
DEPARTMENT OF THE AIR FORCE
MCMXLVII
UNITED STATES OF AMERICA

How To Use The Dictionary

1. The words, phrases, definitions, and other matter in this dictionary are presented in such manner as to follow usual dictionary practices, but the following points are specially made:

a. The words and phrases defined, as well as the comments made, relate primarily to Air Force usage. Some words of general interest, however, are also defined, especially when they have been used as key words in the definitions of other words. See the PREFACE, paragraphs 12, 13, 14, and 15.

b. Certain technical terms, such as those found in a parts catalog, are not normally entered. Room thus remains for the development of specialized glossaries to supplement the coverage offered here.

c. Phrases usually written as numerals, are listed as pronounced. Thus '701 calculator' is listed as **seven-o-one calculator.**

d. No attempt has been made to define a term in all its senses, unless all senses have some special interest to Air Force users. Thus, when words like *aid, base, element,* and *fighter* are defined, it is assumed that the reader will understand that these also have other valid meanings not mentioned.

e. Small type notes are used for defining subsenses or for giving added information on such matters as usage, pronunciation, and etymology. See, for example, **air power, depot,** *n.*, and **taxi,** *n.*

f. Distinctions are made between adjectives and noun attributives. By use of the word *attributive* many hundreds of different combinations are provided for without their being specially defined. It is assumed the user can define these himself by applying the basic definitions given. See **attributive,** *n.*

g. Abbreviations, historical and current, authorized and commonly used, are entered in normal alphabetical order. For their special uses, see **abbreviation,** *n.*

h. Etymologies and pronunciations are shown only when of special interest. See the PREFACE, paragraph 16.

i. Transitive verbs are so defined as to show their typical objects in italic type. Thus, for example, **control,** *v.*, is defined "to exercise control over a *person, unit, thing, act, deed, movement,* or any other thing subject to control."

j. Definitions are written in words other than the words being defined, but in defining a combined form or phrase, such as *letter order*, its own elements may be used in the definition, provided the elements are well understood or otherwise defined. Thus, a letter order is defined in terms of an order, the same as a species is defined in terms of its genus. Likewise, a noun once defined may be used to define its verb form, as with **control,** *v.*

2. Users are urged to examine the PREFACE to see what authority the dictionary may be accorded.

3. Users are likewise reminded that language is dynamic, i.e., it changes, and is used not only for communication, but for persuasion and thought. See the PREFACE, paragraphs 2, 3, and 4.

4. For purposes of revision, the user's attention is invited to the inside back cover for instructions.

THE UNITED STATES AIR FORCE DICTIONARY

The United States Air Force

DICTIONARY

WOODFORD AGEE HEFLIN, *Editor*
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Air University

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Foreword

In the world of aviation and air power, we have in the past fifty years made rapid changes in our technology, scientific thinking, and manner of living. I believe it is evident to any thinking person that language has played a part in this—the language of mathematics and particularly the English language. Through them we learned rapidly that which had been discovered in former eras, as well as that which was in the process of discovery. Through them we were able to communicate and to advance our own thinking.

The language of the Air Force is primarily the English language. It partakes of the complexities, subtleties, and connotations of the language as a whole. Yet it has a feature that sets it apart, the feature of its special vocabulary adapted for use in carrying out military operations. What this vocabulary is, and how it has been made to serve our purposes is a matter of concern to all of us.

In this publication, we see this vocabulary analyzed in detail for the first time. We hope, through its analysis, to bring greater insight into the nature of our mission, and to give guidance to ourselves in the use of the English language so as to advance the effectiveness of our operations.



N. F. TWINING
Chief of Staff
United States Air Force

Preface

1. The purpose of the United States Air Force Dictionary is to provide guidance to all interested persons in the use of that part of the English language that relates in some significant way to the United States Air Force. This purpose rests upon the premise that although the language of Air Force people is indeed English, a certain part of it is in the nature of special usage. Because this usage is not adequately treated in other dictionaries, it is accorded detailed analysis in this publication, in terms of both the Air Force's own operations and the English language as a whole.

Purpose

2. In matters of communication, every person must use the sounds or symbols of his language in definite ways and patterns so as to express himself to those about him. And those about him likewise must use and understand the sounds and symbols in the same general ways, else there will be no communication through their use. Thus language incorporates certain disciplines, handed down from one generation to another. Although these disciplines are constantly undergoing change, they constitute an essential part of the language. The disciplines of spelling, of grammar, of sentence structure, of rhetoric, and of logic, each has a place in language, each lends it form, each makes for exactness of communication.

Communication: Need for discipline

3. But a person uses his language for other purposes than communication. He uses it to think by and to persuade. In thinking—that is, in advancing his thoughts into fields never before probed—he leans heavily upon words and phrases already in use, for he finds extension of meaning so natural and so full of pregnant thought that he assigns new meanings to old words without hesitation, and depends upon context to keep his ideas straight. Likewise, when his purpose is to persuade, he finds that exactness of expression is not necessarily to his purpose. Instead, words and phrases are used for their connotations, for their appeal to private interest, or for their emotional impact.

Extensions of meaning

4. In these respects, the Air Force language is like the English language as a whole. It is complex and of great variety. Now its vocabulary is made to expand and adapt, developing in one instance a multiplicity of meanings for a single word, but specifying in another instance a single meaning for a given word or phrase. To know how to read and use this language, how to interpret it in context, how to exploit and refine its imagery, how to resort to its deeply rooted connotations, and how to curb it and turn its words and phrases into code or precise symbols—to know these things is to know how to make the language serve us not only in military life but in all our relations with our fellow men.

Complexity of language

5. In this publication, the attempt is made to present the Air Force language in all its aspects. No Air Force person desires to shackle his thought and imagination by a language of code; neither can he carry out some of his operations without a certain amount of coded language. The dictionary provides the contexts in which to use one or the other; it is context that gives clue to meaning.

Context, the clue to meaning

6. When the dictionary staff set out to achieve its objectives, certain things had to be done. First of all, there had to be a systematic reading of writings considered to contain the vocabulary of Air Force people. Thus were read numerous regulations, doctrinal and other manuals, pamphlets, general and special orders, technical orders, combat orders, war plans, operational reports, engineering reports, historical accounts, flying instructions, scientific reports, aeronautical charts, memoirs, pieces of correspondence, officially published books, popular books, official news releases, magazine articles—in sum, any written product, whether published or not, that cast light upon the way in which the language is used.

Sources of evidence

7. Out of this reading came some 200,000 quotations, each illustrating the use of some word or phrase. These were brought together by the coordinated effort of several score people who extracted them in context on $4'' \times 6''$ slips. Once these quotations had been arranged in such order as to be systematically available, they constituted a body of primary evidence on how the Air Force language has been used. The slow process of analysis then followed, done by relatively few people, but in accordance with methods considered sound for developing any historical or general dictionary.

200,000 quotations

8. This analysis had two objectives: First, to discover the meanings of the words and phrases used in conducting Air Force business; and Second, to provide guidance in their use so as not only to keep them in harmony with the English language as a whole but to make them serve Air Force purposes. Completion of the first objective provided the groundwork for achieving the second.

Objectives of analysis

9. The Air University was the place at which the USAF dictionary was developed. Here, with its unique resources for library research on Air Force subjects, and with a large number of people at hand ready to make available their knowledge, each experienced and trained in some aspect of military activity, whether in the Air Force, Army, Navy, Royal Air Force, or other organization, the Air University provided the environment particularly needed. Hundreds of people were consulted about thousands of different expressions; and although the editor and staff were ultimately responsible for the definitions and their manner of presentation, they were given guidance in their task by those who are themselves the users of the language.

Research resources

10. Some 4,500 different terms were submitted for inclusion by the major air commands, several hundred of which were in one way or another defined by those who submitted them. These constitute about one-

Major Air Commands

fourth of the entire wordlist of over 16,500 entries, and they represent direct participation in the project by people all over the Air Force. What was submitted by these people was, of course, examined in the light of the staff's own research and experience, and likewise in the light of the evidence provided by the basic collection of quotations.

16,500 entries

11. The coverage of the dictionary is broad, but it is assumed that the user will turn to other dictionaries for words or meanings not found in it. The aim has been to supplement rather than to dispense with other dictionaries—this despite the fact that many words defined in general dictionaries are also defined here. The reason for their being entered here is tied to the peculiar significance that arises from their use in a day of air power.

Use of other dictionaries

12. Thus, terms of purely military interest are entered, likewise terms closely associated with them in the conduct of modern war—especially in the fields of aeronautics, aerodynamics, meteorology, electronics, atomic energy, supersonics, business management, and administration—wherever the vocabulary used in these or other fields has become relevant to Air Force operations. Even a certain number of philosophical words, such as *concept*, *entity*, *direction*, *phenomenon*, *time*, *space*, and *power* are defined, because these words, or the concepts behind them, are taking on new significance, if not new meanings, as man succeeds in making the atmosphere and outer space serve his own purposes, whether they be military or not.

Coverage

13. A certain number of obsolete or historical terms are likewise included for their historical interest, such as *brevet machine*, *rounds*, and *Air Service*. Also, abbreviations of historical interest have been listed along with those currently used.

Obsolete terms

14. Slang has been given a small place in the dictionary, but no special effort has been made to uncover its full use throughout the Air Force. Wherever a slang term has been found in general use it has been defined, but when evidence indicates local use only it has been rejected.

Slang

15. The manner of presentation is along traditional lines adapted to the particular purposes of the dictionary. Words are usually entered in the singular, it being assumed that the plural form also exists. Distinctions are made among most entries by reference to the parts of speech. Verbs are labelled transitive or intransitive, and the transitive have typical objects shown in italics. Noun attributives are distinguished from adjectives. Abbreviations are entered in normal alphabetical order instead of in a separate wordlist. Various senses and subsenses are differentiated within an entry either by numerals, or, when the matter is considered self-evident, simply by a separating semicolon. Special explanations are provided in small-type notes.

Manner of presentation

16. Etymologies and pronunciation are dealt with whenever these matters appear to require special handling, as in such entries as *assignee*, *per diem*, *depot*, *taxi*, and *vice*. But, for the most part, when no special problems of etymology or pronunciation arise, it is expected that the user

Etymology and pronunciation

will resort to some general dictionary if he requires additional information or special instruction.

Cross references

17. Cross references are numerous, intended to provide as complete a picture as possible of the vocabulary connected with a particular subject.

Attributives

18. Examples of attributive use of nouns are given without special definition, the object being to suggest the scope and manner of developing usage, rather than to define terms that the reader himself can define if need requires. In this connection, the use of the word *attributive* is fully explained under the separate entry in the dictionary.

Typography

19. Different type faces and sizes are used for different purposes. The entries, the numerals before definitions, and certain cross references are set in 8 point Bodoni Bold; definitions in 9 point Bruce Old Style Number 31; small type notes in 7 point Bruce Old Style Number 31, with cross references in 6 point Bodoni Bold. The prefatory matter is set in Bruce Old Style Number 31, with captions set in Spartan Heavy and Garamont.

Revision

20. A revised edition is contemplated. It is hoped that every user will participate in correcting, modifying, and adding to the present product. The staff is aware of its own limitations; likewise it is prepared to accept constructive suggestions, especially as provided for under instructions on the inside of the back cover.

Staff

21. Mention has been made of the assistance afforded by those who submitted special materials. It remains to indicate more fully the extent and scope of the effort made to bring the dictionary into being.

22. The principal staff members, in addition to the editor, were Mrs. Sally M. Watkins, Mr. Robert W. Schmidt, Dr. Frank Adams, Dr. Raymond Estep, Dr. L. B. Atkinson, Dr. C. M. Thomas, and First Lieutenant Henry Maggenti, all of whom, except for the first named, have served with the armed forces in uniform. Valuable assistance was also afforded by Dr. M. M. Mathews of the University of Chicago; likewise by Mr. W. H. Allen, Lt. Colonel C. E. Bailey, Mr. G. N. Dubina, Colonel M. Elstun, Dr. R. F. Futrell, Mrs. Betty Gilmore, Colonel W. T. Judkins, Mrs. Rachel Lyons, Mrs. Grace Reid, Air Commodore M.S.W. Robinson (RAF), Colonel R. H. Roussel, Dr. C. E. Sanders, Dr. A. F. Simpson, Mrs. Noreen Skillman, Mr. J. S. Vann, Mrs. Anne Williams, and Mrs. Dorothy Willis. In addition to these, some thirty other persons, principally in uniform and closely associated with Air Force operations, provided special materials from time to time for the project.

Air Force Support

23. Equally important with the staff were those who gave the dictionary support during the period of its development. First among these were the several major air commanders, notably the commanders of the Continental Air Command and the Air Materiel Command, who in 1950 recognized the requirement and proposed a project for it to Headquarters USAF. Approved by the Chief of Staff, the project was given impetus and direction by the Director of

Training, the Air Adjutant General, the Director of Manpower and Organization, and the Inspector General. At Air University, each Commander who served during the dictionary's development gave it full support; and both the former and present Directors of the Research Studies Institute, Colonel W. J. Paul and Brigadier General C. W. Davies, encouraged those who did the actual research and writing to adhere to the highest professional standards of which they were capable. Likewise, the Air University Press, particularly Lt. Colonel Kenneth F. Gantz and Mr. John A. Westcott, Jr., provided valuable technical assistance.

24. The consultants for the dictionary were numerous—in all, more than two hundred. These persons were mainly in the Air Force, but a few were outside. The principal assistance came from members of the Evaluation Staff of the Air War College, from the faculties of both the Air Command and Staff College and the Air War College, from the Air University Library, and from the three divisions of the Research Studies Institute (i.e., the Arctic, Desert, Tropic Information Center, the USAF Historical Division, and the Documentary Research Division). These consultants served on every level. Their interest, experience, and knowledge all contributed to bringing the dictionary into existence.

Consultants

W. A. H.

Research Studies Institute
Air University

A

A (*letter*). See **Alfa** (*code*).

A (*abbr*). **1.** *auth.* 'Army,' esp. in the designations of certain equipment, as 'A-4 bomb release,' 'A-2 bag,' 'A-14 mask.' **2.** 'Aircraft.' See **acft** (*auth abbr*). **3.** 'Amphibian' in USAF aircraft designations, as 'A-10,' etc. Cf. **SA** (*abbr*). **4.** 'Amphibious version,' in designating Naval aircraft so modified. **5.** 'Attack,' when used in aircraft designations. Now *hist.* in the AF. See **VA** (*code*). **6.** 'Assistant chief of staff' or 'air staff' when used in designating sections of a general-staff type of staff organization, as *A-1* for personnel; *A-2* for intelligence; *A-3* for training and operations (and sometimes planning); *A-4* for supply and materiel; sometimes *A-5* for planning or any other designated function; sometimes *A-6* for communications. **7.** 'Airman' as used in the titles *A/B*, *A/3C*, etc. **8.** 'Actual weight' of an aircraft, as distinguished from estimated or calculated weight. **9.** 'Air Force,' as used in Naval designations of guided missiles. **10.** 'Ambulance,' as formerly used (*circa* 1920) in designations of US Army aircraft. **11.** 'Arctic air mass.' **12.** 'Aggregat,' a German word meaning 'complex machinery,' as used in *A-4*.

The designations in sense 6 also appear in attrib. use, as *A-1 staff*, *A-2 estimate*, *A-3 officer*, *A-4 section*. See **S** (*abbr*), sense 4.

A (*code suffix*). 'Regular Air Force male officer' when used with a service number, as in '243A.'

a (*abbr*). **1.** 'Acceleration in feet per second per second.' **2.** 'Available.'

a. (*abbr*). 'Adjective.'

A/1C (*auth abbr*). 'Airman first class.'

A/2C (*auth abbr*). 'Airman second class.'

A/3C (*auth abbr*). 'Airman third class.'

A-4, *n.* [See **A** (*abbr*), sense 12.] The German official name for the V-2.

A-20. A twin-engine attack or light bomber developed by Douglas and used in WW II.

An all-weather fighter version of the A-20 was designated the 'P-70.' The original version exported to France early in WW II was designated the 'DB-7.' In the British service, the plane was designated the 'Boston' when used for bombing, and called the 'Havoc' when modified as an all-weather fighter or night intruder. In the US, the A-20 was popularly called the 'Havoc.' The US Navy designation is 'BD-2.'

A-24. A single-engine dive bomber developed by Douglas, and used during the early part of WW II. The Navy designation was 'SBD.'

The A-24 was popularly known as the 'Dauntless.'

A-25. A single-engine, two-place airplane developed by Curtiss primarily as a naval dive bomber, but also used in the AAF. Popularly called the 'Helldiver.'

The US Navy designation was 'SB2C' for models built by Curtiss, 'SBF' and 'SBW' for models built by other manufacturers.

A-26. The former designation for the current B-26 (which see, sense 1).

A-29. An observation and patrol bomber developed by Lockheed, and popularly known as the 'Hudson.'

The Navy designation is 'PBO.'

A-34. A single-engine dive bomber developed by Brewster, used in WW II.

The Navy designation of the A-34 is 'SB2A.' The plane was popularly called the 'Buccaneer' by Americans, and the 'Bermuda' by the British.

A-35. A single-engine, low-wing dive bomber, developed by Vultee, and popularly known as the 'Vengeance.'

The A-35 was used during the early part of WW II, esp. by the British. It was also known as the 'A-31.'

A-36. A fighter-bomber version of the P-51 (now the F-51), developed by North American, and popularly called, for a short time, the 'Invader.'

AA (*abbr*). **1.** *auth.* 'Antiaircraft.' Attrib., as in *AA battery*, *AA cruiser*, *AA defense*, *AA doctrine*, *AA emplacement*, *AA fire*, *AA gunnery*, *AA weapon*, etc. **2.** 'Antiaircraft artillery.' **3.** *auth.* 'Airman apprentice.' *Navy.* **4.** 'Absolute altitude.' **5.** *auth.* 'Allied Command, Atlantic.'

AA (*code prefix*). 'WAF airman' when used with a service number.

A.A. (*abbr*). Also **A/A.** Variants of 'AA' (*abbr*).

AAA (*auth abbr*). 'Antiaircraft artillery.' Attrib., as in *AAA brigade*, *fire*, *searchlight battalion*.

AAAIS (*auth abbr*). 'Antiaircraft artillery information service.'

AAB (*abbr*). 'Army Air Base.' Now *hist.*

AA bln (*abbr*). 'Antiaircraft balloon.'

AAC (*auth abbr*). 'Alaskan Air Command.'

AACS (*abbr*). **1.** *auth.* 'Airways and Air Communications Service.' Attrib., as in *AACS commander*, *detachment*, *facility*, *squadron*. **2.** 'Army Airways Communications System.' Now *hist.*

AADA (*abbr*). 'Advanced Air Depot Area.'

AAF (*abbr*). **1.** 'Army and Air Force,' used in conjunction with other abbreviations, as in *AAFES*. **2.** 'Army Air Field.' Officially used since 1954. See **airfield,** *n.* **3.** 'Army Air Forces' or 'Army Air Force.' Attrib., as in *AAF aircrew, AAF Air Service Command, AAF base, AAF manual, AAF regulation,* etc. Now *hist.*

AAFAS (*abbr*). 'Army Air Forces Aid Society.' *Hist.*

AAF Board. An AAF board during WW II with the mission of testing materiel and its tactical employment, in coordination with the Army Air Forces Proving Ground Command and Army Air Forces School of Applied Tactics. Now *hist.*

AAFC (*abbr*). 'Army Air Forces Center.' Now *hist.*

AAFCE (*auth abbr*). 'Allied Air Force, Central Europe.'

AAF Center. An AAF command organized in June 1945 that merged the activities of the AAF Board, the School of Applied Tactics, and the Proving Ground Command.

AAFCWF (*auth abbr*). 'Army and Air Force Central Welfare Fund.'

AAFES (*auth abbr*). 'Army and Air Force Exchange Service.'

AAFMPS (*auth abbr*). 'Army and Air Force Motion Picture Service.'

AAFNE (*auth abbr*). 'Allied Air Force, Northern Europe.'

AAFPS (*auth abbr*). 'Army and Air Force Postal Service.'

AAFSAT (*abbr*). 'Army Air Forces School of Applied Tactics.' Now *hist.*

This school was located at Orlando, Florida, during WW II.

AAFSE (*auth abbr*). 'Allied Air Force, Southern Europe.'

AAF Statistical School. An AAF school set up at Harvard University during WW II to study statistical control methods. Now *hist.*

AAFTAC (*abbr*). 'Army Air Forces Tactical Center.' Now *hist.*

AAFTAC was located at Orlando, Florida, during WW II.

AAFTAD (*abbr*). 'Army Air Forces Training Aids Division.' Now *hist.*

AAFTC (*abbr*). 'Army Air Forces Training Command.' Now *hist.*

AAFTTC (*abbr*). 'Army Air Forces Technical Training Command.' Now *hist.*

AAFWB (*auth abbr*). 'Army and Air Force Wage Board.'

AAG (*auth abbr*). 'Air Adjutant General.'

AAGR (*auth abbr*). 'Air-to-air gunnery range.'

AAHA (*auth abbr*). 'Awaiting action higher authority.'

AAM (*abbr*). 'Air-to-air missile.'

AAML (*abbr*). 'Arctic Aeromedical Laboratory.'

AAOC (*abbr*). 'Antiaircraft Operations Center.'

AAR (*abbr*). 'Aircraft Accident Report.'

AARS (*abbr*). 'Army aircraft repair ship.'

AASWAAF (*abbr*). Variant of 'ASWAAF.'

AB (*auth abbr*). **1.** 'Air base.' **2.** 'Aviation Boatswain's Mate.' *Navy.*

A/B (*abbr*). **1.** *auth.* 'Airman Basic.' **2.** 'Airborne.'

abandon, *v. tr.* **1.** To bail out of an *aircraft* and let it crash. Used in command, as in 'abandon ship' or 'abandon airplane.' **2.** To walk away from and leave an *aircraft* no longer to be claimed.

Hence, **abandonment,** *n.*

abandoned aircraft. An aircraft dropped from a unit's inventory because of having been abandoned.

abbr (*abbr*). 'Abbreviation.'

abbrev (*auth abbr*). 'Abbreviation.'

abbreviated, *a.* Of a report or written survey: Reduced in length, esp. for being forwarded to a higher echelon.

abbreviation, *n.* (abbrev) A short form of a word or phrase. Abbreviated 'abbr' in this dictionary.

Abbreviations used in the Air Force and in other military services are numerous, many having been adopted from those already in common English use, but many others having been concocted to serve purposes peculiar to the military services. Sometimes a particular abbreviation has been used only for a short time, then dropped either because the long form for which it stood became obsolete, or because a different abbreviation was considered better for the purpose. The practice of changing and dropping abbreviations has led to considerable uncertainty among readers and writers, esp. when documents of historical interest have used abbreviations once current but now no longer published

In the planning stages of this dictionary, insistent requests were made by several people in the Air Force for the inclusion of all those abbreviations considered relevant to Air Force problems whether historical or current. It was pointed out that the broad sweep of reading required to collect the words and phrases defined in the dictionary could be used to collect abbreviations as well. So, abbreviations are included.

Abbreviations, therefore, are of two sorts: **a.** Those listed in JANAP 169 or JANAP 169(A) regarded as specifically authorized, and marked in this dictionary, when entered, as '(*auth abbr*).' **b.** Those other abbreviations that turn up in the literature of the Air Force, many of which are commonly used and authorized even though not listed in JANAP 169.

Listings from JANAP 169 exclude those not considered of special interest to the AF.

Use of lowercase letters and uppercase letters is common practice, the particular choice being determined by the following rules:

1. If the abbreviation is to be used in telegraphic or other electronic transmission, it is uppercased throughout, since the equipment used in such transmission is not adapted to showing the lowercase.

2. If the abbreviation is to be printed, typewritten, or written by hand, where excessive use of uppercase tends to distract attention or mar appearance, then the following apply:

a. The letters are usually uppercased throughout if they represent the several initial letters of key words in a phrase, as in 'MAQ' for 'monetary allowance in lieu of quarters,' but there are exceptions, as in 'rpm.'

b. The letters are, or may be, lowercased if they are contractions of letters in a single word, in which case the

initial letter may be capitalized if it is a proper noun, or if it is used at the beginning of a sentence or in a title.

c. The letters are, or may be, lowercased if two or more abbreviations of common words are joined together, as in 'unodir' for 'unless otherwise directed' or 'avgas' for 'aviation gasoline.'

d. The letters may also be mixed between lowercase and uppercase, as in 'AFRes' for 'Air Force Reserve.'

e. If the abbreviation is uppercased for one reason or another, it may be shown in caps or in small caps as determined by appearance or style in the particular publication in which it appears.

Three other rules should be mentioned:

3. A period at the end of an abbreviation, or periods between letters, are not commonly shown in Air Force practice within the services, but for a publication outside the services they may be used, depending upon the standards of the publication involved.

4. An abbreviation shown may, unless otherwise indicated, stand for any derived form of the word, as with *auth* for 'authority,' 'authorize,' 'authorized,' etc. These derived forms are not necessarily shown in the dictionary.

5. In addition to those listed in JANAP 169, recognized abbreviations that will be unmistakably understood in the context in which used are authorized. These include, for example, abbreviations for the points of the compass, those for the model designations of airplanes, those for the short titles of publications, those for use in flight plans as authorized by the Civil Aeronautics Administration or by the International Civil Aviation Organization, those commonly used for universities, fraternal organizations, etc., those used in technical fields, and those commonly understood and listed in standard dictionaries, such as 'etc.,' 'i.e.,' 'A.E.F.,' and the like. The burden is upon the user of the abbreviation that it will be understood.

ABC (*abbr*). **1.** 'Atomic, biological, and chemical,' as in *ABC officer*, *ABC warfare*. **2.** 'American-British conversation,' as in *ABC-1*, a report of March 1941 that set forth the Allied world-wide strategy of WW II, or *ABC-2*, a report on air collaboration.

ABCD (*auth abbr*). 'Awaiting bad conduct discharge.'

ABDACOM (*abbr*). 'Australian, British, Dutch, American Command.' Now *hist.*

abeam, *adv.* At right angles to the longitudinal axis, or to the side, of an aircraft.

Abilene Air Force Base. An AF base at Abilene, Texas. Also known as Tye Field and Abilene Municipal Airport Number One.

ab initio training. Training in flying from the beginning. *British.*

Able (*code*). A word formerly authorized for the letter 'A' in transmitting messages when a possibility of a misunderstanding existed. See **Alfa** (*code*).

The following are the formerly authorized code words, listed in order, for each letter in the alphabet: Able, Baker, Charlie, Dog, Easy, Fox, George, How, Item, Jig, King, Love, Mike, Nan, Oboe, Peter, Queen, Roger, Sugar, Tare, Uncle, Victor, William, Xray, Yoke, Zebra.

ABMC (*abbr*). 'American Battle Monuments Commission.'

abn (*auth abbr*). 'Airborne.'

aboard, *adv.* In or on an aircraft, vessel, or land vehicle.

A-bomb, *n.* The atomic bomb. Attrib., as in *A-bomb squadron, A-bomb warhead.*

abort, *n.* An abortive sortie, mission, or flight; an airplane that has aborted. See **air abort, ground abort.**

abort, *v.* **1.** *intr.* Of airborne persons or aircraft: To turn back from an aerial mission before its completion, esp. for reasons other than enemy action. **2.** *tr.* To cause an air *mission, sortie,* or *operation* to fall short of success for reasons other than enemy action. Hence, **aborted,** *a.*

abortive, *n.* An aborted aircraft; also a mission, sortie, or flight that has been aborted.

abortive, *a.* **1.** Of an airborne aircraft: That aborts. **2.** Of a raid, sortie, mission, or operation: Not brought to fruition; unsuccessful esp. for reasons other than enemy action.

abortive sortie. A combat sortie in which the airborne aircraft turns back or flies toward a friendly base before completion of its assigned mission for reasons other than enemy action. Hence, *abortive-sortie rate.* Cf. **noneffective sortie.**

For accounting purposes, the phrase 'for reasons other than enemy action' includes fear of the enemy, as well as engine trouble, bad weather, etc. An abortive sortie may or may not be a credit sortie. See **sortie,** *n.*, sense 1 and note.

abort rate. The rate of abortive sorties made by a unit in a given interval of time, such as a month.

The number of abortive sorties is divided by the number of sorties.

about face. The act of, or command for, turning completely around in a prescribed military manner.

abreast, *a.* or *adv.* Of two or more flying aircraft: At the same altitude and side by side.

abs (*auth abbr*). 'Absent' or 'absentee.'

ABSAP (*abbr*). 'Airborne search and attack plotter.' *Navy.*

absentee, *n.* (abs) *Specif.* A service person absent without leave.

absentee voting. *Specif.* Voting by use of the absentee ballot.

This practice is common among service personnel stationed outside their home states.

absent without leave. (AWOL) Of a member of the armed services or any other person subject to military law: Gone or absent from his place of duty without permission or authorization, and without the intention of deserting. Cf. **desert,** *v.*

absol. (*abbr*). 'Absolute.'

Used in this dictionary to indicate the use of an adjective as a noun, as under **basic,** *a.*

absolute air superiority. Air supremacy.

'Absolute air superiority' is largely an obsolete term in AF usage. See **complete air superiority,** note. See also **control of the air.**

absolute altimeter. An altimeter that registers the absolute altitude of an aircraft.

This altimeter works on the principle of measuring the

time for transmission and return of radio-frequency energy. See **FM radio altimeter, radar altimeter.**

absolute altitude. The height or altitude of an aircraft above the surface or terrain over which it is flying.

absolute angle of attack. The acute angle between the chord of an airfoil at any instant in flight and the chord of that airfoil at zero lift.

absolute ceiling. The maximum altitude above sea level at which a given airplane or airborne missile can maintain horizontal flight in a standard atmosphere. Cf. **static ceiling.**

With any airplane, the ceiling varies according to load.

absolute command of the air. That control or command of the air held when an air force has no air opposition whatever. Also called 'absolute control of the air.'

This term is now seldom used in AF writings. See note under **complete air superiority.**

absolute delay. The time interval between the transmission of two synchronized radio or radar signals.

absolute humidity. The mass of water vapor present per unit volume of space, i.e., the density of water vapor, usually expressed in grams per cubic meter or grains per cubic foot; the actual amount, by weight, of water vapor in a given volume of space. Likewise called 'vapor concentration.'

absolute temperature. A temperature expressed in terms of a scale beginning at absolute zero.

When centigrade degrees are used, the scale is converted to the Kelvin scale (°K); when Fahrenheit degrees are used, the scale is converted to the Rankine scale (°R). See **absolute zero.**

absolute weapon. A theoretical weapon having the ultimate in destructive power. *Popular.*

This term is sometimes applied to the atomic or hydrogen bomb. Cf. **ultimate weapon.**

absolute zero. The temperature at which all thermal motion or heat action ceases.

This temperature is approximately −273.16° C or −459.69° F.

abt (*auth abbr*). 'About.'

AC (*abbr*). **1.** 'Air Corps.' Now *hist.* **2.** 'Alternating current.' **3.** 'Aircraft.' *Rare.* **4.** 'Aircraftman,' as used in the RAF and RCAF; hence, *AC1*, 'aircraftman first class,' and *AC2*, 'aircraftman second class.' **5.** 'Aircraft commander.' **6.** *auth.* 'Air controlman.' **7.** *auth.* 'Arithmetic computation test.'

A/C (*abbr*). **1.** 'Aviation cadet.' **2.** 'Aircraft.' **3.** 'Alter course' as used in a navigator's log. **4.** 'Air Commodore.' *RAF* and *RCAF.*

Ac (*abbr*). 'Altocumulus.'

a.c. (*abbr*). 'Alternating current.'

acad (*auth abbr*). 'Academic.'

academic, *a.* (acad) *Specif.* Of or pertaining to study or classroom work done in an AF school, as in *academic division, academic instructor, academic record.*

academic training. Training done in a classroom or by supervised study, as distinguished from on-the-job training or operational training.

academy, *n.* **1.** A school or college that specializes in the teaching of military subjects, but also provides an undergraduate education for persons who, upon graduation, are commissioned into the armed services, as in 'the Academy at Annapolis.' **2.** *Specif.*, and *capitalized.* The United States Air Force Academy. Attrib., as in *Academy Site Board.* See **service academy.**

ACAN (*auth abbr*). 'Army Command and Administrative Network.'

AC&SC (*auth abbr*). 'Air Command and Staff College.'

AC&SS (*abbr*). 'Air Command and Staff School.' Now *hist.*

AC&W (*abbr*). 'Aircraft control and warning.' Attrib., as in *AC&W facility, installation, system, unit.*

AC/AS (*abbr*). 'Assistant Chief of Air Staff.' Often combined with designating appositive, as *AC/AS Operations.*

ACB (*auth abbr*). 'Airmen Classification Battery.'

ACC (*abbr*). **1.** *auth.* 'Air Coordinating Committee.' **2.** *auth.* 'Allied Control Commission.' **3.** *auth.* 'Air control center.' **4.** 'Allied Control Council.'

A.C.C. (*abbr*). 'Army Cooperation Command.' *British.*

ACCA (*auth abbr*). 'Ad hoc Crypto-coordination Agency.'

accelerating force. 1. *Specif.* The force that accelerates an aircraft, equal to the thrust minus the drag. **2.** Any G-force endured by an aircraft or its parts, or by persons in an aircraft, resulting from the linear or angular acceleration of the aircraft.

acceleration, *n.* **1.** *Mechanical.* The action or process of velocity increase; the rate of velocity increase, often measured in G's. **2.** In physics, any change, or rate of change, of velocity, either increase or decrease.

Acceleration (sense 1) of an aircraft may be linear or angular. Linear acceleration may be lateral, longitudinal, or normal (i.e., vertical); angular acceleration in an aircraft is around one of its axes and may be pitch, roll, or yaw acceleration. Any increase in speed or any change in direction involves acceleration. See **angular acceleration, linear acceleration, footward acceleration, headward acceleration, transverse acceleration.** Cf. **deceleration,** *n.*, and see **G,** *n.*, note.

acceleration error. An error in a bubble sextant or magnetic compass reading caused by mechanical inertia during changes in aircraft velocity.

acceleration force. *Specif.* A force resulting from acceleration that acts upon an aircraft or person in the aircraft.

acceleration tolerance. The tolerance of a person to endure acceleration forces.

accelerometer, *n.* An instrument that measures acceleration.

This instrument can be variously designed to measure different components of acceleration.

acceptable, *a.* Of an action or the price paid for the action: Considered to be within the limits of affordable cost. See **unacceptable,** *a.* Hence, **acceptability,** *n.*

Acceptable, feasible, and *suitable* are technical (if not jargon) terms as sometimes used. A given action proposed for the solution of a problem may, in these terms, be acceptable without being feasible or suitable, or feasible without being acceptable or suitable, or suitable without being acceptable or feasible. The ideal action is one that satisfies all three conditions. Needless to say, a commander is sometimes forced to accept an unacceptable loss. See **feasible,** *a.*, and **suitable,** *a.*; also **accessibility,** *n.*, note.

acceptable loss. A combat loss judged not to be too high for the results obtained.

acceptance, *n.* **1.** The receipt and acknowledgment of physical delivery of a procurement or supply item, esp. an aircraft. **2.** The procedure of providing for, and allowing, an airplane to land at an airhead or a forward air base in a combat area. See **acceptance rate.**

In sense 1, acceptance of aircraft as an item of procurement is sometimes preceded by an *acceptance phase* during which inspection, acceptance tests, and acceptance flights are run.

acceptance rate. The rate at which aircraft are allowed, or can be allowed, to land at a base, esp. at an airhead.

accepted condition. The condition of a procurement, supply, or repaired item that allows its acceptance.

accessibility, *n.* **1.** A condition residing in an object that makes it reachable, as in 'the accessibility of a target.' **2.** An aircraft capability that indicates its power to reach a place, or to take off and land in various places, as in 'this plane, equipped with a ski-wheel assembly, has good accessibility for arctic operations.'

Usage in sense 2 is, strictly speaking, an impropriety, in which an attribute properly belonging to the place to be reached is assigned to the object that is able to reach it. The usage may be justified, however, by the lack of any other ready word for the intended sense.

It may be noted that words ending in '-bility,' such as 'acceptability,' 'feasibility,' 'suitability,' 'compressibility' (sense 2), 'visibility' (sense 4), etc., tend to be used in technical, or semitechnical senses, which are sometimes distortions of the regular meanings. 'Accessibility' falls into this pattern as used in sense 2.

accessory, *n.* (accy) A mechanism or device employed to facilitate or increase the effective use of some other mechanism or piece of equipment. Attrib., as in *accessory power plant.*

See **engine component, engine accessory.**

accessory drive. A special drive shaft and gears, operated off the main engine, to actuate and drive accessories. Attrib., as in *accessory drive pad.*

acci (*abbr*). 'Accidental injury.'

accident, *n.* (acdt) An unexpected or unsought event that does damage to persons or property and is not caused by enemy action. See **aircraft accident.**

The AF in its efforts to prevent accidents uses this term in many combinations, as in *accident cost index,* an index used in the Ground Safety Program; *accident curve,* a statistical curve on a chart showing accident rates; *accident history; accident incident in flight; accident prevention program; accident rate;* and *accident report form.*

acclimatization, *n.* **1.** The functional and structural adjustments of the body when subjected to a change in climatic environment. Cf. **accommodation,** *n.*, **accustomization,** *n.* **2.** In a broader sense, any adjustment or adaptation, whether physiological, psychological, or social, which enables one to live more comfortably in a new climatic environment.

accolade, *n.* A presidential certificate presented to the next of kin of record of a member of the US Armed Forces who dies in line of duty during military operations; or to the next of kin of a civilian who dies overseas, or as a result of injury or disease contracted overseas, while serving with the US Armed Forces during military operations. In full 'accolade certificate.'

accom (*auth abbr*). 'Accommodate' or 'accommodation.'

accommodating command. A command that provides space to a tenant organization or lends support in some special way.

accommodation, *n.* (accom) In aviation medicine, the functional adjustment of the body to environmental changes, as encountered in worldwide air operations.

accomp (*auth abbr*). 'Accomplish.'

accomplish, *v.* (accomp) *tr.* **1.** To complete or carry out an *operation* or *mission*; to reach an *objective.* **2.** To make out a *form.*

account, *n. Accounting.* **1.** A record of transactions, esp. one prescribed for double-entry bookkeeping. **2.** A summarized presentation of such a record in a financial statement in ledger-account form.

accountability, *n.* (acct) The responsibility imposed upon an officer or other person for keeping accurate record of property, funds, or personnel subject to audit, esp. such a record maintained on a numbered stock record account. See **strength accountability.**

The person having accountability of property or funds may or may not have actual custody or supervision of them.

accountability account. An account used to establish and release a person's responsibility for property or money, or both, received and expended.

accountable, *a.* **1.** Of persons or organizations: Charged with or having accountability. **2.** Of property or funds: Requiring accountability. **3.** Of stock records: Showing accountable items.

accounting and disbursing. *a.* Of officers or other persons: Charged with keeping accounts and disbursing funds.

account of advances. *Specif.* An account for moneys advanced on credit by the Treasurer of the US.

accrued leave. (aclv) The total leave credit due an AF officer, airman, or civil service employee.

An officer's or airman's accrued leave consists of accumulated leave (which see) plus credit allowed of 2½ days a month in the current fiscal year; a civil service employee's accrued leave consists of accumulated leave, plus earned credit in the current calendar year.

acct (*auth abbr*). 'Account' or 'accountability.'

accumulated leave. The earned leave credit of an officer, airman, or civil service employee that may be carried over from one leave year to another.

The ceiling on accumulated leave for AF service personnel is 60 calendar days; for civil servants, 30 duty days, except that persons already credited with more than 30 duty days may carry over that credited, provided that the amount of leave used in excess of leave earned in any one year will be used to reduce the credited leave over 30 duty days.

accumulator, *n.* A reservoir that supplies a fluid under pressure when needed; short for 'fuel accumulator' or 'hydraulic accumulator.'

accuracy landing. A landing of an airplane between two designated marks on the ground.

accustomization, *n.* The process of learning to live comfortably, or with a minimum of discomfort, in an extreme or new environment. Cf. **acclimatization,** *n.*

accy (*auth abbr*). 'Accessory.'

acd (*auth abbr*). 'Accord.'

acdt (*auth abbr*). 'Accident.'

ACE (*auth abbr*). 'Allied Command, Europe.'

ace, *n.* An expert combat pilot; *specif.*, one credited with not less than five victories. Also attrib., as in *ace pilot.* See **jet ace, victory,** *n.*, sense 2.

acft (*auth abbr*). 'Aircraft.'

achievement test. A test for measuring skill or knowledge attained in a course of study or period of training.

ACI (*abbr*). **1.** *auth.* 'Air combat information.' **2.** 'Air-controlled interception.'

ACIC (*auth abbr*). 'Aeronautical Chart and Information Center.'

ack (*auth abbr*). 'Acknowledge.'

ack-ack, *n.* [Orig. among British signalmen, a word used for the letters 'AA.'] Antiaircraft; antiaircraft artillery; antiaircraft fire.

Often used attrib. or as an adj., as in *ack-ack battery, ack-ack crew, ack-ack fire, ack-ack gunner, ack-ack shell,* etc.

acknowledgment, *n.* A special message from the addressee of a communication informing the originator that the communication has been received and is understood.

Not to be confused with a reply.

ACL (*abbr*). 'Allowable cabin load.'

AClant (*auth abbr*). 'Allied Command, Atlantic.'

aclv (*auth abbr*). 'Accrued leave.'

ACM (*auth abbr*). **1.** 'Air court-martial.' **2.** 'American Campaign Medal.'

acmp (*auth abbr*). 'Accompany.'

ACMYS (*auth abbr*). 'Airman has completed seven or more years of service.'

ACofS (*auth abbr*). 'Assistant Chief of Staff.'

ACOG (*auth abbr*). 'Aircraft on ground.'

acoustic mine. A mine detonated in water by the sound waves from a ship's propeller, engines, or the like.

acoustic velocity. The velocity of sound waves, or similar waves, in a given medium.

In dry air at 0° C, the velocity of sound is about 1,087 feet a second; in water at 8° C, about 4,708 feet; in steel, about 16,400 feet.

ACP (*abbr*). 'Allied communication publication.'

ACPATT (*auth abbr*). 'All commands through which this shipment passes will process personnel as attached.'

acpt (*auth abbr*). 'Accept.'

acq (*auth abbr*). 'Acquittal.'

ACQT (*auth abbr*). 'Aviation Cadet Qualification Test.'

acquisition and tracking radar. A radar set which locks onto a strong signal and tracks the object emitting the signal.

An acquisition and tracking radar may be airborne or on the ground.

acrd (*abbr*). 'Accrued.'

acrobatic, *a. Specif.* **1.** Of or pertaining to stunt flying, as in *acrobatic flight, acrobatic pilot.* **2.** Of or pertaining to bodily stunts and contortions done by a person on an airplane in flight, such as wing-walking.

acrobatics, *n. Specif.* Short for 'aerial acrobatics.' Cf. **aerobatics,** *n.*

acrojet, *n.* A pilot who performs acrobatics in a jet airplane, esp. as applied to one of a five-man team at the Pilot Training Wing, Williams Air Force Base, Arizona.

ACS (*auth abbr*). 'Alaskan Communication System.'

AC/S (*abbr*). 'Assistant Chief of Staff.'

ACSC (*auth abbr*). 'Air Command and Staff College.'

ACSEA (*abbr*). 'Air Command, Southeast Asia.' Now *hist.*

ACSF (*auth abbr*). 'Attack carrier striking force.'

ACSS (*auth abbr*). 'Air Command and Staff School.' Now *hist.*

ACT (*abbr*). 'Air Control Team.'

act (*auth abbr*). 'Active,' 'acting,' or 'action.'

ACTB (*auth abbr*). 'Aircrew Classification Test Battery.'

action, *n.* (act) **1.** A military move, act, or operation, as in 'our supply line was disrupted by enemy action.' See **air action. 2.** Combat activity, as in 'the squadron went into action last week.' **3.** The process of doing what is required to fulfill an administrative or operational purpose, as in 'remedial action is indicated.'

action copy. The copy of a communication sent to the individual or agency expected to act upon it.

action item. Any item, as a major irregularity, deficiency, or a matter deserving commendation, brought to the attention of an inspector and requiring action.

An action item is usually the subject of a case report.

activate, *v.* (actv) *tr.* **1.** To make a constituted or reconstituted *unit* active by assigning personnel to it. **2.** To make an *establishment,* as an AF base or depot, operative.

In sense 1, a unit is *constituted* or *reconstituted* when the Department of the Air Force gives it a designation and places it on the *active list* or the *inactive list.* Such a unit is *activated* either when on the active list, or when taken off the inactive list, assigned to a command, assigned personnel, and put on the active list.

The unit is *inactivated* when personnel are withdrawn and the unit is once again placed on the inactive list. It may be *reactivated.* It is *disbanded* when the designation is withdrawn by the Department of the Air Force and the unit removed from the inactive list.

A unit which has not been constituted by the Department of the Air Force, i.e., a nonconstituted unit, is *organized.* Formerly T/D units and provisional units were organized. Now a provisional unit or other nonconstituted unit is organized when so ordered and when the necessary personnel are attached or assigned to it. Such a unit is *discontinued* when the personnel are withdrawn from it and it ceases to exist.

An establishment is *established* when its administrative unit is activated or organized or when such action is announced by the Department of the Air Force. An establishment is *discontinued* when its administrative unit is inactivated or discontinued, or when such action is announced by the Department of the Air Force. A discontinued establishment may be *reestablished.*

All of the above actions are carried out by the issuance of appropriate orders.

activation, *n.* (actv) The action of the verb 'activate.'

active, *a.* (act) **1.** Of an installation: Designated for, or in, operation and occupied by a military unit. **2.** Of persons: On active duty. **3.** Of combat duty: Involving actual combat. **4.** Of a theater or war zone: Engaged in actual combat. **5.** Of a unit: Physically in existence, with personnel authorized and assigned in accordance with a table or organization or unit manning document.

active aircraft inventory. The sum of ready aircraft in the basic aircraft inventory and the inventory of command-support aircraft.

Use of this term requires special attention, for it may be variously understood. For example, AFR 150–11, dated 28 May 1953, uses the term in the sense: 'The sum of tactical unit, student training, and special mission aircraft in active use.'

active air defense. That aspect of air defense concerned with combatant action taken to prevent, or interfere with, a hostile attack on an air defense area by aircraft or guided missiles. Distinguished from passive air defense (which see).

Active air defense includes interception, the use of AA artillery, electronic countermeasures, surface-to-air guided missiles, and balloon barrages.

active air reserve. Often *capitalized.* That part of the air reserve considered to be ready for active duty, consisting of the Ready Reserve and that part of the Standby Reserve not on the Inactive Status List.

active defense. 1. The combatant action undertaken in the defense of an area or installation against a ground attack or airborne assault. **2.** Short for 'active air defense.'

active duty. (AD) Normal full-time duty with a military service, as opposed to the inactive duty of a reservist. Also called 'active service.' Cf. next and **extended active duty.**

Attrib., as in *active duty orders,* orders that call a person to active duty at a specified time and place.

active duty for training. Full-time duty with a military service for training purposes.

active homing. Homing in which the homing device reveals its presence. See **homing,** n.

active list. 1. A list of all regular officers on active duty. **2.** A list of constituted units assigned to a major air command for activation, and those which have been activated and are already serving in an active status. See **activate,** *v.,* note.

active military service. Active duty.

active reserve. The active air reserve.

active runway. Any runway on an air base being used at any specific time.

active service. 1. Active duty. **2.** The status of a piece of equipment that is being used continuously.

activity, *n.* (acty) **1.** The mental and physical work performed in carrying out a continuing mission or task, esp. when the work embraces closely related tasks, as in recruiting or training. **2.** Any organized group of people or any establishment looked upon as carrying on an activity (as defined in sense 1).

In sense 2, 'activity' is applied to a group of people, to an office or to an installation when attention is upon the work being done. Reception centers, redistribution centers, research centers, motor pools, finance offices, repair shops, statistical control sections, orderly rooms, etc., are examples of activities from this standpoint. A unit may thus be considered an activity if, as in the case of a base band, the attention is upon its activity. In AF usage, this distinction has not always been made, and the word has fallen into some ambiguity. Cf. **office,** *n.*

activity report. A report on the activities of an organization.

actnt (*auth abbr*). 'Accountant.'

actual range. In bombing, the horizontal distance

that a bomb travels from the moment of release until the moment of impact.

actv (*auth abbr*). 'Activate' or 'activation.'

acty (*auth abbr*). 'Activity.'

acu (*abbr*). 'Altocumulus.' See **Ac** (*abbr*).

acute exposure. *Specif.* The exposure to occasional large doses of nuclear radiation. Cf. **chronic exposure.**

ACW (*auth abbr*). 'Aircraft control and warning.'

AD (*auth abbr*). 'Active duty.'

AD (*code prefix*). 'Aviation cadet' when used with a service number.

A/D (*abbr*). **1.** 'Air depot.' **2.** 'Airdrome.'

ADA (*auth abbr*). 'Air defense area.'

adandac (*auth abbr*). 'Administrative and accounting purposes.'

adapter, *n.* Any device designed to adapt an object or objects to a particular fitting or use, as a threaded bushing used to adapt a fuze to a projectile, or a fitting for an electric receptacle for use with a special plug. See **cluster adapter, homing adapter, launcher adapter.**

adarco (*auth abbr*). 'Advise date of reporting in compliance with these orders.'

adaval (*auth abbr*). 'Advise availability.'

ADC (*auth abbr*). **1.** 'Air Defense Command.' **2.** 'Aide-de-camp.'

adc (*abbr*). 'Adopted child.'

ADCC (*auth abbr*). 'Air defense control center.'

Adcock antenna. [F. *Adcock* (1892–), Br. engineer.] A vertical antenna, transmitting only vertically polarized waves with low-angle radiation.

Five Adcock antennas are utilized in an Adcock radio-range station, four for transmission of radio-range signals, and one for voice transmission or for signal transmission to a radio compass. See next.

Adcock radio range. A radio range using Adcock antennas. See prec.

The four-range transmitting antennas of an Adcock radio range are situated at the four corners of a square. A fifth antenna is located at the center of the square, utilizing a separate transmitter from the other four. Thus the Adcock radio range is a 'simultaneous' type radio range, i.e., it can transmit radio-range signals and voice communications at the same time. Two of the antennae in an Adcock radio range transmit in code the letter 'A,' and the other two the letter 'N,' making four quadrants in this type of range, the northernmost quadrant always being an 'N-quadrant,' as is its counterpart in the direction opposite, with the 'A-quadrants,' lying in easterly and westerly directions, alternating with the N-quadrants. A graphic representation of the pattern of this type of radio range resembles a four-leaf clover. An A-quadrant or an N-quadrant is recognized by the signal appropriate to it. However, as each quadrant overlaps the quadrant adjacent to it, there are thus created four bisignal zones and four equisignal zones. Each bisignal zone has either the 'A' or 'N' signal predominating on each side of the equisignal zone, which is created where the two signals merge, and which is approximately 3° wide. The merging of the two signals in the equisignal zone produces a steady hum. An airplane is on its course or 'on the beam' when it is following any of the four equisignal zones radiating out from the radio-range station. The Adcock radio range is similar to the loop-type radio range (which see). Adcock ranges are designated in radio facility charts as RA (Range, Adcock) for full-power ranges, MRA for medium-power ranges.

adcom (*auth abbr*). 'Administrative command.'

adcon (*auth abbr*). 'Advise all concerned.'

adconSen (*auth abbr*). 'With the advice and consent of the Senate.'

add (*auth abbr*). 'Addition' or 'additional.'

ADDC (*auth abbr*). 'Air defense direction center.'

additional duty. (*addu*) A duty in addition to the primary duty assignment.

addu (*auth abbr*). 'Additional duty.'

adee (*auth abbr*). 'Addressee.'

ADep (*auth abbr*). 'Air depot.'

ADF (*auth abbr*). 'Air direction finder.'

ADHCA (*auth abbr*). 'Advise this headquarters of complete action.'

ad hoc committee. A committee set up for one occasion or circumstance only.

ADI (*auth abbr*). 'Alien declared intention.'

adiabat, *n.* One of a series of diagonally parallel lines on an adiabatic chart showing graphically the cooling that takes place when a thermally-insulated parcel of dry air rises vertically, or the heating that takes place when a parcel descends. Also called an 'adiabatic path.'

See **adiabatic process** and **pseudoadiabat,** *n.*

adiabatically, *adv.* Without gain or loss of heat.

adiabatic change. A change in the temperature of the air or other gas due alone to a change in the pressure on the air or gas.

adiabatic chart. A diagram containing a series of diagonally parallel lines, called 'adiabats' or 'adiabatic paths,' showing graphically the cooling which theoretically takes place in a series of thermally-insulated parcels of ascending dry air, or the heating which theoretically takes place in a series of so insulated parcels of descending dry air. Cf. **pseudoadiabatic chart** and **adiabatic diagram.**

Pseudoadiabats and the lapse rates are also frequently plotted on an adiabatic chart. The temperature lapse rate of descending or ascending air is about 3.4° C for each 1,000 feet. The adiabatic chart in use by the AF is called the 'USAF SKEW T, log p diagram.'

adiabatic diagram. An adiabatic chart.

adiabatic process. The process by which a parcel of thermally-insulated air or gas loses heat in ascent by virtue of its own energy being expended in the expansion incident to ascent, or gains heat in descent by virtue of the pressure exerted upon it.

In the adiabatic process, no heat is transferred to or from the parcel of air from or to the outside.

adiabatic rate. The rate at which the temperature of a parcel of air changes as it rises or falls, brought about by a change in pressure.

ADiv (*abbr*). 'Air division.'

ADIZ (*auth abbr*). 'Air defense identification zone.'

adj (*abbr*). **1.** *auth.* 'Adjutant.' **2.** 'Adjective' as sometimes used in this dictionary. **3.** *auth.* 'Adjust.'

adjustable, *a.* Of an airfoil or other aircraft component: Subject to being set or fixed in two or more positions, as in 'an adjustable wing' or 'an adjustable tab.'

An adjustable surface differs in that, once adjusted to a particular purpose, it is firm as though fixed. Distinguished from 'movable' (which see).

adjustable-pitch propeller. A propeller so constructed that its blade angle may be adjusted manually on the ground while the propeller is standing still. Also called an 'adjustable propeller.' Cf. **variable-pitch propeller.**

adjutant, *n.* (adj) A staff officer common to most staff organizations in the AF, charged with duties that vary from one command to another, but normally responsible to his commander for all official correspondence (except combat orders), personnel and other records, standardization of forms, distribution of orders, and other specified administrative duties. Formerly, and sometimes still, called 'adjutant general' when on a staff higher than that of a wing.

adjutant general. (AG) An adjutant serving on a staff higher than that of a wing. In *pl.*, 'adjutants general.' See **Air Adjutant General.**

In official usage, this term is being replaced by 'adjutant.'

adm (*auth abbr*). 'Admiral.'

admin (*auth abbr*). **1.** 'Administrate,' 'administration,' or 'administrative.' **2.** 'Administrative office of.'

AdminInstr (*abbr*). 'Administrative instructions.'

administer, *v. tr.* To manage the *affairs* of an organization, or the *organization* itself, so as to facilitate the carrying out of the mission.

A person in charge *administers* or *manages* an organization or its affairs, *directs* an operation, *supervises* people or actions.

administration, *n.* (admin) The process or activity of managing the affairs of an organization or program so as to facilitate the forwarding of the operation or operational mission.

Administration is concerned with keeping the stage set so that the operation can go forward. It involves such matters as keeping records, coordinating effort, writing letters, issuing orders, promoting personnel, etc. Administration is a concomitant of all operations. See **operational mission** and cf. **supervision,** *n.*

administrative, *a.* (admin) Of duties, actions, activities, etc.: Pertaining to, or arising from, problems of administration, as distinguished from those of operations.

administrative action. An action carried out under the authority of an administrator on some matter affecting efficiency or economy, usually involving a record but accomplished with a minimum of formality.

This action does not require the same due processes implied in terms like 'legal action' or 'legislative action,' and it differs from executive action in purpose and scope. Cf. **executive action.**

administrative admonition. An admonition given a person but not issued under the Uniform Code of Military Justice.

The same formalities are observed in imposing an administrative admonition as in an administrative reprimand.

administrative aircraft. An aircraft, or aircraft collectively, provided certain headquarters or other AF activities for use in carrying out administrative work connected with their operation.

administrative chart. A chart of an organization that shows the chain of command or administrative channels in the organization.

administrative control. The control exercised by a constituted authority over a person or unit in respect to administrative matters, esp. as distinguished from operational control.

Administrative control is control, not support. It denotes control of persons or units. This control is exercised through the media of personnel classification, assignment of AFS's, effectiveness reports, promotions, granting of leave, etc. The chief use of this term is in contexts where persons or units are attached, and administrative control is exercised by the commander to whom they are attached. See **control,** *n.*, note, **logistic support, operational control**; cf. **administrative support.**

administrative demotion. A nonpunitive demotion for inefficiency given an airman by administrative action.

administrative discharge. A discharge given by administrative action, as distinguished from a discharge given as a result of a court-martial.

Administrative discharges are classified as honorable, general, or undesirable.

administrative flight. A flight made for administrative purposes, as distinguished from an operational flight, test flight, training flight, or the like.

administrative leave. The status of an employee who is absent from his regular place of duty, but in attendance at a nonfederal meeting, such as that of a learned society, without, however, the benefit of per diem.

Administrative leave is authorized under certain conditions.

administratively condemned item. An item which is serviceable or reparable but condemned by an official inspector in compliance with provisions of a technical order or other directive.

administrative order. 1. One of the formal statements issued in connection with carrying out a specific combat operation or maneuver, which sets forth a plan for the logistical and administrative support of the operation. **2.** Loosely, a routine order.

In sense 1, the administrative order may be oral or written. It is issued in conjunction with an operation order, and sometimes with a letter of instruction, covering such matters as traffic, supply, evacuation, and administration.

See **combat order, fragmentary administrative order, operation order.**

administrative reprimand. A reprimand given a person but not issued under the Uniform Code of Military Justice.

An administrative reprimand may be given an individual without consulting him as to his acceptance in lieu of trial by a court-martial, and does not necessarily become a part of the offender's record.

administrative support. That part of logistic support that provides the administration for a unit, detachment, or the like. See **logistic support.**

Administrative support is not to be confused with **administrative control** (which see).

administrative unit. A unit that indirectly forwards the operational mission of its parent unit by performing administrative duties; *specif.*, the headquarters unit of an establishment. See **operating unit.**

administrative vehicle. A vehicle, normally of a commercial type, suitable for transportation needs in carrying out administrative activities.

administrator, *n.* A person responsible for bringing the affairs of an organization into smooth operation and keeping them so, in order that the operations of the organization can be carried out.

AdminO (*abbr*). 'Administrative order(s).'

admiral, *n.* (adm) **1.** A commissioned rank or person in the US Navy, corresponding to general in the AF. **2.** Used as a title for Navy officers above the rank of captain, or for Coast Guard officers above the rank of commodore.

admonition, *n.* An expression of official displeasure or censure, oral or written, addressed to an officer or airman for a specific act.

An admonition is either administrative or punitive. See **administrative admonition, punitive admonition.**

adr (*auth abbr*). 'Address.'

adrm (*abbr*). 'Airdrome.'

AdSec (*abbr*). 'Advanced section.'

adshpdat (*auth abbr*). 'Advise shipping date.'

ADSM (*auth abbr*). 'American Defense Service Medal.'

ADTIC (*abbr*). 'Arctic, Desert, Tropic Information Center.'

adv (*abbr*). **1.** *auth.* 'Advance' or 'advancement.' **2.** 'Adverb.'

advance, *v.* (adv) *tr.* **1.** *To advance a position,* to project a plotted line of position (LOP) on a navigational chart to a point beyond that at which the LOP was actually observed. **2.** *To advance a throttle,* to operate a throttle so as to supply more fuel to an engine. **3.** *To advance a spark,* to cause a spark to occur at an earlier instant in an engine cylinder.

advance, *a.* (adv) **1.** Of an installation: Located forward near the enemy, and temporary in nature, as in 'advance air depot' or 'advance base.' **2.** In special combinations: See note.

Advance leave of absence, military leave of absence granted before such leave has been actually earned; *advance per diem,* a payment of per diem prior to its being earned.

advanced, *a.* **1.** Of a school, a course of instruction, or equipment used in such instruction: Beyond the elementary or beyond the intermediate. **2.** Of an installation, organization, force, etc.: Forward, nearest the enemy. **3.** Of equipment or designs: Involving or incorporating highly progressive or unconventional ideas.

advanced (air) echelon. That part of an air force unit deployed, or being deployed, within or to a theater of operations in advance of the main air force unit or units, to set up housekeeping or to begin operations.

advanced flying training. 1. A late stage of flying training in any given specialty. **2.** *Specif.* Advanced pilot training.

advanced pilot training. A late stage of pilot training, including training and instruction in flying a particular type of advanced aircraft and training designed to qualify pilots for performing duties as junior officers in AF units. See **pilot training,** note, and cf. **basic pilot training.**

advanced trainer. An airplane used for advanced flying training. Formerly abbreviated 'AT.' Now *hist.*

Prominent among these airplanes were the AT-6 and AT-11 (which see). See **basic trainer,** note.

advancing blade. The helicopter rotor blade as it moves 180 degrees from the downwind to the upwind position. Cf. **retreating blade.**

advection, *n. Specif.* A horizontal movement of air in the atmosphere.

advection fog. 1. A fog formed by the horizontal movement of air over a surface colder or warmer than the air. **2.** A fog formed in one place and transported to another by a horizontal air movement.

adverse, *a.* A hyperbolic term used for 'unfavorable' or 'bad,' as in 'adverse weather conditions.'

advisory, *n.* An advisory message issued by Flight Service to a pilot or to operations personnel concerning any factor that might affect the successful completion of a flight or a proposed flight.

ADVON (*abbr*). 'Advanced echelon.' Pronounced as a word.

In the Southwest Pacific, for instance, the forward operational headquarters of Fifth AF was known as 'ADVON 5th AF' until June 1944.

advst (*auth abbr*). 'Advance stoppage.'

ADW (*auth abbr*). 'Air defense warning.'

ADWKP (*auth abbr*). 'Air defense warning key point.'

AE (*code prefix*). 'Female Air Force Reserve and

USAF Medical Service Officer other than Nurse and member of WMSC' when used with a service number.

AEAF (*abbr*). 'Allied Expeditionary Air Forces (Europe).' *Hist.*

AEC (*auth abbr*). 'Atomic Energy Commission.'

AEDC (*auth abbr*). 'Arnold Engineering Development Center.'

AEDD (*auth abbr*). 'Air Engineering Development Division.'

AEF (*abbr*). 'Aviation engineer force.'

A.E.F. (*abbr*). 'American Expeditionary Force(s).' Now *hist.*

AEOP (*auth abbr*). 'Amend existing orders pertaining to.'

AER (*abbr*). **1.** 'Airman effectiveness report.' **2.** 'Abbreviated effectiveness report.'

aerial, *n.* (aerl) That part of a radio or television-receiving set that receives the radiated waves, either as an antenna in the open air or as a unit inclosed in the receiver; also the transmitting antenna of a radio or television station.

An aerial inclosed in the receiver is not normally called an 'antenna.'

aerial, *a.* (aerl) **1.** Of or pertaining to operations in the air or to aircraft. **2.** *Specif.* **a.** Of persons: Who carry out their duties in an aircraft. **b.** Of actions: That take place in the air. **c.** Of weapons or missiles: Used in aircraft; launched, dropped or shot from aircraft.

'Aerial' is used in the place of 'air' in certain combinations, the choice between the two usually being determined by euphony or established custom. The adjective 'air,' however, has certain meanings not shared by 'aerial' (see **air,** *a.*, senses under I and II B), and in some combinations, such as *air control, air doctrine, air dominance,* the word 'air' retains the connotations of the noun (see **air,** *n.*, sense 3).

aerial acrobatics. 1. Aerobatics (which see). **2.** Acrobatic feats performed by a person on an airplane.

aerial bomb. A bomb designed to be dropped from an aircraft, carrying either a high explosive or another agent, and normally detonated on contact or by a timing device. See **bomb,** *n.*

aerial camera. A camera used for taking photographs of the earth's surface from an airborne vehicle.

Aerial cameras are made with a wide variety of shutters, focal lengths, and angles of coverage. They usually are of a type which automatically compensate for altitude changes, and are used for making maps, detecting camouflage, etc. See **mapping camera.**

aerial camera gun. A gun camera (which see) mounted in an aircraft.

aerial cannon. A cannon for use in the air, i.e., an aircraft cannon.

aerial combat. Combat between or among hostile forces in the air; air-to-air combat. Cf. **air combat.**

aerial dart. A metal dart designed to be dropped from an aircraft. Used in WW I against a target such as a Zeppelin. Also called 'flechette.'

aerial defense. Defense against an air attack, esp. in air defense operations. See **air defense.**

In official AF contexts, 'air defense' is more usual than 'aerial defense.'

aerial engineer. A flight engineer, esp. one of enlisted rank.

This term is not recognized in AF regulations.

aerial gunner. A person who mans an aircraft gun.

aerial gunnery. The art or practice of using guns, esp. flexible guns, from aircraft. Also attrib., as in *aerial-gunnery range, system,* etc. See **gunnery,** *n.*

aerial mine. 1. A mine designed to be dropped from an aircraft, esp. into water. Hence, **aerial mine-laying, aerial mining. 2.** An early WW II light-case bomb, the predecessor of the blockbuster, that was normally dropped by parachute. Also called a 'land mine.'

aerial photograph. 1. A photographic print or picture of an object, or of a source of radiation, on the earth's surface, developed from a film previously exposed in an airborne vehicle. **2.** A recording on a film made from an aircraft of an object on the ground, as in 'he took two aerial photographs.' See **photograph,** *n.*

This term is not construed to cover a photograph made air-to-air. This would be called an 'air-to-air photograph.' But the term is broad enough to cover photographs of objects on the ground made by both direct and indirect methods from the air. The visual photograph and the infrared photograph are obtained by direct methods; the radarscope photograph, the video photograph, and the thermal photograph are obtained by indirect methods. See separate entries.

Aerial photographs may be classified as intelligence or cartographic photographs.

aerial photography. The art or science of obtaining aerial photographs.

aerial pickup. 1. A snatch pickup. Hence, *aerial pickup equipment.* **2.** An air pickup.

aerial port. 1. A port of aerial debarkation or embarkation. See **port,** *n.* **2.** An aerial port of entry. See next.

aerial port of entry. A designated place where foreign goods brought in by aircraft may be cleared through the customhouse.

aerial reconnaissance. Reconnaissance undertaken with an airplane or other aircraft to secure information about the enemy, or about the terrain or weather, by visual observation, aerial photography, or electronic methods. Attrib., as in *aerial-reconnaissance squadron.*

aerial torpedo. 1. A torpedo designed or adapted to be launched from a low-flying aircraft into water. **2.** A missile guided through the air to its target by remote control, as a glide bomb. *Loose* usage.

aerial warfare. Air warfare.

aerl (*auth abbr*). 'Aerial.'

AERNO (*abbr*). 'Aeronautical Equipment Reference Number.' Pronounced as a word.
Such numbers are listed in the Aeronautical Equipment Reference Book of Component Parts.

aero, *a.* Of or pertaining to the air, aircraft, or the flying of aircraft.
This word, a borrowing direct from the Greek, is used as a combining form, illustrated by several entries that follow.

aero (*auth abbr*). **1.** 'Aerographer.' *Navy.* **2.** 'Aeronautical,' or 'aeronautics.'

aeroasthenia, *n.* Flying fatigue.
'Flying fatigue' is the preferred term.

aeroballistics, *n.* The ballistics of projectiles fired, dropped, or launched from aircraft.

aerobat, *v.* [Back formation from *aerobatics.*] *tr.* To put an *airplane* through a series of stunts and feats. *British.*

aerobatic, *a.* Of or pertaining to aerobatics.

aerobatics, *n.* The art or action of performing aerial feats with an airplane or glider; stunt flying; an instance of such flying. Cf. **aerial acrobatics.**
Construed either as a singular or plural.

aerobation, *n.* The art or action of performing aerial feats, as in a dogfight or exhibition flying; *specif.* stunt flying.
Usually construed as a singular.

aerocar, *n.* A vehicle convertible to use either as an automobile or airplane.

aerocartograph, *n.* A complex stereoscopic machine used in preparing contoured maps from aerial photographs.

aeroclub, *n.* A club for flying personnel, esp. one founded to encourage amateur flying activities.

Aero Club of America. A club for people in aviation, founded in the US in 1905 to promote private flying, flying safety, and the development of aviation facilities.
This club represented the US in the Fédération Aéronautique Internationale. In 1920 it was merged with the American Flying Club, organized the year before, the two clubs being known by the name of the older club. In 1922, the club was renamed the National Aeronautic Association.

aerodone, *n.* A bookish term for 'glider.' Hence, **aerodonetics,** *n.*, the art of soaring in a glider.

aerodontalgia, *n. Medicine.* A toothache condition sometimes experienced by a person flying at high altitudes.

aerodontia, *n.* A branch of dentistry concerned with the peculiar dental problems of flying personnel.

aerodrome, *n.*[1] [Greek *aerodromos* 'traversing the air.'] S. P. Langley's name for one or other of his model or experimental airplanes.
This term is shown as early as 1891 by the Oxford English Dictionary (Supplement), applied to a model airplane with a motor. It was also applied to a model actually flown in 1896, and to the 1903 machine designed to carry a man, but which failed in tests except that after being modified in 1914 it was able to make short hops measured in seconds. See **Kitty Hawk.**

aerodrome, *n.*[2] [Adapted by combining the Greek word *aero* with *dromos* 'course' by analogy with 'hippodrome.'] **1.** An airdrome. Chiefly *British.* **2.** A hangar. *Obs.*

aerodromics, *n.* The art or science of flying through the air; aeronautics. *Obs.*
This word was used from about 1891 to about 1910 by persons associated with S. P. Langley (1834–1906).

aerodynamic, *a.* Pertaining to aerodynamics (which see). Hence, **aerodynamical,** *a.*, **aerodynamically,** *adv.*
Depending upon the noun modified, this adjective has many special denotations, e.g.: **1.** When applied to objects or surfaces that move through the air it means: Designed or built to react to the surrounding air as intended, as in *aerodynamic airfoil, brake, hull,* or *propeller.* **2.** When applied to effects, qualities, or characteristics it means: That result from the reaction of the moving object to the forces in the surrounding air, as in *aerodynamic drag, efficiency,* or *performance.* **3.** When applied to ideas it means: Conceived in terms of the interplay of forces arising from an object moving through the air, as in *aerodynamic design, problem,* or *study.*

aerodynamic balanced surface. A control surface that is balanced when acted upon by aerodynamic forces. See **balanced,** *a.*, **balanced surface.**

aerodynamic center. A point on a cross section of a wing or rotor blade, through which the forces of drag and lift are acting, and about which the pitching moment coefficient is practically constant. Cf. **wing section.**

aerodynamic control. A control surface. So called because of the local aerodynamic forces created by its use.

aerodynamic force. A force acting on a body in motion through air or other gas, or in relative motion with respect to air or other gas, and arising from this motion. See **air force,** sense 5.

aerodynamic heating. The heating of an aircraft due to the friction of air, significant chiefly at high speeds.

aerodynamicist, *n.* An engineer professionally trained or competent in the field of aerodynamics.

aerodynamic pitch. Zero-torque pitch.

aerodynamic refinement. A quality built into an aircraft that gives it good flying and control characteristics.

aerodynamics, *n.* That field of dynamics concerned with the motion of air and other gaseous fluids, or of the forces acting on bodies in motion relative to such fluids.

aerodynamic turbine. A closed-cycle turbine.

aerodyne, *n.* Any aircraft that derives its lift in flight chiefly from aerodynamic forces, as the conventional airplane, glider, or helicopter. Cf. **aerostat,** *n.*

aeroelastic, *a.* **1.** Of a material or aircraft com-

ponent: Subject to being stretched or deformed under the stress of aerodynamic forces. **2.** Of a stretching or deformity in an airframe or aircraft surface: Brought on during flight by an interaction between aerodynamic forces, elastic materials, and inertia. Hence, **aeroelasticity,** *n.*

aeroelastics, *n.* The study of aircraft structures in which the interaction of elastic deformations in structural elements and the aerodynamic loadings upon these elements are used in structural design and in evaluating stability and control.

aeroembolism, *n.* An altitude decompression sickness brought on by the formation of gas bubbles in the blood vessels or tissues under conditions of low atmospheric pressure, as in high-altitude flying without benefit of a pressurized cabin or the like. Cf. **bends, *n.*, chokes,** *n.*

aeroemphysema, *n.* An altitude decompression sickness brought on by the formation of gas bubbles in the connective tissues, as under conditions of high-altitude flying without benefit of a pressurized cabin or the like.

aero engine. An aircraft engine.

aerograph, *n.* An instrument carried aloft by a balloon, kite, or airplane to record automatically and simultaneously such meteorological conditions as barometric pressure, temperature, and humidity. See **meteorograph,** *n.*

aerography, *n.* Meteorology. Hence, **aerographer,** *n.*, **aerographical,** *a.*

These are standard terms in the USN, but not in the Air Force.

aerohyperoxia, *n. Medicine.* Hyperoxia of the ambient air.

aerohypoxia, *n. Medicine.* Hypoxia due to scarcity of oxygen in the inspired air, as at high altitudes.

aerological, *a.* Of or pertaining to aerology.

Used in combination, as *Aerological Commission, aerological information, aerological school,* or *aerological service.*

aerologist, *n.* A person professionally competent in the science of aerology.

aerology, *n.* **1.** That branch of meteorology concerned with the study of the free air as noted by the use of such instruments as kites, balloons, airplanes, clouds, and pilotless aircraft. See **free air,** senses 1 and 2. **2.** In a broad sense, meteorology, esp. as used in the US Navy.

aeromedical, *a.* **1.** Of or pertaining to aviation medicine, as in *aeromedical center, aeromedical knowledge, aeromedical therapy,* etc. **2.** In a restricted sense: Of or pertaining to aviation medicine as applied to diseases incident to flight in the atmosphere as distinguished from flight in space. **3.** Of or pertaining to the use of aircraft in the practice of medicine. See **aeromedical evacuation.**

Use of 'aeromedical' in reference to aviation medicine is due in part to the absence of an easily pronounced adjectival form of 'aviation medicine.'

Aero Medical Association. A nonprofit association founded in 1929 to advance the art and science of aviation medicine, to maintain cooperation among persons in the medical and other fields concerned with aviation, and to promote and maintain safety in aviation.

Regular members are licensed physicians qualified as aviation medical examiners or flight surgeons. The first president of this association was Louis H. Bauer, M.D.

aeromedical evacuation. The evacuation of the injured or the sick by air.

aeromedical intelligence. Intelligence in regard to the enemy's, or potential enemy's, intentions, situation, or the like, evaluated in terms of aeromedical knowledge.

Aeromedical Laboratory. A laboratory at Wright-Patterson AFB for the conduct of research in aviation medicine.

aeromedicine, *n.* **1.** Aviation medicine. **2.** In a restricted sense, a branch of aviation medicine concerned with diseases incident to flight in the atmosphere, as distinguished from space medicine. Cf. **atmosphere,** *n.*

aeronaut, *n.* The pilot of an aerostat, esp. of a balloon; a balloonist. Chiefly *hist.*

aeronautic, *a.* Aeronautical.

aeronautical, *a.* (aero) Of or pertaining to aeronautics.

Aeronautical Approach Chart. Any of a series of charts on a scale of 1:250,000 designed to provide information for use in approaching an objective. See **USAF** (*auth abbr*), note.

Aeronautical Board. An Army-Navy board originally set up in 1920 to deal with aeronautical standards. *Hist.* since 1947.

aeronautical broadcast station. An aeronautical station which makes scheduled broadcasts of meteorological information and notices.

aeronautical chart. 1. A chart or map representing a given area of the earth's surface and used in air navigation, esp. such a chart published by the Aeronautical Chart and Information Center. **2.** A universal plotting chart.

Aeronautical charts usually represent topographical features readily identifiable from aircraft, and usually contain aeronautical data helpful in navigation.

Aeronautical charts issued by the Aeronautical Chart and Information Center are often designated by the attrib. 'USAF.' These are listed under **USAF** (*auth abbr*). They also appear as separate entries under the second element of the combination, e.g., 'USAF Flight Chart' is entered under **Flight Chart.**

In addition, there are certain other aeronautical charts published by the US Coast and Geodetic Survey, but distributed in the AF by the Aeronautical Chart and Information Center. See, for example, **Sectional Chart.**

Aeronautical Chart and Information Center. An agency of the Military Air Transport Service charged with providing aeronautical charts,

pilot handbooks, air target materials, and related publications for use in the Armed Services.

Aeronautical Chart Service. A former agency under the Air Materiel Command that performed similar services to that of the Aeronautical Chart and Information Center.

Aeronautical Division. The first recognized military air arm of the US Army, set up by administrative order as a division of the Signal Corps on 1 August 1907 and continued until 18 July 1914, when it was succeeded by the Aviation Section of the Signal Corps. Cf. **Balloon Corps.**

aeronautical engineer. An engineer competent in the design and construction of aircraft or aircraft components. Hence, **aeronautical engineering.**

aeronautical equipment. A term applied to aircraft, aircraft components, or aircraft accessories as distinguished from military equipment mounted on, used on, or carried by, an aircraft, as guns or ammunition.

aeronautical fixed service. A radio service between fixed points for the transmission of information relating to air navigation, preparation for flight, and safety of flight.

aeronautical fixed station. A station in the aeronautical fixed service.

aeronautical map. An aeronautical chart.

'Aeronautical chart' is the preferred term.

aeronautical mobile service. A radio communication service for the operation of aircraft, making use of mobile and fixed stations.

Aeronautical Planning Chart. One of a series of aeronautical charts on a scale of 1:5,000,000 covering the entire world and showing principal cities, airports, railroads, highways, and the like, as well as lines of equal magnetic variation and flight operations data.

Aeronautical Planning Charts are used as operational planning charts and Outline Planning Charts (which see under separate entries).

aeronautical rating. One of several ratings conferred by competent authority upon a member of the AF who has completed the requisite training and has obtained the requisite competence in a given aspect of flying.

Aeronautical ratings are currently held by different kinds of pilots and aircraft observers. The latter include those trained in bombardment, navigation, radio, radar, engineering, and gunnery. An aeronautical rating continues to be held even after a holder is not currently qualified, but under certain conditions, the rating may be revoked. See **currently effective aeronautical rating.** Likewise, see **balloon pilot, rated,** *a.*, sense 1.

Aeronautical Standards Group. An AF-Navy group concerned with establishing joint aeronautical standards.

aeronautical station. A land or fixed radio station in the aeronautical mobile service.

Under certain circumstances an aeronautical station may be placed on board a ship.

aeronautics, *n.* (aero) **1.** Originally, and in a restricted sense, the art, skill, or activity of operating aircraft. Cf. **aviation,** *n.* **2.** In a broader sense, the science, art, or business of designing, manufacturing, and operating aircraft.

'Aeronautics' is construed as a singular. The term is a broader term than 'aviation' in that it applies to both lighter-than-air and heavier-than-air aircraft.

aeroneurosis, *n.* A functional nervous disorder brought on by excessive flying, esp. among pilots, and characterized by gastric distress, nervous irritability, insomnia, and emotional instability.

aero-otitis, *n.* In full, **aero-otitis media.** Barotitis media resulting from differential pressures incident to flight at high altitudes.

This term was coined by Captain (now Maj Gen) H. G. Armstrong in 1935.

aeropause, *n.* A layer in the upper atmosphere that marks the limit beyond which man has not yet penetrated, but which recedes as man advances in his knowledge of aeromedical and aeronautical design.

This term is discussed by Clayton S. White, M.D., in *Physics and Medicine of the Upper Atmosphere*, ed. by C. S. White and O. O. Benson (Univ. of N. Mex. Press, 1952), pp 3–4.

aeroplane, *n.* An airplane. Also attrib., as in *aeroplane cockpit, aeroplane raid,* etc. *British.*

'Aeroplane,' an older word than 'airplane,' is the standard British word. Its use in recent years by Americans has practically disappeared, although in the early years of aviation it was not uncommon among them. See **airplane,** *n.*

aeroplanist, *n.* During the infancy of the aircraft industry, a person devoted to promoting the development and use of airplanes. Now *hist.*

aeropulse, *n.* In full, **aeropulse engine.** A pulsejet engine.

aerosol, *n.* A mixture of fine liquid or solid particles and the gas or air in which the particles are suspended, as smoke, fog, or dust.

aerosol bomb. A small container having a device to release an aerosol, esp. a spray of insecticidal or germicidal liquid.

aerosol generator. Any device, as an aerosol bomb or smudge pot, used to create an aerosol.

aerosphere, *n.* That part of the atmosphere in which manned flight is currently possible.

See **aeropause,** *n.*, and cf. **ecosphere,** *n.*

aero squadron. An early name, esp. in WW I, for a unit charged with carrying out air operations.

The First Aero Squadron of the US Army carried out operations on the Mexican border with General Pershing in 1916.

aerostat, *n.* Any aircraft that derives its buoyancy or lift from a lighter-than-air gas contained within its envelope or one of its compartments.

Airships and balloons are examples of aerostats.

aerostatic lift. The lift of a given volume of gas expressed by the difference between its weight

and the weight of an equal volume of air under given conditions.

aerostatics, *n.* A branch of physics concerned with the equilibrium of solid bodies immersed in gaseous fluids and with the equilibrium of gaseous fluids. Hence, **aerostatic,** *a.*

'Aerostatics' is construed as a singular.

aerostation, *n.* The art or science of operating aerostats, as distinguished from aviation. Cf. **aeronautics,** *n.*, sense 1.

aerotow, *v. tr.* To tow a *glider* or other aircraft through the air. Hence, **aerotow,** *n.*, the action of towing an aircraft through the air.

AEW (*auth abbr*). 'Airborne early warning.'

AEWRon (*auth abbr*). 'Airborne early warning squadron.'

AF (*auth abbr*). **1.** 'Air Force' with specific reference to the United States Air Force. **2.** 'Aviation Photographer's mate.' *Navy.*

This abbreviation is commonly used in sense 1 as an attrib., as in *AF activity, AF base, AF Reserve,* etc. It is also used in combination with other abbreviations, as in *AFOIC, AFORD, AFR,* etc.

AF (*code prefix*). 'Airman' when used with a service number.

AF2, *n.* A popular name for an identification card (DD Form 2AF) issued to AF military personnel and certain civilian personnel. See **AGO card.**

AFAC (*auth abbr*). 'Air Force Armament Center.'

AFAS (*abbr*). 'Air Force Aid Society.'

AFB (*auth abbr*). 'Air Force base.'

AFBU (*auth abbr*). 'Air Force base unit.'

AFC (*abbr*). **1.** 'Army Finance Center.' **2.** 'Automatic frequency control.'

AFCC (*abbr*). 'Air Force Combat Command.' *Hist.*

AFCE (*abbr*). 'Automatic flight control equipment.'

AFCent (*auth abbr*). 'Allied Forces, Central Europe.'

AFCRC (*auth abbr*). 'Air Force Cambridge Research Center.'

AFCS (*auth abbr*). 'Active federal commissioned service.'

AFDCCO (*auth abbr*). 'Air Force Departmental Catalog Coordinating Office.'

AFF (*auth abbr*). 'Army Field Forces.'

AFFC (*auth abbr*). 'Air Force Finance Center.'

affil (*abbr*). 'Affiliate' or 'affiliation.'

AF form. Any of several standardized forms prescribed by Headquarters USAF for use by one or more major air commands, each form being identified by a number. *Capitalized* in specific titles.

AFFTC (*auth abbr*). 'Air Force Flight Test Center.'

AFIED (*auth abbr*). 'Armed Forces Information and Education Division.'

AFIP (*abbr*). 'Air Force Information Program.'

afirm (*auth abbr*). 'Affirmative.'

AFIS (*auth abbr*). 'Armed Forces Information School.'

AFJKT (*auth abbr*). 'Air Force Job Knowledge Test.'

AFL (*auth abbr*). 'Air Force Letter.'

afld (*auth abbr*). 'Airfield.'

AFM (*auth abbr*). 'Air Force Manual.'

AFMed (*auth abbr*). 'Allied Forces, Mediterranean.'

AFMTC (*abbr*). 'Air Force Missile Test Center.'

AFNA (*abbr*). 'Air Force with Navy.'

AFNC (*auth abbr*). 'Air Force Nurse Corps.'

AFNorth (*auth abbr*). 'Allied Forces, Northern Europe.'

AFNorth Copenhagen. 'Allied Forces, Northern Europe, Liaison Office, Copenhagen.'

AFNorth London. 'Allied Forces, Northern Europe, Liaison Office, London.'

AFOQT (*auth abbr*). 'Air Force Officer Qualifying Test.' Attrib., as in *AFOQT battery.*

The AFOQT battery is given to newly commissioned officers and to persons being considered for officer training. These tests, calculated to predict proficiency in AF specialties or success in training, classify individuals by aptitude clusters.

AFORD (*abbr*). 'Air Force Overseas Replacement Depot.' *Hist.*

AFORG (*auth abbr*). 'Air Force Overseas Replacement Group.'

AFOSCR (*abbr*). 'Air Force Organization Status Change Report.'

AFOUAR (*auth abbr*). 'Air Force Outstanding Unit Award Ribbon.'

AFP (*auth abbr*). 'Air Force Pamphlet.'

AFPC (*auth abbr*). 'Air Force Procurement Circular.'

AFPG (*abbr*). 'Air Force Personnel Processing Group.'

AFPI (*auth abbr*). 'Air Force Procurement Instructions.'

AFPP (*auth abbr*). 'Air Force Procurement Procedures.'

AFPR (*auth abbr*). 'Air Force plant representative.'

AFPS (*auth abbr*). 'Armed Forces Press Service.'

AFPTRC (*auth abbr*). 'Air Force Personnel Training and Research Center.'

The AFPTRC at Lackland AFB took over the functions of HRRC and HRRI. See **human resources research.** The OERL at Maxwell AFB is a detachment of this organization.

AFPU (*auth abbr*). 'Air Force postal unit.'

AFQT (*auth abbr*). 'Armed Forces Qualification Test.'

AFQTVA (*auth abbr*). 'Armed Forces Qualification Test, Verbal Arithmetic.'

AFR (*auth abbr*). 'Air Force Regulation.'

afr (*abbr*). 'Airframe.'

A-frame, *n.* **1.** An A-shaped or V-shaped support

for lifting airplane engines or other equipment. **2.** A back-pack device shaped like an 'A.'

AFRB (*auth abbr*). 'Air Force Retiring Board.'

AFRCSTC (*auth abbr*). 'Air Force Reserve Combat Support Training Center.'

AFRCTC (*auth abbr*). 'Air Force Reserve Combat Training Center.'

AFRes (*auth abbr*). 'Air Force Reserve.'

AFResM (*auth abbr*). 'Armed Forces Reserve Medal.'

AFRFTC (*auth abbr*). 'Air Force Reserve Flying Training Center.'

AFRO (*auth abbr*). 'Air Force Reserve Orders.' Pronounced as a word.

AFROIC (*auth abbr*). 'Air Force Resident Officer in Charge.'

AFROTC (*auth abbr*). 'Air Force Reserve Officers Training Corps.'

AFRS (*auth abbr*). 'Armed Forces Radio Service.'

AFRSTC (*abbr*). 'Air Force Reserve Specialist Training Center.'

AFRTC (*abbr*). 'Air Force Reserve Training Center.'

AFS (*auth abbr*). 'Air Force Specialty.'

AFSA (*abbr*). 'Armed Forces Security Agency.'

AFSC (*abbr*). **1.** *auth.* 'Air Force Specialty Code.' **2.** *auth.* 'Armed Forces Staff College.' **3.** 'Air Force Service Command.' *Hist.*

AFSMAAG (*auth abbr*). 'Air Force Section, Military Assistance Advisory Group.'

AFSN (*abbr*). 'Air Force service number.'

AFSouth (*auth abbr*). 'Allied Forces, Southern Europe.'

AFSS (*auth abbr*). 'Air Force service statement.'

AFSWA (*abbr*). 'Assistant Secretary of War for Air.' *Hist.*

AFSWP (*auth abbr*). 'Armed Forces Special Weapons Project.'

AFT (*auth abbr*). 'Air freight terminal.'

aft, *adv.* At, near, or toward the rear of an aircraft or section of an aircraft. Also **aft,** *n.*, and **aft,** *a.*

afterburner, *n.* An auxiliary combustion chamber within, or attached to, the tailpipe of certain jet engines, in which hot unused oxygen of exhaust gases from fuel already burned is used to burn a second fuel and thus augment the temperature and density of the exhaust gases as they leave the tailpipe, with consequent increase in thrust.

afterburning, *n.* **1.** Combustion that takes place in an afterburner. Also called 'tailpipe burning.' Cf. **reheating,** *n.* **2.** The irregular burning of certain rocket-engine fuels after thrust has ceased. **3.** Torching (which see).

aftercooler, *n.* An air cooler (which see) located between the supercharger and the intake manifold of a reciprocating aircraft engine.

AFTRC (*abbr*). 'Air Force Training Command.' Used for 'Air Training Command' in certain contexts, as in *AFTRC manual.*

AFUS (*auth abbr*). 'Air Force of the United States.' Now *hist.*

AFV (*abbr*). 'Armored Force vehicle.'

AFVA (*auth abbr*). 'Air Force Visual Aid.'

AFWAR (*auth abbr*). 'Air Force personnel on duty with Army.'

AFWN (*auth abbr*). 'Air Force personnel on duty with Navy.'

AFWST (*auth abbr*). 'Armed Forces Women's Selection Test.'

AG (*abbr*). **1.** *auth.* 'Adjutant General.' **2.** 'Air gunner.' *British.*

A/G (*abbr*). 'Air-to-ground.'

AGARD (*auth abbr*). 'Advisory Group for Aeronautical Research and Development.'

agas (*abbr*). 'Aviation gasoline.' See **avgas** (*auth abbr*).

AGC (*abbr*). **1.** *auth.* 'Adjutant General's Corps.' **2.** 'Automatic gain control.'

AGCA (*abbr*). 'Automatic ground-controlled approach.'

AGCO (*abbr*). 'Air-Ground Cooperation Officer.' *Hist.*

AGCT (*abbr*). 'Army General Classification Test.'

agcy (*auth abbr*). 'Agency.'

age hump. A graphic representation of a condition that arises when a disproportionate number of individuals in a given group of people are of about the same age; the condition itself given such representation.

For example, an age hump may develop among officers in terms of rank if promotions are too freely given to young officers during a period of expansion, followed by a period of retrenchment. The young officers promoted are not retired soon enough to provide for younger officers coming on.

agency, *n.* (agcy) **1.** An office or organization authorized to act for or in behalf of another, as for a commander, for the executive branch of the government, or for any other organization. See **executive agency. 2.** Any office or organization serving as an instrument for getting something done.

'Agency' is sometimes misused when no notion of agency is present. An executive department, for example, is not an agency, except when it serves as one. See **federal agency.**

agent, *n.* (agt) **1.** In intelligence usage, a person who obtains or assists in obtaining information for intelligence or counterintelligence purposes, but who has no overt connection with any intelligence agency or officer. **2.** Any person authorized to act for another.

AGF (*abbr*). 'Army Ground Forces.'

AGGR (*auth abbr*). 'Air-to-ground gunnery range.'

aggression, *n.* **1.** An offense against the peace and

security that arises when a nation, group of nations, or armed faction commits any act, directly or indirectly, intended to encroach upon the sovereignty, independence, or territorial integrity of any other nation, esp. when such act is unprovoked or considered unjustified in the light of international agreements or in the light of machinery available for settling disputes or redressing wrongs. **2.** A condition resulting from such an offense.

Attempts by international bodies have long been made to define 'aggression,' one of the more recent being made by a United Nations Special Committee, which reported back to the General Assembly in 1953. In this latter instance, no definition was found acceptable to all parties. However, the work of this committee exposed the ways in which aggression may occur: It may be direct and military, or indirect and subversive, or economic, or ideological.

Sense 1 is a general definition and, as such, cannot do more than suggest the nature of the term defined. Like certain other words, such as 'freedom' or 'general welfare,' the word 'aggression' is a conditional word, also a point-of-view word, and its proper application to a particular situation depends upon measuring psychological factors rather than legalistic ones, for aggression is tied to intent, where the presence or absence of signs of sincerity or of readiness to arbitrate makes all the difference in labeling or not labeling a particular act an act of aggression.

aggressive, *a.* **1.** Characterized by positive action; disposed to take positive action; ready or eager to attack. **2.** Of or pertaining to aggression, as in 'aggressive warfare.'

aggressor, *n.* **1.** In air combat, the side that initiates or continues the offensive. **2.** Sometimes *capitalized.* In war games and maneuvers, the side indicated to be the attacker. Attrib., as in *aggressor force.* **3.** In war, the side that commits aggression or makes an unprovoked attack.

AGIC (*abbr*). 'Air-ground information center.'

AGL (*abbr*). 'Airborne gun laying.'

AGLC (*abbr*). 'Air-ground liaison code.'

AGLT (*abbr*). 'Airborne gun laying for turrets.'

AGO (*abbr*). 'Adjutant General's Office.'

AGO card. A popular name for an identification card (W.D.A.G.O. 65): See note.

This card was carried by all officers of the Army, including the AAF, during WW II and for some time after the National Security Act of 1947. Now replaced for normal officer identification by separate cards issued by the Departments of the AF and the Army, the AGO card continues to be issued to, and used for identifying, certain key civilian technicians and civilian employees of the Departments of the AF and Army, likewise civilians travelling overseas on business for the Departments of the AF and Army, and dependents of military and civilian personnel of the AF and Army authorized to travel to occupied areas. Cf. **AF2,** *n.*

agonic line. The isogonic line of 0° magnetic variation, i.e., an imaginary line passing through those points on the earth's surface where magnetic north corresponds to true north.

The Western Hemisphere and the Eastern Hemisphere each has an agonic line.

AGOS (*abbr*). **1.** *auth.* 'Air-ground operations system.' **2.** 'Air-ground operations section (or school).'

AGP (*abbr*). 'Aircraft grounded for lack of parts.'

AGRS (*auth abbr*). 'American Graves Registration Service.'

AGS (*abbr*). **1.** 'Airborne gunsight.' **2.** 'Automatic Gain Stabilization.' **3.** *auth.* 'Army General Staff.'

agt (*auth abbr*). 'Agent.'

AGW (*abbr*). 'Allowable gross (takeoff) weight.'

ahd (*auth abbr*). 'Airhead.'

AI (*abbr*). **1.** *auth.* 'Airborne intercept.' **2.** 'Air installations.' **3.** 'Air inspector.'

AI2 (*abbr*). 'Airborne receiver (for homing on enemy AI-equipped fighters).' Also written 'AI^2.'

A/I (*abbr*). **1.** *auth.* 'Aptitude Index.' **2.** 'Air Inspector.'

AIC (*abbr*). **1.** *auth.* 'Aircraft in commission.' **2.** 'Ammunition identification code.'

Aichi, *n.* [A Japanese aircraft-manufacturing company of WW II and before.] Used in the names of aircraft.

Well-known Aichi airplanes of WW II included the *Aichi B7A1,* a two-seat naval torpedo-bomber or dive bomber; the *Aichi E13A1,* a low-wing, reconnaissance float plane; and the *Aichi D3A2* (or *Aichi 99*), a single-engine, low-wing monoplane with fixed landing gear, used for dive bombing and training.

aid, *n. Specif.* A chart, mockup, or piece of equipment designed to assist an individual in carrying out or performing a certain activity or task.

aide, *n.* Short for 'aide-de-camp.'

aide-de-camp, *n.* With special reference to the AF, an officer serving on the personal staff of a commander, esp. of a general officer in high command, and assisting in duties personally undertaken and performed by the commander himself. Usually shortened to 'aide.'

aided tracking. A system, or the action, of tracking a moving object in bearing, elevation, or range (or any combination of these) by means of a semiautomatic radar tracking mechanism.

The tracking mechanism requires some manual control.

aid station. A medical installation in a forward or isolated area where emergency or minor treatment, sorting, and classification of sick and wounded are performed.

Normally the aid station is the point from which motor evacuation, and sometimes air evacuation, begins.

aiguillette, *n.* [French.] A metal-tipped three-strand braided cord worn around the left shoulder of a service uniform by attachés and aides. See **fourragère,** *n.*

aileron, *n.* [French diminutive of *aile* wing.] A control surface set into or near the trailing edge of an airplane wing, extending, when in the wing, toward the tip and usually within the contour of

the wing, used to control the rolling movements of the airplane. Attrib., as in *aileron linkage*.

Ailerons work in pairs; when an aileron on one wing creates lift in one direction, the aileron on the other wing creates a pull in the opposite direction. See **differential aileron linkage.**

See also **external aileron, Frise aileron, interplane aileron, slotted aileron, upper-surface aileron. Cf. balancing plane.**

aileron angle. The acute angle between the chord of an aileron moved from its neutral position and its chord in neutral position.

The angle is positive when the trailing edge of the aileron is down, negative when up.

aileron booster. The booster motor (which see) for an aileron.

aileron buzz. The sound of an aileron flutter or vibration.

aileron control. 1. The control exercised over the roll movement of an airplane through the use of the ailerons. **2.** A cable or other device for moving the ailerons.

aileron flutter. A high-frequency vibration occurring in the ailerons on certain airplanes.

aileron roll. An airplane roll in one or more complete revolutions executed as a single quick maneuver principally, if not entirely, by use of ailerons.

This maneuver is performed only with high-speed airplanes. The term, however, has been applied loosely to other rolling maneuvers, esp. the barrel roll.

aileron seal. A rubberized canvas seal over the aileron hinge.

aileron tab. A trim tab on an aileron.

aileron yaw. The yawing movement or tendency of an airplane in the direction of the ascending wing when ailerons are used.

ailevator, *n.* An elevon. *Rare.*

aim, *v. tr.* To point a fighter *airplane* so that its guns may be brought to bear upon a target; to point a *gun* so that its missile is expected to strike a target; to drop a *bomb* or *mine* at a target or place. Often construed with *at*.

aimable cluster. A cluster of bombs, esp. fragmentation or incendiary bombs, held together so as to be aimed and dropped by ordinary bombing methods. See next.

aimable cluster adapter. A cluster adapter having efficient ballistic characteristics used to hold the bombs together in an outer case so as to aim and drop the bombs by ordinary bombing methods. Cf. **ballistic case.**

aiming error. In bombing, an error that results from inaccurate aim. See **error,** *n.*, sense 2.

aiming point. In bombing, the point on the ground used as a reference to determine the moment for bomb release so as to hit the target or the desired mean point of impact.

The target itself may, or may not, be the aiming point. See **offset bombing.**

air, *n.* **1.** The mixture of gases in the atmosphere. **2.** The element through which aircraft fly. **3.** The region above and around the earth, including the atmosphere and the space beyond, subject to control by military aircraft, in contradistinction to land and sea. See **air,** *a.* or *attrib.*, senses under II. **4.** Short for 'air arm,' 'air force,' 'air power,' 'air service,' 'air support,' 'air transport,' etc., as in 'H hour passed with no sign of air' (O. Bradley). See **defending air, offensive air, tactical air. 5.** An aircraft, as in 'he went by military air.'

A sailor has two words, 'water' and 'sea,' to distinguish between the element that bears his ship and the realm in which he navigates. The airman normally makes a single word serve for both the element and the realm. However, see **sky,** *n.*

air, *a.* or *attrib.* Cf. **aerial,** *a.*

I. Of air, the physical substance.

A. Of or pertaining to air, the mixture of gases: **1.** Designating mechanisms or orifices through which air flows or by which air is controlled, e.g., *air filter, air vent, air venturi*. **2.** Designating mechanisms that contain or use air, e.g., *air line, air compressor*. **3.** Designating qualities or characteristics of the air, e.g., *air density, air temperature*.

B. Of air, the supporting element of aircraft: **1.** Designating features, qualities, or attributes found in, or characterizing, the air, e.g., *air bump, air ocean, air realm*. **2.** Designating the effects of the air against moving aircraft, e.g., *air drag, air resistance*.

II. Of air, the realm of the aviator.

A. Of or pertaining to aviation and the navigable region above and around the earth: **1.** Designating activities, phenomena, or concepts connected with aviation, e.g., *air age, air business, air career, air commerce, air education, air game, air industry, air medicine, air parlance, air review, air safety, air travel*. **2.** Designating flight paths or other defined space in the air, e.g., *air frontier, air highway, air trail*. **3.** Designating incidents that occur in the air, e.g., *air accident, air collision*.

B. Of organizations or matters concerned with aviation: **1. a.** Designating governmental or private agencies, e.g., *air committee, Air Force, Air Ministry*. **b.** Designating matters arising out of government action, e.g., *air diplomacy, air law, air program, air rights*. **2.** Designating an air force or individuals, offices, activities, or organizations of an air force, esp. the AAF or USAF, as distinguished from the Army or Navy: **a.** In the names and titles of AF officials, e.g., *Air Adjutant General, Air Secretary*. **b.** In the names of AF committees or boards, e.g., *Air Academy Board*. **c.** In the names of AF installations, organiza-

tional elements, or places, e.g., *air district, air finance, air headquarters, air outpost, air theater.* **d.** Designating the status of an air force in relation to other services, e.g., *air autonomy.* **e.** Designating activities of an air force, e.g., *air inspection, air procurement.* **f.** Designating persons in an air force, e.g., *air commander, air marshal, air nurse, air officer.* **g.** Designating the materiel of an air force, e.g., *air ordnance.*

C. Of or pertaining to the development, application, or use of military power exerted by the employment of aircraft or guided missiles: **1.** Designating the degree of power exercised by an air force in controlling the air, e.g., *air dominance, air superiority.* **2.** Designating the condition or status of the air arm as a military force, e.g., *air potential, air preparedness, air strength.* **3.** Designating military operations in the air, e.g., *air blockade, air campaign.* **4.** Designating activities intended to forward the employment or use of air power, e.g., *air collaboration, air planning.* **5.** Designating the art or science of meeting a hostile force by the use of air power, e.g., *air strategy, air tactics.* **6.** Designating places on the ground to be struck by airborne weapons, e.g., *air target.* **7.** Designating persons: **a.** Who take part in the development of air power, e.g., *air leader, air prophet.* **b.** Who are employed in air planning or air intelligence work, e.g., *air advisor.* **c.** Who are experienced in military aviation, e.g., *air veteran.*

D. Of or pertaining to aircraft: **1.** Designating types, specimens, or groups of aircraft, e.g., *air ambulance, air armada, air fleet, air patrol, air taxi.* **2.** Designating equipment, weapons, or materials carried by or used in an aircraft, e.g., *air cargo, air mail, air torpedo.* **3.** Designating actions performed in an aircraft, e.g., *air gunnery, air photography.* **4.** Designating actions carried out by the use of aircraft, e.g., *air attack, air blitz, air bombardment, air raid, air search, air towing.* (Also see sense II, C, 3.) **5.** Designating actions conducted in support of the ground echelon, e.g., *air cooperation, air support.* **6.** Designating places where aircraft take off, land, are parked or serviced, e.g., *air park, air strip, air station, air terminal.* **7.** Designating maneuvers carried out by aircraft, e.g., *air blanket, air canopy, air cover, air formation.* **8.** Designating activities or services carried out by aircraft, e.g., *air express, air protection, air reconnaissance, air shuttle.* **9.** Designating qualities of an aircraft, e.g., *air range.* **10.** Designating persons who work on, or specialize in, aircraft, e.g., *air mechanic, air technician.* **11.** Designating persons who perform duties on an aircraft, e.g., *air gunner, air observer.* **12.** Designating persons who are flown to their destination by aircraft, e.g., *air commando, air passenger, air patient.*

air (*auth abbr*). 'Aircraft' in combination only.

AirA (*auth abbr*). 'Air Force attaché.'

air abort, *n.* An aborted airborne mission or sortie; an airborne aircraft that has aborted. See **abort,** *n.*

air-abort, *v. intr.* To abort after being airborne.

Air Academy. A popular name for the United States Air Force Academy.

Airacobra, *n.* A popular name for the P-39.

Airacomet, *n.* A popular name for the F-59.

air action. Attack or operations by military aircraft, esp. against surface targets; aerial fighting.

air adapter. A part in a centrifugal-flow jet engine that receives the air from the diffuser, increases the air pressure, and leads the air to a combustion chamber.

Air Adjutant General. (AAG) The adjutant of the staff of Headquarters USAF.

'Air Adjutant General' has been applied by certain major commands to their own adjutants but this is not considered standardized usage.

air alert. 1. A state of alertness on the part of an aircrew for meeting an air attack, or for engaging in some other air action, marked by getting airplanes into the air ready for immediate response to orders. Cf. **ground alert. 2.** The aircraft that become airborne for this state of readiness. **3.** The signal or sound for getting airplanes into the air for such an alert.

In common parlance, an alert against an air attack, as in a city, is sometimes called an 'air alert.'

Air Almanac. A publication issued three times a year as a combined effort by the US Naval Observatory and the British Royal Greenwich Observatory, containing astronomical data pertaining to air navigation.

Prior to 1953, there were two separate publications: the *American Air Almanac* in the US and the *Air Almanac* in England.

air arm. 1. That part of a military or naval force, or of a national military establishment, that carries out air operations. **2.** *Specif.* Formerly, the military aviation branch of the Army, corresponding to the artillery arm, cavalry arm, etc.

In sense 1, the air arm of the Department of Defense is the USAF.

air armament. 1. The military airplanes and other military aerial equipment of a nation. **2.** Armament for aircraft. **3.** The act of arming with aerial military equipment.

air army. The English translation of the Russian *aviatsionnaya armiya,* a Soviet numbered air force.

Subordinate echelons of the Russian air army are the air division (*aviatsionnaya diviziya*), the air regiment (*aviapolk*), and the air squadron (*aviaeskadra*).

air assault. An attack by aircraft against a surface target or targets. Cf. **airborne assault.**

air-atomic, *a.* Of or pertaining to atomic warfare conducted by use of aircraft, as in *air-atomic era, air-atomic threat,* etc.

air attaché. (AirA) A rated AF commissioned or warrant officer belonging to an ambassador's or minister's diplomatic staff, whose primary duty is to collect by overt methods air intelligence information regarding the country in which he is on duty.

air attack. Attack from the air, i.e., attack by aircraft, esp. against surface targets.

air barrage. 1. A barrage of exploding bombs dropped from aircraft. Usually shortened 'barrage' (which see). **2.** An antiaircraft barrage.

air base. (AB) **1. a.** In the AF, an establishment, comprising an airfield, its installations, facilities, personnel, and activities, for the flight operation, maintenance, and supply of aircraft and air organizations. **b.** A similar establishment belonging to any other air force. **c.** In a restricted sense, only the physical installation. See **airdrome,** *n.*, note. **2.** *Aerial photog.* An imaginary line connecting the points in space at which successive photos in a strip were taken; the length of such a line.

In sense 1, cf. **Air Force base, airdrome,** *n.*, and **base,** *n.*

air base area. The general vicinity of an air base; *specif.*, in the AF, an area for which an air base has the responsibility for supply, maintenance, and the like.

An air base area usually includes, in addition to the air base, a number of auxiliary airdromes or flight strips.

air-based, *a.* Of electronic equipment: Carried in an airborne aircraft.

air base group. A group, acting as a supporting group in a wing, that performs the housekeeping functions necessary to the operation of an air base in the AF.

air base wing. A wing adapted in its organization to operate a base, as distinguished from other kinds of wings. See **wing,** *n.*, sense 11.

air battle. 1. A battle in the air between two or more aircraft. **2.** A battle for air superiority involving strikes at airfields, aircraft factories, etc.

air blitz. A sudden onslaught by military airplanes against a ground target or targets. See **blitz,** *n.*

air blockade. The isolation, or the denial of an enemy's use, of a place, harbor, route, or the like by air action.

air boat. 1. A small, light boat driven by an airplane propeller mounted on the boat and revolving in the air. **2.** A flying boat. *Obs.*

air bomber. A bombardier. *British.*

airborne, *a.* (abn) **1. a.** Of an airplane or other winged craft: Supported entirely by aerodynamic forces; flying. **b.** Of a free balloon or dirigible: Unmoored and floating in air. **c.** Of a captive balloon: Aloft. **d.** Of an aircrew member or other person: Riding in an airborne aircraft. **e.** Of a patrol, flight, or the like: Having its aircraft in the air. **2. a.** Of equipment and other materiel: Carried or transported, or designed to be carried or transported, by aircraft: See note. **b.** Of a force or organization: Transported, or designed to be transported, by aircraft, as an *airborne infantry battalion.* See **airborne force, airborne infantry, airborne troops. 3.** Of an action or operation: Carried out with transport aircraft, as an *airborne drop, airborne exercise,* or *airborne landing.*

In sense 2a, 'airborne equipment' often refers to equipment transported, or designed to be transported, by an aircraft, as distinguished from equipment installed in an aircraft as a part of its normal operating equipment, e.g., an airborne field artillery piece would be thus distinguished from an aircraft cannon. The latter is mounted in an aircraft.

airborne assault. An attack esp. to gain a specific objective, as an airhead, made by ground forces carried to the attack by aircraft and airlanded or dropped by parachute. Cf. **air assault.**

airborne early-warning radar. An early-warning radar set or system specially designed to be carried by aircraft, the radar signals being relayed from the aircraft to surface stations. See **early-warning radar.**

airborne force. A force of ground and air units organized, equipped, and trained for airborne assault.

airborne infantry. Infantry organized and trained to be carried by air to a battle area and landed by transport aircraft, as distinguished esp. from parachute infantry or troops. Also called 'air infantry.' Cf. **airborne troops.**

airborne interception radar. A kind of specially-designed radar normally carried by interceptors for locating hostile aircraft.

airborne lifeboat. A lifeboat carried by an aircraft to be dropped in the water in rescue operations.

airborne rocket. *Specif.* An aircraft rocket.

airborne task force. A task force composed of ground-force units and equipment airlifted or airdropped for the accomplishment of the mission.

The air units employed in the airlift are not considered a part of the task force.

airborne troops. Ground troops especially organized, trained, and equipped for airborne assault, landing by parachute or aircraft.

In some contexts, 'airborne troops' refers specifically to troops landed by aircraft, as distinguished from parachute troops; some other special contexts restrict the

term to include only those troops landed by parachute or glider, as distinguished from those landed in powered aircraft. See **air-transported troops,** note.

airborne unit. A ground unit organized, trained, and equipped for airborne assault.

air brake. Loose usage for 'speed brake.'

air-breathing engine. An engine that uses or takes in air from the outside to oxidize its fuel, as distinguished esp. from a rocket motor or rocket engine.

airburst, *n.* An explosion in the air, *specif.*, a bomb explosion above the surface, as distinguished from an explosion on contact with the surface or after penetration. Attrib., as in *airburst bomb.*

airburst fuze. Any fuze designed to set off an explosion in mid-air, as a concussion fuze, proximity fuze, or time fuze.

air cadet. An aviation cadet.

air campaign. A connected series of military air operations against an area, target system, hostile air force, or a combination of these.

air cargo. 1. Any goods or materiel shipped, or consigned for shipment, by air; the cargo carried by an aircraft. **2.** The system, organization, or service that transports this cargo. See **cargo,** *n.*, and cf. **bomb load, cargo load.**

In the AF, air cargo includes air freight and nearly all items of air express, but usually does not include mail or the baggage of passengers.

air-cargo net. A net used to tie down cargo in an aircraft, or for holding cargo items together when dropped.

air carrier. 1. An organization, esp. a civil organization, that engages in air transportation. **2.** An aircraft that carries cargo, mail, or passengers.

AirCent (*auth abbr*). 'Allied Air Forces, Central Europe.'

air chaplain. Sometimes *capitalized.* A chaplain on the staff of a major air command who supervises the chaplains' program and recommends to the commander the assignment or reassignment of AF personnel in the light of welfare needs. Sometimes called a 'command chaplain.' Cf. **Chief of Air Force Chaplains.**

air chief marshal. A commissioned rank in the RAF and RCAF, corresponding to the rank of general in the USAF; a person holding this rank.

air combat. Combat between or among airborne forces and opposing forces, either airborne or on the surface. Cf. **air-combat maneuver.**

'Air combat' is a broader term than 'aerial combat,' but is often used in the specific sense of the latter.

air-combat crew. A combat aircrew.

air-combat maneuver. Usually *pl.*, sometimes construed as a singular. A practice tactical maneuver involving AF units, undertaken to test tactics, techniques, training, and doctrine, including operations that involve radar countermeasures, logistics, communications, simulated bomber strikes, fighter combat, etc. See **maneuver,** *n.*, sense 3. Cf. **air combat, combat maneuvers.**

Air-combat maneuvers are usually a part of joint or combined maneuvers.

air command. 1. Generically, any command made up of AF units. **2.** *Specif.* A major air command.

In sense 1, 'air command' normally connotes a large force, such as an operational command made up of two or more numbered air forces. In sense 2, 'air command' often appears in specific titles, as 'Alaskan Air Command' or 'Continental Air Command.'

Air Command and Staff College. (AC&SC) A member college of the Air University which serves as an educational and doctrinal center in the field of command and staff organization, procedure, and techniques. Formerly (prior to November 1954) called the 'Air Command and Staff School.'

The AC&SC includes the Command and Staff School, the Squadron Officer School, the Air Weapons Course, the Air Weapons Orientation Course, and the Academic Instructor Course.

air commodore. A commissioned rank in the RAF and RCAF, corresponding to that of brigadier general in the USAF; a person holding this rank.

air control. 1. A kind of control imposed by the use of air power upon a hostile or potentially hostile nation that compels that nation to adopt patterns of behavior, both political and military, acceptable to those exercising the control; police action carried out by the use of air power. **2.** Control of the air (which see). **3.** Control, exercised with the aid of radio and radar, over the movements of aircraft. Cf. **air traffic control.**

air control center. A name applied to what was formerly called the 'tactical air control center,' i.e., a control center located in a forward area chiefly for providing direction to air support operations as authorized by the air operations center.

The air control center is the first step down in the tactical air control system, subordinate to the air operations center and above the control and reporting centers, the target director posts, and the air control teams. In theory, the air control center exercises no power for deciding what operations are to be carried out, since it serves to carry out directions of the air commander at the air operations center. In practice, however, it often acts under general directions and does exercise some command function.

Note. The terminology connected with AF-Army cooperation in tactical operations is undergoing change. This is generally in response to a clarification of the nature of air power. New terms are, therefore, to be expected in this area of AF activity.

air control team. In a close air support situation, a team composed of a rated officer, i.e., a pilot, and one to three airmen, constituting the most forward element of the tactical air control system in air support operations. The team may use a truck, armored vehicle, jeep, or liaison-type air-

craft to maintain visual contact with the situation. See **air control center.**

air-cooled, *a.* Cooled by air. Said esp. of engines or machine guns.

air cooler. A kind of radiator or heat exchanger for cooling the air compressed by a supercharger or compressor. See **aftercooler,** *n.*, **intercooler,** *n.*

air cooperation. 1. Cooperation on the part of air units with ground units in planning and carrying out tactical operations; also short for 'air-ground cooperation.' Cf. **army cooperation. 2.** Air support provided surface forces, as in 'Gen Saville was charged with providing the air cooperation.' Attrib., as in *air cooperation mission.*

In sense 2, this term has sometimes been used to avoid use of 'air support' (which see).

Air Coordinating Committee. (ACC) An interdepartmental committee established for coordinating federal policy in the field of aviation.

air coordinator. An airborne pilot acting for his commander in coordinating air strikes in close air support. Also called 'tactical air coordinator.'

air corps. 1. *Capitalized.* One of the branches of the US Army, organized as a corps between 1926 and 1947, with military aviation as its primary interest and responsibility. **2.** A provisionally-planned AF unit on a level of command above an air division. **3.** In a general sense, the military aviation corps of any national army.

In sense 1, the Air Corps superseded the Air Service in 1926. In 1941, the Air Corps was joined with the Air Force Combat Command and other air units, which together comprised the Army Air Forces (AR 95–5, June 20, 1941). In 1942, the 'functions, duties, and powers' of the Chief of the Air Corps were transferred to the Commanding General, AAF (Executive Order 9082), but the Air Corps remained as an entity until the National Security Act of 1947 established the USAF. See **air service,** note.

air corridor. A passage in the air for aircraft, esp. such a passage either leading through a system of antiaircraft defenses or established by international agreement.

Air Council. 1. A council within the British Air Ministry charged with making policy decisions for the RAF. **2. a.** An AAF council similar to the Air Force Council. **b.** Short for 'Air Force Council.'

Membership in the Air Council (sense 1) consists of the Secretary of State for Air (President), the Parliamentary Undersecretary of State for Air, the Chief of the Air Staff, Royal Air Force, the Controller of Supplies (from the Ministry of Supply), and the heads of the major Air Ministry departments.

air cover. 1. The protection against attack, esp. air attack, given by airplanes to surface or airborne forces. **2.** The airplanes giving, or designated to give, this protection. See **cover,** *n.*, sense 1.

aircraft, *n.* (acft) Construed either as *singular* or *plural.* **1.** In a broad sense, any machine or craft designed to go through the air (including, in some instances, outer space), given lift by its own buoyancy (as with airships), or by dynamic reaction of air particles over and about its surfaces, or by reaction to a jet stream or other fluid jet. **2.** Such a machine or craft regarded as a vehicle, and subject to having its direction changed during flight by the movement of control surfaces or by reaction to a fluid jet. **3.** A miniature or model of any such machine or craft. **4.** *Restrictive.* A powered fixed-wing airplane. **5.** *transf.* The pilot or crew that flies an aircraft, as in 'the aircraft was directed to land.'

In sense 1, the word 'aircraft' is broad enough to be applied to rigid and nonrigid airships, to gliders, helicopters, and fixed-wing powered airplanes, to kites, toy balloons, and pilot balloons, and also to winged missiles, ballistic missiles, and space ships, if they are being considered as air vehicles or carriers. So applied, the term may be used either generically, i.e., as a category word including all the different kinds of such machines or craft, or as a specific term applied to any one of them, or to any particular specimen, as in 'the aircraft landed,' wherein the word 'aircraft' is ambiguous unless defined by context.

But because the word has been used in its restrictive sense (sense 4) so widely and so often, some persons prefer not to use it at all in its generic sense (sense 1), or they use it in reference only to gliders, helicopters, and fixed-wing powered airplanes. This denial of its full generic use has given rise to the term 'air vehicle,' which serves as a broad term in lieu of 'aircraft,' although the new term carries a strong connotation of the idea that rockets and ballistic missiles are esp. to be considered in the category.

aircraft acceptance. The acceptance of aircraft. See **acceptance,** *n.*, both senses.

aircraft accident. An accident involving one or more military aircraft during the operation of the aircraft, either on the ground or in the air, and not caused by enemy action: See note.

In certain official AF contexts, the term 'aircraft accident' is highly restricted, e.g., an accident involving an aircraft may not be considered an 'aircraft accident' if the craft is undergoing maintenance or repair at the time. Aircraft accidents are also often classified as major or minor, depending upon the degree of injury to persons or of damage to aircraft.

aircraft allowance. *Specif.* The aircraft, or the number of aircraft, prescribed for an organization by an authorization document, as by a unit authorization list.

aircraft ammunition. Ammunition specially designed to be shot, launched, or dropped from aircraft; *specif.* (in certain contexts), aerial bombs.

Ammunition, such as small-arms or artillery ammunition, torpedoes, etc., adapted but not specifically designed for aircraft use, is not designated 'aircraft ammunition.'

Because the word 'ammunition' is often used in its restricted sense (see **ammunition,** *n.*, sense 2), where it is not applied to bombs, use of 'aircraft ammunition' with specific reference to aerial bombs is misleading unless done in adequate context.

aircraft attrition. The process of permanently losing aircraft, esp. in reference to the aircraft losses in a given unit. See **permanent loss.**

In a broad sense, aircraft attrition includes permanent losses from whatever cause—from wearout, accident, cannibalizing, reassignment, or combat. But the term is

sometimes used restrictively to include those permanent losses that are: **a.** Due only to wearout or accident (either ground or flying). **b.** Due only to combat. **c.** Due only to combat, wearout, or accident.

aircraft attrition rate. A rate that expresses, in terms of a given aircraft inventory, the permanent aircraft losses sustained by an organization due to specified causes in a given period of time.

This term, to be useful in statistical control, must be arbitrarily used in the same way by reporting organizations. The factors involved are the aircraft *inventory*, the aircraft *losses*, and the period of *time* covered by the reporting.

Strictly speaking, the inventory, however defined for reporting purposes (see **aircraft inventory**), changes with each loss or replacement. For example, if the initial active aircraft inventory is 100, the first aircraft lost represents an attrition rate of 1 to 100; if no replacement has been made, the second aircraft lost represents an attrition rate of 1 to 99 or 1.01 to 100; if then the inventory is augmented to 110, the third aircraft lost represents an attrition rate of 1 to 110 or .909 to 100; and so on. For the time covered, the attrition rate is the sum of the separate rates.

Losses may be arbitrarily defined, depending upon the purpose of the commander who requires the report: See **aircraft attrition.** The period of time is also a matter for the commander to determine.

aircraft cannon. A cannon (which see) designed or modified for use in an aircraft. Also *collective.*

aircraft carrier. A ship that carries airplanes, has a takeoff and landing deck, and is otherwise designed and equipped to serve as a base of operations for the airplanes. Often called a 'carrier.' See **CV** (*abbr*).

aircraft clearance. A form completed to authorize a flight of one or more aircraft; the authorization granted by this form.

An aircraft clearance may contain weather information, procedures and restrictions, a diagram of a runway layout, or the like.

Cf. **cross-country clearance, IFR clearance, operational clearance, VFR clearance.**

aircraft commander. A pilot designated pilot-in-command of a given aircraft, responsible for its safe operation, and in command of all personnel on board during flight.

The aircraft commander is the designated commander regardless of rank, except in certain circumstances a command pilot or authorized instructor may assume command over the aircraft commander.

aircraft control and warning. A service or activity in which aircraft (including guided missiles) are detected and tracked in flight and reported, followed by evaluation and plotting of the information obtained, which information is then used in a warning network and in the control of fighter aircraft, antiaircraft artillery, and other combative forces. Attrib., as in *aircraft control and warning facility, installation, unit,* etc.

In the continental US, an AC&W group is ordinarily assigned to each air defense division.

aircraft controller. A person who controls, or is responsible for controlling, the movements of aircraft, including guided missiles, by means of radio communication or electronic devices. Usually called a 'controller.'

This term is generic. See **air defense controller, air traffic controller, forward air controller, ground controller, tactical air controller.**

aircraft engine. Any engine (which see) designed or modified for use in an aircraft.

aircraft incident. Any incident that focuses attention upon a particular aircraft, like a death aboard or loss of an engine; also in some contexts, an aircraft disaster, accident, crash landing, ditching, or abandonment, which does not occur near an air base.

aircraft instrument. Any mechanical, electric, or electronic device used aboard an aircraft for indicating the performance or condition of its engines or accessories for navigating, or for indicating the attitude, altitude, airspeed, etc. of the aircraft. See **engine instrument, flight instrument, navigational instrument.**

aircraft inventory. An accounting of the aircraft held by, or assigned to, a unit, activity, country, or the like, esp. as counted and classified into categories; the number of aircraft held or assigned.

This term is subject to different understandings, and for that reason requires special definition in the various contexts in which used. For example, a squadron's inventory usually consists only of first-line aircraft, whereas a wing's inventory may include not only these, but also those in storage or those being repaired. When used for reporting statistical control data, the term requires special definition suited to the particular purposes of the commander. See **active aircraft inventory, basic aircraft inventory, command-support aircraft, inactive aircraft inventory, total aircraft inventory.**

aircraft machine gun. Any machine gun designed or adapted for use on, or by, an aircraft.

aircraftman, *n.* Any of the four lower grades or ranks in the RAF, corresponding roughly to basic airman or airman 3rd class in the USAF; a person holding such rank.

An aircraftman in the RAF is either an aircraftman second class, aircraftman first class, leading aircraftman, or senior aircraftman.

aircraft mechanic. A specialist in airframes, aircraft engines, aircraft hydraulic systems, or the like, who services and maintains aircraft. Usually called a 'mechanic.'

aircraft observer. 1. A person, other than a pilot, holding a currently effective aeronautical rating. **2.** An aeronautical rating given to persons, other than pilots, qualified to occupy positions on an aircrew.

The rating of aircraft observer has normally been qualified by a word in parentheses designating the specialty of the holder, as *Aircraft Observer (Bombardier), Aircraft Observer (Medical), Aircraft Observer (Flexible Gunner), Aircraft Observer (Bombardment), Aircraft Observer (Navigator), Aircraft Observer (Navigator-Bombardier), Aircraft Observer (Radio Observer I), Aircraft Observer (Radar Night Fighter), Aircraft Observer (Radar All-Weather Fighter), Aircraft Observer (Radio Observer C), Aircraft Observer (Radar), Aircraft Observer (Radar, RCM), Aircraft*

Observer (*Radar Bombardier*), or *Aircraft Observer* (*Flight Engineer*). These ratings are gradually being superseded by only two ratings, *senior aircraft observer* and *aircraft observer* without specifying the particular area of qualification.

aircraft rocket. A rocket missile specially designed to be carried by, and launched from, an airplane.

aircraft rocket launcher. A device attached to an aircraft for holding and launching aircraft rockets. See **launcher,** *n.*

Various types of aircraft rocket launchers are normally identified by a word or term in parentheses identifying the kind of launcher as follows: *aircraft rocket launcher* (*automatic*); *aircraft rocket launcher* (*displacement*), a kind of launcher that swings rockets from carrying position into firing position; *aircraft rocket launcher* (*drop*), a launcher that drops the rocket before ignition; *aircraft rocket launcher* (*full automatic*), a kind of launcher requiring only operation of the firing switch to fire and launch a number of rockets automatically; *aircraft rocket launcher* (*post*), a launcher carrying the rocket on a post or posts fitted to the rocket motor tube; *aircraft rocket launcher* (*rail*), a launcher carrying the rocket on rails; *aircraft rocket launcher* (*semiautomatic*), a launcher requiring operation of both feeding and firing switch; *aircraft rocket launcher* (*tree*), a kind of launcher having a central stem with rocket-bearing branches; and *aircraft rocket launcher* (*tubular*), a launcher carrying the rocket in, and launching it through, a tube.

aircraftsman, *n.* **1.** One skilled in building aircraft; an aircraft manufacturer. **2.** Used erroneously for 'aircraftman.'

aircraft sounding. 1. The action of carrying meteorological instruments aloft in aircraft for the purpose of making air soundings. **2.** A term used to designate the now-obsolete method or activity of detecting flying aircraft with sound locators. See **sound locator.**

aircraft spotter. A ground observer who looks for, and reports on, aircraft, esp. enemy aircraft over friendly territory. Often called a 'spotter' (which see). See **Ground Observer Corps.**

aircraft utilization. 1. The use of, or the act of using, aircraft, esp. so as to exploit their full possibilities. See **employment,** *n.*, note. **2.** In some contexts, the average number of hours flown by a unit's aircraft for a specified period.

Use of this term in sense 2 requires special attention to context in order to avoid misinterpretation. See **daily aircraft utilization.**

aircraft-warning service. A service in which persons are trained and equipped to observe and report on the appearance and movements of aircraft, esp. enemy aircraft over friendly territory.

An aircraft-warning service usually includes aircraft spotters and radar facilities, plus the necessary communications. *Capitalized* in specific reference.

aircraft weapon. 1. A weapon used on, or by, an aircraft, esp. an aircraft cannon or machine gun. **2.** A winged, guided missile.

aircrew, *n.* The full complement of air officers and airmen who man, or are designated to man, an aircraft in the air; also applied in certain contexts to the pilot of a single-place airplane. Often shortened 'crew.'

The aircrew consists of the pilot together with a copilot, navigator, and engineer, as well as gunners, bombardiers, the flight surgeon, the aircraft commander, and parachute-drop technicians when such personnel are aboard. A crew member may serve in more than one capacity.

aircrewman, *n.* An aircrew member. Often shortened 'crewman.'

aircrew member. An individual serving on an aircrew. Often shortened 'crew member.'

aircrew personnel. Personnel who occupy aircrew positions as their principal duty.

aircrew station. Any place in an airplane where a crew member carries out his part in flight operations or combat.

air current. *Specif.* A stream of air moving in any direction other than the horizontal, esp. in the vertical.

An air current is distinguished from wind, which is usually considered to move horizontally.

air defense. Defense against attack on an air defense area by airborne enemy aircraft or guided missiles; the sum total of all measures undertaken for this purpose; an organization or activity providing this defense.

Air defense is regarded by most authorities as comprising two categories: Active air defense and passive air defense. See separate entries.

air defense area. (ADA) A specifically defined extensive area that includes objectives of possible enemy air attack and for which air defense is, or must be, provided.

An air defense area is divided into air defense sectors.

air defense command. 1. A command providing air defense for a given air defense area. **2.** (ADC) *Capitalized.* A major air command of the USAF, responsible for providing air defense for the US.

In sense 2, the Air Defense Command was activated on 1 January 1951, and has its headquarters at Ent AFB, Colorado. Previously, the ADC had been a component of the Continental Air Command. The ADC comprises the Eastern Air Defense Force, the Central Air Defense Force, and the Western Air Defense Force. See separate entries. Cf. **Continental Air Defense Command.**

air defense control center. (ADCC) A land-based, air-operations installation which, with the aid of early-warning installations, air defense direction centers, and other organizations and facilities, provides aircraft control and warning, and control and direction of active air defense in a given air defense sector.

air defense controller. An aircraft controller (which see) responsible for controlling and vectoring friendly aircraft during air defense and coordinating the operations of antiaircraft artillery. Often shortened to 'controller.'

air defense direction center. (ADDC) A ground-control intercept station that controls interceptors and antiaircraft fire, and reports the

progress of air defense to the air defense control center.

air defense identification zone. (ADIZ) The airspace above a specified geographical area in which the control and ready recognition of aircraft is required.

Types of air defense identification zones are as follows: (1) The *coastal ADIZ*, an ADIZ established over an oceanic area adjacent to the international boundary lines of the US or its territories or possessions; (2) the *domestic ADIZ*, an ADIZ over an area which lies primarily within the international boundaries of the US or its territories or possessions; and (3) the *international boundary ADIZ*, an ADIZ established on or adjacent to the international boundary lines of the US or its territories or possessions.

air defense operation. An air operation (which see) concerned with the air defense of an area.

Air defense operations include early-warning activities, air alerts, interception, and air-to-air combat.

air defense sector. A subdivision of an air defense area (which see).

Each air defense sector is divided into *air defense subsectors* and is provided with an air division and an aircraft control and warning group.

air defense team. The team made up of the three chief elements in an active air defense system, i.e., interceptor aircraft, antiaircraft artillery, and aircraft control and warning units.

air density. The ratio of the mass of air to its volume, expressed as its weight per unit of volume, e.g., kilograms per cubic meter.

air depot. 1. A depot providing supply or maintenance for aircraft of AF organizations. **2.** In WW II and until 1948, one of several large installations, such as the one at San Antonio, Texas, that served as supply points for subdepots and other AAF installations, as well as for major overhaul of aircraft and other equipment.

In sense 1, an area depot, base air depot, specialized depot, zonal depot, etc., are each called an 'air depot.'

air depot group. In WW II, a military unit, sometimes operating directly under an air service command, assigned duty in an air depot (sense 2), or charged with the operation of such a depot.

air depot wing. A wing that operates, or is adapted to operate, an air depot. Often called a 'depot wing.'

The air depot of WW II was operated by one or more air depot groups.

air direction center. Short for 'air defense direction center' or 'tactical air direction center.'

air discipline. 1. The systematic rules and procedures adopted or used in operating or handling aircraft. See **discipline,** *n.*, sense 5b. **2.** The strict observance of these rules and procedures. See **discipline,** *n.*, sense 1.

air division. In certain numbered or named air forces, a unit or its headquarters conventionally on a level of command above wing level, composed of two or more combat wings, but sometimes adapted to other organizational structures.

In SAC, two kinds of air divisions are provided for, the conventional unit, and a unit on the level of command of a numbered air force. In ADC, the air division operates directly over squadrons. Air divisions are sometimes not set up in the structure of an air force.

air division combat operations center. A command post in or adjacent to an air defense control center for the use of the air division commander and his staff in directing and supervising the air defense of the air defense sector.

air doctrine. Doctrine in respect to the employment of air power: See **doctrine,** *n.*

air domination. The actual positive control of the air exercised by virtue of having a high degree of air superiority.

See **air superiority, air supremacy, domination,** *n.*

airdrome, *n.* Cf. **aerodrome,** *n.*[2] **1.** The takeoff and landing area of an air base, with associated runways, hangars, taxi areas, waiting rooms, etc., but not including maintenance shops. Attrib., as in *airdrome control tower*. See also **airdrome officer, airdrome traffic. 2. a.** An area or place, either on land or water, for the takeoff and landing of aircraft and including the associated facilities and installations, if any, for the handling, servicing, or maintenance of aircraft. **b.** An airfield with limited facilities.

In American usage, 'airdrome' (sense 2a) connotes the physical installation and facilities, whereas 'air base' usually connotes not only these, but the personnel and organizations that operate them.

airdrome group. An air base group.

airdrome officer. The duty officer (which see) at an air base who has the primary responsibility of meeting incoming transient aircraft and seeing to the accommodation and feeding of their crews.

airdrome traffic. All traffic, including aircraft and ground vehicles, on the runways and taxiways of an air base or airdrome and all aircraft flying within its control zone.

airdrop, *n.* An act or instance of airdropping. Sometimes simplified to 'drop.' See next.

airdrop, *v. tr.* To release or let fall *parachute troops, equipment,* or supplies from an aircraft in flight, as in an airborne assault or air-supply operation. Hence, **airdropping,** *n.*

Airdropping is usually, but not necessarily, done by parachute.

air echelon. 1. That part of an organization moved by air, either by military transport aircraft or by a unit's own aircraft, or by both, as distinguished from that part moved by water or by land. See **surface echelon. 2.** That part of an AF organization composed of its aircrew members. See **ground echelon. 3.** The military force that operates in the air, as distinguished from ground or naval forces.

In sense 1, the air echelon is often moved for the purpose of commencing operations on a limited scale, and normally consists of aircrews and aircraft, and of a minimum number of noncrew personnel and organizational equipment required for support. Cf. **advanced (air) echelon, flight echelon, water echelon.**

air effort. The military effort exerted through the activity of an air force or air units.

air engineer. 1. An aviation engineer (sense 1). **2.** *Capitalized.* During WW II, in Headquarters AAF and in certain theater and numbered air force headquarters, a staff officer serving to advise on the construction of airfields. Now *hist.*

AiRepDn (*auth abbr*). 'Aircraft Repair Division.'

air evacuation. Evacuation by aircraft; *specif.*, medical air evacuation.

Also in combination, as in *air evacuation flight, mission, squadron,* etc.

air evacuation holding facility. A hospital where patients are held while awaiting medical air evacuation.

air evacuation team. A team comprising a flight nurse and an aeromedical evacuation specialist for administering to patients aboard medical evacuation aircraft.

air evacuee. One evacuated by air.

Air Explorer. A member of the Boy Scouts of America participating in nonmilitary aviation studies and receiving AF advice and assistance. Hence, **Air Explorers,** the activity.

air express. 1. A system or service for the prompt and safe transportation of money, parcels, or other goods by air, sometimes including the local calling for and delivery of the goods. **2.** The goods carried by this service.

airfield, *n.* Also **air field,** and capitalized in specific names. (afld) **1.** A place with runways, taxiways, and parking space, used for the takeoff and landing of aircraft. **2.** *Restrictive.* That area on an air base or the like where planes take off, land, taxi, and park, as distinguished from the rest of the installation. **3.** An air base, esp. as used in the Army in the names of official installations. See **Army airfield.**

'Airfield' is no longer used in the official names of AF bases except for certain bases overseas. In Army use, as in sense 3, the term is usually spelled as two words.

airfield approach area. A cleared area (which see).

airfield control radar. Airport surveillance radar. Usually called 'ACR.' *British.*

air fighter. A person who fights in aerial combat.

air fighting. Air-to-air combat.

air firing. The firing of ammunition from flying aircraft. Attrib., as in *air-firing test.*

airflow, *n.* A flow or movement of air; *specif.*, the relative flow or movement of air around an aircraft in flight, or around or through its baffles, air scoops, or the like.

airfoil, *n.* A surface or body, as a wing, propeller blade, rudder, or the like, especially designed to obtain a reaction, as lift or thrust, from the air through which it moves.

In giving lift or thrust to aircraft, airfoils are adapted to the principles of Bernoulli's law (which see).

airfoil profile. An outline or silhouette of an airfoil seen from the side.

airfoil section. A cross section of an airfoil, taken at right angles to its longitudinal axis at any given point.

air force. (AF) **1.** In a general sense, a military force or organization made up of personnel, equipment, and installations for carrying out military operations in the air; *an air force in-being,* an extant, operational air force. See note. **2.** Usually *capitalized.* **a.** Short for 'United States Air Force' (which see). **b.** Often *pl.* Short for 'Army Air Forces.' *Hist.* **3.** Often *capitalized.* A numbered or named air force (which see). **4.** Military force or power exerted in or from the air with the use of aircraft, guided missiles, or the like. See **military force,** sense 2. **5.** Any of the forces exerted upon an aircraft in flight, i.e., gravity, lift, thrust, or drag; also the sum of these forces. See **aerodynamic force.**

In the USAF, command of an air force (senses 1 and 3) rests with an air commander.

Air Force Academy. Short for 'United States Air Force Academy' (which see).

Air Force Aid Society. A civilian corporation that renders emergency financial aid to AF personnel and their dependents.

Air Force Association. A civilian association of persons interested in air power, the regular members of which served in the USAF or a predecessor service.

Established in Feb 1946, the association publishes *Air Force.* Cf. **Arnold Award.**

Air Force band. A T/O unit organized as a band (which see).

Air Force base. (AFB) A geographical location that provides space for carrying out an operation, including facilities for offices, warehousing, accommodation of personnel, and usually for the takeoff and landing of aircraft, such location being under the jurisdictional control of the United States Air Force.

An Air Force base is so designated by Hq USAF. 'Base' is capitalized in specific names, as in 'Craig Air Force Base.'

Air Force blue. 1. The medium blue color officially adopted by the USAF, called shade 84. This color is used to signify the AF. **2.** *Air Force blues,* a blue uniform worn by an AF person. Usually shortened 'blues.' Construed either as a *singular* or *plural.*

Air Force Bulletin. An official publication of Headquarters USAF, containing matter of an

informative or advisory nature and of continuing interest.

Joint Army and AF Bulletins were discontinued 1 Jan 1950. The Air Force Bulletin contains such matter as an Executive Order or a Presidential Proclamation.

Air Force Coat of Arms. The center of the Air Force Seal, consisting of the shield and crest.

Air Force Combat Command. An air command, or its headquarters, under the direct control of the War Department, superseding the General Headquarters Air Force in 1941, and consisting of four continental air forces. *Hist.*

This command was merged with the Air Corps and other air units to make up the Army Air Forces in June 1941, and in 1947 lost its legal identity when the USAF was established.

Air Force Council. An agency of the office of the Chief of Staff, USAF, that is responsible for recommending policy and courses of action to the Chief of Staff, and for providing policy guidance to the Air Staff.

The Air Force Council is also responsible for maintaining continuing surveillance of AF capability to carry out assigned missions. It is composed of the Vice Chief of Staff, the Deputy Chiefs of Staff, and the Inspector General, USAF.

Air Force Crest. The crest of the Department of the Air Force, depicting the American eagle with cloud formation behind and a wreath beneath, the wreath consisting of alternate folds of silver and blue.

Air Force doctrine. A doctrine accepted by the Air Force for guidance esp. in the employment of air power. See **doctrine,** *n.*

Air Force Establishment. A name given by law in 1951 to the USAF and the facilities and activities connected with it.

This name covers 'all commands, organizations, forces, agencies, installations, and activities, including the Department of the Air Force, all members of the Air Force, all property of every kind and character—real, personal, and mixed—and all civilian personnel, under the control or supervision of the Secretary of the Air Force' (*Air Force Organization Act of 1951*). Cf. **Department of the Air Force.**

Air Force Finance Division. A separate operating agency of the USAF that carries out or supervises finance functions of the AF requiring centralized control.

Air Force installation. An installation belonging to the AF or one in which the AF exercises a real property interest, and designated as such by Headquarters USAF.

Air Force Letter. (AFL) An administrative AF publication, general in application, containing regulatory material considered to be temporary in duration, or informative matter that may be of either temporary or permanent interest.

Air Force Manual. (AFM) A manual published by order of the Secretary of the Air Force, determined to be of interest and applicable to two or more major air commands. See **manual,** *n.*

Air Force Medical Service. A service within the AF to provide medical support necessary for the AF to maintain the highest degree of combat readiness and effectiveness, including the health of all personnel in both combat and noncombat assignments. Usually shortened to 'Medical Service.'

The Medical Service is made up of both enlisted and officer personnel. Those officers professionally qualified in a branch of medicine are organized into various corps, such as the Medical Corps, Dental Corps, etc.

Air Force Nurse Corps. (AFNC) A corps in the AF Medical Service made up of graduate nurses commissioned as officers in the AF.

Men were not accepted as nurses in the Air Force until autumn 1955.

Air Force of the United States. (AFUS) A designation for the overall USAF, sometimes used between 1947 and 1951 to distinguish the overall organization from its regular component, which was ambiguously called the 'United States Air Force.'

The *Air Force Organization Act of 1951* designates the overall organization as the 'United States Air Force,' and the regular component as the 'Regular Air Force.'

Air Force Pamphlet. (AFP) An AF publication that disseminates information considered of continuing usefulness, but not considered appropriate for issuance in other types of AF publications.

Air Force procurement inspector. A person authorized by the Commanding General, Air Materiel Command, to inspect, accept, or reject materiel procured as a result of governmental contract, orders, or the like.

Air Force Register. An annual publication of the Department of the Air Force listing the names of regular AF officers and certain other AF personnel along with such personal data as service number, permanent and temporary grade, etc.

This publication is divided into several lists arranged by categories, as those covering the secretaries, the principal commanders and staff officers, the active list, the Medical Service, the promotion lists, the USAF retired list, etc.

Air Force Regulation. (AFR) A regulation issued by the Secretary of the Air Force, i.e., a basic formal order setting forth rules, policy statements, procedures, responsibilities, organizational frameworks, or the like for the government and operation of the AF, and having a permanent nature.

Air Force representative. A person, civilian or military, serving in a place outside AF jurisdiction, where he represents the views of, or acts for, the Air Force.

This term is sometimes loosely applied to any AF person in attendance at a meeting, conference, or the like. Unless such a person is authorized to act for, or present the views of, the AF, he is not strictly an AF representative. The term, however, is broad enough to cover AF instructors at civilian or non-AF service schools,

as well as AF liaison officers, AF members of committees, AF agents at factories, etc.

Air Force Reserve. (AFRes) **1.** A component of the USAF, comprising a reserve force of civilians organized for training, readiness to be trained, or assignment, and directly controlled by the USAF. **2.** In combination, as *Air Force Reserve officer, Air Force Reserve pilot, Air Force Reserve unit.*

Members of the AFRes are subject to call or recall to active duty under special circumstances or in accordance with national need. When called to active duty they are distinguished from Regular AF members in personnel records, but otherwise serve as if members of the Regular Air Force. Cf. **Air National Guard, reserve component.**

Air Force Reserve installation. An AF installation occupied either by (1) an AF reserve training unit or units, or (2) AF reserve training units and Air National Guard units.

Air Force Reserve Officers Training Corps. Full for 'Air Force ROTC' or for 'AFROTC.'

Air Force Reserve Order. (AFRO) **1.** *pl.* A collection of numbered and dated publications issued upon the order of competent authority, each promulgating directives or announcements relative to AF Reserve personnel actions, except court-martial action or action calling AF Reserve personnel to extended active duty. See **order,** *n.*, sense 2 and note. **2.** Usually *pl.* A particular issue of these publications.

Air Force Reserve Training Center. Any of several training centers manned by a non-T/O unit of the USAF for the training of AF Reserve T/O units or personnel.

Air Force reservist. 1. *Specif.*, esp. when capitalized. A member of the Air Force Reserve. **2.** *General.* A member of the Air National Guard of the United States or of the Air Force Reserve not on extended active duty. Cf. **air reservist.**

Air Force ROTC. A training corps under the control of the USAF, with detachments in colleges and universities to prepare cadets for service in one of the components of the USAF.

The 'ROTC' in this term is pronounced by letter. The corps is under the Air University.

Air Force Seal. The seal of the Department of the Air Force, at the center of which is the Air Force shield and crest encircled by thirteen stars and the date MCMXLVII, outside of which is an encircling band bearing the phrases 'Department of the Air Force' and 'United States of America.'

When the Seal is reproduced in color, the background is ultramarine blue, the shield a light blue and white, and the thunderbolt gold with flames in natural color. The twists of the wreaths are alternate white and blue, and the eagle in natural color in front of a white cloud. The thirteen stars are white and the Roman numerals gold. The encircling band is white edged in gold with black letters.

Air Force service statement. (AFSS) Any signed statement by which a reserve officer volunteers for extended active duty for a specific period.

Air Force Shield. The shield of the Department of the Air Force, the field being divided by a nebuly line formation (representing clouds), the upper part depicting the heraldic thunderbolt superimposed, which portrays striking power through the air.

Air Force Specialty. (AFS) A grouping of duties and tasks related in skill, knowledge, difficulty, operational sequence, or the like, and making up a job or specialty.

The change-over from the Army MOS to AFS began, on a phased basis, in early 1950 for airmen, in January 1952 for officers.

Any single individual may have more than one AFS. See **duty AFS, primary AFS, secondary AFS.**

Air Force Specialty Code. (AFSC) **1.** A code set up for identifying all Air Force Specialties. **2.** A combination of digits or digits and letters identifying a given Air Force Specialty.

Air Force station. An AF depot installation not provided with landing and takeoff facilities, as in 'Gadsden Air Force Station.'

Air Force supply. Usually *pl.* Supply items or categories of supply items belonging to, or used by, the AF.

AF supplies include (1) supplies provided through AF supply agencies for use by the AF, (2) supplies provided through Army supply agencies for use by, and in possession of, the AF, exclusive of supplies on temporary loan from the Army, and (3) Army-purchased supplies stored as AF credits under Army custody.

Air Force unit. 1. A unit belonging to the AF, as distinguished from units belonging to the Army or Navy. **2.** In reporting personnel strengths, any unit, including SCARWAF units, counted against the AF troop basis.

airframe, *n.* **1.** The structural components of an airplane, including the framework and skin of such parts as the fuselage, empennage, wings, landing gear (minus tires), and engine mounts. **2.** The framework, envelope, and cabin of an airship.

The airframe, esp. in sense 1, does not include the engines, accessories, or other parts that are, or may be, replaced from time to time. Attrib., as in *airframe builder, airframe design, airframe drag, airframe factory, airframe mechanic,* etc.

air freedom. Freedom to operate in the air in accordance with a purpose or objective.

This freedom may depend upon having the kind of equipment required for the purpose as well as an understanding of air power. In war operations, freedom may be limited by a limited concept of air power, as well as by an inferiority in tactical strength. See **control of the air,** note.

air freight. 1. Air cargo, sometimes restricted to air cargo that moves with less dispatch than air express. **2.** A system or service for the transport of this air cargo, as in 'the goods were moved by air freight.'

air freighter. A transport aircraft used esp. for carrying air freight.

air-freight terminal. (AFT) A military establishment at a flight-departure point for concentrating and storing air freight consigned for shipment.

air front. A direction from which aircraft attack, esp. as they come in toward a nation's strategic targets; a direction toward which air attack is made. See **front,** *n.*

air-ground, *a.* Of or pertaining to both air and ground forces, as in *air-ground communication, air-ground cooperation, air-ground exercise, air-ground liaison, air-ground operation,* etc. Cf. **air-surface,** *a.*

air-ground cooperation. Cooperation between air and ground units in carrying out tactical operations.

air-ground liaison code. A set of symbols for a limited number of words, phrases, and sentences used for communication between air and ground forces. Cf. **identification panel code.**

air-ground operations section. The Army agency at an air operations center, which receives requests for air missions, evaluates these requests, and submits the approved requests to the combat operations section.

air-ground operations system. An Army system providing the ground commander with the means for receiving, processing, and forwarding the requests of subordinate ground commanders for close-air-support missions and for the rapid dissemination of information and intelligence.

The air-ground operations system includes the air-ground operations section, ground liaison officer teams, photo-interpretation teams, and the necessary communication facilities.

air-ground support. Close air support.

air group. A group (sense 1), esp. distinguished from a group in the Army.

air gunner. An aerial gunner. Chiefly *British.*

air gunnery. Aerial gunnery.

air harbor. A harbor for flying boats or other seaplanes, or for amphibious airplanes.

airhead, *n.* An area in enemy territory, or in threatened friendly territory, or territory not quickly accessible by surface movement, held or seized to insure continuous supply of troops and materiel by air. Attrib., as in *airhead base, airhead operation.*

An airhead is normally the area taken in the initial stage of an airborne assault, either by airdrop or airlanding operations, or by both. The airhead may also be used to evacuate troops and equipment by air.

air infantry. Airborne infantry.

air inferiority. A degree of air control that is less than that held by a hostile air force. The counterpart of 'air superiority.'

air inlet. An entrance for air; *specif.,* the open front part of a jet engine for taking in air.

air inspector. Often *capitalized.* An inspector in the AF.

The term 'air inspector' no longer has official AF sanction; it is still widely used to emphasize the inspector's connection with AF organizations or equipment. See **air,** *a.,* II, B, 2; **base inspector,** note.

air installation. **1.** An installation under the jurisdiction of an air force, or an installation set up for aircraft. **2.** *Air Installations,* an activity or staff function concerned with the planning, maintenance, modification, and operation of AF installations.

In sense 1, 'air installation' is applied to an entire AF base, a single building, a weather station, or the like. See **installation,** *n.*

air intake. A scoop, duct, or the like for taking in air; an air inlet.

air intelligence. **1.** Military intelligence appraising or evaluating foreign or enemy capabilities, limitations, vulnerabilities, and intentions as they relate to the command and employment of air power. **2.** Usually *capitalized.* An organization or activity providing such intelligence. **3.** Also sometimes applied to information gathered by aerial reconnaissance.

Attrib., as in *air intelligence mission, officer, training.*

air-interception radar. Airborne interception radar.

air interdiction. Interdiction (sense 1) by aircraft.

air invasion. Invasion by aircraft; *specif.,* the invasion of a country by airborne troops.

air judge advocate. A judge advocate or staff judge advocate in the AF, as distinguished from one in the Army or Navy.

The term 'air judge advocate' is not recognized in any appropriate public law or in AF general orders or regulations.

airland, *v. tr.* and *intr.* To land *troops* or *materiel* by aircraft, as distinguished from dropping by parachute; also *intr.,* as in 'the troops airlanded.'

airlanding, *n.* An act or instance of landing troops or supplies by an aircraft, as distinguished from dropping by parachute.

Attrib., as in *airlanding force, operation, sortie,* etc.

air lane. A route in the air, esp. a convenient or frequently used route.

air-launched, *a.* Of a rocket, guided missile, or the like: Launched, or designed to be launched, from an aircraft in flight.

air liaison officer. (AirLO) Sometimes *capitalized.* A USAF pilot officer representing a tactical air force and attached to an army or naval command, whose chief duty is acting as air advisor to the army or naval commander and his staff.

A *corps air liaison officer* is attached to an Army corps; a *division air liaison officer* is attached to an Army division.

airlift, *n.* **1.** The transportation of personnel or materiel by air, as distinguished esp. from surface transportation. **2.** The operation or service carrying out such transportation; the aircraft

used in such an operation. **3.** The cargo thus transported.

Attrib., as in *airlift mission, operation, pilot, support,* etc. See **strategic airlift, tactical airlift.**

airlift, *v. tr.* To transport *personnel* or *materiel* by aircraft.

airline, *n.* **1.** An established system of aerial transportation, esp. a commercial system, together with its equipment, holdings, and facilities; the company owning or operating such a system. **2.** A great circle route between two points.

Attrib. (in sense 1), as in *airline accident, equipment, network, pilot,* etc.

airliner, *n.* A commercial transport airplane used on an airline.

airline terminal. Also **airlines terminal.** In commercial aviation, a central place in a city where passengers are sold tickets, weighed in, and provided transportation to the airport, or arrive by bus or limousine from an airport. Also called 'air terminal' (which see, sense 2).

AirLO (*auth abbr*). 'Air Liaison Officer.'

air load. The aerodynamic load or force imposed upon a moving airfoil or other object.

airload, *v. tr.* To load *personnel* or *materiel* on an aircraft.

air lock. *Specif.* A stoppage or interruption of the proper flow of fluid in an oil line or system, esp. in a hydraulic system, caused by trapped air.

air log. A distance-measuring device used esp. in certain guided missiles to control range.

air logistics. 1. That part of logistics (which see) that maintains the AF, as distinguished from the logistics provided the other services. **2.** The transportation of personnel or materiel by air, as distinguished from transportation by other means. *Loose* usage.

airmada, *n.* A contraction of 'air armada.'

airmail. Mail sent, or destined to be sent, by air; a system or service set up for carrying mail by air. Attrib., as in *airmail pilot, route,* etc.

Airmail is usually not considered to be air cargo.

Air-Mail Flyer's Medal of Honor. A medal given to a person considered to have distinguished himself by heroism or extraordinary achievement while flying in the airmail service after 1918.

Auth. by Congress 14 Feb 1931.

airman, *n.* (amn) **1.** An enlisted person of either sex in the USAF, as distinguished from an officer or warrant officer. Used as a word of common gender, as in regulations, where no distinction is being made between the sexes. **2.** An enlisted person of the male sex in the USAF, as distinguished from a WAF airman: See note. **3.** An enlisted person of either sex below the rank of staff sergeant, esp. as used in a title: See note. **4.** One who flies; an aviator; an aircrew member; a pilot.

In sense 1, 'airman' is used in general application, the same as 'man' in 'all men are mortal'; but also like 'man' it is used as the normal designation (sense 2) of the male only, as in 'an airman and a WAF airman kept the books.' In some contexts, however, 'male airman' is used. See **male airman, WAF airman.**

It may be observed that some other words of common gender tend to be used restrictively for either the male or the female of the species when applied to people, as in 'an Indian came into the room,' where the Indian would be understood to be a man unless context indicated the contrary. This is so of a long list of occupational designations, such as mechanic, farmer, postmaster, doctor, pilot, Air Force officer, etc. However, if the word is for a person normally considered to be a woman, then the word is used restrictively for the female of the species, as in 'a nurse came into the room,' where the nurse would be understood to be a woman unless context indicated the contrary.

In the specification of sense 3, an airman is designated a 'basic airman,' 'airman 3rd class,' 'airman 2nd class,' or 'airman 1st class,' these titles corresponding to the former designations of 'private,' 'private first class,' 'corporal,' and 'sergeant,' respectively. See **E** (*abbr*), sense 1.

air maneuver. 1. Usually *pl.* A maneuver conducted by an air force to evaluate and test its equipment, doctrine, tactics, techniques, and state of readiness. See **maneuver,** *n.*, sense 3. **2.** A maneuver of an aircraft in flight, esp. to avoid enemy gunfire or an enemy attack or to gain a tactical advantage in air-to-air combat. See **maneuver,** *n.*, sense 1.

Airman Military Record. The permanent official record (AF Form 7) of an airman containing all information about him as an individual.

Airman's Guide. 1. A CAA-AF periodical for the use of both civil and military aviators, containing radio facility charts and a directory of airfields and including information regarding hazardous conditions, restrictions in the use of airfields, and other general flight information. **2.** An unofficial handbook for noncommissioned officers and airmen containing advice to the airman and general information in regard to the AF. Also called the 'Airman's Handbook.'

airmanship, *n.* The art or skill of flying aircraft or of using aircraft tactics.

air marker. A mark or sign on the ground to give direction or location to aircraft in flight.

air marshal. A commissioned rank in the RAF and RCAF, corresponding to the rank of lieutenant general in the USAF; a person holding this rank.

air mass. A large body of air within the atmosphere having approximately uniform temperature and moisture characteristics throughout in a horizontal direction.

An air mass derives its original properties from the surface over which it forms. A *polar air mass* is formed in a cold northern region; a *tropical air mass* is formed in a region in or near the tropics.

air-mass analysis. The study of the characteristics and behavior of air masses.

air-mass fog. Any fog occurring in an air mass, in which the principal factor for formation is cooling of the air to its dew point, caused by advection, or by radiation, or by both. See **fog,** *n.*

air-mass thunderstorm. Any thunderstorm occurring within an air mass, as distinguished from a frontal thunderstorm.

air mastery. Control of the air (which see).

air materiel. Materiel provided for an air force.

In a few contexts, 'air materiel' connotes esp. aerial equipment and supplies, i.e., aircraft, aircraft equipment, air and ground navigational equipment, etc.; however, in common usage, the term means Air Force materiel, as in 'Air Materiel Command,' etc.

air materiel area. (AMA) **1.** Any one of the several areas of the US set up by the Air Materiel Command for expediting AF maintenance and the supply of AF organizations and installations within those areas. **2.** The organization that operates any one of these areas under the Air Materiel Command, comparable in echelon to a numbered air force.

The air materiel areas are part of a system. They operate in a western zone and an eastern zone. See **area depot** and **zone,** *n.*, sense 1.

This term is capitalized when used in specific reference.

air materiel area depot. An area depot.

Air Materiel Command. (AMC) A major air command of the AF that provides logistic support to the USAF.

The AMC's mission of logistic support includes (1) research and development, (2) procurement and industrial planning, and (3) supply and maintenance. As corollaries of these, the AMC provides service units for air depots and furnishes technical instruction and information as required. Headquarters AMC is at Wright-Patterson AFB. Cf. **Air Technical Service Command.**

air mechanic. An aircraft mechanic.

Air Medal. (AM) A decoration awarded to any person serving in any capacity with the AF who distinguishes himself by meritorious achievement while participating in aerial flight. See **decoration,** *n.*

The Air Medal is often awarded for flying a certain number of combat missions.

air meet. An assembly of aviators and aircraft esp. for show purposes, i.e., stunt flying, airplane races, etc.

air mile. A nautical mile by air.

air-minded, *a.* Interested in, or favorably disposed toward, aircraft and aviation; conscious of the significance of air power.

air mining. Aerial mining. Attrib., as in *air-mining mission.*

Air Ministry. A department of the British Government dealing with both civil and military aviation. See **Air Council,** sense 1.

Air Ministry Experimental Station. A British ground radar station in an early-warning system. Now *hist.*

This early-warning radar system was later known as 'Chain Home.'

air mission. 1. The objective, purpose, or duty of an aircrew or of airborne personnel sent into the air with a single, or several, aircraft. **2. a.** The action involved in achieving this objective or carrying out the duty, as in 'the air mission was a dangerous one.' **b.** The aircrew that carries out this action. **c.** An instance of carrying out this action, as in 'he had two air missions.' **3.** A duty, service, or business assigned the air arm, as distinguished from the mission of another service. **4. a.** A group of technical or operational advisers sent abroad on matters pertaining to developing air power, creating an air force, or the like. **b.** Any group of people sent somewhere by air, as on a goodwill tour.

The period of time involved in the air mission of sense 2a depends upon the point of view. From one standpoint, as in that implied by the phrase 'mission accomplished,' the air mission ends upon achieving the objective, as in dropping bombs upon a target; from another (more logical perhaps, since duration is an attribute of action rather than of purpose), the air mission continues to the moment when the aircraft are no longer airborne, as in landing at a base or in being forced down. Cf. **task,** *n.*, note.

In sense 4a, air missions to certain South American countries are under USAF jurisdictional control, administered by the Caribbean Air Command.

air movement designator. Any combination of letters and numerals assigned in accordance with an established code to a shipment of materiel or passengers as an identification and priority authorization for movement by air. Formerly called an 'air priority identification.'

air movement table. A table prepared by both air and ground commanders in planning an airborne operation, showing which air units will carry which ground units, giving the number of aircraft required, the times involved for the operation, etc.

Air National Guard. (ANG) A military force, comprising those units and personnel organized and partly maintained by the several states, territories, or District of Columbia, for which certain federal responsibility is vested in the Department of the Air Force, and which, while in the service of the United States, constitute a component of the USAF.

Members of the Air National Guard, when also members of the Air National Guard of the United States, are AF reservists, but their units, until called into the service of the US, are subject to no direct control by the USAF. Individual members on extended active duty with the Air Force are paid from ANG funds.

Air National Guard of the United States. (ANGUS) One of the two reserve components of the USAF consisting of all federally recognized units and organizations of the Air National Guard, and of all personnel of the Air National

Guard appointed or enlisted in the Air National Guard of the United States, or given temporary recognition by the Secretary of the Air Force.

The ANGUS has no existence apart from the Air National Guard, for its units and personnel are also units and members of the latter. However, since certain units and members of the ANG may not be federally recognized, ANGUS and ANG are not two names for the same thing. ANGUS is a term of convenience to identify those units and members of the ANG subject to service in the USAF under certain circumstances, but not under direct control of the USAF. Cf. **allotment,** *n.*, sense 3.

air-naval, *a.* Of or pertaining to both air and naval forces, as in *air-naval maneuvers, air-naval operations*, etc. See **air-surface,** *a.*

air navigation. The art, science, or action of plotting and directing from within an aircraft its movement through the air from one place to another.

Attrib., as in *air-navigation problem, route, school*, etc. Also **air navigational,** *a.*

air-navigation aid. 1. *Specif.* An air marker, light beacon, radar beacon, radio range, or the like, that serves to guide or orient flying aircraft. **2.** In less precise usage, any flight instrument, navigational instrument, or other device, or any practice or method, used in air navigation.

air-navigation chart. A chart for air navigation, i.e., an aeronautical chart.

Air Navigation Development Board. A board formed by agreement between the Secretary of Defense and the Secretary of Commerce for developing an integrated system of aids for air navigation and air traffic control and intended to serve aviation needs or to be integrated with an air defense system.

AirNorth (*auth abbr*). 'Allied Air Forces, Northern Europe.'

air objective chart. A chart in an air objective folder. See **target chart.**

air objective folder. A collection of air target materials covering strategic targets. See **air target material.**

An *air objective folder by area* contains material relevant to the strategically selected targets within the area covered by a given world aeronautical chart; an *air objective folder by category* contains materials relating to a given target category (as electric power installations, waterways, etc.) within a land mass specified by Headquarters USAF.

air observation. Visual observation from the air, usually distinguished esp. from aerial photographic activity. See **observation,** *n.*, note.

air observer. 1. In the US Army, a person in an airborne aircraft, normally other than the pilot, who makes reconnaissance observations, directs artillery fire, and performs other duties as required. Cf. **aircraft observer. 2.** A person, usually a high-ranking military officer, especially designated to observe and report on the conduct of military air operations.

air offensive. A sustained attack by aircraft against hostile air forces or surface targets.

An air offensive normally has two phases: First, to gain air superiority, and second, to strike at battle or strategic targets. In those instances where air superiority is already achieved, or where losses are acceptable, the term may be restricted to the second phase only. An air offensive is often understood to refer only to a strategic air offensive.

air operation. An operation carried out in the air or by an air force, including the planning and other activities that form an integral part of the air action; also *restrictive*, that part of this action that deals only with the flying phase of the action. See **air defense operation, operation,** *n.*, **strategic air operation, tactical air operation.**

air operations center. A center at air force level at which representatives of both air and ground forces exchange battle information so as to plan and organize tactical air support of ground operations, and from which the tactical air commander assigns, controls, and coordinates the tactical air effort. Also called 'joint operations center.' See **air control center,** note.

The air operations center is composed of the air-ground operations section and the combat operations section (which see under separate entries).

air opposition. 1. The opposition offered by one air force to another; the opposition of hostile airborne aircraft to friendly aircraft. **2.** The aircraft that offer such opposition.

air order of battle. The manner in which an air force is organized and disposed.

In some contexts, 'air order of battle' refers specifically to the air order of battle of an enemy or foreign nation; the enemy or foreign air order of battle is studied to determine what enemy air units exist, what units support them, and their strength, organization, and disposition.

air parity. 1. Parity between one air force and another, as in 'Russia may develop air parity with the United States.' **2.** Parity of an air force with another service.

air park. 1. A facility or installation providing parking space for aircraft. **2.** A landing and parking facility for personal aircraft within the confines of a residential area or business district. **3. a.** Formerly, in the Air Service of the A.E.F., an installation near an airdrome, used for the salvage, supply, and maintenance of aircraft; the organization manning this installation. **b.** A similar installation or organization in the US, so-named until about 1935.

air path. 1. A path made by or pursued by an aircraft in the air. See **path,** *n.* **2.** An air lane.

air patrol. A detail of airborne aircraft sent out for reconnaissance, combat, or guard purposes. See **combat air patrol.**

airphibian, *n.* An aerocar.

air photograph. An aerial photograph.

Air Photographic and Charting Service. (APCS) An organization in the Military Air Transport Service providing the AF with photographic, aeronautical charting, and with television services, except those made the specific responsibility of other AF organizations; the service provided by this organization.

air pickup. 1. An action on the ground of taking persons, cargo, or some special article into an aircraft for air transport. **2.** *Specif.* Such an action performed with a passenger or cargo aircraft on a regular run or as a part of a regular duty. **3.** The service performed in this action.

See **pilot pickup, special air pickup.** The air pickup is distinguished from the snatch pickup, where the aircraft is airborne.

air pilotage. Pilotage from an aircraft, as distinguished from pilotage from a vessel.

air plan. Any plan for the development or employment of aircraft, air power, or of an air force.

airplane, *n.*

'Airplane' is preferred to 'aeroplane' in American usage, having received official sanction in Army publications as early as 1918. It is of some linguistic interest that W. W. Skeat (1835–1912), Professor of Anglo-Saxon at Cambridge University, recommended in 1911 that the British adopt 'airplane' in preference to 'aeroplane' (see *Flight* 21 Oct 1911, p 918). By that time, however, 'aeroplane' was too firmly established in Britain to be ousted.

1. In a broad sense, any heavier-than-air aircraft supported by the dynamic reaction of air flowing over fixed or rotating plane surfaces (as distinguished from aerostats), including the piston-driven and jet airplane, the glider, helicopter, gyroplane, and the winged guided missile. **2.** In restricted senses: **a.** A power-driven aircraft having a fixed wing or an adjustable fixed wing. See note. **b.** Any winged aircraft, including the helicopter, exclusive of the glider and the winged guided missile. **c.** A landplane as distinguished from a seaplane. *Rare.* **3.** The military weapon as embodied in the use of the airplane, as in 'the airplane has changed the strategy of war.' **4.** Elliptical for 'airplane pilot' or 'airplane crew,' as in 'we signaled the airplane to land.'

Sense 2a is the usual sense meant unless context indicates the contrary. Here the airplane, either piston-driven or jet, consists normally of the airframe, the propulsion system, the instruments for control, navigation, and recording, the communication equipment, the furnishings or fixtures, and the accessories.

airplane carrier. An aircraft carrier.

airplane commander. The aircraft commander (which see) of an airplane.

airplane dart. A flechette or aerial dart.

airplane engine. Any engine (which see) designed or modified for use with an airplane.

airplane ski. Any one of several kinds of skis attached to the landing gear of an airplane to facilitate takeoff and landing on snow or ice. See **ski,** *n.*, note.

air plot. Often **airplot,** *n.* **1.** In air navigation, the procedure of first plotting an aircraft's air position (which see) and then allowing for wind effect on the aircraft to determine its actual position. Cf. **groundplot,** *n.* **2.** Sometimes *capitalized.* A department aboard an aircraft carrier where air information is collected and from which the carrier's airplanes are directed.

air pocket. An airspace marked by strong current flow which, when entered or encountered by an aircraft, causes the craft suddenly to rise or drop, esp. to drop, as if into a pocket.

air police. (AP) Often *capitalized.* The organized police within the AF charged with maintaining law and order and security in the AF.

The air police is the counterpart of the Army's military police.

airport, *n.* (aprt) A place on land or water used regularly for the takeoff and landing of aircraft that receive or discharge cargo or passengers.

'Airport' is a common designation for a municipal facility of this sort. It usually provides some supply and repair for aircraft, shelter and baggage handling for passengers, and temporary storage facilities for cargo. Cf. **port,** *n.*

air-portable, *a.* Of equipment: Readily carried in aircraft with only minor or no dismantling and reassembly.

airport beacon. A rotating light beacon of high candlepower located at or near an airport or airdrome and coded in flashes and colors to give information regarding the airport and vicinity, e.g., whether the airport is civil or military, on land or water, hazardous in some respect, etc.

Airport Development Program. A program sponsored by the US government for the construction and maintenance of airports or air bases throughout the Caribbean area, Central America, Brazil, and Liberia.

This program was implemented between Nov 1940 and Sep 1944 by contracts with Pan American Airways.

airport surface detection equipment. Radar equipment used in air traffic control, presenting the layout of the runways, taxiways, and ramps at an airport and showing all moving or stationary traffic.

airport surveillance radar. A radar set or system used in a ground-controlled approach system to detect aircraft within a certain radius of an airdrome and present continuously to the radar operator information as to the position, in distance and azimuth, of these aircraft. Usually abbreviated 'ASR.'

Airport surveillance radar does not detect or display the elevation of aircraft. It is chiefly for air traffic control in the ground-controlled approach system and is used in conjunction with precision-approach radar (which see).

air position. In air navigation, the theoretical po-

sition of an aircraft at a given moment, assuming it to have been unaffected in flight by wind. Also called 'no-wind position.'

air position indicator. A flight instrument that continuously indicates the air position of an aircraft in latitude and longitude or other coordinates. See prec.

The air position indicator utilizes pitot-static pressures and an electrical compass system, as the gyro flux-gate system, in its operation. The instrument also indicates true heading and the air mileage flown.

air power. Also **airpower,** *n.*

Trends favor spelling this term as a single word, but the more conservative two-word spelling is normally used throughout this dictionary.

1. That power that arises from man's ability to fly in a vehicle or to cause a vehicle to go through the air or through space, and to exploit in lesser or greater degree the complex relationships that result from this ability, as in 'to understand air power is to lay the foundations of peace.' See note.

In this sense, air power is essentially a phenomenon, the nature of which has certain inherent attributes or characteristics. Its full exploitation and use depend upon the soundness of man's concept of it. It emerges from three quite different abilities. The first of these is the ability to fly. The second is the ability to evolve new tactics, strategy, and methods of transport—all based upon hitherto unrealized speeds, range, mobility, and flexibility. The third is the ability to turn these first two abilities to account in political, diplomatic, military, cultural, and economic affairs.

In the first of these, the 'ability to do something in the air' (Mitchell) depends upon knowledge of certain laws of science coupled with inventiveness, adaptation of raw materials and industrial plants, development of suitable fuels, and mastery of the techniques of aircraft control, air navigation, maintenance, etc., to the end that flight is achieved with greater ease and efficiency. In the second, the ability depends upon understanding and exploiting certain dynamic relationships and principles that arise from new speeds, flexibility of movement, elimination of geographic barriers, etc. In the third, the ability, akin to the ability that gives dominion or sway to a farsighted leader, depends upon recognizing and exploiting the political, diplomatic, military, and economic opportunities opened up by the development of the first two sources of this power. See **power,** *n.*, sense 1.

2. An instance of this power as it exists in a particular nation, as determined by the development of the factors from which it derives, including military, commercial, and private aviation, as in 'air power in the US, as well as in Britain and France, emerged as individual persons, private firms, and government agencies or bodies acted either separately or together to advance aeronautical knowledge and practice.' In this sense air power may be made an instrument of national policy, exploited either in peace or in war.

3. This power adapted to military ends, i.e., the power which a nation may use in war against another nation or nations, based upon a national weapons system organized about air forces.

In this sense, 'the ability to do something in the a has special reference to the use of the national weapon system to deliver firepower through the air. As su this power helps define the objective, and provides the particular means for achieving it, as through the special capabilities inherent in an air force for mass or concentration, flexible movement, surprise, security, and delivery of firepower. This power implies the ability to use force. It is an instrument of national policy, and is small or great in proportion to the leadership and vigor of the air force, its physical equipment, its doctrines and concepts. See **strategic air power, tactical air power.** It is in this sense, as well as in sense 4, that many persons responsible for AF doctrine tend to restrict the use of the term 'air power.'

4. *transf.* That part of the military establishment of a nation made responsible as a single organization for the principal employment of this power; in the US, the United States Air Force. This sense and that of sense 3 are common in AF doctrinal literature.

In this sense, physical objects, i.e., air vehicles and facilities, together with the personnel, skills, and organization required to employ these physical objects, are identified as air power. Air power in this sense is considered as an indivisible entity and under the operational control of an air commander, the whole and each part of the whole being employed in such manner as to maintain the integrity of the whole and to provide a single instrument for operation in airspace.

5. Military aircraft or the units of an air force, as in 'air power was assembled for the strike.'

6. The air arm, as in 'the job of air power was to support ground troops.'

7. A nation having predominant strength in civilian and military aviation, as in 'the United States is both a sea and an air power.'

air pressure. 1. Either the static or dynamic pressure of air, or both. Cf. **atmospheric pressure, impact pressure. 2.** Military force or pressure brought to bear through air power.

air-pressure fuze. A concussion fuze or barometric fuze.

air priority. 1. The status of persons, mail, or materiel having precedence for transportation by air. **2.** Short for 'air priority identification.'

air priority board. An early name for an air transportation board (which see).

air priority identification. An air movement designator.

air prisoner of war. A prisoner of war belonging to the enemy air force.

Attrib., as in *air prisoner of war interrogation.* An *APWI section* is an air intelligence activity established during time of war to interrogate captured enemy air personnel and examine captured enemy documents.

air procurement district. Any of several subcommands of the Air Materiel Command; the geographical district administered by such a subcommand: See note.

Air procurement districts are responsible for the field phases of contract administration, etc. They lie within air materiel areas but are under the technical direction of the Director of Procurement and Production, Headquarters AMC.

Air Proving Ground. 1. The AF installation operated at Eglin AFB by the Air Proving Ground

Command. **2.** Short for 'Air Proving Ground Command.'

Air Proving Ground Command. (APGC) A major air command in the USAF organized primarily to determine the operational suitability of materiel by test and evaluation. See prec.

air provost marshal. (APM) **1.** *Capitalized.* **a.** A staff officer under the Inspector General, USAF, who advises on, and exercises supervision and inspection over, the maintenance of discipline, enforcement of security, and the confinement and rehabilitation of prisoners throughout the AF. **b.** The directorate headed by this officer. **2.** A name formerly given a provost marshal at wing or command level.

air raid. A bombing, strafing, or rocket attack by aircraft against a surface target, as a city, airfield, or the like.

Attrib., as in *air-raid alarm, air-raid alert, air-raid cellar, air-raid defense, air-raid drill, air-raid precaution, air-raid shelter, air-raid warden, air-raid warning,* etc.

air reconnaissance. Aerial reconnaissance.

air refueling. The refueling of an aircraft in the air by another flying aircraft. Attrib., as in *air-refueling squadron.*

Air refueling is accomplished by means of a hose or 'flying boom' sent out or lowered to connect the tanker aircraft with the aircraft being refueled.

air-refueling mission. A mission by one or more tanker aircraft for the purpose of air refueling.

air regional representative. An AF officer located in a strategic industrial area or region of the US who acts as an AF representative in administering contracts and performing related functions with the industries in the region.

An air regional representative does not negotiate with industries where there is an AF plant representative.

air request. 1. A request for air support. **2.** The call mission sent in response to this request.

air rescue. The action of searching for, rendering aid to, and rescuing personnel by aircraft wherever needed either on land or at sea. See **aircraft incident, Air Rescue Service.**

Air Rescue Service. (ARS) An AF organization under the Military Air Transport Service that provides air rescue, including search for both civilian and military aircraft in remote areas either on land or sea.

ARS has working arrangements with the US Coast Guard whereby each assists the other, both for aircraft down at sea or for ships in distress. An important function of ARS is to provide aid or rescue in distress areas, as in a flood or hurricane.

Air Research and Development Command. (ARDC) A major air command in the USAF that carries out the research and development activities required for the accomplishment of AF missions.

air reserve. A reserve force considered available for service in the USAF or in an auxiliary service; *specif.*, when capitalized, short for 'Air Force Reserve.'

Broadly defined, the air reserve includes not only reserve components of the USAF (the AFRes and the Air National Guard of the United States), but also the AFROTC, the Air National Guard, the Civil Air Patrol, and the Air Explorers, BSA.

Air Reserve Officers Training Corps. Another name for the Air Force Reserve Officers Training Corps.

Air Reserve Records Center. A center in Denver, Colorado, responsible for the custody of master personnel records on Air Force Reserve personnel not on extended active duty.

air reservist. 1. A member of the air reserve; *specif.*, a member of the AF Reserve or of the Air National Guard of the United States. Cf. **reserve officer, reserve enlisted member. 2.** *Capitalized.* An official magazine published by the Continental Air Command for members of the air reserve (in its broad sense).

air resistance. The resistance of the air against any body moving through it, as an airplane, bomb, or bullet.

air room. A place normally maintained at the headquarters of a major air command, of a numbered or named air force, or sometimes of a wing, on the current situation from which intelligence is given or presented to authorized personnel in the form of briefings, film showings, map displays, drawings, charts, written summaries, or the like. Called a 'war room' in the Army.

The air room commonly consists of at least one large room and a smaller room, fitted with sliding panels, curtains, and platforms, adapted to ready use in keeping data current. Usually all theaters of operation are covered in the displays, but special features may be emphasized. Below wing level, the air room is called 'situation room.'

air route traffic control center. A CAA facility that establishes routes and altitudes for all aircraft flying over a given control area, plots the flights of such aircraft, and otherwise operates to control air traffic over the area and insure against air collision. Cf. **military air traffic control center.**

air science. The study of air power and its employment, esp. such study conducted in a unit of the AFROTC. Used in the phrase 'Professor of Air Science.'

air scoop. A device or part mounted on an aircraft and open toward the front for taking in air during flight.

An air scoop may take in air for supply to a carburetor, for cooling an engine, ventilating a cabin, supplying air to an airship's ballonet, or for other purposes.

air scout. 1. A person who scouts in an aircraft; an aircraft used or designed for scouting. **2.** *Capitalized.* The former designation for an air explorer.

airscrew, *n.* An aircraft propeller. Chiefly *British.*

air seal. Any partition, gasket, or the like used to block off or stop the flow or passage of air, as between an aircraft engine and its accessories section.

air-sea rescue. 1. *Capitalized.* **a.** A WW II air rescue service in which the AAF, the Coast Guard, the air arm of the Navy, and other organizations cooperated to effect aid and rescue for people in an aircraft or ship disaster either on land or sea. **b.** A similar service established by the British in WW II. **2.** In a general sense, air rescue at sea.

air service. 1. *General.* The civil or military service performed or provided by the operation of aircraft or air organizations. **2.** *Capitalized.* **a.** The official designation of the air arm of the US Army between 1920 and 1926. See note. **b.** In WW I, the designation given the air arm of the A.E.F. **c.** Between 1918 and 1920, a designation covering both the Division of Military Aeronautics and the Bureau of Aircraft Production, to the former of which the Aviation Section of the Signal Corps was transferred on 21 May 1918. **3.** An organization or activity performing maintenance or supply for aircraft or air organizations.

In sense 2a, the Air Service was created by the Army Reorganization Act of 1920. See **air corps,** sense 1; also **Aeronautical Division, Aviation Section.**

air service area command. In WW II, an area command under a theater air service command.

air service command. 1. *Capitalized.* In WW II, an AAF major command responsible for the supply of AAF units and the maintenance of AAF equipment and materiel. **2.** Also in WW II, a numbered air force command or a theater command working within the framework of the world-wide Air Service Command, as in 'the XII Air Service Command' or 'the CBI Air Service Command.' Capitalized in specific designations.

See **Air Technical Service Command.**

air service group. In WW II, an AAF unit responsible for field or third echelon maintenance and repair of aircraft and other air equipment, and operated directly under an air service command without reference to a wing organization. Now *hist.*

airship, *n.* **1.** A dirigible. Attrib., as in *airship car, keel, raid, shed, station,* etc. **2.** Any man-carrying aircraft. *Obs.*

See **nonrigid airship, pressure-rigid airship, rigid airship, semirigid airship.**

airship hull. The main structure or body of an airship, esp. of a rigid or semirigid airship, consisting of the envelope or covered framework, gas cells, etc., but exclusive of the external features, as the cars, gondolas, fins, etc.

air show. 1. A display or exhibition of aircraft or a show featuring aerobatics, airplane races, or the like. **2.** Military aerial activity, as 'the General ran the air show in his area.' *Colloq.*

airsick, *a.* Affected with airsickness.

airsickness, *n.* A sickness or disorder sometimes affecting persons aboard an aircraft in flight, caused by the motions of the aircraft and characterized esp. by nausea and vertigo.

air sounding. The action of measuring or determining atmospheric pressure, humidity, etc. by means of instruments carried or sent aloft; a measurement, graph, or record resulting from this action. Cf. **aircraft sounding.**

AirSouth (*auth abbr*). 'Allied Air Forces, Southern Europe.'

airspace, *n.* Space in the air, or space above a particular surface of the earth, esp. such space considered to have a particular shape and extent for a particular purpose.

Airspace is commonly defined by the outline of the geographical area below it, and is considered to extend upward indefinitely; but it may also be considered as the limited space occupied by a formation of aircraft, or the space used in an aerial maneuver. Cf. **pancake,** *n.,* sense 2.

airspace reservation. The airspace above a designated land or water area through which flight is prohibited or restricted.

airspace restricted area. An area over which flight is restricted or prohibited.

Airspace Subcommittee. A committee functioning under the Air Coordinating Committee, responsible for coordinating the use of airspace by military, civil, or other aircraft in order to avoid or reduce conflict in such use.

The authority of the Airspace Subcommittee covers the airspace over the US, the District of Columbia, US territories and possessions, and territorial waters.

airspace warning area. A danger area (which see) beyond the three-mile limit.

airspeed, *n.* Also **air speed.** The speed of an aircraft, measured along its longitudinal axis, relative to the air through which it moves either on the ground or in the air, or in the case of a wind tunnel, relative to the stream of air in which it is immersed, esp. as indicated or determined by instruments, corrections, or calibrations, and expressed in statute miles per hour or in knots. Cf. **groundspeed,** *n.,* **relative motion.**

'Airspeed' is often modified by a qualifying word, as in the phrases *indicated airspeed, basic airspeed, calibrated airspeed, true airspeed,* and *equivalent airspeed.* See separate entries. The unqualified word 'airspeed' usually means either indicated airspeed or true airspeed and is therefore often ambiguous.

airspeed boom. A pole or pipe extending from a wing into the airflow, in which instruments are located for measuring airspeed. Used esp. in flight-testing.

The airspeed boom is a species of the instrumentation boom.

airspeed head. Any instrument or device, usually a pitot-static tube, mounted on an aircraft for receiving the static and dynamic pressures of the air used by the airspeed indicator.

airspeed indicator. A flight instrument that shows the approximate speed of an aircraft relative to the air through which it flies.

The ordinary kind of airspeed indicator operates by using the pressure difference between static and dynamic air pressures. The instrument is designed to show true airspeed under standard sea-level conditions, i.e., when atmospheric pressure is 29.92″ of mercury and temperature is 15° C, assuming no errors to inhere in the instrument or its system; but, in actual practice, corrections must be applied to compensate for instrument error and varying atmospheric conditions to determine the true, or actual, airspeed. See **airspeed, *n.***

Airspeed indicators have been, and are, calibrated in miles-per-hour; they are also being manufactured for AF use with calibrations in knots.

airspeed meter. An airspeed indicator.

airspeed tube. An airspeed head.

air squadron. 1. A squadron belonging to an air force, as distinguished esp. from a cavalry squadron or navy squadron. **2.** A flying squadron. **3.** A squadron of aircraft in the air. *Rare.*

air staff. 1. *Capitalized.* **a.** In the Department of the Air Force, a staff that advises and assists the Secretary of the AF, the Under Secretary of the AF, the Assistant Secretaries of the AF, and the Chief of Staff. See note. **b.** In Great Britain, a staff in the Air Ministry concerned with RAF policy and operations. **2.** An advisory group to a commander or government official on the use of air power. **3.** In WW II, a staff that advised an air commander, as distinguished from one that advised a ground commander.

In sense 1a, the Air Staff consists of the Chief of Staff, the Vice Chief of Staff, not more than five Deputy Chiefs of Staff, and 'such other members of the Air Force and such civilian officers and employees in or under the jurisdiction of the Department of the Air Force as may be assigned or detailed under regulations prescribed by the Secretary of the Air Force' (*Air Force Organization Act of 1951*).

airstart, *n.* An act or instance of starting an airplane's engine while in flight.

air station. 1. A Naval air station. **2.** *Aerial Photog.* The point of an aerial camera above the surface at the instant of a given exposure. **3.** An airdrome.

See **Air Force station, station, *n.***

air strategy. 1. A general strategy by which a nation seeks to achieve its objectives, either in peace or war, primarily through employment of air power, as in 'Soviet power cannot be restrained by a surface strategy except in a few isolated places, instead it must be curbed by an air strategy,' or 'the air strategy adopted has as one of its aims the encouragement of friendships among Asiatic peoples by a demonstration of how air power can increase trade.' **2.** The strategy of an air commander, as in 'his air strategy was to build and train a guided-missile force so that a counterblow could be immediately delivered.'

airstream, *n.* A stream or flow of air, esp. the relative stream of air set up around or against an aircraft in flight, or the stream caused by the revolving propellers of an aircraft.

airstream engine. An engine that develops thrust from a rearward ejection of air. Now *rare.* Cf. **thermal jet engine.**

air strike. An attack on a surface target by aircraft. See **strike,** *n.*

airstrip, *n.* A land, ice, or snow surface adapted in its unimproved state, or subjected to a ready type of improvement, for the takeoff or landing of aircraft, and usually located in a forward area or at an airhead, and having minimum improvements and facilities.

Often called 'strip' (which see, sense 2). An airstrip is considered to include any aprons, shoulders, gradings for drainage, or other like improvements, as well as the actual runway of the landing strip.

air superiority. That superiority in air power or air control, local or general, held when an air force has greater combat effectiveness than that of an opposing air force, esp. if the degree of this superiority permits the conduct of air operations without prohibitive interference by the opposing air force.

Air superiority technically covers several degrees of greater combat effectiveness than an enemy possesses, from bare superiority up to and including air supremacy (which see). See **absolute air superiority, absolute command of the air, complete air superiority, defensive air superiority, general air superiority, local air superiority**; also **air freedom, control of the air.**

air superiority mission. A mission flown with the primary purpose of attaining or maintaining, or helping to attain or maintain, air superiority by destroying enemy aircraft or air installations.

air-supplied, *a.* Furnished with supplies delivered by aircraft. Said of a place, force, unit, etc.

air supplies. *pl.* Supplies for an air force.

air supply. Supply by air, i.e., the delivery of supplies and equipment, as food, ammunition, medicine, weapons, or other materiel by aircraft; the activity involved in this delivery; any organization engaging in this activity. Cf. **combat air supply.**

The last action in air supply may be by parachute, by freedrop, or by airlanding.

air support. 1. The support or aid given by air units or forces to surface forces or other air forces, as through reconnaissance, air supply, close air support, interdiction, or any other air operation. **2.** *Specif.* Such support or aid provided surface forces under circumstances either where both air and surface forces seek to achieve com-

mon objectives by cooperative action, or where surface objectives are not in conflict with air objectives; hence, short for 'close air support,' 'direct air support,' or 'logistic air support.' Attrib., as in *air-support aircraft*, *air-support party*, etc.

In sense 2, 'air support' has sometimes been misinterpreted to suggest that ground strategy determines the nature and the timing of the air-ground activity. The airman's view, however, is that a general strategy is the determining factor and that the air-ground activity is essentially one of cooperation. To emphasize this view, such terms as 'air cooperation,' 'air cooperation mission,' 'army cooperation aircraft,' 'close-cooperation mission,' and 'tactical air command' have been used instead of 'air support' or its combinations. Most of these terms, however, have proved somewhat forced, and 'air support' has survived in the specific sense above. In all circumstances of air support, command of AF units remains with the air commander.

See **close air support, direct air support, general air support,** and **support,** *n.* See also **air support command, tactical air command.**

air support command. A name used in early WW II to designate one of the major subdivisions of an air force charged with the air support of Army units. Now *hist.*

This designation was replaced in the spring of 1944. See **tactical air command,** sense 3.

air-support party. A tactical air control party.

air supremacy. That degree of air power or air control, local or general, held when an air force can impose its will upon any hostile air force at any time or any place within the realm of control; the highest degree of air superiority.

'Air supremacy' implies the existence of a hostile but ineffective air force; if no such force exists, 'control of the air' is preferred. See **air superiority,** note.

air-surface, *a.* Of or pertaining to both air and surface forces, as in *air-surface cooperation*, *air-surface operation*, *air-surface team*, etc. See **surface,** *n.*, note, and cf. **air-ground,** *a.*, **air-naval,** *a.*

air-surface code. An air-ground liaison code.

air surgeon. 1. Sometimes *capitalized.* A surgeon in the AF, as distinguished from one in the Army or Navy. **2.** A surgeon on the staff of a major air command. *Loose* usage. See **surgeon,** *n.*, sense 2. **3.** *Capitalized.* The Surgeon General, USAF. *Loose* usage. **4.** *Capitalized.* The senior surgeon for the air forces within the AAF, or his office.

Air Surgeon General. An incorrect title for the Surgeon General, USAF.

air surveillance. The systematic observation of the air or of a given sector of airspace by electronic, visual, or other means for the purpose of locating aircraft or guided missiles, tracking them, and reporting whatever data is obtained.

airswinging, *n.* The action of flying an airplane on different headings during flight, to carry out compass swinging.

Air Tac. An inversion and shortening of 'Tactical Air Command.'

air target material. Usually *pl.* Those materials such as photographs, charts, mosaics, intelligence digests, radar navigation guides, weather reports, etc., prepared for the planning, training, or conduct of air operations against one or more specific targets.

These materials are assembled into target dossiers, where they become available for selected use in making up objective folders and combat mission folders. Their assemblage is accomplished usually in accordance with established procedures and specifications.

air task force. A force made up of aircraft of different types and capabilities, with appropriate personnel, placed temporarily under a single air commander to carry out a precisely defined operation or mission. Cf. **organization,** *n.*, note.

air technical intelligence. Intelligence developed from the study of the aircraft, aerial equipment, air force materiel, or antiaircraft weapons of an enemy or foreign nation; any organization producing such intelligence. See **crash intelligence, technical intelligence.**

Air Technical Service Command. An AAF command that consolidated in August 1944 the functions of the Air Service Command and the Materiel Command. *Hist.*

This command was redesignated the Air Materiel Command on 9 Mar 1946.

air terminal. 1. An airport, city, or other geographical place considered to mark a place where aircraft are landed and serviced. **2.** An airline terminal.

In sense 1, the air terminal is a stopping point, but not necessarily a turnaround point.

air-to-air, *a.* Used or occurring between or among aircraft in the air, as *air-to-air bomb*, *air-to-air communication*, *air-to-air firing*, *air-to-air guided missile*, *air-to-air gunnery*, *air-to-air rocket*, etc. See following entries.

air-to-air, *adv.* Between or among aircraft in flight, as in 'the missile can be used air-to-air.'

air-to-air bombing. The action of dropping bombs upon flying aircraft.

air-to-air combat. Aerial combat.

air-to-air refueling. Air refueling.

air-to-ground, *a.* Used or occurring between aircraft and the ground, as *air-to-ground communication*, *air-to-ground gunnery*, *air-to-ground interdiction*, *air-to-ground rocket*, etc.

air ton mile. A cargo ton mile, with reference to aircraft.

air torpedo. An aerial torpedo (in both senses).

air-to-surface, *a.* Used or occurring between aircraft and the surface, as *air-to-surface communication*, *air-to-surface missile*, etc. See **surface,** *n.*, and cf. **air-to-ground,** *a.*

air-to-surface-vessel radar. A term adopted from the British for an airborne sea-search radar.

air traffic. **1.** The flow of aircraft within a given airspace, or the traffic of aircraft on an airdrome, or a combination of these. **2.** The passengers, cargo, mail, or baggage carried by aircraft.

air traffic clearance. A verbal authorization for an aircraft or flight of aircraft to proceed under specified conditions within a control zone or control area, used to prevent collision with other aircraft flying at known altitudes along known paths.

An air traffic clearance may supplement an aircraft clearance, and may be given before takeoff or while in flight.

air traffic control. (ATC) **1.** The control of air traffic to promote its safe, orderly, and expeditious movement. **2.** Usually *capitalized*. An activity providing this service.

air traffic control center. An air route traffic control center or military air traffic control center.

air traffic control clearance. An air traffic clearance.

air traffic controller. An aircraft controller (which see) responsible for providing air traffic control. Often shortened 'controller.'

air traffic control radar. Any radar set or system used for air traffic control, as an airport surveillance radar, area control radar, or precision approach radar. See separate entries.

Air Training Command. (ATC) A major air command with headquarters at Scott AFB, Illinois, having the mission of providing training for AF officers and airmen.

The Air Training Command provides training that includes basic military training, aircrew and flying training, administrative and technical training, etc.

air transport. **1.** The transportation or conveyance of cargo or personnel by aircraft, as distinguished from surface or ground transport by other vehicles or vessels. **2.** A transport aircraft, **3.** An organization, service, or activity providing air transport.

air transportability. The ability or capability of being readily and easily transported by aircraft. Said of troops, equipment, etc.

air-transportable, *a.* Having air transportability. See next.

air-transportable unit. A ground unit trained and equipped for ready and easy movement by air, distinguished esp. from an airborne unit.

air transportation. **1.** Air transport (sense 1). **2.** Aircraft used as a means of transportation.

air transportation board. Sometimes *capitalized*. An agency set up by an Army, Navy, or AF commander in a designated overseas area to provide an effective and equitable distribution and utilization of the available air transportation of the Military Air Transport Service. Formerly called an 'air priority board.'

Air Transport Command. A name used in WW II to designate (a) an AAF command (Mar 1942) later called the Troop-Carrier Command, and (b) the successor of the Ferrying Command, redesignated in June 1942. *Hist.*

The latter command continued after the National Security Act of 1947, but was merged into MATS in May 1948.

air-transported troops. Ground troops transported to a combat area by aircraft and air-landed.

In some special contexts, 'air-transported troops' is restricted to mean those troops transported to the combat area by powered aircraft, as distinguished from gliders. See **airborne troops,** note.

air transport wing. An AF wing in which the primary mission group is organized and equipped for air transport.

air troops. **1.** Airborne troops. **2.** The military personnel of an air force. *Obs.* in the AF.

air umbrella. Airplanes in the air providing cover over other airplanes or over a force, place, or operation on the surface.

air umpire. An umpire for an air maneuver or for the air aspects of a joint maneuver. See **maneuver,** *n.*

air unit. **1.** An Air Force unit (sense 1). **2.** A formation or element of aircraft in flight.

Air University. (AU) A major air command with headquarters at Maxwell AFB, Alabama, which functions as an AF doctrinal, educational, and research center.

The principal components of the Air University are the Air War College; the Air Command and Staff College; the School of Aviation Medicine, USAF; the Institute of Technology, USAF; the Air Force Reserve Officers Training Corps; the Extension Course Institute, USAF; and the Research Studies Institute. The Air University Library is the principal library of the USAF.

air vane. A vane that works in a flow of air, as distinguished from a jet vane.

air vector. In air navigation, a vector representing the true heading and true airspeed of an aircraft, and forming a part of the wind triangle.

air vehicle. Any object that by virtue of lift obtained by its own buoyancy in air, or by the dynamic reaction of air over and around its surfaces, or by its reaction to a jet stream, goes through the air as a carrier of something.

This term covers aircraft of all types when considered as vehicles, but emphasizes the inclusion of the rocket or ballistic missile in the category when they are considered as the carriers of a warhead or other payload. See **aircraft,** *n.*, note.

air vice marshal. A commissioned rank or person in the RAF and RCAF, corresponding to major general in the USAF.

air war. That aspect of war carried on with the weapons of air power.

Air War College. (AWC) A school of the Air University charged with the schooling of senior officers for high command and staff duty, and with the development of doctrine on the broad use of air power.

air warfare. 1. Warfare in which strategic and tactical doctrines of air power are applied. **2.** Warfare making use of the weapons of air power, i.e., airplanes, bombs, etc.

air warning system. A system for warning of hostile aircraft approaching a defended area.

An air warning system may include radar for detecting aircraft, aircraft spotters, communication facilities, etc. See **aircraft control and warning.**

airway, *n.* A path or route in the air designated by proper authority as suitable for air traffic. See **civil airway.**

An airway is normally provided with air-navigation aids, as radio ranges, light beacons, etc.

airway beacon. A rotating light beacon established along an airway to indicate the location of the airway.

Airway beacons are normally provided with course lights. See **course light.**

Airways and Air Communications Service. (AACS) A service under the Military Air Transport Service: See note.

This service provides (1) facilities for ground (point-to-point) and ground-to-air communication and air-navigation aids along airways and air routes, (2) military air traffic control, and (3) other special communication facilities or systems as may be authorized by the Chief of Staff, USAF.

airway station. A communication installation established to communicate with aircraft along an airway, receive position reports, and relay such reports to an air traffic control center. Also called 'airways station.'

air weapon. 1. The military power that inheres in an air force, as in 'he did not understand the air weapon'; also an air force. **2.** Also applied to a military aircraft, guided missile, or the like used as a weapon. **3.** A weapon used by an aircraft, as a bomb, machine gun, etc.

Air Weather Service. (AWS) A service under the Military Air Transport Service providing meteorological service primarily for the Armed Services.

airwork, *n.* In flying training or practice, that flying comprising maneuvers or performances, as glides, climbs, stalls, eights, etc., and such straight and level flight not done in pattern work (which see).

airworthy, *a.* Of an aircraft: Fit and safe for flight. Hence, **airworthiness,** *n.*

AIT (*auth abbr*). 'Automatic Information Test.'

AJ (*abbr*). 'Antijamming.'

AJ (*code prefix*). 'Air Force Reserve and USAF Occupational Therapist' when used with a service number.

aja (*abbr*). 'Adjacent.'

AK (*code prefix*). 'Coast and Geodetic Survey Officer' when used with a service number.

Akron, *n.* A large rigid airship built for the Navy by Goodyear, which was commissioned in 1931, and after some 1,500 hours of service crashed into the sea off the New Jersey coast, 4 April 1933.

This airship displaced 6,500,000 cubic feet, and was 785 feet long, 133 feet in diameter. It carried a trapeze for the landing of airplanes, and had a hangar for five planes.

AL (*code prefix*). 'Female Air Force Reserve and USAF Officer' when used with a service number.

A/L (*abbr*). 'Airlift.'

Al (*auth abbr*). 'Allied.'

Alamogordo bomb. The first atomic bomb detonated 16 July 1945 at Alamogordo, New Mexico. Sometimes called the 'Trinity bomb.'

alarm bell. *Specif.* A bell used in certain aircraft to signal the crew and passengers in emergencies, esp. for bailout, ditching, or crash landing.

Alaskan Air Command. (AAC) An AF major air command with the mission of organizing and conducting the air defense of Alaska with appropriate support.

Albatros D-5. A German WW I single-engine, single-seated biplane used as a scout-fighter.

Albatross, *n.* A popular name for the SA-16A or the UF-1.

Albrook Air Force Base. An AF base at Balboa, Canal Zone, named for Lieutenant Frank P. Albrook, killed in a plane crash in 1924.

ALCO (*abbr*). 'Airlift Liaison Coordination Officer.'

ALCorCen (*auth abbr*). 'Air Logistics Coordination Center.'

alcu (*abbr*). 'Altocumulus.' See **Ac** (*abbr*).

ALD (*auth abbr*). 'At a later date.'

Aldis lamp. A flashlight with a very narrow beam, often colored, visible only from the point at which directed.

Used esp. to signal from aircraft to aircraft.

Aldis sight. A WW I telescopic gunsight developed for fighter planes and mounted through the windshield.

alert, *n.* **1.** A state of readiness against impending danger, or for going into action. Hence, 'to be, or stand, *on alert*,' or 'to be *at the alert*.' **2.** The time that passes when on alert. **3.** The warning signal for an alert.

Attrib., as in *alert hut, alert plane, alert shack.* Cf. **air alert, ground alert, red alert, white alert, yellow alert.**

alert, *v. tr.* **1.** To warn *personnel*, as of an air mission, or of an impending air attack. **2.** To notify

a *person* or a *unit* of an impending action, as of movement overseas.

alert crew. A crew alerted to perform specified duties if called upon.

alert room. A room, usually on the flight line, where alerted aircrews wait.

Alfa (*code*). An authorized word for the letter 'A,' used in transmitting messages when a possibility of a misunderstanding exists. Cf. **Able** (*code*).

The following are the authorized code words, listed in order, for each letter in the alphabet: Alfa, Bravo, Charlie, Delta, Echo, Foxtrot, Golf, Hotel, India, Juliet, Kilo, Lima, Mike, November, Oscar, Papa, Quebec, Romeo, Sierra, Tango, Uniform, Victor, Whisky, Xray, Yankee, Zulu.

ALG (*abbr*). 'Advanced landing ground.'

alight, *v. intr.* Of aircraft: To come down safely on land or water. Said particularly of seaplanes alighting on water. Cf. **land,** *v.*

all-clear, *n.* An all-clear signal.

all-clear signal. 1. A signal that an air raid has ended. **2.** A signal from a control tower that an airplane is free to take off or land.

Allied, *a. Capitalized.* Belonging to the Allies; comprised of representatives of the Allies; issued to members of the Allies.

Used commonly in WW II, as in *Allied agency, Allied air, Allied Air Force, Allied base, Allied Control Council, Allied equipment, Allied fighter, Allied nation, Allied pilot, Allied strategy,* etc.

Allied Forces. *Specif.* The armed forces of the Nato countries, esp. as used in such phrases as 'Allied Forces, Mediterranean,' 'Allied Forces, Northern Europe.'

Allies, *n. Specif.* **1.** The coalition of nations that fought against the Central Powers in WW I. **2.** The coalition of nations that fought against the Axis Powers of WW II. **3.** The members of NATO.

In senses 1 and 2, see **World War I** and **World War II.**

Allison, *n.* Short for 'Allison engine,' produced by the Allison Division of General Motors Corporation.

In WW II, the best known of these engines were liquid-cooled, in-line engines, used in the P-40 end P-51. Since the war, the best known Allison engines are the J-33 series, the J-35 series, the T-38, and the T-40.

all-jet, *a.* **1.** Of airplanes: That rely entirely upon jet engines for thrust. **2.** Of an air force: Equipped entirely with jet aircraft.

allocate, *v.* (aloc) *tr.* To give or apportion a definite quantity or number of *supplies, personnel spaces, funds, units* or *people* for a given purpose or to an organization.

allocation, *n.* (aloc) **1.** The people, spaces, funds, or the like that are allocated. **2.** The action or process of allocating. Attrib., as in *allocation system.*

allot, *v.* (alot) *tr.* To make an *allotment;* to distribute a *portion.*

allotment, *n.* (alot) *Specif.* **1.** A portion of the pay or allowances of an officer or airman, active or retired, paid, or to be paid, to an allottee. **2.** A specific authorization of personnel to a command or other unit. See **bulk allotment, manpower authorization voucher. 3.** An authorization of a unit to a state, territory, or the District of Columbia, to be organized by the state, territory, or District as a part of the Air National Guard. **4.** *Fiscal.* An authorization to incur obligations within specified limits under statutory provisions. **5.** The action of making funds available under such authorization.

In sense 1, allotments are normally voluntary, but sometimes in the case of Class E and Class Q allotments, they may be compulsory. The classes are: *Class B,* for the purchase of US savings bonds; *Class D,* for the payment of premiums on US Government Life Insurance; *Class E,* to a fiduciary, firm, government department or office, or to an individual, for savings, payment of debt, or indirect support of a dependent; *Class G,* an emergency allotment of a single payment made to dependents of officers and airmen who, because of their sudden departure from permanent duty stations, have not made other necessary financial arrangements; *Class N,* for the payment of premiums on National Service Life Insurance; *Class Q,* to the dependent or dependents for whom an airman is claiming quarters allowance; *Class QP,* to a dependent parent.

allotment form. A form on which an authorization for allotment is made out.

all-out, *a.* Conducted with all possible energy and available resources. Said of an assault, offensive, war, or the like.

allowable cabin load. 1. The load, either of cargo or passengers, which an aircraft is considered capable of airlifting safely over a given route under prescribed conditions. Expressed in terms of weight. **2.** For passenger flights, the number of available passenger seats which can be occupied when the aircraft is to fly under prescribed conditions.

In sense 1, the weight of the allowable cabin load is the difference between the allowable gross takeoff weight of an aircraft and the operating weight and weight of the gasoline load combined. See **critical hop.**

allowable cargo load. An allowable cabin load for cargo.

allowable engine operating time. The maximum number of hours for an airplane engine to operate before being replaced. Cf. **engine life.**

allowable gross takeoff weight. The gross weight of an aircraft, including the operating weight, fuel weight, and load weight, with which an aircraft is permitted to take off.

allowance, *n.* (alw) *Specif.* **1.** A monetary amount paid an individual in lieu of furnished quarters, subsistence, a railroad ticket, or the like; a commutation. **2.** A prescribed amount of equipment or supply items for an individual or unit.

In sense 1, an allowance is an addition to the items of base pay, flying pay, or overseas pay. See **basic allowance**

for quarters, basic allowance for subsistence, clothing monetary allowance. In sense 2, see **aircraft allowance, table of allowance.**

all-up weight. Gross weight; the total weight of an aircraft with its crew, fuel, equipment, cargo and passengers.

allways fuze. An impact fuze designed to function regardless of the direction in which it makes contact with the target.

all-weather, *a.* Usable or serviceable under any condition of weather or visibility: See note.

1. Of airdromes, runways, or associated facilities: Serviceable, or providing service, under all conditions of weather and visibility. 2. Of aircraft: Operational under all conditions of weather and visibility; *specif.*, equipped with radar for operating against enemy targets. 3. Of weapons, equipment, or the like: Usable or serviceable under adverse as well as favorable weather conditions. 4. Of an air force or airline: Having the equipment, installations, and facilities to allow operation of its aircraft under any weather condition. 5. Of flying or flying operations: Conducted in any kind of weather or condition of visibility; in a restricted sense, conducted with radar-equipped aircraft.

all-weather fighter. A fighter or interceptor equipped with radar to detect and destroy hostile aircraft without dependence upon direct visual contact, and provided with instrument-flying equipment and other equipment for operating under varying weather conditions.

This fighter is normally a multiplace airplane. See **night fighter.**

all-weather hangar. A climatic hangar. See **hangar,** *n.*, sense 2.

all-wing, *a.* Of an airplane: Designed and built as a single wing, without conventional fuselage or empennage.

ally, *n. Specif.* A nation joined with another nation or other nations for the purpose of prosecuting a war against a common enemy, esp. a member of the coalition that fought against Germany either in WW I or WW II. See **Allies,** *n.*

almanac, *n.* A publication containing astronomical and other related data arranged by days, weeks, and months. See **Air Almanac.**

almt (*abbr*). 'Allotment.' See **alot** (*auth abbr*).

ALO (*abbr*). 'Air liaison officer.' See **AirLO** (*auth abbr*).

aloc (*auth abbr*). 'Allocate' or 'allocation.'

aloft, *adv.* In the air above the earth.

alot (*auth abbr*). 'Allot' or 'allotment.'

ALP (*abbr*). 1. 'Air liaison party.' 2. *auth.* 'Ambulance loading point.'

alpha (*auth abbr*). 'Alphabetical.'

alphabet code. A list of short, easily distinguished words used to identify letters in a radio or telephonic message. See **Alfa** (*code*).

Sometimes mistakenly called a 'phonetic alphabet.'

alpha hinge. A drag hinge.

alpha particle. A particle, with a positive charge of 2, ejected at high speed from certain radioactive elements or isotopes, and identical with the nucleus of helium.

Alpha particles produce harmful physiological effects.

alpha radiation. The radiation of alpha particles.

Alsos, *n.* [Gk. 'grove.'] Short for 'Alsos Mission.'

This mission (fall 1943 to fall 1945) was established to learn the progress of Germany in the field of nuclear physics. It was composed of American military men and scientists, and named for Maj Gen L. R. Groves, head of the Manhattan District.

alst (*abbr*). 'Altostratus.' See **As** (*abbr*).

alt (*auth abbr*). 'Altitude.'

alternate, *a.* (altn) 1. *Specif.*, as used in a flight plan: Designating an airfield or airport (civil or military) to be used under instrument flight conditions in case landing at the point of first intended landing or destination is inadvisable. 2. Designating an airdrome, airport, or the like not normally in use but serviceable for emergency purposes. 3. Alternative. Said of a route, target, etc.

When applied to an air base or airfield, 'alternate' and 'auxiliary' are sometimes used without distinction. 'Alternate,' however, has the notion of being a substitute for, whereas 'auxiliary' suggests supplementing or helping.

alternate communications facility. Any communications equipment or device, including radio, landlines, pyrotechnics, visual markers, etc., used when regular facilities are not used for one reason or another.

alternating current. An electrical current which reverses direction at regularly recurring intervals.

alternative, *n.* 1. An opportunity for choosing between two or more courses of action. 2. Any one of the different courses of action open to choice.

Strictly speaking, an alternative offers opportunity for choice between only two courses of action, but common usage has extended the word's application, as in 'the general was not yet committed; he had several alternatives.'

alternator, *n.* An alternating current generator.

altigraph, *n.* An altimeter that records its readings on a graph.

altimeter, *n. Specif.* A flight instrument that indicates altitude above a given reference level, as above the sea or ground.

Altimeters, for all practical purposes, are of two kinds. One uses an aneroid barometer; the other uses radio or radar waves. See **absolute altimeter, pressure altimeter.**

altimeter-calibration standard atmosphere. An altitude-pressure table computed from the NACA standard atmosphere, and used in calibrating aeronautic instruments, such as altimeters.

altimeter setting. A pressure reading set into an altimeter to adjust for a given barometric pressure; the setting of the altimeter to adjust for this pressure.

'Tower said the altimeter setting was 29.96; the pilot made the setting and began to let down.'

altitude, *n.* (alt) **1.** The elevation of an object above a given level, as above the sea or ground, esp. as indicated or determined by instruments, corrections, or calibrations, and expressed in linear measure. **2.** The vertical distance between any point in the atmosphere or air and a reference point on the earth's surface. **3.** Angular altitude, expressed in degrees, esp. as used in celestial navigation. **4.** By extension of sense 2, a factor in the operation of aircraft through the air: See note. **5.** Short for 'indicated altitude,' 'calibrated altitude,' etc.

In senses 1 and 2, altitude is not always subject to exact measurement. Hence distinctions are made in vocabulary to indicate differences in ways of measurement, as in *calibrated altitude, density altitude, indicated altitude, pressure altitude,* and *radar altitude.* See separate entries. Likewise, to avoid ambiguity as to the level above which the measurement is made, distinctions are made, as in *absolute altitude, pressure altitude,* and *true altitude.*

In sense 4, the term is used with distinguishing attribs., as in *bombing altitude, critical altitude, minimum altitude,* etc.

Also in sense 4 the term is used variously, as in: *To gain, lose,* or *maintain altitude,* to go up or down or fly level; *to struggle for altitude,* to do everything possible to ascend; *to demonstrate an airplane's altitude,* to demonstrate the airplane's ceiling; *to go off altitude,* to fly up or down involuntarily; *to hit,* or *climb to, altitude,* to reach the desired or assigned altitude; *to be at altitude,* to fly at desired or assigned altitude.

In an effort to pin down what are essentially relative terms, AFM 400–5 (1950) makes the following distinctions: *Minimum altitude* from 0 to 2,000 feet above the surface; *low altitude* from 2,000 to 5,000 feet; *medium altitude* from 5,000 to 13,500 feet; *high altitude* from 13,500 to 18,000 feet; *maximum altitude* from 18,000 feet upward. On the other hand, the *Dictionary of US Mil Terms for Joint Usage* (1955) shows the following standards for bombing altitudes: *minimum,* below 900 feet above the surface; *low,* between 900 and 8,000 feet; *medium,* between 8,000 and 15,000 feet; *high,* over 15,000 feet. Cf. **height,** *n.*

altitude alkalosis. An alkalosis, i.e., a condition of increased alkalinity in the blood and tissues, brought on by exposure to high altitudes.

This condition results from increased loss of carbon dioxide from the blood when rapid breathing to obtain oxygen increases ventilation.

altitude alkaluria. A symptom of altitude alkalosis indicated by the urine becoming alkaline.

altitude anoxia. Technically, an absence of oxygen in the blood at high altitudes, but loosely used for 'altitude hypoxia.'

altitude barrier. 1. The upper limit in the atmosphere beyond which the oxygen supply is insufficient for power plants using oxygen, or the air is too thin to react upon the surfaces of an airplane. **2.** The aeropause.

altitude chamber. A low-pressure chamber.

altitude circle. Any circle on the celestial sphere, parallel to the celestial horizon.

altitude correction. An altimeter correction made for a nonstandard atmosphere.

altitude decompression sickness. Decompression sickness brought on by flying at high altitudes without benefit of special equipment. Usually called 'decompression sickness.'

altitude hyperventilation. Excessive ventilation of the blood induced by rapid or deep breathing at high altitudes.

altitude hyperventilation tetany. Altitude tetany.

altitude hypoxia. An insufficiency of oxygen in the blood at high altitudes, resulting from a proportional increase of water vapor in the air sacs of the lungs. Usually called 'hypoxia.'

Body fluids, under decreasing oxygen pressure at high altitudes, are the source of the water vapor.

altitude indicator. Any device for indicating altitude.

altitude indoctrination. Indoctrination in procedures and behavior for flight at high altitudes.

altitude intercept. A celestial intercept.

altitude meter. An early name for an altimeter.

altitude mixture control. An automatic device on the carburetor for keeping the air-fuel ratio the same by weight at different altitudes.

altitude sickness. Any sickness brought on by flying at high altitudes, as hypoxia, alkalosis, or altitude tetany.

altitude suit. A pressure suit or a pressurized suit.

altitude test chamber. A low-pressure chamber used for testing.

altitude tetany. Tetany marked by muscular spasms, esp. of the extremities, brought on by exposure to low atmospheric pressure.

altitude tolerance. The tolerance of an individual for the stresses of a low atmospheric pressure, as at high altitudes.

altn (*abbr*). 'Alternate.'

altocumulus, *n.* A solid or patchy layer of cumuliform cloud with ice or water content and composed of rather flattened globular masses separated into elements arranged in groups, lines, or waves. Abbreviated 'Ac.'

This cloud occurs at altitudes between 6,500 to 20,000 feet.

altostratus, *n.* A stratiform cloud veil having an ice crystal content and occurring at altitudes between 6,500 to 20,000 feet. Abbreviated 'As.'

This cloud may be of varying thickness, which sometimes gives it a mottled appearance.

alt set (*abbr*). 'Altimeter setting.' *British.*

Altus Air Force Base. An AF base at Altus, Oklahoma, named for the city.

aluminum, *n.* A strategic metal used in the manufacture of airplanes, landing mats, etc.

alveolar equation. A relationship between the component gas and moisture fractions in the air cells of the lungs to the barometric pressure at a given altitude.

As the barometric pressure decreases, the proportion

of water vapor in the air cells increases. Cf. **altitude hypoxia.**

alw (*auth abbr*). 'Allow' or 'allowance.'

alws (*abbr*). 'Allowance.' See prec.

AM (*abbr*). **1.** *auth.* 'Air medal.' **2.** *auth.* 'Amplitude modulated' or 'amplitude modulation.' **3.** *auth.* 'America.' **4.** *auth.* 'Aviation structural mechanic.' **5.** 'Airplane mechanic.'

AM (*code prefix*). 'Air Force Reserve and USAF Physical Therapist' when used with a service number.

A/M (*abbr*). 'Air Marshal.'

AMA (*auth abbr*). 'Air Materiel Area.'

Amarillo Air Force Base. An AF base at Amarillo, Texas, named for the city.

AMAS (*auth abbr*). 'American Military Assistance Staff.'

AMATC (*auth abbr*). 'Air Materiel Armament Test Center.'

amaurosis fugax. An irregular term for 'blackout' (sense 1).

amb (*auth abbr*). 'Ambulance' or 'ambassador.'

ambient, *a.* Surrounding, encompassing, as in *ambient air, ambient temperature,* etc.

ambt (*auth abbr*). 'Ambulant' or 'ambulatory.'

ambulance, *n.* (amb) **1.** A vehicle for carrying the wounded, sick, or injured. **2.** Attrib., as in *ambulance aircraft, ambulance driver, ambulance glider.*

ambulatory patient. A patient able to walk.

AMC (*auth abbr*). **1.** 'Air Materiel Command.' Used as an attrib. **2.** 'Army Medical Center.'

AMD (*auth abbr*). 'Air movement designator.'

AmdlEvac (*auth abbr*). 'Aeromedical evacuation.'

AME (*abbr*). 'Aviation Medical Examiner.'

amecz (*auth abbr*). 'Antimechanized.'

AMedS (*auth abbr*). 'Army Medical Service.'

amend, *v.* (*amnd*) *tr. Specif.* To correct, add to, or otherwise modify an *order, plan,* or the like. Hence, **amended,** *a.*, **amending,** *a.*

American, *a. Specif.* **1.** Of or pertaining to the US, as in *American Air Almanac* (see **Air Almanac**), 'American air power,' 'American bomber,' etc. **2.** Of or pertaining to the North American continent, as in 'American arctic.' **3.** Of or pertaining to the Western Hemisphere, as in 'Inter-American Defense Board.'

American Campaign Medal. A US military decoration awarded persons under certain specified conditions for service within the American Theater between 7 December 1941 and 2 March 1946.

American Defense Service Medal. A US military decoration awarded persons who entered military service under orders to active duty for a period of 12 months or more between 8 September 1939 and 7 December 1941.

American Expeditionary Force. The American armed forces sent to Europe and other fronts in WW I.

American Theater. A theater of war of WW II that included Canada, the continental United States, the Caribbean, and Latin America.

Both Greenland and Alaska are excluded.

American Volunteer Group. The air force made up of volunteer Americans which, under the command of Claire Chennault, aided the Nationalist Chinese against the Japanese between the summer of 1941 and the spring of 1942. Abbreviated 'AVG.'

Claire Chennault, who rose to the rank of major general, became the commanding general of the AAF Fourteenth Air Force in China organized after American entry into WW II.

AMES (*abbr*). 'Air Ministry Experimental Station.' *Hist.*

AMG (*auth abbr*). 'Allied Military Government of Occupied Territory.'

AMGOT was the predecessor of this abbreviation, esp. before 1943, when it was often written and pronounced 'Amgot' and used as a noun.

amidship, *adv.* Also **amidships.** In the middle of an aircraft.

AmInd (*auth abbr*). 'American Indian.'

AML (*auth abbr*). 'Aeromedical Laboratory.'

AMM (*abbr*). 'Air-mining mission.'

ammeter, *n.* An instrument for measuring electric current in amperes.

ammeter shunt. *Electricity.* A shunt attached to an ammeter to permit measurement of the current.

ammo (*auth abbr*). 'Ammunition.'

ammonium picrate. Explosive D (which see).

ammunition, *n.* (ammo) **1.** A generic term for certain composite objects or substances used up or expended, or intended to be used up or expended, in the process of inflicting damage (or intended damage) upon the enemy or a practice target, or in the process of use in military pyrotechnics: See note. **2.** In a restricted sense: Cartridge or shell ammunition for guns, as distinguished from bombs, mines, grenades, or the like.

In its broad sense (sense 1), ammunition embraces (1) certain missiles not projected by gunfire, as stones, arrows, aerial bombs, or rockets; (2) certain packaged explosives, chemical agents, or biological agents, as mines, hand bombs, or incendiaries; (3) pyrotechnics; (4) cartridge or shell ammunition. See **aircraft ammunition.**

ammunition belt. A string of cartridges used for feeding a machine gun; a belt for cartridges.

A machine-gun belt may consist either of linked ammunition or of a fabric belt with loops to contain the cartridges.

ammunition booster. An electrically-driven sprocket which conveys linked ammunition to a machine gun in a confined tract.

ammunition box. A box in which linked ammuni-

tion is folded and from which it can be fed into a machine gun.

ammunition depot. A storage and supply depot for shells, bombs, or other ammunition.

ammunition dump. An ammunition storage point. Cf. **bomb dump.**

ammunition identification. Identification of ammunition by type, size, manufacturer's symbol, lot number, and grade.

ammunition identification code. A code used for identifying ammunition.

ammunition inspector. A person with technical qualifications authorized to inspect ammunition.

ammunition pressure test. A test to determine the amount of gas pressure produced in a firearm or gun by an exploding round of ammunition.

ammunition storage point. A temporary storage point in a forward area for any kind of ammunition. Also called 'ammunition dump.'

amn (*auth abbr*). 'Airman' or 'airmen.'

amnd (*auth abbr*). 'Amend' or 'amendment.'

AMO (*auth abbr*). 'Aircraft Materiel Officer.'

amp (*abbr*). 'Ampere.'

amph (*auth abbr*). 'Amphibian' or 'amphibious.'

amphibian, *n.* (amph) *Specif.* An airplane designed to take off and land on either water or land.

amphibian, *a.* Designating aircraft designed to take off or land on either water or land.

amphibious, *a.* (amph) **1.** Of vehicles or equipment: Designed to be operated or used on either land or water. **2.** Of a party or task force: That makes or participates in an assault landing on a shore from seaborne transport. **3.** Of actions: Done or conducted on both land and water.

amphibious landing gear. A landing gear made up of both wheels and floats, the wheels protruding below the floats.

amphibious task force. A task force consisting both of naval units and of assault troops, often supported by naval and air units.

amplidyne, *n.* A generator used as a power amplifier in servosystems.

amplifier, *n.* A device for increasing the power or strength of anything, as that of a radio signal.

amplitude, *n.* **1.** *Physics.* The extent of a vibration. **2. a.** *Electricity.* The maximum variation or departure from the average of an alternating current. **b.** *Electronics.* The greatest value of an alternating radio wave or the like in one direction, measured from zero.

amplitude modulation. (AM) A method of radio transmission in which the amplitude of the carrier wave is varied or changed.

AMS (*auth abbr*). 'Army Map Service.'

amt (*auth abbr*). 'Amount.'

amtank (*abbr*). 'Amphibious tank.'

AMTI (*abbr*). 'Airborne moving target indicator.'

amtrac (*auth abbr*). 'Amphibious tractor.'

AN (*abbr*). **1.** 'Army-Navy.' **2.** 'Air Force-Navy,' as used in 'WBAN.'

In sense 1, used esp. as a prefix in the AN nomenclature system.

AN (*code prefix*). 'Air Force Reserve and USAF Nurse' when used with a service number.

an (*abbr*). **1.** *auth.* 'Airman.' **2.** *auth.* 'Annual.' **3.** *Capitalized.* 'Antonov,' as used in the designations of Russian aircraft designed by Oleg K. Antonov, as in *An-2*, a single-engine passenger biplane.

analogue computer. A computing machine that works on the principle of measuring, as distinguished from counting, in which the measurements obtained, as voltages, resistances, etc., are translated into desired data. See **digital computer.**

Analogue computers range from the relatively simple devices of the slide rule or airspeed indicator to complicated electrical machines used for solving mathematical problems. Radar and gun directors lean heavily upon this type of computer. See **differential analyzer.**

analysis, *n.* In intelligence usage, a process in which data is examined to separate its component parts and to categorize them separately or in relation to the entire data.

ANC (*auth abbr*). 'Army Nurse Corps.'

anchor cable. A static cable.

anchor light. A single light or a group of clear lights carried on any of certain seaplanes to indicate its position at night while at anchor.

ancillary air base. A subsidiary air base that augments the facilities of a main base, directly controlled by the commander of the main base.

Gunter Air Force Base, for example, is considered an ancillary base to Maxwell Air Force Base. Cf. **auxiliary air base.**

ANCR (*abbr*). 'Aircraft not combat ready.'

ANDB (*abbr*). 'Air Navigation Development Board.'

Andersen Air Force Base. An AF base at Guam, Marianas Islands, formerly known as North Guam Air Force Base, renamed for Brigadier General James Roy Andersen, who died 27 February 1945.

Andrews Air Force Base. An AF base at Camp Springs, Maryland, near Washington, D.C., formerly known as Pyles Field, but renamed for Lieutenant General Frank M. Andrews, a pioneer exponent of air power, killed in Iceland, 1943.

anemic hypoxia. An oxygen deficiency in the blood brought about by an inadequate amount of hemoglobin.

anemometer, *n.* An instrument for measuring the speed of wind or other airstream.

aneroid, *n.* A disc-shaped metallic capsule from

which all the air has been evacuated, which expresses its sensitivity to changes in atmospheric pressure by expanding and contracting.

The aneroid is the activating element in manifold-pressure gauges and certain altimeters and barometers.

aneroid altimeter. An aircraft altimeter in which the sensing and actuating element for differences in atmospheric pressure is an aneroid.

aneroid barometer. A barometer having an aneroid as its sensing element. See prec.

The expansions and contractions of the aneroid causes a pointer to register atmospheric pressure, usually expressed in inches of mercury, on a calibrated dial. See **mercury barometer.**

ANFE (*auth abbr*). 'Aircraft not fully equipped.'

ANG (*abbr*). **1.** *auth.* 'Air National Guard.' **2.** 'Air Force, Navy, Army,' in naval designations of guided missiles approved for joint use.

angel, *n.* **1.** *Collective.* A type of confusion reflector having the reflecting material often suspended from parachutes or balloons to give delayed descent. See **confusion reflector. 2.** A measure of altitude equivalent to 1,000 feet, as in 'at twenty-two angels he was making mach 1.2.'

angle of attack. 1. *Specif.* The acute angle between the chord of an airfoil, and a line representing the undisturbed relative airflow. Also called 'angle of incidence' (sense 2). **2.** Any other acute angle between two reference lines designating the cant of an airfoil relative to oncoming air. See **rotor angle of attack.**

In sense 1, esp. in regard to a wing, this angle consists of the effective angle of attack plus the induced angle of attack, the two together imparting a given lift to an airfoil. See **absolute angle of attack, critical angle of attack, zero-lift angle of attack.** In sense 2, see **effective angle of attack, induced angle of attack.**

angle of attack for infinite aspect ratio. In aerodynamic theory, an assumed angle of attack at which a given airfoil would produce a specified amount of lift if the airfoil were of infinite span, the angle being formed by the chord of the airfoil and a line representing the relative direction of the undisturbed airflow.

This angle is assumed to have a magnitude equal to that of the effective angle of attack for a finite airfoil; the latter, however, is real and forms its angle between the chord and the resultant velocity of disturbed airflow. The line representing the resultant velocity divides the angle between the chord and the line representing the undisturbed airflow.

To produce the same amount of lift, an airfoil of finite span must be set at a greater angle of attack than would be necessary if the airfoil were of infinite span (or of infinite aspect ratio), since the down-wash velocity produced by the airfoil-tip vortexes of the finite airfoil tend to reduce the lifting effectiveness of its angle of attack.

angle of depression. Depression angle.

angle of elevation. In aerial gunnery, an acute angle between the bore axis of a gun and the horizontal. Called 'quadrant elevation' in ground gunnery.

angle-off, *n.* **1.** The angular measurement between the line of flight of an aerial target and the gun-bore sight line of an attacking aircraft. **2.** The angle between the line of flight of an attacking airplane and the line of flight of an aerial target.

angle of glide. The acute angle between the horizontal and the flight path of an airplane as it descends in a glide.

angle of heel. The acute angle between the lateral axis of a seaplane on the water and the horizontal.

angle of incidence. 1. The angle of wing setting. **2.** The angle of attack. *British.* **3.** *Electronics.* The angle between the direction of an electromagnetic wave and a line perpendicular to a reflecting surface struck by the wave.

angle of lag. 1. The lag angle. **2.** *Electricity.* Phase lag.

angle of pitch. 1. The acute angle between the longitudinal axis of an aircraft and its line of travel, looked at from the side. See **pitch,** *n.*, sense 3. **2.** The blade angle. Often called 'pitch.'

angle of roll. The acute angle between the lateral axis of an airplane and the horizontal.

The angle is positive when the port tip is higher than the starboard tip.

angle of stabilizer setting. The acute angle between the longitudinal axis of an airplane and the chord of the stabilizer looked at from the side.

The angle is positive when the leading edge of the stabilizer is higher than the trailing edge.

angle of wing setting. The acute angle between the longitudinal axis of an airplane and the root chord of a wing looked at from the side.

angle of yaw. The acute angle between the longitudinal axis of an aircraft and its line of travel, looked at from above.

It is positive when the aircraft turns to the right.

angular acceleration. Acceleration around an axis, esp. around one of the axes of an aircraft. See **acceleration,** *n.*, note.

angular altitude. A measure in degrees of a given object above the horizon, taken from a given or assumed point of observation, and expressed by the angle between the horizontal and the observer's line of sight.

The angular altitude of a celestial body is measured by the arc of a vertical circle between the body and the celestial horizon, ranging from zero through ninety degrees. Cf. **celestial altitude.**

angular motion. 1. The motion of a body about a fixed axis, measured by the rate of change in the angle between two lines perpendicular to the axis, one fixed in space, the other in the moving body. **2.** *Specif.* The motion of a rotor blade about the axis that provides for feathering. Cf. **in-plane motion.**

angular rate. In bombing, the rate of change in the angle made by the airplane's line of flight

and the line extending from the plane to the target.

angular velocity. The rate of angular motion.
This velocity may be expressed in revolutions per minute, degrees per second, or radians per second.

ANGUS (*auth abbr*). 'Air National Guard of the United States.'

anhedral, *n.* [See note.] A positive dihedral. Sometimes used erroneously for negative dihedral.
'Anhedral' and 'cathedral' are coined words, formed respectively from the Greek *ana* up, and the Greek *kata* down, combined with the root of *dihedral*. Analogous formations are *anode* and *cathode*.

anl (*abbr*). 'Animal.'

anlys (*abbr*). 'Analyse,' 'analysis,' or 'analyst.'

ann (*auth abbr*). 'Announce.'

annex, *n.* **1.** A part of a document, esp. of an operation or administrative order, appended to amplify or explain a section or paragraph within the main body of the text. **2.** A subsidiary building or office used by an activity when its principal building or office can no longer accommodate it.
In sense 1, annexes are used to preserve brevity, clarity, and simplicity in the main body of the order. See **tab,** *n.*, note.

annex, *v. intr.* To extend one's activity into an annex. *Colloq.*

AN nomenclature system. A joint Army-Navy-AF code system set up for designating certain communication and electronic equipment.
Designations assigned from the AN nomenclature system often bear the prefix 'AN.' This prefix does not imply that a particular piece of equipment is used by all the services, but merely that the designation was assigned under the AN nomenclature system.
Examples of designations in this system: *AN/APN–7* (airborne radar navigational aid), a responder beacon; *AN/CPN–8* (air-transportable radar navigational aid), a land-based responder beacon; *AN/CPS–4* (air-transportable radar search), a medium-range radar for height-finding; and *AN/FPS–1* (ground, fixed radar search) a long-range, early-warning radar.
These pieces of equipment sometimes are designated under another nomenclature system by the Radiation Laboratory, e.g., *BASN* is the AN/APN–7.

annotate, *v.* **1.** *tr.* To append or insert notes, generally of an explanatory or critical nature, to or in a *document*, *book*, *film*, or the like. **2.** *intr.* To make annotations.

annotated photo. A photograph on which annotations have been made.
The annotations may be made directly on the photograph or on the film and then be printed as a part of the photograph.

annual, *a.* (an) Designating actions carried out once each year, as in 'annual inspection,' 'annual inventory,' etc.

annual appropriation. An appropriation available for incurring obligations only during the fiscal year specified in the appropriations act.

annual leave. 1. Leave credit accrued during a calendar or fiscal year. **2.** Absence from duty charged against this leave credit. See **accrued leave.**
This term is normally used in connection with the Civil Service, seldom in connection with the military. See **leave,** *n.*

annular wing. A cylindrical wing that surrounds the fuselage, used in the coleopter.

ANO (*auth abbr*). 'Above named officer.'

anode, *n.* The positive pole or electrode in a battery, vacuum tube, etc. Often called the 'plate.'
In a vacuum tube, the anode receives the electrons emitted by the cathode.

anoxemia, *n.* Hypoxemia.

anoxia, *n.* **1.** Literally, the absence of oxygen in the blood, cells, or tissues, as would be the case if a person were at 50,000 feet or above without benefit of oxygen equipment. **2.** Hypoxia.

anoxic anoxia. An oxygen deficiency due to diminished oxygen tension in the arterial blood, in spite of a normal oxygen capacity.

A-N radio range. A radio range coded with the letters 'A' and 'N' in Morse code.
See **Adcock radio range.**

ans (*auth abbr*). 'Answer.'

ANT (*symbol*). A designation for Russian airplanes designed by A. N. Tupolev. See **Tu** (*abbr*).

antenna, *n.* Anything that projects out to pick up sound or electric vibrations; *specif.* that part of a radar or of a radio-sending or radio-receiving set that projects into the air and contains, or itself consists of, that apparatus that radiates waves or receives them.
The physical appearance of an antenna differs with the devices used, such as that of a rod, a wire loop, a straight wire, etc. Likewise if mounted on a pedestal, as in radar, the antenna may have the shape of a reflector. A radar antenna includes parts such as the feed and the reflector. See **loop antenna, paraboloid antenna, sense antenna.** See also **aerial,** *n.*

antenna array. An antenna system consisting of a number of separate antenna wires either separately fed from the transmitter or acting as reflectors and directors.

anthropometric adaptation. An adaptation of a cockpit, control lever, or the like to meet the requirements of the human body.

anthropometric engineering. Engineering of aviation equipment that takes into account the comfort, safety, and efficiency of people who operate the equipment.

anti (*prefix*). Counter; against; opposing.
See following entries for examples of use.

antiairborne, *a.* Of or pertaining to ground defenses against airborne attack. See **airborne,** *a.*, senses 2 and 3.

antiaircraft, *a.* (AA) **1.** Of surface guns or missile launchers: Used to strike against airborne aircraft (including ballistic and guided missiles). **2.** Of fire, shells, guided missiles, etc.: Directed from the surface against airborne aircraft (including ballistic and guided missiles). **3.** Absolute for 'antiaircraft artillery.' Also attrib., as in *anti-*

aircraft computer, gunner, protection, training, unit, etc.

Certain usage in sense 2 may be construed as attrib. usage under sense 3.

antiaircraft artillery. (AAA) Projectile weapons with their related equipment, as searchlights, radar, etc., employed on the ground or on ships to strike at airborne aircraft (including ballistic and guided missiles). Attrib., as in *antiaircraft-artillery battery, fire,* etc.

'Antiaircraft artillery' is an inclusive term for cannon, small caliber automatic weapons, rockets, surface-to-air guided missiles, etc., together with the equipment used or required in connection with antiaircraft operations.

antiaircraft barrage. 1. A barrage of antiaircraft fire through which enemy aircraft are expected to fly. Sometimes called a 'predicted barrage.' **2.** Less precisely, any concentration of antiaircraft fire.

antiaircraft defense. The total defense on the ground or on ship employed against aircraft (including ballistic and guided missiles).

This defense includes AAA, barrage balloons, and AAA intelligence service.

antiaircraft missile. *Specif.* A guided missile launched from the surface against an airborne target.

antiblackout suit. A G-suit. Chiefly *Naval.*

anticyclone, *n.* An atmospheric condition in which winds spiral out from a high-pressure center; also the area over which this condition exists.

Anticyclonic winds blow clockwise in the northern hemisphere, counterclockwise in the southern.

antidetonant, *n.* A substance added to gasoline to prevent detonation.

antidisturbance fuze. A fuze designed to be so sensitive after being armed as to detonate with the slightest disturbance.

An antidisturbance fuze attached to a bomb is set or armed after the bomb has come to rest.

antidrag, *a.* **1.** Of structural members in an aircraft: Designed or built to resist the effects of drag. **2.** Of a force: Acting against the force of drag.

antidrag wire. A cross-bracing wire in a wing, usually concealed, opposing the tension of the drag wire and preventing the wingtip from moving forward.

antiexposure suit. A special waterproof coverall designed to be worn over flying clothing or regular clothing to protect against exposure, particularly in cold water. Also called 'exposure suit,' 'immersion suit,' 'survival suit.'

antiflak, *a.* Of actions or operations: Directed toward destroying, or neutralizing the effects of, antiaircraft artillery, as in *antiflak mission, antiflak patrol.*

antifreeze, *n.* A substance used in a cooling system to prevent freezing.

antigravity device. Any device designed to protect a person against high G-forces.

anti-G suit. A G-suit.

anti-icer, *n.* A device designed to prevent the formation of ice. Cf. **deicer,** *n.*, **Nesa glass.**

anti-icing, *a.* Of a compound, a fluid, or equipment: That prevents icing.

antijamming, *a.* Of a device, method, system, or technique: That reduces or eliminates jamming.

antiknock, *n.* A substance, such as iso-octane, which may be added to gasoline, or used as a fuel itself, to prevent detonation in an engine cylinder. Hence, **antiknock,** *a.*

antimateriel, *a.* Of a bomb or other explosive: Used to effect damage against materiel or physical objects.

antimissile missile. An explosive missile launched to home upon another missile in flight.

antipersonnel, *a.* (apers) **1.** Of shells, bombs, or the like: Designed to destroy or obstruct personnel. **2.** Of actions: Undertaken to destroy people.

antishipping, *a.* Of actions or bombs: Directed against ships or shipping facilities.

antispin parachute. A special parachute attached to an airplane, usually at the tail or wingtip, which when opened helps recovery from a spin.

antisub (*abbr*). 'Antisubmarine.'

antisubmarine, *a.* **1.** Of equipment, mines or missiles: Designed to attack or destroy submarines. **2.** Of actions: Directed against submarines. **3.** Of units or organizations: Set up to search out and attack submarines.

antitank, *a.* **1.** Of aerial weapons or equipment: Used, or designed to be used, against tanks. **2.** Of actions: Directed against tanks.

antitorque rotor. A subsidiary rotor that rotates in a vertical plane and generates thrust opposite to the torque of the main rotor. See **tail rotor.**

antitransmitter-receiver, *n.* A device used in microwave radar so as to utilize the same antenna in transmitting and receiving. Called 'ATR.'

anvil cloud. The anvil-shaped top part of a well-developed cumulonimbus.

anx (*auth abbr*). 'Annex.'

AO (*abbr*). **1.** 'Airdrome officer.' **2.** 'Artillery observation,' as formerly used (*circa* 1920) in designations of US Army aircraft.

AO (*code prefix*). 'Male Air Force Reserve and USAF Officer' when used with a service number, as in 'AO335464.'

AObsr (*auth abbr*). 'Air observer.'

A.O.C. (*abbr*). 'Air officer commanding.' *British.*

AOCM (*auth abbr*). 'Aircraft out of commission for maintenance.'

AOCP (*auth abbr*). 'Aircraft out of commission for parts.'

AOM (*auth abbr*). 'Army of occupation medal.'

AP (*abbr*). **1.** *auth.* 'Air police.' **2.** By extension, 'a member of the air police.' **3.** 'Aiming point.' **4.** *auth.* 'Armor-piercing.' See **ap** (*abbr*). **5.** 'Air position.' **6.** *auth.* 'Aerial port.'

A/P (*auth abbr*). 'Allied papers.'

ap (*abbr*). **1.** 'Armor-piercing.' **2.** 'Airplane.'

apar (*auth abbr*). 'Apparatus.'

APC (*abbr*). 'Armor-piercing capped.'

APCM (*auth abbr*). 'Asiatic-Pacific Campaign Medal.'

APCS (*auth abbr*). 'Air Photographic and Charting Service.'

APE (*abbr*). 'Aerial port of embarkation.'

aperiodic compass. A magnetic compass so made and adjusted that its needle is extremely stable under most flying conditions.

In an aperiodic compass the magnetic strength of the magnet assembly is balanced against the damping forces so that dead-beat stability (which see) is imparted to the compass needle.

apers (*auth abbr*). 'Antipersonnel.'

APG (*abbr*). 'Air Proving Ground.'

APGC (*auth abbr*). 'Air Proving Ground Command.'

API (*abbr*). **1.** *auth.* 'Armor-piercing incendiary.' **2.** 'Air position indicator.'

APIC (*abbr*). 'Army photo interpretation center.'

APID (*abbr*). 'Army photo interpretation detachment.'

APIT (*auth abbr*). 'Armor-piercing incendiary tracer.'

a/pl (*abbr*). 'Armor plate.'

aplt (*abbr*). 'Applicant.'

APM (*auth abbr*). 'Air Provost Marshal.'

APMA (*auth abbr*). 'Advance payment of mileage authorized.'

APMALTA (*auth abbr*). 'Advance payment of monetary allowance in lieu of transportation authorized.'

apmt (*abbr*). 'Appointment.' See **apt** (*auth abbr*).

apnea, *n.* Literally, a cessation of breathing, but used to denote a temporary cessation only.

APO (*auth abbr*). 'Air Force post office' or 'Army post office.'

This abbr. is usually followed by a number signifying a particular post office, esp. a post office overseas.

APOD (*auth abbr*). 'Aerial port of debarkation.'

APOE (*auth abbr*). 'Aerial port of embarkation.'

APO repack. The action of repacking or rewrapping a package in an AF post office.

app (*auth abbr*). 'Appendix' or 'apprehend.'

apparent horizon. The horizon formed by the apparent meeting of the earth and sky as observed from any point. See **horizon,** *n.*, note.

apparent precession. The relative angular movement of the spinning axis of a gyroscope in relation to a line on the earth, resulting from the rotation of the earth and the property of the gyroscope to maintain its spinning axis in the same direction. See **direction,** *n.*, sense 2b.

For example, a gyroscope at the equator with its spinning axis pointed to the earth's center would have this axis pointing to the zenith if an airplane carried the gyroscope halfway around the world along the equator.

apparent time. A reckoning of time as measured by the apparent motion of the sun about the earth.

Apparent time differs from mean time in that it results in days of unequal length. See **mean solar day.**

apparent wander. Apparent precession. *British.*

appendix, *n. Specif.* **1.** A tube on a balloon used for inflation and deflation. **2.** An attachment to the main text of a document. See **tab,** *n.*, note.

appl (*auth abbr*). 'Applicant,' 'applicable,' or 'application.'

applied research. Research directed toward using knowledge gained by basic research to make things or to create situations that will serve a practical or utilitarian purpose.

Basic research discovered Bernoulli's law; applied research adapted an airfoil so that lift is imparted in accordance with the implications of Bernoulli's law. See **basic research,** note.

appn (*abbr*). **1.** *auth.* 'Appropriation.' **2.** 'Apprehend' or 'apprehension.'

appointing authority. A person authorized to appoint the members of a board, committee, or the like: See note.

'Appointing authority' is often used interchangeably with 'convening authority,' although strictly speaking the terms are not synonymous.

appointment, *n.* (appt) **1.** The designation of a person to hold a position, as an appointment to a staff position. **2.** The designation of a person to hold a commission or warrant in the AF or in an AF reserve component. Attrib., as in *appointment letter.*

apportionment, *n. Fiscal.* A designated sum under an appropriation or contract authorization made available for a specific period by authority of the Director of the Budget.

appr (*auth abbr*). 'Approve' or 'approval.'

appraise, *v. tr. Intelligence.* To evaluate.

The preferred term is 'evaluate.'

apprentice, *n.* (apr) *Specif.* The second and semi-skilled position in a given AF Specialty; a person holding such a position.

approach, *n.* **1.** The action of drawing near an object or a given point. Often used with the suggestion of being done after due consideration or in accordance with a pattern. Used in respect to drawing near a landing field, bombing target, or

airborne target. **2.** *Specif.* An initial or final approach for landing. See **initial approach, final approach.** **3.** In bombing, the flight action during the bomb run, or during the early stage of the bomb run, or during the period immediately preceding arrival at the initial point. **4.** A direction from which an aircraft comes in for a landing, or from which it approaches a traffic pattern, as in 'the tower gave him an approach with an unobstructed view.' **5.** A direction from which an aircraft may be attacked in flight by another aircraft, as in 'every approach was covered by a gunner.'

In sense 2, the word is often used attrib., as in *approach altitude, approach beacon,* etc. See **one-eighty-degree approach, overhead approach, ninety-degree approach, straight-in,** *a.*

In sense 3, usage appears more generic than specific.

approach chart. 1. An aeronautical chart, printed on one side of the instrument approach and landing chart, showing terrain detail around an airfield and containing a diagram of approach and letdown procedure. **2.** An oblique approach chart or a target approach chart. **3.** Short for 'USAF Aeronautical Approach Chart.'

approach control. A system of control by the Civil Aeronautics Administration over flights arriving at, or departing from, an area under instrument flight rules.

Approach control personnel direct the approach and takeoff of IFR flights under their control by means of radio and sometimes radar.

approach control office. An office or activity that provides approach control service.

approach control radar. Any radar set or system used in a ground-controlled approach system, as an airport surveillance radar, precision approach radar, or a combination of both.

approach indicator. An instrument that shows the beam position during a landing approach.

approach leg. That part of a landing pattern during which an airplane makes its final approach.

approach light. A light or one of a series of lights set ahead of a runway to indicate a favorable approach to the runway.

approach path. That part of the flight path made when the aircraft approaches for landing.

approach pattern. The prescribed course or pattern which an airplane follows preliminary to landing at an airfield.

approach procedure. The procedure which a pilot observes preliminary to landing.

approach system. A system for directing an airplane to a landing or to a point at which the pilot can see to land, under instrument flight rules.

approach time. The time at which an aircraft is expected to commence its approach procedure.

approach zone. The zone or area surrounding an airfield within which aircraft preparing to land must fly a prescribed course.

appropriate, *v. tr.* To provide *funds* or *money,* esp. by act of Congress.

appropriated fund. A fund appropriated by act of Congress.

appropriation, *n.* (appn) *Specif.* **1.** The action of appropriating public funds by act of Congress against which a government department or agency may incur obligations or make payments out of the treasury for specified purposes. **2.** The public funds so appropriated.

appropriation act. *Specif.* An act of Congress providing for the expenditure of public moneys and stipulating the amounts and manner for each item of expenditure.

appropriation head. One of several sections of an appropriation act, each constituting a separate grant and limitation.

appropriation limitation. A stipulation in an appropriation act of a maximum amount to be obligated or expended for a specified purpose.

appropriation refund. An amount recovered, after having been previously expended in error, and covered into the treasury as a credit.

appropriation reimbursement. An amount representing a collection or collections, other than refunds, covered into the treasury as repayments to an appropriation or working fund.

approval, *n.* (appr) The action of approving a proposal, plan, request, or the like.

Approval is a prerogative of a commander.

approve, *v.* (appr) *tr.* To give official sanction to a *proposal, plan, request,* or the like.

This term is commonly used in indorsements by echelons of command higher than that of the originator. Cf. **concur,** *v.*

approved circuit. A circuit approved for the transmission of classified messages in the clear.

approving authority. A person or group of persons vested with the responsibility of approving the findings of another person or persons before such findings can be acted upon. See **reviewing authority.**

appt (*auth abbr*). 'Appointment.'

APR (*abbr*). 'Air priority.'

apr (*auth abbr*). **1.** 'Apprentice.' **2.** *Capitalized.* 'April.'

APri (*auth abbr*). 'Air Priority.'

apron, *n.* **1.** A hard-surfaced area, usually paved, adjacent to a hangar, repair shop, runway, or the like, used to park, load, unload, service, or handle aircraft. Often erroneously called a 'ramp' (which see). **2.** A balloon apron.

In sense 1, see **loading apron, parking apron, warmup apron.**

aprop (*abbr*). 'Appropriate.' See **appn** (*auth abbr*).
aprt (*auth abbr*). 'Airport.'
aprx (*auth abbr*). 'Approximate' or 'approximately.'
APS (*abbr*). **1.** *auth.* 'Army Postal Service.' **2.** 'Air Pictorial Service.' Now *hist.*
APSQ (*auth abbr*). 'Advance payment of subsistence and quarters.'
APT (*abbr*). **1.** *auth.* 'Airman Proficiency Test.' **2.** 'Armor-piercing tracer.'
apt (*auth abbr*). 'Appoint.'
aptitude cluster. A grouping of similar aptitudes, corresponding to a grouping of related occupations or jobs.
aptitude cluster score. A raw score obtained in an aptitude test used for assignment to an aptitude cluster.
aptitude index. An index of an individual's aptitude, esp. in reference to aptitude clusters. See **stanine rating.**
aptitude test. A test or battery of tests designed to show a person's aptitudes in a single field or in several related fields.
APTPDA (*auth abbr*). 'Advance payment of travel per diem authorized.'
APU (*abbr*). **1.** *auth.* 'Army postal unit.' **2.** 'Auxiliary power unit.'
APWI (*abbr*). 'Air prisoner of war interrogation.'
AQ (*auth abbr*). 'Aviation fire control technician.'
AQE (*auth abbr*). 'Airman Qualifying Examination.'
A-quadrant, *n.* One of two quadrants in an Adcock or loop-type radio range, in which the A-signal is heard. See **Adcock radio range,** note.
AR (*auth abbr*). 'Army Regulation' or 'airman recruit.'
AR (*code prefix*). 'Air Force Reserve and USAF Dietitian' when used with a service number.
A/R (*abbr*). **1.** *auth.* 'At the rate of.' **2.** 'Armed reconnaissance.'
ar (*abbr*). **1.** 'Arrest.' **2.** *Capitalized.* 'Arado.'
Arado, *n.* The name of a German airplane manufacturer, used in the designations of certain WW II planes.

Some of the better-known planes produced by Arado were the *Ar 196*, a low-wing, two-seat monoplane for shipboard use; the *Ar 232*, a transport monoplane having either two or four engines; and the *Ar 234*, a twin-jet airplane used for bombing or reconnaissance.

AR&D (*abbr*). 'Air Research and Development.'
arbitrary course. In air navigation, a course chosen at one's discretion.
ARC (*auth abbr*). 'American Red Cross.'
arc (*abbr*). 'Arctic.'
ARCen (*auth abbr*). 'Air Reserve Center.'
archie, *n.* A WW I name for antiaircraft artillery. *Slang.*
ARCS (*auth abbr*). 'Air resupply and communication service.'
arctic, *n.* Sometimes *capitalized.* The region surrounding or near the north pole: See note.

Among definitions of *arctic* are the following: **1.** The region within which the mean temperature of the warmest month is below 50° F, and in which the mean annual temperature is 32° F or below. **2.** The region north of the Arctic Circle. **3.** The region north of the limit for tree growth or for cereal crops. **4.** The region of permafrost. **5.** Among physicists, the region of intense magnetic disturbances and auroras. **6.** Any far-northerly region.

arctic, *a.* Of or pertaining to the arctic.

Usually capitalized when used as part of a proper name. This adjective is common in AF usage in such locutions as *arctic clothing; Arctic, Desert, Tropic Information Center; arctic equipment; arctic flight; Arctic Indoctrination School; arctic survival; arctic testing; arctic tropopause; arctic war;* etc.

arctic air. 1. The air in an air mass that originates in the arctic. **2.** In a restricted sense, the air in an air mass having considerable height and originating over ice-covered arctic water areas.

In sense 2, arctic air, influenced by the conduction of heat from relatively warm water below, does not have such cold surface temperatures as polar air, but is colder and drier aloft and extends to greater heights. 'Arctic air' and 'polar air,' however, are often used as synonyms.

Arctic Circle. The parallel of latitude at which, discounting refraction, the sun's rays are tangent to the earth's surface at the winter solstice.

In 1950, the Arctic Circle was at latitude 66° 33′ 15.2″ N

arctic navigation. A navigational system employed in arctic regions, esp. by use of electronic and gyroscopic instruments.

Arctic navigation presents special problems. For example, the magnetic compass is erratic; physical check points are rare due to the absence of land and the movement of the ice in the Arctic Ocean; and cloud cover and twilight obscure celestial bodies during certain periods.

arctic operations. *pl.* The sum-total of activities involved in the operation of aircraft in arctic areas.
arctic smoke. Steam fog.
ARD (*auth abbr*). 'Air reserve district.'
ARDC (*auth abbr*). 'Air Research and Development Command.'
Ardmore Air Force Base. An AF base at Ardmore, Oklahoma, named for the city.
area, *n.* **1.** The surface of anything; the measure of its extent. **2.** *Specif.* An extent or space on the earth. **3.** Short for 'air materiel area.' **4.** *transf.* The scope or extent of something intangible, as the area of responsibility, or the area of study, or the area of power.

A certain tendency exists to use 'area' in reference to any space or extent, whether on the ground or not, but because the term retains connotations of a surface, esp. that of the earth, it is often advantageous to use some other term, such as 'space,' 'extent,' 'region,' or 'airspace,' when referring to a place not on the ground or other surface.

area attack. Area bombing, esp. against towns.
area bombing. Bombing done by dropping bombs over all parts of a target area, with the intention of hitting many small targets within the area or

of making the area untenable for the enemy. Cf. **density bombing, precision bombing.**

area control center. A unit established to provide air traffic control service over a specified area for flights under instrument flight rules.

area control radar. A radar set or system used for air traffic control over a relatively large area.

Area control radar is used chiefly to channel aircraft so as to provide a smooth flow of air traffic to the approach control radar.

area defense. A defense against air attack organized to protect an area, as distinguished from a point defense or line defense.

area depot. A depot, including a landing field and base facilities, set up by the Air Materiel Command within an air materiel area, responsible for certain designated supply and depot maintenance both for the air materiel area in which located and for the air materiel zone.

In its capacity as a specialized depot for the entire zone, it is called a 'zonal depot'; in its capacity of serving the area, it is called an 'area depot.'

area forecast. A weather forecast indicating the expected weather conditions for a stated period in any area greater than five miles in radius.

area of control. In the Military Air Transport Service, an area over which one of the MATS divisions exercises control in transport operations, i.e., the area of the Atlantic Division, or the area of the Continental Division, etc.

area of operations. A term sometimes used for 'theater of operations.'

'Theater of operations' is preferred in respect to air operations because of the connotations of 'area' (which see).

area of responsibility. The extent to which a commander or other person exercises responsibility.

area of war. A theater of war.

area ratio. The ratio of one surface area to another, as the ratio between the mouth area and the throat area of a rocket nozzle.

area-rule concept. A concept of aircraft design based on the notion that interference drag at transonic speed depends almost entirely on the distribution of the aircraft's total cross-sectional area along the direction of flight.

Drag at transonic speed decreases in proportion to how closely the cross-sectional area resembles a theoretical optimum body shape. To obtain minimum transonic drag, the designer reworks the shape of a given aircraft to achieve a distribution approximating the ideal shape. In some instances, this may result in extending the nose, adding a tail blister, indenting the fuselage, or the like.

area support. Indirect support (sense 1).

area target. A target consisting of an area rather than a single factory or similar pinpoint target.

ARefS (*auth abbr*). 'Air refueling squadron.'

ArFCoS (*auth abbr*). 'Armed Forces Courier Service.'

ArLO (*auth abbr*). 'Army Liaison Officer.'

arm, *n.* **1.** A combat branch of a military force or unit. **2.** *pl.* Weapons of war.

Thus, in sense 1, the AAF was an arm of the US Army, as the Armored Cavalry, Infantry, etc., continue to be. In contexts suggestive of combat, the AF is an arm of the Department of Defense. See **air arm.** Likewise the combat group of a wing is the arm of the wing. Cf. **service,** *n.*

arm, *v. tr.* **1.** To furnish a *man* or *troops* with weapons. **2.** To equip or load an *airplane* or other vehicle with guns, bombs, rockets, or the like. **3.** To load a *gun, bomb rack, missile launcher,* or the like. **4.** To make a *bomb, torpedo,* or *mine* ready for detonation by removal of the safety pin from the fuze. **5.** To prepare a *nation* for war by producing weapons, training troops, etc.

armada, *n. Specif.* A fleet of military aircraft.

armament, *n.* (armt) **1.** The weapons of an airplane, tank, ship, or the like; the weapons of a unit or organized force. **2.** *pl.* War equipment, weapons, and supplies.

In sense 1, 'armament' denotes guns or rockets, but not aerial bombs or mines. In sense 2, the term is very broad, and includes atomic, radiological, and bacteriological weapons, bombs, guns, ammunition, guided missiles, rockets, launching systems, etc., together with handling, training, testing, and other equipment.

The term is widely used as an attrib., as in *armament inspector, armament installation, armament officer, armament technician,* etc.

armd (*auth abbr*). 'Armored.'

armed conflict. Conflict between nations or other contestants entailing the physical destruction of, or injury to, one another's armed forces.

Armed conflict is presumed to exist if the lives or safety of members of the armed services of a nation, belligerent power, coalition, or faction are endangered as a direct result of the use of physical force.

armed force. 1. One of the armed forces (see sense 2). **2.** *pl.* The military forces of a nation, belligerent power, coalition, or faction; *specif.* in the US (often *capitalized*), the Armed Forces of the United States. See **armed service,** note, **military force.**

In the plural form, this term is often used as an attributive.

Armed Forces Day. A day set aside each year by the Secretary of Defense in honor of the Armed Forces, usually near the middle of May.

Armed Forces Liberty Pass. An authorization for absence from an assigned base after normal duty hours (DD Form 345).

Armed Forces of the United States. Collectively, all components of the Air Force, Army, Navy, and Coast Guard. Sometimes restricted to the first three.

Armed Forces Policy Council. A council to advise the Secretary of Defense on broad policy and other matters as directed.

This Council succeeded the War Council in 1949, and consists of the Secretary of Defense (Chairman), the departmental secretaries, the members of the Joint Chiefs

of Staff including the chairman, and sometimes the Commandant of the Marine Corps.

Armed Forces Press Service. (AFPS) A weekly clipping service, administered by the Army, which supplies materials to interested service newspapers.

Armed Forces Radio Service. (AFRS) A radio service, including maintenance, programs, transcriptions, etc., available to Army Forces overseas and to certain service and veteran hospitals in the US.

Armed Forces Reserve Medal. (AFResM) A medal awarded for honorable and satisfactory service in one or more reserve component of the Armed Forces for a period of 10 years.

Armed Forces Security Agency. A predecessor of the National Security Agency. *Hist.*

Armed Forces Special Weapons Project. (AFSWP) An Armed Forces project organized to carry out certain functions connected with the military use of atomic energy not delegated to the Atomic Energy Commission.

The field command of this project is at Sandia Base, New Mexico.

armed reconnaissance. The conduct of an armed reconnaissance mission.

armed reconnaissance mission. An air mission flown to locate and attack enemy materiel, personnel, and facilities (i.e., targets of opportunity) in an assigned general area or along an assigned ground communications route, and not for the purpose of attacking specifically briefed targets.

armed service. 1. One of the three branches of the Department of Defense. **2.** Usually *plural* and *capitalized:* The Armed Forces of the United States. Also used in combinations, as in *Armed Services Medical Procurement Agency, Armed Services Medical Regulating Office* (ASMRO), *Armed Services Petroleum Purchasing Agency, Armed Services Procurement Regulations.*

Use of 'Armed Forces' and 'Armed Services' is not always disciplined. The two terms, however, have different connotations. 'Armed Forces' suggests that the speaker is thinking of military forces established for war; 'Armed Services' suggests an emphasis upon the services rendered to the nation. See **service,** *n.*, note.

armed warfare. Warfare in which the contestants are in armed conflict. Distinguished from psychological warfare (which see).

Armée de l'Air. The designation of the French air force.

armgrd (*auth abbr*). 'Armed guard.'

arming, *n.* The action of the verb 'arm,' esp. in sense 4. Used attrib., as in *arming delay, arming hook,* etc.

armistice, *n.* A suspension of military operations by mutual agreement among the belligerent parties.

armor, *n.* **1.** Any physical protective covering, such as sheet metal, used on ships, airplanes, etc., or on persons, against projectiles or fragments. **2.** Armored units or forces. **3.** In a weapon system, that component that gives protection to the vehicle or the weapon on its way to the target.

In sense 3, the armor may consist of armor (sense 1) or any other protective device or technique, such as window, diversionary attack, speed, etc. See **weapon system.**

armored, *a.* (armd) **1.** Of vehicles or other equipment: Equipped with armor. **2.** Of a military force: Provided with tanks and other armored equipment.

armored clothing. Clothing provided with protective armor, as in the flak jacket. Often called 'body armor.'

armorer, *n.* (armr) A person, esp. a ground crew member, who repairs, loads, and handles aircraft armament and bombs.

armor-piercing, *a.* (ap) Of ammunition, bombs, bullets, shells, or the like: Designed to penetrate resistant targets.

armr (*auth abbr*). 'Armorer.'

armt (*auth abbr*). 'Armament.'

army, *n.* **1.** The land military forces of a nation. **2.** A unit of the US Army made up of two or more army corps. **3.** *Capitalized.* Short for 'United States Army.' **4.** In sense 3, used attrib., esp. to designate equipment, organizations, and the like.

In attrib. uses, 'army' is sometimes loosely used in the sense of military, as in *army mentality,* or *army justice.*

Army air base. An air base of the AAF. Now *hist.* in the AF. See **Army airfield.**

Army Air Corps. The Air Corps of the US Army. Now *hist.* See **air corps.**

Army airfield. Also **Army Air Field** in specific designations. **1.** An airfield of the AAF. Now *hist.* **2.** An airfield operated by the Army or in conjunction with Army aviation, as in 'Post Army Air Field' at Fort Sill, Oklahoma. Abbreviated 'AAF' (which see).

Army Air Force. 1. A misused term for 'Army Air Forces.' **2.** One of the numbered air forces of the AAF. Now *hist.*

Army-Air Force. Used attributively: Pertaining to both the Army and the Air Force.

Army Air Forces. 1. The name of the air arm of the United States Army between 1941 and 1947 or until unification. Now *hist.* See **air corps,** note. **2.** Used attrib., as in *Army Air Forces Center, Army Air Forces Aid Society.*

Army Air Forces Center. An AAF command organized in June 1945 that merged the activities of the AAF Board, the School of Applied Tactics,

and the Proving Ground Command. Located at Orlando, Florida. Now *hist.*

Army Air Service. The Air Service of the US Army. Now *hist.* See **Air Service.**

Army aviation. 1. Aviation conducted by Army personnel under command of Army unit commanders. **2.** The personnel, aircraft, and facilities that participate or are used in this aviation.

Army aviation is an organic part of the Army, although in certain procurement and training matters the AF acts for the Army. The mission of Army aviation is limited, and in combat operations it is largely restricted to observation, liaison work, courier missions, aerial wire-laying, artillery and topographic survey, and light transport within the combat zone including evacuation of the wounded.

army co-op aircraft. Short for 'army cooperation aircraft.'

army cooperation. 1. Cooperation on the part of ground units with air units in planning and carrying out tactical operations. Cf. **air cooperation,** sense 1. **2.** Also used for 'air support,' esp. in the phrase 'army cooperation aircraft.' See **air support,** note.

army cooperation aircraft. An aircraft designed or used to give direct air support to ground troops.

Army exchange. (PX) The current term for a post exchange on an Army station.

Army General Classification Test. (AGCT) A battery of tests used by the Army as a basis for classifying enlisted personnel.

AGCT scores were used for classifying AAF personnel during WW II.

Army Ground Forces. Between 1942 and 1948, a major subdivision of the US Army, distinguished from the AAF and the Army Service Forces (or the Services of Supply).

Army hot day. A day with an arbitrarily selected set of conditions considered to be average for the summer months in the US, and used chiefly in connection with engine-cooling problems. Also called an 'Army summer day.'

At sea level, Army hot day temperature is considered to be 38° C (100.4° F).

Army of Occupation Medal. A US military decoration awarded persons who have served with United States occupation forces under certain conditions since WW II.

Army of the United States. 1. During WW II, a common designation for the overall army forces of the US, including the Regular Army, the National Guard of the United States, the Army Air Forces, and other components created for war purposes. Often abbreviated 'AUS.' **2.** As used in certain statutes, the United States Army. Not considered good usage.

In WW II, officers in the AAF received commissions in the AUS.

Army purchased items. Equipment or supplies procured by the Army for use by the AF.

Army Service Forces. In WW II, a major subdivision of the US Army that provided logistical services, as distinguished from the AAF and the Army Ground Forces. Now *hist.*

See **Services of Supply.**

Army summer day. An Army hot day.

ArNa (*auth abbr*). 'Army with Navy.'

arng (*auth abbr*). 'Arrange' or 'arrangement.'

Arnold, *n.* [See note.] Used attrib. in the names of organizations, as in *Arnold Engineering Development Center* (AEDC), *Arnold Air Society.*

General Henry Hartley Arnold (1886–1950) was Chief of the Air Corps (1938–1941), Chief of the AAF (Jun 1941–Mar 1942), and CG of the AAF (May 1942–1946). He graduated from the US Military Academy in 1907, became a pilot in 1911, a 5-star general of the Army in 1944, a 5-star general of the AF in 1949.

Arnold Air Society. A fraternal organization for AFROTC students, affiliated since 1950 with the Air Force Association.

The first chapter was organized in 1947 at the University of Cincinnati.

Arnold Award. An annual award, established in honor of General H. H. Arnold by the Air Force Association in September 1948, and presented for 'the most outstanding contributions towards the peace and security of the US in the field of aviation.' In full, 'H. H. Arnold Award.'

Arnold Engineering Development Center. An AF engineering development center at Tullahoma, Tennessee, named for General of the Air Force Henry H. Arnold.

aromatic fuel. A fuel in which the chief chemical compound has a benzene ring structure, used esp. in jet aircraft.

A.R.P. (*abbr*). 'Air-raid precautions.' *British.*

ARR (*abbr*). 'Air regional representative.'

arr (*auth abbr*). 'Arrive' or 'arrival.'

ARRC (*auth abbr*). 'Air Reserve Records Center.'

arrester gear. Arresting gear.

arresting gear. Either the wires, hooks, and other devices, installed on an airplane, or those installed in a small landing area, the two together being used to stop a plane from rolling beyond the limits of the landing area; also all of these devices taken together.

arresting hook. A hook attached to an airplane for engaging an arresting wire.

The arresting hook is part of the complete arresting gear.

arresting wire. That part of the arresting gear which the arresting hook engages. Sometimes called a 'cross-deck pendant' (which see).

arrival, *n.* (arr) The action or event of an aircraft arriving at a place; an instance of such action, as in '6 arrivals, 4 departures.'

Used attributively, as in *arrival airfield, arrival notice, arrival report,* etc.

arrowhead, *n.* A bronze replica of an Indian arrowhead worn as a decoration to denote a combat parachute jump, combat glider landing, or amphibious assault landing under certain specified conditions.

ARS (*auth abbr*). 'Air Rescue Service.'

ARSTS (*abbr*). 'Air Reserve Specialist Training Squadron.'

art (*auth abbr*). 'Article.'

ARTCC (*abbr*). 'Air Route Traffic Control Center.'

article of supply. An item of supply.

article of war. Any one of the articles in a code of rules approved by act of Congress for governing the conduct of persons in the military services or of persons subject to military law. *Articles of War,* these articles taken together.

Superseded by the Uniform Code of Military Justice.

articulation, *n.* An arrangement that allows a thing to adjust, as the hinging of rotor blades to allow freedom of motion in both the plane of flapping and the plane of rotation.

artificial feel. A feel experienced by a pilot when he activates a control surface moved by a servomechanism, the feel resulting from an artificial pressure fed into the cockpit control that simulates the pressure of the actual movement.

artificial horizon. 1. A line on a flight indicator which lies within the horizontal plane, about which the pitching and banking movements of an airplane may be shown. **2.** *transf.* A flight indicator. **3.** A bubble horizon.

In sense 1, the artificial horizon operates in conjunction with miniature arms or a miniature airplane, also on the face of the flight indicator, the wings of the miniature airplane being coincident with the artificial horizon when the airplane is in level flight. The artificial horizon remains level at all times; in pitching movements, it moves up or down; in banking movements, the wings of the miniature airplane appear to tilt.

artillery, *n.* (arty) *Specif.* Used attrib. to designate aircraft used to reconnoiter or destroy artillery.

arty (*auth abbr*). 'Artillery.'

ARU (*auth abbr*). 'Air Reserve unit.'

ARUG (*auth abbr*). 'Air Reserve unit (general training).'

ARUSNP (*auth abbr*). 'Air Reserve unit (general training, nonpay).'

ARUSP (*auth abbr*). 'Air Reserve unit (general training, pay).'

ARW (*abbr*). 'Air-raid warning.'

ARWAF (*auth abbr*). 'Army personnel assigned and/or attached as individuals or units for duty with Air Force.' Pronounced as a word, and used attrib., as in *ARWAF officer, ARWAF unit.* Cf. **SCARWAF** (*auth abbr*).

ArWC (*auth abbr*). 'Army War College.'

A.S. (*abbr*). 'Air Service.' *Hist.*

As (*abbr*). 'Altostratus.'

a/s (*abbr*). 'Airspeed.'

ASA (*auth abbr*). 'Army Security Agency.'

ASAC (*abbr*). 'Air service area command.' *Hist.*

ASAP (*auth abbr*). 'As soon as possible.'

ASAS (*abbr*). 'Army Security Agency School.'

asbl (*auth abbr*). 'Assemble.'

ASC (*abbr*). 'Air Service Command.'

A-scan, *n.* **1.** A scan for presentation on an A-scope. **2.** An A-scope. *Popular.*

ascend, *v. intr.* Of balloons or airships: To rise into the air. See **climb,** *v.*

ascent, *n.* The action of ascending.

This term is used chiefly in reference to airships, but in general contexts is applied to airplanes and persons.

ASCom (*abbr*). 'Army service command.'

A-scope, *n.* A radarscope that presents the target range by a vertical deflection of the time base, or, in certain modified versions, by a horizontal deflection.

ASD (*auth abbr*). 'Aviation supply depot.'

ASDE (*abbr*). 'Airport surface detection equipment.'

ASE (*abbr*). 'Airborne search equipment.'

ASESA (*auth abbr*). 'Armed Services Electro Standards Agency.'

ASETC (*auth abbr*). 'Armed Services Electron Tube Committee.'

ASF (*abbr*). 'Army Service Forces.' Now *hist.*

ASG (*abbr*). 'Aeronautical Standards Group.'

asg (*auth abbr*). 'Assign,' 'assigned,' or 'assignment.'

asgd (*abbr*). 'Assigned.' See **asg** (*auth abbr*).

asgmt (*abbr*). 'Assignment.' See **asg** (*auth abbr*).

asgn (*abbr*). 'Assign.' See **asg** (*auth abbr*).

ashcan, *n.* A depth charge. *Slang.*

Ashiya Air Base. An air base at Ashiya, Japan, named for the city.

A.S.I. (*abbr*). 'Airspeed indicator.' *Canadian.*

Asiatic-Pacific Campaign Medal. A US military decoration awarded persons for service of a specified kind within the Asiatic-Pacific Theater of War between 7 December 1941 and 2 March 1946.

Asiatic-Pacific Theater of War. A WW II theater of war that included the Pacific and different land and sea areas in Asia and Southeast Asia.

A-signal, *n.* A dot-dash signal heard either in a bi-signal zone or in an A-quadrant of a radio range. See **Adcock radio range,** esp. note.

aslt (*auth abbr*). 'Assault.'

ASM (*auth abbr*). 'Air-to-surface missile.'

ASMPA (*abbr*). 'Armed Services Medical Procurement Agency.'

ASMRO (*auth abbr*). 'Armed Services Medical Regulating Office.'

ASN (*abbr*). 'Army serial number.'

ASofAF (*auth abbr*). 'Assistant Secretary of the Air Force.'

ASP (*abbr*). **1.** *auth.* 'Ammunition supply point.' **2.** 'Air superiority mission.'

ASPB (*auth abbr*). 'Armed Services Petroleum Board.'

aspect ratio. The ratio between the square of the span of an airfoil and its area.

asphyxia, *n.* A cessation of breathing due to lack of oxygen, with or without an excess of carbon dioxide.

ASPPA (*auth abbr*). 'Armed Services Petroleum Purchasing Agency.'

ASPR (*auth abbr*). 'Armed Services Procurement Regulations.'

ASR (*abbr*). **1.** 'Airport surveillance radar.' **2.** 'Air-sea rescue.' **3.** 'Available supply rate.'

assault, *n.* (aslt) **1.** In general, a violent attack on anything; in restricted usage, a violent onset against a ground force or target. **2.** *Specif.* **a.** An airborne assault. **b.** In amphibious operations, the attack on the beach defenses calculated to gain a beachhead. **c.** In a bombing operation, the phase during which the bombs are dropped.

Attrib., esp. in sense 2a, as in *assault cargo aircraft, assault glider, assault group, assault lift, assault sortie, assault transport,* etc.; and in sense 2b, as in *assault operation, assault phase.* See **air assault, airborne assault.**

In sense 2c, see **approach,** *n.*, **withdrawal,** *n.*, sense 2.

assault echelon. That part of a landing force that is first to land in an objective area.

assault transport aircraft. An aircraft designed esp. for airlanding operations in an airborne assault. Construed either as a singular or plural.

Examples of the assault transport aircraft are the C-122 and the C-125. See **transport aircraft,** note.

assemble, *v.* (asbl) **1.** *tr.* To put together an *airplane, glider,* or the like from component parts. **2. a.** *intr.* Of aircraft: To come together at a predetermined height and location. **b.** *tr.* To cause *aircraft* to assemble.

assembly, *n.* (assy) **1.** The action or process of the verb 'assemble' (both senses). **2.** A component part, itself made up of assembled pieces.

In sense 1, this term is often used attrib., as in *assembly area, assembly line, assembly team,* etc.

assembly point. 1. A point in the air designated for aircraft to assemble, as for proceeding to a target. **2.** A place on the ground at which certain aircraft are put together preliminary to testing and flying.

assess, *v. tr.* To evaluate and record officially the extent of *damage* or *destruction* done to an aircraft, building, or other target.

assign, *v.* (asg) *tr.* **1. a.** To place an *officer* or *airman,* usually by special order, in an organization provided for by a unit manning document, and to make him an integral member of it, subject to the same jurisdictional control that other members of the organization are subject to. **b.** Hence, indirectly to place an AF *officer* or *airman* on duty with a command or establishment, as in 'he was assigned to SAC.' **c.** To place a *member* of one armed service on duty with a unit of another armed service, jurisdictional control remaining with the service to which the member belongs. **d.** To appoint a Civil Service *employee* to a space provided for by a unit manning document. **2.** To place a *unit* under a designated commander or within a designated command or larger unit, where it becomes an integral part of the command, subject to the same jurisdictional controls as other units in the command, as in 'his group was assigned to the Fifth Air Force.' **3.** To place *real property* under the jurisdictional control of a commander, as in 'the base was assigned to the Air Training Command.' **4.** To prescribe certain *responsibilities* or *duties* to an individual or a unit, as in 'to assign a mission' or 'to assign a job or task.' **5.** To furnish *equipment* to an individual or organization, as in 'this aircraft was assigned to the combat group.' **6.** To allot *space* to an aircraft or individual, as in 'assigning quarters,' 'assigning a lane of approach,' or 'assigning an altitude.'

In the subsenses of sense 1, 'assign' indicates in each case that the person is charged against the troop basis of the unit to which assigned. Sense 1b differs from sense 1a, in that 'assigned' in sense 1b has no connotation of the UMD. See **manning unit.** In the case of the Military Air Transport Service (MATS), two different jurisdictional controls are involved—those of the AF and of the Navy. In sense 1c, 'assign' is used where 'attach' might be considered the better word, except for the matter of charge against the troop basis. For instance, SCARWAF personnel and units are said to be 'assigned' to the AF, but such personnel or units, though counted against the AF troop basis, are 'assigned' with implied reservations. They are really attached to the AF for all purposes except for the implied reservations. A SCARWAF officer, for instance, receives promotion in the Army, not the AF; he wears an Army uniform; he is under Army Regulations. In sense 1d, 'assign' has limitations inherent in the status peculiar to a civilian.

In senses 1 and 2, an assigned unit or person need not be on duty with the organization to which assigned, since either the assigned unit or person may be put on detached service, or attached for duty with another unit. Cf. **attach,** *v.*, **jurisdictional control, parent unit, tenant,** *n.*

assigned, *a.* (asg) Designating personnel, units, equipment, missions, etc., that have been assigned in one sense or another.

assignee, *n.* [Pronounced 'a-sigh-nee' among AF personnel.] Short for 'mobilization assignee.'

assignment, *n.* (asg) **1.** The condition or status of being, or having been, assigned. **2.** The action of assigning.

assist, *n.* An act of assisting; *specif.*, an act of providing additional thrust to an airplane by using a jet engine or rato unit over and above the

power plant already in use. See **jet assist, rocket assist, takeoff assist.**

assistant, *n.* (asst) A person who helps or assists another. Used in certain titles, as in *assistant for programming, assistant for atomic energy.* Cf. **deputy,** *n.*

assistant, *a.* (asst) In functional titles: Assisting a designated official, as in *assistant chaplain, assistant adjutant, assistant secretary.*

assistant chief of staff. A staff officer who assists the chief of staff as head of a major subdivision in a headquarters organization, as in *assistant chief of staff, personnel.*

This staff officer is so designated on the 'general staff' type of organization, as well as on certain other types of organization. On a general staff, he is called the A-1, A-2, etc., according to the division over which he presides.

assisted takeoff. The action of an airplane's taking off with an added boost from a rocket motor or other device. Chiefly *British.* See **RATO** (*abbr*).

assoc (*auth abbr*). 'Associate' or 'association.'

associate activity. A unit or other organization, looked upon as an activity, that shares the occupancy of an AF installation.

asst (*auth abbr*). 'Assist' or 'assistant.'

assume, *v. tr. To assume command,* to take over and begin the exercise of command in a military organization.

assumed position. A position, other than the actual position, that a navigator assumes himself to be at for determining the computed altitude of a given celestial body.

The assumed position normally lies near the dead-reckoning position.

assumption, *n.* A supposition on the current situation, or a presupposition on the future course of events, either or both assumed to be true without positive proof, but made to enable the commander, in drawing up an operational or war plan, to complete his estimate of the situation and make a decision on his course of action.

In operational or war planning, a commander is sometimes obliged to make certain assumptions when all the relevant facts are not positively known, esp. as regards the enemy. Such assumptions serve as temporary substitutes for facts, and are formulated by judicious and common-sense consideration of facts already known.

assy (*auth abbr*). 'Assembly.'

ast (*abbr*). 'Altostratus.' See **As** (*abbr*).

A-staff, *n.* An AF general staff.

astern, *adv.* and *a.* To the rear of an aircraft; behind; from the back.

ASTIA (*abbr*). 'Armed Services Technical Information Agency.'

ASTP (*abbr*). 'Army Specialized Training Program.'

attrocompass, *n.* An instrument by which the true heading of an aircraft may be found by sighting upon a celestial body.

astrodome, *n.* A plastic dome located on top of a fuselage for celestial navigation, and sometimes used as a hatch.

astro hatch. An astrodome. *British.*

astronaut, *n.* One who would engage in, or is concerned with, interplanetary flight.

astronautics, *n.* The art and science of flying through space, or sending winged guided vehicles or missiles through space.

astronavigation, *n.* Celestial navigation. Hence, **astronavigator,** *n.*

astronomical triangle. Either a celestial triangle or a terrestrial triangle. Also called a 'navigational triangle.'

astronomical twilight. 1. That period of twilight that occurs, for computation purposes, when the sun is between the horizon and a point about 18 degrees below the horizon, the latter measured at the middle of the sun. **2.** The light diffused during this period.

This twilight is named 'astronomical twilight' to suggest the time of complete darkness at its darker limits, when the stars make their full appearance or begin to disappear. See **twilight,** *n.*

Some writers restrict the use of this term to the twilight occurring when the middle of the sun is between 12° and 18° below the horizon.

ASU (*auth abbr*). 'Area service unit.'

ASV (*abbr*). 'Aircraft-to-surface vessel,' designating airborne radar for detecting surface vessels.

ASW (*auth abbr*). 'Antisubmarine warfare.'

ASWAAF (*abbr*). 'Arms and Services with the Army Air Forces.'

ASWAF (*auth abbr*). 'Arms and Services on duty with Air Force.'

AT (*abbr*). **1.** *auth.* 'Antitank.' **2.** 'Advanced trainer.'

AT-6. A former designation for the T-6.

The AT-6 was the first and most widely used of modern single-engine advanced trainers. It is popularly called the 'Texan' by Americans and was named the 'Harvard' by the British.

AT-11. The former designation of the T-11.

ATA (*abbr*). 'Actual time of arrival.'

ATAF (*abbr*). 'Allied tactical air force.'

ATAG (*auth abbr*). 'Air Training Advisory Group.'

ATAR (*abbr*). 'Antitank aircraft rocket.'

ATB (*abbr*). 'Air Transportation Board.'

ATC (*abbr*). **1.** *auth.* 'Air Training Command.' **2.** *auth.* 'Air Traffic Control.' **3.** 'Air Transport Command.' Now *hist.*

ATCC (*auth abbr*). 'Atlantic Division Transport Control Center (Hq).'

atch (*auth abbr*). 'Attach.'

atchmt (*abbr*). 'Attachment.'

ATD (*auth abbr*). **1.** 'Armament Test Division.' **2.** 'Actual time of departure.'

atdnt (*abbr*). 'Attendant.'

atelectasis, *n.* Partial collapse of the lung.

ATerm (*auth abbr*). 'Air terminal.'

ATF (*abbr*). **1.** 'Air task force.' **2.** 'Actual time of fall.'

ath (*auth abbr*). 'Athletic.'

athodyd, *n.* [Coined from *a*ero *th*ermo *d*ynamic *d*uct.] *Generic.* A ramjet or pulsejet engine.

ATI (*abbr*). 'Air technical intelligence.'

ATIC (*abbr*). 'Air technical intelligence center.'

atk (*auth abbr*). 'Attack.'

Atl (*auth abbr*). 'Atlantic.'

atl (*auth abbr*). 'Awaiting trial.'

Atlas, *n.* A long-range ballistic missile, developed for the AF by Consolidated Vultee.

atm (*auth abbr*). 'Atmosphere' or 'atmospheric.'

atmosphere, *n.* (atm) **1.** The body of air which surrounds the earth. **2.** *Physics.* The pressure of the air at sea level, equal to about 14.7 pounds to the square inch. See **atmospheric pressure, standard atmosphere.**

In sense 1, the atmosphere is usually considered to consist of different layers, shells, or spheres. From one standpoint these are the troposphere, the stratosphere, and the ionosphere; from another the lower atmosphere, the middle atmosphere, and the upper atmosphere. But these same spheres, or other spheres differently conceived, may have certain characteristics that result in other names being applied to them, as those of the *chemosphere*, the *isothermal region*, the *ozonosphere*, the *exosphere*, the *ecosphere*, the *physiological atmosphere*, the *mesosphere*, and the *thermosphere*. See under separate entries.

atmospheric, *n.* Usually *pl.* An electromagnetic disturbance generated by atmospheric electrical discharges; the noise in a radio receiver or on a radar screen caused by this disturbance.

The noise so produced in a radio is often called 'static.' See **noise,** *n.*

atmospheric, *a.* Of or pertaining to phenomena connected with the atmosphere, as *atmospheric disturbance, atmospheric tide,* etc.

atmospheric circulation. The circulation of air in the atmosphere.

The structure of this circulation is vast and complicated, and is sometimes classified into primary or planetary circulation, secondary circulation, and tertiary circulation. The first of these occurs on a planetary scale and results from a gain in heat in the equatorial regions coupled with a net loss of heat by radiation in the higher latitudes, the heat energy being transferred from the equator to the poles by actual movement of air. Because of the earth's rotation and because of the effects of land and sea, this circulation is deflected and rendered complex with resultant semipermanent centers of action. The heated air rises at the equator, moves toward the poles as the antitrade winds, settles to the earth, and returns to the equator in the northeast and southeast trade winds, except that part of the subsiding antitrade winds escapes toward the poles as westerlies of the middle latitudes, whence they either return to the equator aloft or continue toward the poles at high levels, from where they return to the equator as polar easterlies. The secondary circulation embraces smaller wind systems, such as the monsoons, tropical and extratropical cyclones, and anticyclones. The tertiary circulation comprises numerous variable winds, thunderstorm winds, land and sea breezes, etc.

atmospheric control. Any device or system designed to operate movable aerodynamic control surfaces to direct a guided missile in atmosphere dense enough for such controls to be effective; the control provided by such devices. Cf. **non-atmospheric control.**

atmospheric plane. A horizontal plane in the atmosphere.

atmospheric pressure. The static force or pressure exerted by the atmosphere in any direction in any part of the atmospheric envelope. Cf. **air pressure.**

Atmospheric pressure is expressed in different ways, as at sea level, it is 76.0 centimeters of mercury, 29.92 inches of mercury, 33.9 feet of water, 14.66 pounds per square inch, 1,013.25 millibars, etc.

atmospheric refraction. Refraction of light from a celestial body by the atmosphere.

atmospheric sounding. An air sounding.

atmospheric sounding diagram. An adiabatic chart.

ATO (*abbr*). **1.** *auth.* 'Aircraft transfer order.' **2.** 'Assist takeoff.' **3.** 'Armament test division.'

atom, *n.* The smallest particle of an element that enters into the composition of molecules, or in which a balance exists between protons and electrons.

atom bomb. An atomic bomb.

atomdef (*auth abbr*). 'Atomic defense.'

atomic, *a.* **1.** Of a substance: That supplies energy through nuclear reaction, as in *atomic pellet, atomic powder.* **2.** Of a period of time: That is affected by or determined by the use of atomic weapons, as in *atomic age, atomic era.* **3.** Of equipment: That utilizes atomic weapons or is used in the employment of atomic weapons, as in *atomic artillery, atomic bomber, atomic missile, atomic rocket, atomic warhead.* **4.** Of a mission, force, or operation: That employs atomic weapons, as in *atomic air attack, atomic assault force, atomic blitz, atomic striking force, atomic warfare.* **5.** Of bases or installations: At which atomic weapons are stored or from which missions delivering atomic weapons depart, as in *atomic base, atomic installation.* **6.** Of vehicles or equipment: That utilize power derived from atomic fission, as in *atomic engine, atomic-powered plane, atomic vehicle.*

atomic bomb. A bomb in which the explosive consists of a nuclear-fissionable, radioactive material, as uranium 235 or plutonium 239. Attrib., as in *atomic-bomb attack, atomic-bomb test.*

The generic term that covers both this bomb and the thermonuclear bomb is 'nuclear bomb.'

atomic device. Any device that makes use of nuclear-fissionable, radioactive material, esp. an atomic bomb, shell, or other atomic missile.

atomic energy. The energy generated by nuclear fission or nuclear fusion.

Atomic Energy Commission. (AEC) The civilian

governmental agency, established by the Atomic Energy Act of 1946, to take over the organization and property of the Manhattan Project, and to supervise and control the production of nuclear-fissionable, radioactive materials in the United States.

The AEC took over its duties on 1 Jan 1947.

atomic medicine. 1. That branch of medicine and medical research concerned with the problems resulting from the use of atomic energy and atomic weapons. **2.** Any medicine prepared by the use of fissionable material.

atomic pile. A nuclear reactor.

atomic radiation. The radiation or radioactivity which results from the decomposition of a nuclear-fissionable, radioactive material, or from the fusion of atomic nuclei.

atomic weapon. A bomb, shell, guided missile, or the like in which the warhead consists of nuclear-fissionable, radioactive material, as uranium 235 or plutonium 239, as the explosive charge.

atomization, *n. Specif.* The breaking down of fuel into minute particles as it is forced into the cylinder of an engine under extreme pressure.

atomize, *v. tr. Specif.* To destroy completely a *building,* an *area,* or an entire *city* by use of conventional bombs or an atomic weapon.

atorp (*auth abbr*). 'Antitorpedo.'

ATR (*abbr*). 'Antitransmitter-receiver.'

ATRC (*abbr*). 'Air Training Command.' See **ATC** (*auth abbr*).

ATS (*abbr*). 'Air Tactical School.'

ATSC (*abbr*). 'Air Technical Service Command.' *Hist.*

attach, *v.* (atch) *tr.* **1.** To place a *person* through competent orders in an organization other than the one to which he is assigned, either for temporary duty or for administrative reasons, as for quarters and rations, or for flying duty. **2.** To place a *unit* with a military organization for reasons of administration, operational control, or logistic support, as stated in orders, without making it an integral part of the organization.

Use of the word 'attach' in both senses can be given specific meaning by following it with a phrase introduced by *for,* as in 'attached for all purposes except quarters,' or 'attached for administration only.' Practice in this direction gives flexibility to the word and clarifies the use of 'assign.'

attaché, *n. Specif.* A person attached to the staff of a minister or ambassador. See **air attaché.**

attached unit. A unit placed under the control of a unit other than its parent unit for a specific purpose, the while remaining assigned to its original parent unit. See **detached unit,** note.

attachment, *n.* (atch) **1.** A supplementary device fastened to or mounted on a machine, vehicle, apparatus, or other end item, so as to vary or extend its function. **2.** The placement of a person, detachment or unit with another unit in an attached status.

attack, *n.* (atk) An act of offense; an act of striking at a person, force, nation, city, physical object or the like with the purpose of inflicting injury, damage, or destruction.

As an attrib., 'attack' sometimes has a restricted meaning of striking at an air or surface target in air support operations, as in *attack aviation, attack group, attack mission, attack plane, attack tactics,* etc.

attack airplane. An airplane designed and equipped primarily for low-flying bombing or strafing attacks.

attack bomber. 1. Any light or medium bomber designed or modified for low-flying bombing and strafing attacks. Attrib. with *mission.* Cf. **A-20** and **fighter-bomber,** *n.* **2.** A category of light bombers designed to attack surface targets. *Hist.* since 1939.

attacking, *a.* Of an airplane or airplanes: That participate in an attack. Also said of units or persons.

attention, *n.* (attn) A prescribed attitude of readiness held by a person, esp. in response to the command 'attention.'

attention, *v.* **1.** Used as a request in the heading of a letter, and often abbreviated: Please bring to the attention of, as in 'ATTN: Mr. Brooks.' Hence, *attention line.* **2.** Used in the imperative: Come to attention.

attenuation, *n. Specif.* The decrease of an electrical signal; the process of decreasing the power of an electrical signal.

attenuator, *n.* A device for reducing the amplitude of a signal current.

attitude, *n.* The aspect that an aircraft presents at any given moment, as determined by its inclinations about its three axes. Also attrib., as in *attitude indicator, attitude instrument.*

attitude control. *Specif.* A control system or mechanism, as an automatic pilot, that puts or keeps an aircraft or missile in a desired attitude.

attitude gyro. A gyro used in attitude control.

attitude of flight. The attitude of an aircraft during flight, as to pitch, roll, or yaw.

attn (*auth abbr*). 'Attention.'

attnd (*auth abbr*). 'Attendant.'

attrib or **attrib.** (*abbr*). 'Attributive' or 'attributively,' esp. as used in this dictionary.

attributive, *n.* As used in lexicography, a word that stands before the noun it modifies. Distinguished from an appositive. Abbreviated 'attrib.'

An attributive may be an adjective, as in '*gay* city,' but in this dictionary it is usually a noun that modifies another noun, as in '*aircraft* factory' where 'aircraft' remains a noun even though functioning somewhat like

an adjective. A noun attributive may not be used predicatively after a link verb, whereas the usual adjective attributive may be so used. For example, we may turn 'gay city' into 'the city is gay,' but we cannot turn 'aircraft factory' into 'the factory is aircraft.' This distinction does not always hold, for some adjectives are also not subject to being used predicatively after link verbs—such adjectives as 'principal,' 'middle,' 'four,' and 'aerial'—but the distinction usually holds and can be used as an initial test. Some nouns, such as 'air' are so repeatedly used as modifiers that they may be classified as adjectives, although, strictly speaking, they remain nouns used attributively. The distinction between a noun attributive and an adjective attributive is illustrated in the phrases 'a taxiing lane' and 'a taxiing airplane.' In the first instance, 'taxiing' is a noun used attributively, in the second, it is an adjective. One may not say, 'the lane is taxiing,' but one may say 'the airplane is taxiing.' See **engine,** *n.*

attributive, *a.* Of a word that stands before its modified word. Hence, **attributively,** *adv.*

attrite, *v.* [Rimes with 'bright.'] *tr.* To reduce in size by attrition.

attrition, *n.* **1.** A process of being worn down suffered by an object or force. **2.** The process of permanent loss suffered by a group of objects or a group of persons by losing some of its members.

When used as a factor in reporting statistics, this term (sense 2) must be precisely defined by its users to show what are meant by losses. Under field conditions it has been used with different limitations. For example, retirement losses to a combat crew have been considered not a part of attrition, whereas losses due to changes in duty status have been. In some contexts, the term means the process of suffering net losses, as in 'war of attrition,' where replacements are not equal to losses. See **aircraft attrition, personnel attrition.**

attrition rate. A rate, usually expressed as a percentage, reflecting the loss of personnel or equipment due to defined causes in a given period of time.

See **aircraft attrition rate, personnel attrition rate,** and **attrition,** *n.*

atty (*auth abbr*). 'Attorney.'

Atwell shelter. A prefabricated, half-cylindrical hut of wood, fibre glass, and canvas, used esp. in cold-weather areas for personnel shelter or storage.

AU (*auth abbr*). **1.** 'Air University.' **2.** 'Army unit.'

AU (*code prefix*). 'Female Air Force Reserve and USAF Warrant Officer' when used with a service number.

AUBV (*abbr*). 'Air University Board of Visitors.'

aud (*auth abbr*). 'Audit' or 'auditor.'

Aud Gen (*abbr*). 'Auditor General.'

audio frequency. Any frequency that affects the human ear, ranging between 15 and 20,000 vibrations per second, the most audible being between 500 and 4,000 per second.

Auditor General. A staff officer in Headquarters USAF under the Deputy Chief of Staff, Comptroller, who supervises the auditing activity of the AF.

AUFUSAF (*abbr*). 'Army Unit for United States Air Force.'

aug (*auth abbr*). **1.** *Capitalized.* 'August.' **2.** 'Augment.'

auger, *v. To auger in,* to crash in a tail spin. *Slang.*

augmentation, *n.* (aug) *Specif.* The act or process of increasing the personnel or equipment of certain AF units, as provided for to meet additional workloads.

augmenter, *n.* Any device, as an afterburner, that increases thrust, velocity, or power. See **thrust augmenter.**

AUM (*auth abbr*). 'Air-to-underwater missile.'

aural null. A condition of minimum or no aural signal being received over a radio-receiving set using a directional antenna.

With a loop-type directional antenna, aural null occurs when the plane of the loop is at right angles to the direction of the transmitted signal. See **loop antenna.**

aural radio range. A radio range, such as the loop-type radio range, in which the on-course signal is an aural signal only.

aural signal. A signal which must be heard by the ear and be interpreted without benefit of visual instruments.

aural-type VHF range. A VHF aural-type range.

AUS (*auth abbr*). 'Army of the United States.'

austerity program. A program of extreme economy and self-denial.

auth (*auth abbr*). 'Authority,' 'authorize,' 'authorized,' or 'authorization.'

authab (*auth abbr*). 'Authorized abbreviation.'

authentication, *n.* **1.** A signature or seal that shows that a military document is genuine and official. **2.** A symbol or code in a message included as evidence of its authenticity and as a means of protecting the communications system against fraudulent transmissions.

authority, *n.* (auth) **1.** The power of a commander to command those subordinate to himself, or to take action within the scope of his command. **2.** By extension, this power, or a part thereof, delegated and used in the name of the commander. **3.** The commander who exercises this power, or the staff, office, or organization that acts for him. **4.** A law, regulation, order, letter, or the like, that serves as a basis for doing something.

In sense 1, authority is a limited and delegated power, subject to being revoked, and defined by law, regulation, and custom. In the US, the ultimate source from which it derives is the people. Cf. **command,** *n.*

authority library. A library that maintains a collection of laws, regulations, orders, letters, or the like. See **authority,** *n.*, sense 4.

authority line. A line on a piece of military correspondence appearing just before the signature when signed by someone for the commander, showing its source of authority.

The authority line is appropriate on correspondence directed to higher headquarters or to persons outside

the chain of command. Example: FOR THE DIRECTOR. Cf. **command line.**

authorization, *n.* (auth) **1.** That which has been authorized. **2.** The instrument or document that grants a right, power, or thing.

authorize, *v.* (auth) *tr.* To grant, by appropriate authority, a *right*, *privilege*, *power*, or *thing* to a person or organization.

In passive constructions, the indirect object often becomes the subject, as in 'Capt Jones was authorized to sign,' 'the group was authorized 50 airplanes.'

authorized, *a.* Granted, sanctioned, or approved by appropriate authority.

authorized allowance. A prescribed amount of supplies or equipment for an individual or organization, as authorized by a table of organization, a master equipment allowance list, or any other appropriate authority.

authorized frequency. The radio frequency authorized a radio station.

autmv (*auth abbr*). 'Automotive.'

auto (*auth abbr*). 'Automatic.'

autogiro, *n.* Also **autogyro.** An airplane that derives its lift chiefly from airfoils that rotate without engine power about a nearly vertical axis as the airplane moves through the air.

The autogiro is provided with a conventional propeller that gives it thrust, and generally with stub wings. It differs from a helicopter chiefly in that its rotating airfoils are not powered by an engine except, in some models, during takeoff. Autogiros have not been manufactured in recent years. See **jumpoff autogiro.** Cf. **gyrodyne,** *n.*

autogiro landing shock cord. One of several elastic bracing cords that brace autogiro rotor blades at the moment of touchdown.

autokinetic phenomenon. A nocturnal visual illusion in which a fixed light appears to move when a person stares at it intently.

auto lean. Short for 'automatic lean.'

automatic, *n.* (auto) **1.** A full-automatic firearm. **2.** *Popular.* A semiautomatic firearm; *specif.*, a semiautomatic pistol.

Inasmuch as the word 'automatic,' when applied to firearms, has become ambiguous, the terms 'full-automatic' and 'semiautomatic' are often used. See separate entries, and see also **self-loading,** *a.*

automatic, *a.* (auto) **1.** Designating firearms that are fully automatic or semiautomatic. **2.** Designating mechanisms that work in reaction to certain conditions, as in *automatic horn*, *automatic valve*, etc. **3.** Designating actions or movements executed by use of automatic equipment, as in *automatic approach*, *automatic landing*, *automatic takeoff*, etc. **4.** Designating a standing operating procedure observed in distributing or issuing something.

automatic direction-finder. A direction finder which automatically indicates the direction of the station or stations to which it is tuned. See **automatic loop radio compass.**

automatic flight-control equipment. Equipment designed to maintain automatically a desired aircraft attitude, altitude, or heading.

automatic frequency control. A mechanism for providing continuous automatic adjustment to the tuning of the local oscillator of a radar receiver in order to maintain a constant beat frequency between the local oscillator and the transmitting tube.

automatic gun charger. A gun charger that includes a mechanism for the clearance of gun stoppages and the retention of the breech mechanism to the rear of the gun receiver.

automatic issue. The automatic distribution of publications to individuals or offices listed on a specific distribution list.

automatic lean. A setting designation on the mixture control of an airplane. Usually called 'auto lean.'

At auto lean, the carburetor automatically maintains a fuel-air ratio for normal cruising conditions.

automatic loop radio compass. An automatic direction-finder consisting of a radio compass having a loop antenna that automatically turns to a position of minimum reception from a radio transmitter in its frequency range, showing on the appropriate instruments the relative bearing between the aircraft's heading and the radio transmitter.

automatic pilot. A control mechanism incorporating a gyroscope, which initiates corrections on the control surfaces of an aircraft to maintain a steady and preset course and attitude, without assistance from the human pilot.

Also called a 'copilot,' 'autopilot,' 'gyropilot,' 'robot pilot,' and 'mechanical pilot.'

automatic propeller. A variable-pitch propeller having its blades attached to a mechanism or system that automatically adjusts them to a pitch of maximum effectiveness under varying flight conditions.

automatic radio compass. Short for 'automatic loop radio compass.'

automatic rich. A setting designation on the mixture control of an airplane. Usually called 'auto rich.'

At auto rich, the carburetor automatically maintains a proper fuel-air ratio for maximum power performance.

automatic slot. A movable slot.

automatic stability. The stability (which see, sense 1a and note) of an aircraft maintained by such mechanical devices as an automatic pilot which operate the control surfaces automatically.

automatic tracking. Tracking in which a servomechanism keeps the radar beam trained on the target, by locking the servomechanism to the echo signal from the target.

automatic weapon. *Specif.* As used in reference to antiaircraft artillery, any weapon of 75 mm or smaller. See **light weapon,** note.

automation, *n.* A development in industrial production by which electronic or mechanical devices are used to supervise and control the operation of the machines or mechanized tools that make products; the process of production inherent in this development.

By automation, the ratio of man-hours to machine-hours is reduced for the output of any given product, the same as has always occurred when machines displace men, but the reduction resulting from automation is that specially felt in the man-hours used in supervising and operating machines, not in the man-hours used in doing what the machines do.

autonomous, *a. Specif.* Of the US air arm: Having a status and recognition equal to that of the Army or of the Navy. Hence, **autonomy,** *n.*

Autonomous and *autonomy* became doctrinal terms during the AF struggle to achieve separation from control by the Army. Autonomy for the AF came with the National Security Act of 1947.

autopilot, *n.* Short for 'automatic pilot.'

auto rich. Short for 'automatic rich.'

autorotation, *n. Specif.* **1.** The free rotation of rotor blades without engine power. **2.** An uncontrolled rolling of an airplane, as in a spin.

autumnal equinox. 1. The point where the sun appears to cross the celestial equator from north to south. **2.** The time of this crossing, when day and night are of equal length.

The autumnal equinox occurs about 21 September. Cf. **vernal equinox.**

aux (*auth abbr*). 'Auxiliary' in combination only.

auxiliary, *a.* **1.** Of an installation: That supplements, as in *auxiliary airfield, base, landing field, strip,* etc. **2.** Of equipment: That supplements or is in addition to regular equipment, as in *auxiliary bomb-bay tank, auxiliary compressor, auxiliary power plant,* etc. **3.** Of an organization: Set up or established to assist in periods of need, as in *auxiliary air force, auxiliary unit,* etc. Cf. **Civil Air Patrol.**

auxiliary air base. An air base used to aid, or to supplement the facilities of, another air base, either on a day-to-day basis or in times of emergency. Cf. **alternate,** *a.*, note.

The auxiliary air base need not be under the jurisdiction of the commander of the main base, but it often is. When it is, it is usually suited to sustaining only limited operations, having limited communications, personnel, and maintenance and servicing facilities.

auxiliary airport beacon. A rotating light beacon, usually of lower candle power than an airport beacon, used to indicate the specific location of an airport, or otherwise to assist in the identification of an airport or airdrome.

auxiliary airway beacon. A light beacon, usually of lower candle power than the airway beacon, indicating special features on the terrain or otherwise supplementing an airway beacon.

auxiliary booster. An additional booster needed for a large bursting charge which would otherwise not be properly detonated by a booster alone.

auxiliary power unit. A power unit that can be used in addition to, or in place of, other sources of power.

AV (*code prefix*). 'Female Air Force Reserve and USAF Warrant Officer,' when used with a service number.

av (*auth abbr*). 'Aviator' or 'aviation' in combination only.

aval (*auth abbr*). 'Available' or 'availability.'

AvBad (*auth abbr*). 'Army aviation badge.'

AVC (*abbr*). **1.** 'Automatic volume control.' **2.** 'Aviation cadet.'

AvCad (*auth abbr*). 'Aviation cadet.'

AVCS (*abbr*). 'Assistant Vice Chief of Staff.'

Avenger, *n.* The popular name for the TBF.

average, *a.* and *n.* **1.** *adj.* Usual, most common, typical. **2.** *n.* An arithmetical mean. Also used as an adjective.

Because 'average' has been used in contexts where an unprecise notion is given an aura of having been arrived at by statistics, as in 'the average airman,' it is common practice to use the word 'mean' instead of 'average' in sense 2.

avfr (*auth abbr*). 'Available for reassignment.'

AVG (*abbr*). 'American Volunteer Group.'

avg (*auth abbr*). 'Average.'

avgas (*auth abbr*). 'Aviation gasoline.'

aviation, *n.* (avn) [French from the Latin *avis* bird.] **1. a.** The art, science, or practice of flying through the air in heavier-than-air aircraft, as in 'his smattering knowledge of aviation.' Cf. **aeronautics,** *n.* **b.** By extension, the art or science of flying or sending piloted or pilotless airplanes or rocket ships through the air (including outer space), as in 'the next development in aviation will be the spaceship.' **c.** The development and operation of heavier-than-air aircraft, as in 'aviation in Great Britain had reached a point where radar was essential.' **2.** *transf.* **a.** The aircraft flown; the air force or its components that employ aircraft, as in 'powerful aviation overcame the enemy's resistance.' See **fighter aviation, tactical aviation. b.** The mode of travel provided by aircraft, as in 'aviation provides the quickest way of getting there.' **c.** The activity of employing aircraft to carry out a military operation; the people who do this. Used esp. in the phrases 'fighter aviation,' 'tactical aviation,' 'troop-carrier aviation,' etc. **d.** The world of the airplane, i.e., the people engaged in both the manufacture and operation of airplanes, as in

'the name Avro was known in aviation almost before airplanes flew.'

'Aviation' is a flexible term, and it often carries connotations of one sense into another. Sometimes in context, for example, the meanings of sense 1a and sense 1c cannot be separated. In sense 1b, the term is broadly used and includes the concept of astronautics, but it does not include rocket artillery in that the latter employs missiles not subject to guided change in direction during flight.

aviation, *a.* or *attrib.* (avn) Of or pertaining to aviation: See note for certain common usages.

1. Designating persons having certain connections with aviation, as in *aviation adviser, analyst, expert, mechanic, psychologist, writer,* etc. **2.** Designating units or organizations, as in *aviation detachment, section, squadron,* etc. **3.** Designating places, as in *aviation center, base, field,* etc. **4.** Designating equipment or supplies used in aviation, as in *aviation fuel, aviation ordnance, aviation radio,* etc. **5.** Designating records or writings, as in *aviation annual, history,* etc. **6.** Designating proposals, actions, or activities, as in *aviation industry, intelligence, policy, program,* etc.

aviation badge. One of several similarly designed emblems or badges for wear on the uniform, each signifying a particular rating or flight service.

Aviation badges are basically 3-inch spread silver wings bearing distinctive center designs for each of the ratings. A badge is authorized for a command pilot, a senior pilot, a pilot, a senior aircraft observer, an aircraft observer, a flight surgeon, and a flight nurse. The flight nurse's aviation badge has a 2-inch span.

The center design of the pilot's badge is that of the Federal shield; of the observer's badge, the shield in the Air Force seal; of the surgeon's badge, the medical caduceus; of the nurse's badge, the medical caduceus with an 'N' superimposed. See **pilot's wings.**

Sometimes an aviation badge is made of cloth with the design embroidered with metallic thread. See **evening dress uniform,** note, **miniature,** *a.*

aviation cadet. 1. A person in training to become a commissioned AF officer with an aeronautical rating. **2.** The grade or status of such a person.

In sense 1, the term is often used restrictively to denote a pilot cadet, but the term in its general application includes persons in cadet training as aircraft observers as well as pilots. The aviation cadet has a status somewhat between that of an officer and an enlisted man. His subsistence allowance is that of an officer; his pay is between that of a basic airman and an airman third class.

aviation corps. 1. *General.* An army's air arm with the status of a corps. **2.** *Capitalized.* A proposed corps of the US Army to supersede the Aeronautical Divison. *Hist.*

The corps of sense 2 was proposed by a bill in Congress in 1913. The bill did not pass.

aviation dentistry. A branch of dentistry concerned with the study, prevention, cure, or treatment of diseases and other ailments of the teeth and related structures arising from conditions encountered in, or brought on by, flying.

aviation engineer. 1. One who constructs airfields or other field installations for use of airplanes. Also called an 'air engineer.' **2.** An aeronautical engineer. *Loose* usage.

Attrib. (in sense 1), as in *aviation engineer personnel, aviation engineer troops, aviation engineer unit.*

aviation engineer battalion. A unit in an engineer aviation brigade (which see, esp. note).

Although called an 'aviation engineer battalion' during WW II, the proper designation is now 'engineer aviation battalion.'

aviation engineer force. An AF unit responsible for the construction of airfields, composed of engineer aviation brigades (which see).

aviation gasoline. (avgas) Gasoline specifically prepared for use in airplanes.

Aviation gasoline is rated by a performance number. See **performance number.**

aviation medical examiner. A medical person authorized to perform physical examinations to qualify persons for flying.

This title is used by both the Air Force and the Civil Aeronautics Administration.

aviation medicine. A branch of medicine concerned with the study, prevention, cure, or alleviation of diseases or other bodily ailments arising from conditions encountered in, or brought on by, aviation.

Aviation medicine deals with such subjects as the biological problems peculiar to aviation, including selection, maintenance, and treatment of the flyer himself; assistance in designing aircraft and related equipment to meet human requirements; adaptations of man to the conditions of flight; and the problems involved in the evacuation of the sick and wounded by air. Also called 'aeromedicine.'

'Aviation medicine' is used as an inclusive term, embracing both aeromedicine (in its restricted sense) and space medicine. See **aeromedical,** *a.*, **aeromedicine,** *n.*

aviation officer. In the A.E.F. of WW I, a designation for a staff officer responsible to his commander for military aviation.

Aviation Section. An aviation branch of the Signal Corps, so designated as the successor of the Aeronautical Division. In full, **Aviation Section of the Signal Corps.**

The Aviation Section, created by act of Congress, 18 July 1914, provided greater recognition for the air arm than that previously provided. This section was transferred to the Division of Military Aeronautics under the War Department on 21 May 1918, where it became a part of the Air Service. See **Air Service,** sense 2c.

aviator, *n.* One whose profession is that of flying heavier-than-air aircraft; a pilot of such aircraft. See **pilot,** *n.*, note; cf. **aeronaut,** *n.*

aviator's deafness. A nerve-type deafness found among a moderate percentage of people who habitually fly in airplanes.

This deafness is induced by noise, and affects the hearing of frequencies of about 4,000 cycles per second.

aviator's ear. Barotitis media.

aviatrix, *n.* A woman pilot of a heavier-than-air aircraft.

avigation, *n.* [Coined upon the analogy of 'navigation.'] Air navigation. Hence, **avigational,** *a.*, **avigator,** *n.*

These terms are used only infrequently.

avionic, *a.* Of or pertaining to avionics.

avionics, *n.* [Coined from *avi*ation electr*onics*.] A field of applied research in which electronic devices are adapted to use in aviation.

avlub (*auth abbr*). 'Aviation lubricant.'

avn (*auth abbr*). 'Aviation.'

avoiding action. Evasive action.

avoil (*abbr*). 'Aviation oil.'

Avon Park Air Force Base. An AF base at Avon Park, Florida, named for the city.

Avro, *n.* Any British or Canadian airplane made by A. V. Roe & Co., Ltd., or A. V. Roe Canada, Ltd.

Some of the better-known Avro airplanes are the *Avro Lancaster*, a four-engine bomber of WW II; the *Avro Lincoln*, a modification of the Lancaster, and the *Avro Anson*, a twin-engine trainer.

AW (*abbr*). **1.** *auth.* 'Automatic weapons.' **2.** 'Article of War.' **3.** *auth.* 'Air warning' in combination only.

AW (*code prefix*). 'Male Air Force Reserve and USAF Warrant Officer' when used with a service number.

a/w (*abbr*). 'All-weather.'

award, *n.* **1.** The conferring of a decoration or service award. **2.** Any special recognition given a person or unit, esp. a decoration or service award, or in some cases a cash award; a symbol of such recognition, as a medal, ribbon, or the like. **3.** In a restricted sense, a service award.

See **decoration,** *n.*, and **service award.**

AWC (*abbr*). **1.** *auth.* 'Air War College.' **2.** 'Army War College.'

AWCO (*auth abbr*). 'Area Wage and Classification Office.'

awd (*auth abbr*). 'Award.'

aweasvc (*abbr*). 'Air weather service.' See **AWS** (*auth abbr*).

AWngSvc (*abbr*). 'Air warning service.'

AWOL (*auth abbr*). 'Absent (absence) without leave.'

Sometimes pronounced as a word.

awol, *adv.* In the status of being absent without leave, as in 'he went awol.' *Colloq.*

AWS (*auth abbr*). 'Air Weather Service.'

awt (*auth abbr*). 'Awaiting.'

axial compressor. An axial-flow compressor.

axial flow. *Specif.* In a jet aircraft, the flow of air along the longitudinal axis of the engine.

axial-flow compressor. A centrifugal compressor used esp. in a jet engine that forces the air or other fluid in a straight line parallel to the axis of its rotating impeller.

This compressor draws air into its system by a rotating impeller, the air being discharged radially by the blades of the impeller. The air, however, is immediately picked up by fixed blades (fixed to the casing), which are so designed as to guide the air back to its original direction parallel to the axis of the rotor. The velocity of the air is reduced by the fixed blades (or stator blades), the kinetic energy being converted into pressure energy. This compressor may be designed with only one impeller-stator-blade combination, in which case it is called a 'single-stage compressor'; or it may be designed with more than one such combination, in which case it is called a 'multistage compressor.' Cf. **double-entry centrifugal compressor.** See also **compressor,** *n.*, **radial-flow compressor.**

axial-flow jet engine. A jet engine in which the flow of air is along the longitudinal axis of the engine; *specif.* a turbojet engine that utilizes an axial-flow compressor.

axis, *n.* A straight line, real or imaginary, that passes through a body and about which the body may, or actually does, revolve.

An airplane is considered to have three mutually perpendicular axes, each passing through the center of gravity. The *longitudinal axis*, sometimes called the 'x-axis,' runs lengthwise in the plane of symmetry from fore to aft; the *lateral axis*, sometimes called the 'y-axis,' runs from side to side; the *vertical* or *normal axis*, sometimes called the 'z-axis,' runs in the plane of symmetry from the back to belly.

axis of attack. The direction from which an attack is made; the specific heading of a bomber after crossing the initial point.

axis of precession. In a gyroscope or gyroscopic body, any axis perpendicular to the spinning axis, about which precession may take place.

The axis of precession follows a line between the point at which force is applied and the spinning axis. See **precession,** *n.*, sense 1.

axis of thrust. An axis or line running through the longitudinal center of a reaction motor, along which the thrust of the motor is directed. Cf. **center of thrust.**

axis of tilt. *Aerial photog.* A line on an oblique photograph representing the intersection between the tilted or oblique plane of the photographing camera and the assumed vertical plane of the same camera had the photograph been taken vertically at the same focal length from the same point.

Along this line the scale of the oblique is the same as that of the assumed vertical photograph.

axis power. *Specif.* Any one of the three powers that formed an alliance for aggressive action prior to WW II, i.e., Germany, Italy, or Japan.

The term 'axis' (Italian *asse*) was first used in a speech by Mussolini, 1 Nov 1936, in reference to a German-Italian agreement on Italian annexation of Ethiopia. Hence, 'axis power' was applied first only to Italy or Germany.

Az (*auth abbr*). **1.** 'Azimuth.' **2.** 'Azores.'

Azel camera. A camera mounted to photograph images on an Azel scope.

Azel scope. A radarscope constructed to show both azimuth and elevation.

azimuth, *n.* (Az) **1.** Bearing in the horizontal plane, usually expressed as an angle, and in air navigation measured clockwise from true north, grid north, or magnetic north, from 0° to 360°. **2.** Hence, in bombing, the factor of the bomb's movement after release to the right or left of its downward course. Distinguished from range (which see, sense 8). Cf. **azon,** *n.* **3.** In aerial gunnery, the bearing in the horizontal plane, the reference point, or 0°, being at the nose of the aircraft. **4.** Short for 'azimuth angle,' as in 'the

plane was coming in at an azimuth of fifteen degrees.' **5.** In celestial navigation, the angle at the zenith measured clockwise from true north to the vertical circle passing through the body. Abbreviated 'Z_n' or 'Zn.' See **true azimuth.**

azimuthal equidistant projection. An equidistant azimuthal projection. See separate entry.

azimuth angle. 1. The angle used to express azimuth. **2.** In celestial navigation, the interior angle of the astronomical triangle at the zenith, measured from the observer's meridian to the vertical circle through the body.

A certain star or aircraft may be said to have an azimuth angle of 35°, meaning that the star or aircraft on a horizontal plane is bearing 35° clockwise from true north as seen by the observer. In helicopter terminology, the angle is between the blade-span axis in the plane of symmetry and some arbitrary position in the rotor disc measured in the plane of rotation.

The symbol for an azimuth angle is 'Z.'

azimuth ballistic correction. A ballistic correction made in azimuth.

azimuth directional beam. A beam used in an instrument landing system for the correct azimuth to the runway.

azimuth plane. The horizontal plane in which azimuth is measured.

azimuth rate. *Gunnery.* The rate of change in azimuth measured in mils or degrees per second.

azimuth-stabilized PPI. A plan position indicator which is stabilized by a connection with the gyro compass so that the presentation is oriented towards true or magnetic north at the top of the scope. Also called a 'north-stabilized PPI.'

azon, *n.* [*Az*imuth *on*ly.] A kind of bomb used in WW II, having movable control surfaces in the tail adjusted by radio signals to control the bomb in azimuth only. Hence, *azon bomb*, *azon missile.*

B

B (*letter*). See **Bravo** (*code*). **1.** Used as a designation in the names of various objects, as *B-2 unit* (a portable food-heating unit for aircraft), *B-4 bag*, etc. **2.** Used as a symbol meaning 'special armament version' in Naval designations of aircraft so modified.

B (*abbr*). **1.** *auth.* 'Bomber,' as in *B-17*, *B-26*. **2.** *auth.* 'Base' when used in combinations, as in *AFB*. **3.** 'Belted' when applied to ammunition. **4.** 'Beech Aircraft Company,' 'Boeing Aircraft Company,' or 'Boeing Aircraft of Canada, Limited,' when used in the designations of US Naval aircraft.

B-2. A twin-engine, all-metal, biplane night bomber developed by Curtiss, in use in the 1930's, and popularly called the 'Condor.'

B-2 runway light. A portable runway light.

This light is usually provided in sets of the same color, either clear or otherwise.

B-4 bag. A bag of heavy fabric, having side pockets with zipper openings, generally used as a suitcase.

B-6. A twin-engine, biplane bomber developed by Keystone, in use in the 1930's.

B-7 shackle. A shackle having movable hooks at each end for carrying and releasing bombs or fuel tanks, and used with equipment for either electrical or manual operation.

B-10. A twin-engine bomber developed by Martin, in use from 1932 until 1940. Also at times used as a utility aircraft in WW II.

B-17. A four-engine, midwing bomber, developed by Boeing and used extensively during WW II in Europe and the Mediterranean area.

The B-17 is popularly called the 'Flying Fortress.'

B-18. A twin-engine, midwing bomber adapted from the Douglas DC-3, and popularly called the 'Bolo.'

B-19. A large four-engine bomber developed by Douglas and brought out in June 1941.

The B-19 was built in prototype only, and used for experimental purposes to provide data on large airplanes. It was the largest of all bombers until the B-36 appeared.

B-24. A four-engine, midwing bomber developed by Consolidated and used in WW II.

The B-24 is popularly called the 'Liberator.' This plane was made in many modifications, designated *B-24G*, *B-24N*, *TB-24*, *F-7*, etc. The original B-24 had a twin fin and rudder, but a later modification, the B-24N, had only a single fin and rudder. See **PB4Y-2.**

B-25. A twin-engine bomber, developed by North American and used extensively in WW II, particularly in the Pacific theater and the Mediterranean area. Popularly called the 'Mitchell.'

The B-25 was widely used after WW II for training, administrative, and liaison purposes.

B-26. 1. A twin-engine bomber developed by Douglas, popularly called the 'Invader,' used in Korea as a night intruder and, with modifications, a night reconnaissance plane. The new designation (since 1949) of the A-26. **2.** A twin-engine bomber developed by Martin, often called the 'Marauder,' and used in WW II.

B-29. A four-engine bomber developed by Boeing. Attrib., as in *B-29 drone*, *B-29 raid*.

The B-29 was used extensively in the Pacific theater in WW II, particularly in the bombing of Japan, and was the plane used to drop the first atomic bomb. It is popularly called the 'Superfortress.'

B-32. A four-engine bomber developed by Consolidated, essentially as insurance against failure of the B-29.

The B-32 lagged in development far behind the B-29 and ultimately only fifteen of these 'Super B-24's' saw limited combat in the Pacific.

B-34. A twin-engine, low-wing bomber, developed by Lockheed. The B-34 was used in WW II for bombardment training and patrol and popularly called the 'Ventura.'

B-36. A long-range bomber developed by Consolidated.

Different models of the B-36 are powered with six propeller-type pusher engines only, or with six propeller-type pusher engines and four jet engines. The first flight of a B-36 was on 8 Aug 1946.

B-45. A high-wing bomber propelled by four jet engines, developed by North American, and popularly called the 'Tornado.'

B-47. A bomber powered by six jet engines, having sweptback wings and a double-wheel bicycle landing gear, developed by Boeing. It is popularly called the 'Stratojet.'

B-50. A four-engine bomber developed by Boeing, with some features like those of the B-29, but having a taller fin and rudder, and larger engine nacelles.

B-52. A heavy bomber powered by eight jet engines, having sweptback wings and a double-wheel, twin bicycle landing gear, developed by Boeing.

Essentially a scaled-up version of the B-47, the B-52

made its first flight on 15 April 1952. It is popularly called the 'Stratofortress.'

B-57. The US version of the British Canberra.

B-61. A name sometimes given the TM-61.

BA (*abbr*). 'Blind approach.'

BABS (*abbr*). 'Blind approach beacon system.'

baby, *n.* An extra fuel tank on an airplane, which may be jettisoned. *Slang.*

baby flat-top. An escort aircraft carrier.

baby incendiary bomb. A small incendiary bomb used by the British in WW I.

back, *n.* The top part or the upper surface area of an airplane, esp. of an airplane's fuselage, referred to in such contexts as 'to fly on its back.'

The back is normally conceived as the top part between the nose and the vertical stabilizer.

back area. Any area back of the front lines.

Distinguished from the 'rear area' in that it is not necessarily an operational area. It may contain raw materials, industries, highways, etc. See **rear area.**

back azimuth. A reciprocal azimuth determined by adding or subtracting 180° to or from the degrees expressing the azimuth of an object.

backer-up, *n.* Usually *pl.*, **backers-up.** One of a number of airplanes charged with laying additional markers on a target already marked by target indicators. *British.*

backfire, *n. Specif.* **1.** A rearward escapement of gases or cartridge fragments upon firing a firearm or gun. See **flareback,** *n.* **2.** A premature explosion in the cylinder of an internal combustion engine during the exhaust stroke, tending to drive the crankshaft in a direction counter to its normal one; any explosion in the intake or exhaust passages of such an engine.

back formation. The formation of a word by clipping an ending from an existent word that appears to be (but is not) a derivative of the word being formed; the new word thus formed.

This process is old, as in the formation of *greed* from *greedy* and *diagnose* from *diagnosis*. In more recent times, it appears in the formation of words like *edit* from *editor*, *donate* from *donator*, and *typewrite* from *typewriter*. In a somewhat different form, it appears in nouns (used attributively) derived from present participles, as in *bomb* from *bombing* (see **bomb,** *n.*, sense 5), and *taxi* from *taxiing* (see **taxi,** *n.*, sense 2). Recent use of *tactic* as a singular form of *tactics* may also have been affected by this process. See also **formate,** *v.*

background, *n.* **1.** Data or general information used as standard reference material for a particular problem. Usually attrib. with *data, information, investigation,* etc. **2.** *Radar.* An object or objects, esp. on the earth's surface, that produce signals on a radar screen but are of no particular interest; background returns. See **object of interest, radar target.**

background research. An aspect of basic research considered to provide a foundation for subsequent research.

Background research is usually considered to involve systematic observation, collection, and organization of facts to provide adequate data upon which to project the analysis and experimentation required for the discovery or testing of new facts, principles, or hypotheses.

background return. *Electronics.* An echo from an object other than the target, appearing on a radar screen. Cf. **clutter,** *n.*

backhaul, *n.* **1.** The return trip of an airplane or other vehicle, when carrying cargo. **2.** Excessive and unnecessary re-routing and double-handling of cargo.

backlash, *n. Specif.* The backward striking motion of a badly fitted machine part that results from changes in velocity, as between the teeth of the engaging gears of an airplane turret.

backlog, *n.* **1.** In maintenance, assembly, or supply: The accumulation of unrepaired, unassembled, or unhandled articles, as engines, instruments, etc., arising from a difference between input and a smaller output. **2.** Also transferred: Accumulated articles awaiting shipment.

backlog, *v. tr.* To set aside an *article* for future handling, repair, or assembly.

back order. **1.** An order by any supply activity upon a higher source of supply to provide an item or items requisitioned by a user, or by a lower supply activity, but which could not be immediately provided out of already held stock. **2.** A notation on a supply requisition to this effect.

Hence, **back-order,** *v.*, in sense 1.

back pack. Short for 'back-pack parachute.'

back-pack parachute. A parachute pack attached to the parachute harness at the upper back of the wearer.

backswept wing. **1.** A sweptback wing. **2.** An airplane wing in which the leading edge tapers backward from root to tip. Now *rare.*

back-to-chest acceleration. Acceleration of the body in the direction from the back to the chest.

back turret. A top turret.

back-type parachute. The back-pack parachute (which see).

backup communications equipment. Alternate communications equipment. See **alternate communications facility.**

The term 'backup,' as used in this context, is obsolescent in the USAF.

backup force. Any organized force prepared to back up or reinforce units already engaged in, or committed to, an assault.

A backup force operates as a unit under its own command, and in the AF serves esp. in counterair activities.

backwash, *n.* The part of an aircraft's wash that flows backwards, esp. that caused by a propeller or jet stream. See **wash,** *n.*, sense 1; also **jet wash, propeller wash.**

bacteriological warfare. Warfare conducted with

bacteriological weapons, as by bombs filled with bacteria.

This is a species of biological warfare. Cf. **biological warfare.**

BACU (*abbr*). 'Battle area control unit.'

BAD (*auth abbr*). 'Berlin airlift device.'

BADA (*abbr*). 'Base air depot area.'

bad conduct discharge. (BCD) A discharge given an airman by sentence of a general or special court-martial.

badge, *n.* A distinctive device, usually of cloth or metal, worn to indicate some special qualification, proficiency, or service of the wearer. See **aviation badge.**

Badger, *n.* A name given a sweptback twin-jet Russian bomber, first observed at the Moscow 1954 May-day show.

bad show. Any performance or operation not well accomplished by accepted standards. *Slang.*

bad time. Time in service, such as a period of absence without leave, not credited for discharge, longevity, or promotion.

bad weather. *Specif.* Weather in which flying is hazardous or ineffectual. Attrib. with *conditions, flying, operations,* etc.

Baedeker raid. [From the *Baedeker* guide.] In WW II, an air raid upon a historically important English or European city, usually conducted for reprisal rather than against military or industrial installations.

BAFCom (*auth abbr*). 'Basic Armed Forces Communication Plan.'

baffle, *n.* **1.** A plate or wall, as around an engine or in a wing tank, the purpose of which is to deflect, direct, or retard the flow of a liquid or gas. See **pressure baffle. 2.** A wall or partition used in a loudspeaker to direct the sound waves and thus improve fidelity.

bag, *n.* **1.** *Collective.* The airplanes or other aircraft shot down or destroyed in a given action or in a period of time; the airplanes 'bagged.' *Colloq.* **2. a.** The envelope or gas chamber of a balloon or other aerostat. **b.** One of the gas cells within the envelope of a rigid aerostat.

bag, *v. tr.* To shoot down or otherwise destroy hostile *aircraft. Colloq.*

bag (*auth abbr*). 'Baggage.'

bagair (*auth abbr*). 'While traveling via air outside the US, baggage to accompany is authorized.' Weight allowed is shown with this abbreviation.

baggage compartment. A compartment used for baggage in an aircraft or other vehicle.

baggage slip. A slip on or in a piece of baggage, bearing the name and address of the owner, destination, etc.

bail, *v. intr.* Usually with *out.* To escape from an aircraft by parachuting. Said of a person.

'To bail out,' now commonly accepted as a standard term, was as late as 1948 considered by some writers to be slang. Its origin is in dispute. One writer in 1940 (*Notes & Queries,* 179:223) considers it to be in allusion to baling a bundle; another (*Am Sp,* Apr 1941, p 148) thinks it to be in allusion to bailing water out of a boat. Like many terms beginning as slang, it probably had different allusions for different people, and no doubt the expression 'bail me out of here' in allusion to getting out of a place of confinement contributed to its adoption. H. L. Mencken cites an example of use in the London *Star,* 10 Jul 1940, in *Am Sp* (Feb 1944, p 6), but usage is considered to be some years earlier. See **parachute,** *v.,* note.

bailment, *n.* The action of delivering something in trust for a special purpose.

bailment aircraft. Aircraft assigned under bailment contract to an organization not in the Department of the Air Force.

Bailment aircraft include the following categories: Bailment for test and test support, bailment for maintenance, bailment for modification, bailment for other purposes.

bailout, *n.* The action of bailing out of an aircraft. Attrib. with *door, hatch, practice,* etc. See **bail,** *v.*

bailout bottle. A bailout oxygen bottle.

bailout kit. A survival kit packed in a container designed to be attached to the harness or pack of a parachute.

bailout oxygen bottle. A portable metal bottle containing oxygen to be used by a person after bailout at a high altitude. Sometimes called a 'bailout oxygen cylinder.' Cf. **carry-around oxygen bottle.**

baka bomb. [Fr. Japanese 'foolish.'] A WW II Japanese rocket airplane bearing explosives, guided onto its target by its pilot, called 'jinrai Butai' (divine thunderbolt) by the Japanese.

This craft was carried by a large airplane to a point near the target and released.

Bakalar Air Force Base. An AF base near Columbus, Indiana, formerly known as Atterbury Air Force Base, renamed for First Lieutenant John E. Bakalar, killed in action in France, 1944.

Baker (*code*). A word formerly authorized for the letter 'B.' See **Able** (*code*).

Baker Board. A board headed by Newton D. Baker, appointed in 1934 to report upon the operations of the Army Air Corps and upon the adequacy and efficiency of its equipment and training for the performance of its missions in both peace and war.

BAL (*abbr*). 'Base authorization list.'

bal (*auth abbr*). 'Balance.'

balance, *n.* (bal) **1.** The stability achieved by an aircraft when the forces of drag, thrust, lift, and gravity are acting upon the aircraft so as to produce steady flight without roll, yaw, or pitch. **2.** A balancing tab. **3.** Any weight used for coun-

terbalancing, as on an aircraft control surface, to eliminate flutter.

balance, *v. tr.* To bring an *aircraft* into balance.

balance area. The area on a balanced control surface, as a rudder or aileron, that lies forward of the hinge line.

The purpose of the balance area is to reduce the hinge moment necessary to move the control surface.

balanced, *a.* **1.** Of an elevator, aileron, rudder, or other control: Designed or equipped in such manner as to put each side of its hinge axis in equilibrium with the other. See **balanced surface. 2.** Of an air force or task force: Made up of components, each having the particular strength and equipment required by the nature of its particular role in the operation being carried out, so as to serve both economy and efficiency. See **balanced forces.**

balanced forces. 1. Forces kept in a relationship to one another, as regards strength and equipment, in proportion to the part that each plays in the performance of the overall mission, in order to achieve economy and provide maximum flexibility and operational efficiency. **2.** Land, sea, and air forces kept substantially equal in terms of their size or expenditure of money. In this sense, the word 'balanced' is a word of persuasion sometimes used to suggest evenhandedness or impartiality without regard to overall strategy. Cf. **national weapons system.**

balanced stock. Often *pl.* A stock supply of items in quantities deemed sufficient to meet requirements for a specified period.

balanced surface. A balanced aileron, rudder, or the like. See **balanced,** *a.*

A surface may be balanced for static conditions or for conditions when aerodynamic forces act upon it. See **aerodynamic balanced surface, static balanced surface.**

balancing plane. An early name for an aileron, esp. for an aileron set between the wings of a biplane. Cf. **main plane.**

balancing tab. A tab (which see) that moves when its primary control surface is moved, but in an opposite direction, thus creating a force that aids the pilot in moving the primary surface. Cf. **flying tab.**

Balbo, *n.* A large flight formation of airplanes.

The Balbo is named after the late Italian General, Italo Balbo (1896–1940), who led a mass flight from Italy to the US and return in 1933.

ball, *n.* **1.** A solid projectile or missile, esp. one used in small arms. See **shell,** *n.* **2.** The ball in a ball-bank indicator. **3.** A signal rocket or flare burning in the air.

In sense 1, 'ball' is not necessarily descriptive of shape, but is a carry-over from former days when most projectiles were spherical.

ball ammunition. Non-armor-piercing ammunition in which the projectile is solid. See prec., sense 1.

ballast, *n.* Any substance, as sand or water, used to improve stability of an airplane or to balance and aid in the control of a balloon or airship; anything used for this purpose.

ballast tank. A tank for water used as ballast, esp. in a lighter-than-air aircraft.

ball-bank inclinometer. A ball-bank indicator.

ball-bank indicator. The usual bank indicator, having a ball which rolls or oscillates in a slightly curved tube filled with a liquid to dampen irregular movements of the ball.

The ball assumes a position resultant of the forces of gravity and centrifugence acting upon it. Also called 'ball-bank inclinometer.'

ball bearing. A bearing in which the moving parts operate against freely revolving steel balls contained in a race, chiefly for the purpose of reducing friction; any one of the balls in such a bearing.

Ball bearings are used at points of stress, as in a landing gear, a high-speed engine bearing, etc.

ball gunner. Short for 'ball-turret gunner.' See **ball turret.**

ballistic case. Any shell or casing given efficient ballistic characteristics, used to inclose explosive elements for delivery on a target; any bomb, shell, or rocket case. Cf. **aimable cluster adapter.**

ballistic coefficient. A coefficient expressing the relative efficiency of a projectile in overcoming air resistance.

ballistic condition. Any one of the conditions affecting the motion and behavior of a projectile in flight.

Ballistic conditions may include muzzle velocity, weight, size, and shape of missile, rotation of the earth, density of the air, etc.

ballistic correction. A gun-aiming adjustment made for the ballistic conditions affecting the flight of a projectile.

A ballistic correction may be either lateral or vertical. It does not cover any adjustments made after observation of fire.

ballistic curve. The curve described by the actual path of a bullet, bomb, shell, or other projectile as determined by the ballistic conditions, i.e., by the velocity due to the propulsive force, by gravity, wind, temperature, etc. See **projectile,** *n.*, sense 1.

This term is not applied to the path of a rocket until its fuel is cut off. See **trajectory,** *n.*

ballistic deflection. The deflection (which see) of a missile due to its ballistic characteristics.

With regard to projectiles fired from guns, ballistic deflection is considered to be either lateral or vertical. Lateral ballistic deflection is positive if to the right, negative if to the left; vertical ballistic deflection is positive if upward, negative if downward.

ballistic density. A theoretical constant density of the atmosphere that would have the same

effect on a missile in flight as the varying densities actually encountered.

ballistic efficiency. 1. The efficiency of a missile in overcoming air resistance, gravity, and other ballistic conditions. **2.** The external efficiency of a rocket or other jet engine of a missile. See **external efficiency.**

ballistic lead. The correction or allowance for wind effects and gravity made when computing a lead angle. Cf. **kinetic lead.**

ballistic missile. *Specif.* Any missile guided esp. in the upward part of its trajectory, but becoming a free-falling body in the latter stages of its flight through the atmosphere.

This missile contains guiding devices, such as preset mechanisms, but it is distinguished from a guided missile in that it becomes a free-falling body, subject to ballistic reactions as it descends through the atmosphere. Currently, the term has a strong connotation of a missile designed to travel outside, or in the outer reaches of, the atmosphere before plunging toward its target. The German V-2 is considered a ballistic missile.

ballistics, *n.* The science or art that deals with the motion, behavior, appearance, or modification of missiles acted upon by propellants, rifling, wind, gravity, temperature, or any other modifying substance, condition, or force; the art of designing missiles so as to give them efficient motion and flight behavior within the limitations set up by their purpose.

See **aeroballistics,** *n.*, **bomb ballistics, exterior ballistics, interior ballistics, penetration ballistics, terminal ballistics.**

ballistic temperature. A theoretical constant temperature that would have the same effect on a missile in flight as the varying temperatures actually encountered.

ballistic trajectory. That part of the trajectory of a bomb, shell, rocket, or other missile which is traced after the cutoff of propulsive force.

The ballistic trajectory of a bullet or shell is its entire trajectory, beginning at the muzzle of the gun; that of a bomb is from the point at which it separates from the bomber; that of a ballistic missile from the point at which its fuel is exhausted or cut off. See **trajectory,** *n.*

ballistic wave. An audible disturbance caused by the compression of air ahead of a projectile in flight.

ballistic weapon. *General.* Any missile weapon, as a bomb, rocket, shell, or bullet, affected by ballistic conditions.

ballistic wind. A theoretical or assumed constant wind that would have the same effect on a missile, as on a bomb, from the point of its departure to its target as the varying winds actually encountered.

ballistite, *n.* Often *capitalized.* A smokeless propellant or powder containing nitrocellulose and nitroglycerine, used in some rocket, mortar, or small-arms ammunition.

ball of fire. The luminous sphere surrounding a nuclear bomb immediately after explosion, consisting of heated air.

ballonet, *n.* A bag or compartment within the main bag or envelope of a balloon or airship, or within each gas cell of a rigid airship.

Ballonets assist in the trim and altitude control of balloons and airships. By their use desired pressure within the main envelope can be maintained by taking in or releasing air, thus preventing deformation of the envelope caused by changes in volume of the lifting gas.

balloon, *n.* (bln) **1.** A contrivance that incorporates a nonporous bag filled with heated air or a gas lighter than air so that it rises and floats in the atmosphere, esp. a nonrigid airship without a propelling system. Attrib., as in *balloon crew, balloon depot, balloon fabric, balloon flight, balloon hangar,* etc. **2.** The gas bag only, as that of a blimp or barrage balloon.

The first balloon was the fire balloon, invented in France in 1783. See **montgolfier,** *n.*

In technical parlance, 'balloon' is normally restricted to nonrigid airships. See **airship,** *n.*, **barrage balloon, blimp,** *n.*, **captive balloon, dirigible balloon, fire balloon, free balloon, kite balloon, pilot balloon, sounding balloon.**

balloon, *v. intr.* **1.** Of airplanes: To rise after a hard bounce on landing, in response to lift caused by an altered angle of attack. **2.** To float upward in reaction to increased air density between the airplane and the ground when attempting a landing at excessive speed. **3.** Esp. of parachutes: To billow or swell out like a balloon. **4.** To engage in ballooning.

In sense 2, see **ground effect.**

balloon apron. An antiaircraft device consisting of cables hanging perpendicularly from other cables extending between two or more balloons.

The term 'balloon apron' is sometimes used in the sense of 'balloon barrage' (which see).

balloon barrage. An antiaircraft defense normally consisting of a number of balloons, usually strung together and equipped with balloon aprons, held captive by steel cables and strategically moored near vital areas or installations.

The cables or aprons force attacking planes to fly at higher altitudes, thus impeding attack. Sometimes called 'balloon curtain' or 'balloon apron.'

Balloon Corps. *Civil War.* An unofficial title given to a small number of balloonists with their equipment who engaged in tactical observation for the Union Army between June 1861 and July 1863.

balloon curtain. A balloon barrage.

balloon fabric. A fabric, usually rubberized, for balloon or airship envelopes.

Balloon fabric is also sometimes used as a finish covering over the wood covering of certain airplanes.

balloon gun. An early antiaircraft gun for use against balloons.

ballooning, *n.* The activity connected with piloting, riding in, or sending balloons aloft.

ballooning era. An era when ballooning was popular, esp. between 1783 and 1910.

balloonist, *n.* One who engages in ballooning, esp. one who rides in or operates a free balloon.

balloon observer. One who observes activities on the ground from a balloon, esp. military activities. See **observer,** *n.*, note.

balloon pilot. 1. A person who pilots, or is trained to pilot, a lighter-than-air aircraft, including both dirigibles and free balloons. **2.** An aeronautical rating formerly given a person qualified to pilot a lighter-than-air aircraft.

Although the rating of balloon pilot or senior balloon pilot is not currently effective, persons who earned the rating are not deprived of it.

balloon squadron. An observation squadron that uses balloons.

ball turret. A turret in the shape of a ball, designed to project or to be let down from the belly of an airplane, and to house the gunner. Attrib. with *gunner*. See **turret,** *n.*

The ball turret, having guns mounted in it, rotates as the gunner brings his guns to bear.

ballwin (*auth abbr*). 'Ballistic winds.'

Baltimore, *n.* A twin-engine bomber, developed by Martin for the RAF and used in WW II.

balum, *n.* A piece of wire of any specified length, used in connection with a VHF antenna lead-in.

BAMO (*auth abbr*). 'Bureau of Aeronautics material officer.' *Navy.*

band, *n.* **1.** *Electronics.* A given segment of the electromagnetic spectrum, i.e., a range of frequencies within two definite limits. **2.** A group of musicians who play together upon various wind and percussion instruments, sometimes with stringed instruments added. See **Air Force band.**

In sense 2, an AF band is normally organized as a T/O unit, to participate in and provide music for military formations and other appropriate ceremonies; to provide concert music, dance orchestras, glee clubs, instrumental combinations, and individual musicians for recreation and entertainment at AF installations; and to assist in promoting AF objectives and in enhancing the prestige of the AF and of the US. Volunteer bands are also authorized in the AF.

B&G (*abbr*). 'Buildings and grounds.'

B&GR (*auth abbr*). 'Bombing and gunnery range.'

bandit, *n.* Any enemy airplane.

bandwidth, *n.* The width of a band of frequencies; *specif.*, the width of a resonance curve, in cycles per second, taken at a specified point along the curve.

The bandwidth is usually measured between the frequencies at which the power obtained in a circuit is one-half of the maximum.

Bane Award. An annual award of two hundred dollars from an endowment established by Major Reuben H. Fleet in 1944 in honor of Colonel Bane, US Army Air Corps, who died in 1932. In full, 'Thurman H. Bane Award.'

The Institute of Aeronautical Sciences presents the award 'To an officer or civilian of the Air Materiel Command for an outstanding achievement in aeronautical development during the year.'

Bank, *n.* A code name for the Russian version of the B-25.

bank, *n.* **1.** The attitude of an aircraft when its lateral axis is inclined with respect to the horizon; the position normally assumed by an aircraft when making a turn, to prevent skidding. **2.** A turn made by an airplane when in this attitude.

bank, *v.* **1.** *tr.* To incline an *aircraft* laterally, usually when making a turn, to prevent skidding; hence, to turn an *aircraft*. **2.** *intr.* Of aircraft or persons within: To incline laterally; hence, to turn.

bank-and-turn indicator. A flight instrument containing in a single housing a bank indicator and a turn indicator, the instruments being used in conjunction. Also called 'turn-and-bank indicator.'

banked attitude. The attitude of an aircraft when its lateral axis is inclined with respect to the horizon, measured in degrees.

bank indicator. A flight instrument which shows, with respect to the horizon, an aircraft's angle of roll about its longitudinal axis.

The bank indicator also indicates skidding or slipping of the aircraft in a turn and is used in conjunction with the turn indicator. See **ball-bank indicator, bank-and-turn indicator.**

banner cloud. A cloud floating from a tall mountain peak and suggesting a banner. It may be caused by reduced atmospheric pressure on the leeward side of the peak or may consist wholly or in part of drifting snow.

Banshee, *n.* **1.** A popular Navy name for the F2H. **2.** A B-29 drone aircraft, so designated.

bantam, *n.* Any of certain diminutive pieces of equipment, as an early experimental model of the jeep, or a light-weight radar homing beacon designed to be dropped by parachute for use on the ground. *Slang.*

BAQ (*auth abbr*). 'Basic allowance for quarters.'

BAR (*auth abbr*). **1.** 'Browning automatic rifle.' **2.** 'Bureau of Aeronautics representative.'

bar, *n.* **1.** Usually *pl.* A strip or strips of material, usually metal, indicating warrant or commissioned officer's rank up to and including captain in the AF. **2.** A metal strip on which a decorative ribbon is mounted; the decoration represented by the ribbon so mounted. **3.** Short for 'overseas bar.' **4.** A unit of atmospheric pressure equal to the pressure of one million dynes per square centimeter.

In sense 4, the bar is equal to 29.5306 inches of mercury at 32 degrees F at 45 degrees latitude.

Bárány chair. [Named after Robert *Bárány* (1876–

1936), Swedish physician.] A revolving chair which tests a person's equilibrium.

BARB (*abbr*). 'British angular rate bombsight.'

barbette, *n.* A mound of earth, or a platform, carriage, or the like for supporting a gun or guns so that fire may be directed over the surrounding armor or parapet, rather than through an embrasure. Hence, **in barbette,** mounted in such a manner.

barbln (*auth abbr*). 'Barrage balloon.'

bare unit. The basic part of an assembly, as of a radar transmitting station, left when easily detachable subassemblies and detailed parts are removed.

Barge, *n.* A code name for a large four-engine Russian bomber with straight wing, observed in flight at a Soviet air show, and presumed to have been designed by Tupolev.

Bark, *n.* A code name for the Russian Il-2.

Barksdale Air Force Base. An AF base near Shreveport, Louisiana, named for Lieutenant Eugene H. Barksdale, a test pilot killed in 1926.

Barling bomber. A six-engined American triplane bomber, of which only one was made, designed by Walter H. Barling and first flown in 1923 by the Air Service.

barnstorm, *v. intr.* To engage in barnstorming (which see).

barnstormer, *n.* One who barnstorms.

barnstorming, *n.* The action or activity of taking an airplane or airplanes from one location to another and engaging in taking passengers on joyrides, performing exhibition flying, etc. Barnstorming is often associated with circuses, fairs, or the like.

baro (*auth abbr*). 'Barometer.'

barodontalgia, *n.* The practice of dentistry concerned with the causes, diagnosis, and treatment of dental disorders resulting from decreased barometric pressure, or other factors peculiar to flying; the dental pain incident to these disorders.

barogram, *n.* A graphic record showing variations in atmospheric pressure.

barograph, *n.* A barometer that imprints a continuous record of atmospheric pressure on a graph. Also called a 'barometrograph.'

barometer, *n.* (baro) An instrument for measuring atmospheric pressure, used in such instruments as an altimeter.

There are two main types of barometer: See **mercury barometer, aneroid barometer.**

barometric altimeter. An altimeter that uses a barometer for measuring height.

barometric fuel control. A device that maintains the correct flow of fuel to an aircraft engine by adjusting to atmospheric pressure at different altitudes, as well as to impact pressure.

barometric fuze. A fuze set or activated by atmospheric pressure acting through a barometric device. Used esp. in leaflet bombs.

barometric pressure. Atmospheric pressure as measured by a barometer.

barometric pressure gradient. The rate of barometric change in a given direction expressed in the AF in tenths of millibars for any given distance on the ground.

barometric switch. A switch activated by an aneroid reacting to barometric pressure.

barometric tendency. The tendency of barometric change as indicated by readings within the preceding few hours, usually three, recorded in tenths of millibars.

barometrograph, *n.* A barograph.

barosinusitis, *n.* An acute or chronic congestion of the mucous membranes of a paranasal sinus, often impaired by flying at high altitudes without benefit of a pressurized cabin or compartment. See **dysbarism,** *n.*

baro switch. A barometric switch, once used esp. in an automatic rip-cord release.

barotalgia, *n.* An ailment or pain of the middle ear, often resulting from flying at high altitudes without benefit of a pressurized cabin or compartment. See **dysbarism,** *n.*

barotitis externa. An acute or chronic inflammation of the external auditory canal and eardrum, often caused by high-altitude flying without benefit of a pressurized cabin or compartment. See **dysbarism,** *n.*

barotitis media. An acute or chronic inflammation of the middle ear caused by dysbarism.

This inflammation is associated with stoppage of the ventilating passages.

barotraumatic deafness. A deafness, usually temporary, resulting from barotitis media.

Baroudeur, *n.* A popular name for the Sud-Est S.E. 5000.

'Baroudeur' is a French Moroccan word meaning a fighter.

barrack, *n.* Usually **barracks,** construed as a singular and plural. (bks) A building or set of buildings in which military personnel live or lodge.

Barracks are sometimes divided into smaller rooms, but normally are constructed in one or two stories to provide long and narrow rooms accommodating several persons in each.

barracks bag. A large bag of heavy cloth usually with a drawstring, intended to hold the clothing, equipment, and personal effects of an airman or other military person. Cf. **duffel bag.**

Barracuda, *n.* A British, three-place naval tor-

pedo-bomber, developed by Fairey and used in WW II.

barrage, *n.* Any concentration of fire, exploding bombs, or obstructing material serving esp. as a barrier against enemy action.

See **air barrage, antiaircraft barrage, balloon barrage, barrage fire, box barrage.**

barrage balloon. (barbln) A moored balloon, usually one of several, to protect vital areas or installations against low-flying airplane attack. Also called 'obstruction balloon.'

barrage fire. Of antiaircraft guns: Fire executed on predetermined firing data, placed as a curtain or barrier across the probable course of enemy airplanes.

barrage jamming. The simultaneous jamming of a number of radio or radar channels.

barrel, *n.* (bbl) **1.** That part of a gun or firearm through which the projectile is fired. **2.** A measure for certain liquids, esp. oil or oil products. **3.** The cylinder of an engine. *Slang.*

In sense 2, a petroleum barrel holds 42 US gallons, 34.97 imperial gallons. Cf. **drum,** *n.*

barrel, *v. intr.* With *along, around, down, through,* etc.: To move rapidly, esp. in an aircraft. *Slang.*

barrel engine. An engine having its cylinders arranged parallel to and around the drive shaft, as the cartridge chambers of a revolver.

barrel roll, *n.* An aerial stunt or feat in which an airplane makes, or is caused to make, a complete roll simultaneous with a complete revolution about a line offset but parallel to the longitudinal axis, as a chamber of a revolver revolves about the barrel.

'Barrel roll' has sometimes been applied to a slow roll.

barrel-roll, *v.* **1.** *tr.* To cause an *aircraft* to perform a barrel roll. **2.** *intr.* Of an aircraft or person in an aircraft: To go into a barrel roll.

barrier, *n. Specif.* A wire net so located as to prevent planes from colliding with other planes or from going off a runway. Sometimes used at the end of a runway; also used near the middle of a carrier's flight deck.

BAS (*abbr*). **1.** *auth.* 'Basic allowance for subsistence.' **2.** 'Basic airspeed.'

base, *n.* **1.** An air base or Air Force base. **2.** Short for 'base headquarters.' **3.** The housekeeping or other unit that operates a base, as distinguished from any other unit on the base, esp. in combinations, as *base adjutant, base commander, base supply.* **4.** Any area or installation from which operations are carried out. Often called a 'base of operations.' See note. **5.** An area or installation that supports an operation, as in 'supply base.' **6.** The bottom of a projectile. See **square base.**

In sense 4, a base or base of operations may be an entire country, as the base of operations for the European Theater during part of WW II was England.

base, *v.* **1.** *tr.* To establish *aircraft* or other *vehicles* on a base; to place or assign a *unit* or *person* on or to a base. **2.** To serve as a base for *aircraft, units,* etc., as 'this field bases two units.' **3.** *intr.* With *at, on,* or *upon:* To be located, established, assigned, or placed.

base accountable supply officer. A base supply officer.

base air depot. A large overseas installation in the immediate vicinity of a port, designed primarily to support a base of operations with bulk quantities of air force supplies and such specialized services not required for the immediate support of combat units.

A base air depot is a nonmobile installation of a permanent nature. It contains facilities for aircraft assembly, repair, and modification. It is usually given a proper name, such as Bengal Air Depot (of WW II) or Burtonwood Air Depot.

base allowance list. A variant name for 'base authorization list.'

base altitude. An altitude maintained during a given mission, esp. on the flight to the target, rendezvous, or the like.

base authorization list. Usually *capitalized.* A list of all equipment specified by the unit allowance lists of the organizations (except tenant organizations) at a particular AF base or installation. Abbreviated 'BAL.'

basec (*auth abbr*). 'Base section.'

base chaplain. A chaplain, normally the ranking chaplain, at an air base, who supervises the other chaplains on the same base and coordinates their activities. Often *capitalized.*

base command. A command in which the mission is to maintain and operate a military base or bases. Distinguished from a theater command or a major air command.

base commander. The commanding officer of a base. Often distinguished from some other commander, such as a theater commander, whose headquarters is also located at the same base.

base development. The setting up of facilities at a given location for the primary purpose of supporting military operations.

In this combination, 'base' may refer to any installation from a radio or radar station to a major Army, Navy, or AF base, the nature and extent of the base facilities being determined by the mission.

base exchange. (BX) An AF term for 'post exchange.'

base flight. A flight organization that performs maintenance on base flight aircraft and transient aircraft of all types.

base flight aircraft. Those aircraft assigned to a base or an administrative organization of a base, as distinguished from those assigned to the operational organizations.

base fuze. A fuze assembled in the rear of an artillery projectile. Cf. **tail fuze.**

base headquarters. 1. The headquarters organization of an air base. **2.** The building or other place where this organization is located.

base housekeeping. Housekeeping (which see) of an air base.

base inspector. Often *capitalized*. The senior inspector of the housekeeping or other unit that operates an AF base.

Normally, the base inspector is the inspector on the staff of a wing commander or a comparable headquarters staff. Also called an 'air inspector' (now unofficially), 'base air inspector' (now unofficially), or, under certain circumstances, an 'inspector,' 'wing-base inspector,' or 'wing inspector.'

base leg. A segment of a landing pattern followed by an aircraft just prior to the final approach.

base line. 1. A glowing line on a radar screen, representing the track covered by a radar scanner. Echoes from reflecting objects appear as pronounced irregularities in the line. **2.** A line between two radio transmitters. **3.** A reference line on a map.

base medical supply officer. An officer that exercises supervision and administration over the receipt, storage, issue, safeguarding, and accounting for medical supplies at an AF base.

base of trajectory. A straight line between the two ends of a trajectory.

base pay. (BP) The pay of an airman or officer according to his rank and longevity before additional pay is added for quarters, subsistence, flying status, overseas duty, etc.

base supply officer. An officer who exercises supervision and administration over the receipt, storage, issue, safeguarding, and accounting of certain supplies at an AF base.

base support. The support or service provided all organizations on a base by service organizations performing housekeeping duties. See **housekeeping,** *n.*

base support equipment. (BSE) That equipment provided a base or organization, in addition to unit essential equipment, to enable the base to perform its assigned mission.

Base support equipment may be provided for either limited or unlimited operations, and includes fire-fighting equipment, road-building machinery, transportation equipment, and the like.

base support T/A. A table of allowance for meeting the functional requirements of normal base activities.

base surge. In an underwater atomic explosion, the expanding, doughnut-shaped mass surrounding the base of the vertical column produced by the explosion.

The base surge will not form if the atomic charge explodes at too great a depth.

base wing. 1. Short for 'air base wing.' **2.** A transposed form of 'wing-base.' Considered *loose* usage.

basic, *a.* **1.** Absol. for 'basic flying training,' 'basic airman,' etc. **2.** Designating any communication, as a letter, telegram, memorandum, or the like, considered as introducing a new subject or a new phase of a subject, esp. as distinguished from other related communications. See **basic letter.**

basic aircraft inventory. The number of aircraft provided an organization, necessary for the accomplishment of the organization's mission: See note.

Under the Mutual Security Program (MSP), 'basic aircraft inventory' is defined as the number of aircraft provided a country for the accomplishment of its MSP mission.

basic air doctrine. Doctrine concerned with the nature of air power, and with what can be, and what cannot be, done with it. See **doctrine,** *n.*, sense 1, **phenomenon,** *n.*

Basic air doctrine deals with the phenomenon of flight, with the new relationships that exist as a result of hitherto unrealized speeds, range, mobility, and flexibility, and their application to the principles of war, such as those of mass, dispersion, and surprise, as well as to their application to the principles of peace, such as those of friendly association, distribution of economic wealth, and rendering of service. Cf. **operational air doctrine.**

basic airman. (A/B) **1.** A person holding the lowest rank in the AF, normally one unskilled in an AF specialty or yet unassigned for on-the-job training. **2.** The rank of such a person.

A basic airman was formerly designated a 'private.'

basic airspeed. Indicated airspeed corrected for instrument error.

basic allowance for quarters. (BAQ) An amount of money prescribed and limited by law which an officer or airman receives to pay for quarters not provided by the government.

basic allowance for subsistence. (BAS) An amount of money prescribed and limited by law which an officer or airman receives to pay for subsistence.

In the case of airmen, the basic allowance may vary according to circumstances.

basic color scheme. *Specif.* The system by which different types of ammunition are identified by color.

basic communication. The original letter, telegram, or other communication to which indorsements or inclosures are attached.

basic correspondence. The written correspondence on a subject, kept together and including the basic communication, inclosures, indorsements, etc.

basic cover. Aerial reconnaissance for ground commanders that obtains general information or coverage on enemy terrain and permanent installations; the information thus obtained.

Basic cover is not necessarily current, and is supplemented by block cover (which see).

basic crew. The minimum authorized crew to man a specific aircraft on a given mission.

basic dead reckoning. A type of dead reckoning (which see) in which an earlier known position, elapsed time, and the track-ground speed vector are used. Wind velocity is not known.

basic doctrine. Doctrine concerned with what a thing is, with what constitutes its true nature. Used in special reference to air power. See **basic air doctrine, doctrine,** *n.*, sense 1, **phenomenon,** *n.*

basic dry rating. The thrust at sea level of a jet engine not using water injection.

basic field. The broad technical or scientific field or military program within which a given project falls.

basic flying training. 1. A stage of flying training in any given specialty between primary and advanced. **2.** *Specif.* Basic pilot training.

basic intelligence. Intelligence of a general nature concerned with more or less permanent matters, for use in background evaluations.

basic letter. Any letter considered as introducing a new subject or a new phase of a subject, esp. such a letter when distinguished from its indorsements, inclosures, or other communications on the same subject.

basic load. 1. The load on an aircraft or structural member determined under a specified condition of static equilibrium. **2.** Short for 'basic load of ammunition.'

basic load of ammunition. A unit or measure of ammunition for use in a single weapon or for all the weapons in an organization, consisting of all the ammunition carried by the members and vehicles of a given unit, including that stowed in self-propelled weapons. Usually called 'basic load.' Also called 'unit of fire,' esp. when calculated for a single weapon.

The basic load is often an amount fixed arbitrarily in accordance with a table of equipment. It may be determined by a calculation on what is to be used per weapon per period of time, esp. a day.

basic military training. The military training given a person without previous or recent military training or experience.

Basic military training includes drill, training in combat fundamentals and personal welfare, and instruction in military citizenship, etc. See **military training.**

basic mission. The mission of an organization or person related to overall objectives.

The basic mission is not usually expressed, but is implicit. For example, in 'time of war one of the basic missions of every person or organization in the AF is assumed to be that of contributing to the defeat of the enemy. The term is sometimes confused with 'primary mission.'

basic pay. Base pay.

basic pilot training. A stage of pilot training between primary pilot training and advanced pilot training, comprising basic training and instruction in visual and instrument flying, together with academic and military instruction and training.

Aviation cadets graduating from basic pilot training receive pilot ratings and commissions as second lieutenants. See **pilot training,** note. In WW II, a pilot cadet received his commission and rating after advanced pilot training.

basic research. Research carried out by the use of those techniques and disciplines relevant or appropriate to the discovery, testing, or illustrating of a fact, relationship, or principle; research concerned with adding to man's knowledge.

Basic research deals with primary evidence or raw materials, and because of this the use of primary evidence may be taken as a sign of basic research. Such research is applicable to anything—phenomena, the facts upon which a science is developed, the principles or laws of science, the biography of a man, the facts related to an historical event, the logic of mathematics or reasoning, the criteria of the disciplines, or the manifestations of philosophy, religion, or aesthetics. It may be conducted in a laboratory by experimentation, or in a library by relating hitherto unrelated facts. This research is often done in phases, or by different people, each working on a part of the total effort, in which case any part of the activity is considered basic research.

This activity includes background research (which see), which is not so much a phase of basic research as it is an aspect, for basic research involves continuous reappraisal of fact and hypothesis. See **applied research** and **research,** *n.*

basic support plan. In logistics, a plan upon which are developed a service troop list (which see) and the transportation and supply system in support of an operational plan.

basic T/A. 1. *Basic T/A (excepting clothing and individual equipment)*, a table of allowances listing the equipment having general application or authorized to several activities. **2.** *Basic T/A for clothing and individual equipment*, a table of allowances listing the clothing and individual equipment for all personnel.

basic trainee. An airman undergoing basic military training.

basic trainer. An airplane used in basic pilot training, of a more complicated design and construction than the primary trainer. Now *hist.*

The designation 'trainer' (T) has now replaced all other designations of trainer aircraft.

basic training. 1. Elementary training and instruction in the essential fundamentals of military service. **2.** Short for 'basic flying training,' 'basic military training,' 'basic pilot training.'

basic training school. A school that gives basic military training (which see) or basic training in any specialty.

basic weight. Of aircraft: The weight that includes all fixed operating equipment, fixed furnishings, trapped fuel and oil, and water or other coolant

in the radiator (if any), to which it is only necessary to add the variable or expendable load items, as parachutes, bombs, liferafts, etc., for the various missions.

The basic weight of an airplane varies with structural modifications and changes in the fixed operating equipment. The term 'basic weight' may be qualified with a word indicating the type of mission; thus the same plane may have different basic weights, depending upon whether it is 'basic weight for combat,' 'basic weight for ferry,' or the like.

basket, *n.* The basket-like container suspended beneath a balloon for carrying persons or equipment.

basket leave. A kind of unauthorized leave taken by an officer on a weekend or holiday, covered by a request for leave that is placed in the commander's basket, the request being destroyed in case the officer returns before the weekend or holiday has passed, or approved in case the officer is delayed in his return.

BASO (*abbr*). 'Base accountable supply officer.'

basops (*auth abbr*). 'Base operations.'

B.A.T., BAT (*abbr*). 'Blind approach training.' *British.*

Bat, *n.* **1.** A code name for the Russian Tu-2. **2.** An American glide bomb incorporating a radar apparatus to guide itself toward its target and used in the Pacific area during WW II.

bathtub, *n.* A popular term applied to any tub-like protuberance on the underside of an aircraft, as the lower engine cowling on a P-40 airplane.

battalion, *n.* (bn) An Army or Marine unit consisting of a headquarters and two or more companies or batteries.

battery, *n.* (btry) **1.** An apparatus containing several electric cells, esp. containing a liquid electrolyte. Attrib. with *box, circuit,* etc. **2.** A group of persons working in unison; any group of like weapons or equipment working in unison. Attrib. with *fire, commander,* etc. **3.** *In battery,* in firing position. Said of a gun. **4.** An artillery unit, either tactical or administrative, corresponding to a company in the infantry.

battery cart. A vehicle containing one or more batteries or more commonly a gasoline-powered generator, generally used for starting aircraft engines on the ground, to conserve the batteries installed in the aircraft.

battle, *n.* **1.** Any conflict between individuals, groups of individuals, or nations, esp. an armed conflict within the framework of a war. Attrib. with *damage, dress, fatigue, gear, formation,* etc. **2.** *Specif.* An air battle. Attrib. with *aircraft.* Cf. **combat,** *n.,* note.

battle area. A place of battle on the ground primarily between ground forces, considered somewhat more expansive than a battlefield. Cf. **combat area.**

Air units directly concerned with a battle area are units engaged in supporting ground units.

This term has no counterpart entirely satisfactory for defining the airspace in which two opposing air forces engage in battle, but see **battlefield, *n.*, battle sky,** and **combat airspace.**

battle area control unit. In WW II, a radar control unit set up in a forward area for directing aircraft to targets. *Hist.*

A BACU usually operated in conjunction with a forward director post.

battle casualty. A person who becomes a casualty as a direct result of enemy action or while serving in the face of the enemy.

battle fatigue. The ground force term for 'combat fatigue.'

battlefield, *n.* **1.** A place in which a battle between ground forces takes place. See **battle area. 2.** Also applied to an airspace in which an air battle is fought. *Rare.*

battle jacket. *Popular.* The waist-length jacket of the service uniform, officially called a 'jacket.' See **coat,** *n.*, **jacket,** *n.* Cf. **Eisenhower jacket.**

battle sky. An airspace in which an air battle takes place.

This term is not common. Its use is cited because of the difficulty in finding a suitable term to serve the airman as 'battle area' serves the ground fighter. See **battle area,** note.

battle star. A service star.

baud, *n.* A unit of signaling speed.

The speed in bauds is the number of code elements transmitted per second.

bay, *n.* **1.** The space between two bulkheads or other structural partitions or members in an aircraft; an opening. See **bomb bay, cargo bay. 2.** The space between two sets of wing struts in a biplane. **3.** Any space formed by dividing a floor area into sections for special purposes, such as storage locations.

BB (*abbr*). 'Short range bomber' (*Blizhnii bombovos*), used in the names of Russian aircraft from 1925 to 1945, as in *BB-1, BB-22,* etc.

bb (*abbr*). 'Bomb.'

bbl (*auth abbr*). 'Barrel.'

BC (*abbr*). **1.** 'Bottom dead center.' **2.** 'Bomber command.'

BCAir (*abbr*). 'British Commonwealth Air Force.'

BCD (*auth abbr*). 'Bad conduct discharge.'

bd (*auth abbr*). **1.** 'Board.' **2.** *Caps.* 'Bomb disposal.'

BD-2. A Naval designation for the A-20.

BDA (*auth abbr*). 'Bomb damage assessment.'

BDC (*abbr*). 'Bottom dead center.'

bdry (*auth abbr*). 'Boundary.'

BDS (*abbr*). 'Bomb damage survey.'

beach, *n.* Any shore area that provides room for walking about next to the water; *specif.,* such

an area large enough to land at least a combat team with its equipment.

beach capacity. The estimated capacity of a given beach to receive cargo unloaded from vessels, expressed in terms of weight (long or short tons) or measurement tons per day.

The estimate is based upon an evaluation of the physical characteristics of the beach with regard to sea, tides, and weather expectancy, and is made without reference to clearance capacity or storage capacity behind the beach.

beach diagram. A graphic representation of a beach showing landing areas.

The areas for respective landing teams are usually identified on the diagram by colors.

beach exit. Any route used for inland movement from a beach, or used by vehicles returning to the beach.

beach gradient. The rate of slope in a beach.

In planning amphibious landings, the gradient under the surface of the water is also considered. The gradient is expressed as a fraction, vertical increase being the numerator, horizontal distance being the denominator, as in 'the beach gradient was 1 to 30.'

beachhead, *n.* (bhd) A seashore area taken and held by the attacking force in an amphibious invasion; the occupying force on this area, as in 'the beachhead was wiped out.' Cf. **bridgehead,** *n.*

beaching gear. A wheeled contraption on which a seaplane or flying boat is moved about on shore.

beacon, *n.* Anything that serves to guide or orient, as a fire, a lighthouse, a radio beacon, etc.; *specif.*, a movable or stationary apparatus that sends out light, radio, or radar beams to guide or orient aircraft; a beacon transmitter or a beacon station.

Some writers do not clearly distinguish between a beacon and the beam it sends forth. See **light beacon, radar beacon, radio beacon.**

beacon light. 1. The light emitted from a light beacon. **2.** A light beacon.

beacon presentation. The radarscope presentation resulting from radio-frequency waves sent out by a radar beacon.

beacon station. A station where a beacon is located, esp. a radio or radar beacon.

beacon tower. A tower on which a beacon is mounted.

beacon transmitter. A radio or radar transmitter which serves as a beacon. See **radio beacon, radar beacon.**

bead, *n.* In flexible gunnery, the center of an optical ring sight.

Beale Air Force Base. An AF base at Marysville, California, originally named Camp Beale after Edward F. Beale (1822–1873), California pioneer.

beam, *n.* **1.** A stream of radio or radar impulses; the steady hum in an equisignal zone (which see); a light beam. Cf. **beacon,** *n.*, note. **2.** The direction extending from the side of an airplane at right angles to the plane of symmetry. **3.** The breadth at its maximum width of an airplane fuselage, hull, or vessel. **4.** A heavy rigid member in the structure of an aircraft.

In sense 1, *on the beam,* following a radio beam; hence, acting or performing satisfactorily and efficiently.

beam attack. An attack directed against the side of an aircraft. See prec., sense 2.

beam-rider guidance. A system for guiding missiles in which the guided missile rides along a beam, usually a radar beam, to its target.

The beam along which the missile travels may be either fixed or movable; in the latter case control is exercised over the missile in flight by moving the beam.

beam-riding missile. A guided missile that is directed to its target by beam-rider guidance.

beam-shy, *a.* Of a pilot or navigator: Inclined to apprehension and uncertainty in finding or following a radio beam.

beam signal. A signal in a radio beam, or the beam itself, used for navigational aid.

beam width. The angular width of the central effective part of a radar beam, measured in azimuth between points of half-power intensity.

beam-width error. An error or distortion, as presented on a radarscope, caused by the width of the scanning beam making the target appear wider than in actuality, or by covering two targets in a single sweep, making them appear as one target.

Bearcat, *n.* A popular name for the F8F.

bearing, *n.* (brg) The relative position of, or direction taken by, an aircraft, bomb, etc., with respect to a point and line of reference in a horizontal plane, as to a compass point and line; *specif.*, the position or direction of an object relative to a line between the observer and true north or magnetic north. Cf. **heading,** *n.*, **relative bearing.**

'Bearing' is often identified with 'azimuth,' which is really a species of bearing. Some authorities on navigation recommend that the direction of a point on earth be called 'bearing,' and the direction of a celestial body be called 'azimuth.'

bearing projector. A fixed light used in conjunction with a landmark beacon to indicate the direction toward a landing area by means of its beam.

Beast, *n.* A code name for the Russian Il-10.

beat frequency. *Electronics.* A heterodyne frequency resulting from the combination of two different frequencies, equal to the difference between the original two frequencies.

Beaufighter, *n.* A British twin-engined, two-place day-and-night fighter of WW II, developed by Bristol.

Beaufort, *n.* A British twin-engined, medium torpedo-bomber of WW II, developed by Bristol.

Beaufort's scale. A scale from 0 through 12 for showing the strength of wind, devised by Sir Francis Beaufort (1774–1857).

This scale uses 0 for 0 mph, 1 for 1–3 mph, 2 for 4–7 mph, 3 for 8–12 mph, 4 for 13–18 mph, 5 for 19–24 mph, 6 for 25–31 mph, 7 for 32–38 mph, 8 for 39–46 mph, 9 for 47–54 mph, 10 for 55–63 mph, 11 for 64–75 mph, and 12 for above 75 mph.

beaver, *v. tr.* To shoot holes in an *aircraft. Slang.*

beavertail, *n.* A fan-shaped radar beam, wide in the horizontal plane and narrow in the vertical plane.

The beavertail is swept up and down for height-finding.

Beechcraft, *n.* [*Beech* Aircraft Corporation.] Used in the names of aircraft, as in *Beechcraft C-45, Beechcraft Kansan*, etc.

beef, *n.* **1.** Strength or power, as in 'the airplane has plenty of beef.' *Slang.* **2.** A complaint or point for argument, as in 'his beef is the food.' *Slang.*

beef, *v. tr.* With *up:* To strengthen, improve, or better the performance of an *organization* or a *mechanism*, as of an airplane or one of its parts. *Slang.*

Bell, *n.* [*Bell* Aircraft Corporation.] Used in the names of aircraft, as in *Bell Airacomet P-59A, Bell Airacobra P-39, Bell Kingcobra P-63A*, etc.

Bellamy drift. **1.** A method of ascertaining the drift of an aircraft without benefit of check points on the ground, the method being worked out by J. C. Bellamy (1915–), meteorologist, by use of pressure and radio altimeters. **2.** The drift angle obtained by this method.

bell crank. A mechanical device having two arms and a central fulcrum, normally used to transmit or change the direction of a force from one assembly or control to another, as in the steering system of an airplane's nose wheel, certain types of aileron controls, etc.

Bell cranks are usually V-shaped, but in any shape the principle of two arms having a central fulcrum is present.

belligerent power. Any organized political entity with armed forces, and with an established government recognized by neutral powers, that is engaged in war.

A colony, faction, or section of a country engaged in armed conflict against its general government is not considered a belligerent power until recognized as such by neutrals.

belly, *n. Specif.* The under side of an airplane fuselage. Attrib. with *gunner, skid, turret*, etc.

belly, *v. intr.* **1.** With *down:* To fly close to the ground in an airplane. **2.** With *in:* To belly-land.

belly band. The belt at the joint between the tail section of an F-84 jet airplane and the fuselage.

belly-land, *v. tr.* To land an *airplane* on its belly, without benefit of landing gear. Also used intransitively of airplanes or persons within. See **belly,** *v.*, sense 2.

belly tank. A detachable auxiliary gas tank, usually carried underneath the fuselage, for the purpose of increasing range.

belt, *n.* Short for 'ammunition belt' or 'safety belt.'

belted ammunition. Cartridge ammunition arranged in a belt for ready fire in a machine gun. See **linked ammunition.**

bench check. A work-shop check of the condition, completeness, or working order of a piece of equipment. See **bench test.**

bench item. Any nonexpendable and recoverable part, assembly, subassembly, sub-subassembly, attachment, accessory, or end item used for training, personnel experimentation and testing, recruiting, or display purposes.

In certain specific contexts, the definition of 'bench item' may be construed to exclude certain items, as airplane engines or trainer aircraft, which would normally be regarded as bench items according to the general definition of the term.

bench mark. (BM) A mark on some fixed object, such as a foundation slab or a large natural stone, indicating a given elevation and used as a reference in surveys.

bench stock. A stock of expendable nonrecoverable items established at or near points of consumption.

bench test. A test of an engine or motor made with the engine or motor fastened to a bench or stand prior to installation in an aircraft.

bench trainer. A training device that can be, or is, set up on a bench for the trainee to examine and operate.

bend, *v.* **1.** *intr.* Of a radio-range course: To change direction in reaction to a shore line, mountain, or other deflecting feature or object. **2.** *tr. To bend the courses*, to alter the direction of the courses of a four-course radio range, as an Adcock radio range, so that opposite courses are no longer in line with one another. Cf. **rotate,** *v.*, **squeeze,** *v.*

bending stress. The stress received by an object, as by a wing spar, subjected to both tensile and compressive forces.

Bendix shock strut. A combination pneumatic and hydraulic strut, manufactured by Bendix Corporation, used in the landing gear of airplanes, sometimes called a 'pneudraulic strut.'

The taxiing and landing loads in such a strut are borne chiefly by compressed air.

Bendix Trophy Race. An air race from coast to coast held annually since 1931, for which a trophy is given by the Bendix Aviation Corporation.

bends, *n.* **1.** A painful cramping in the joints caused by aeroembolism. **2.** Popularly used synonymously with 'aeroembolism.'

beneath, *prep.* On a line between a celestial object

and the earth's center. Used in defining such words as 'subpoint,' 'substellar,' etc.

benef (*auth abbr*). 'Beneficiary.'

beneficial occupancy. The occupancy of a facility prior to its completion, permitting the occupant to carry on his functions but without interfering with the completion of the facility.

Benelux, *n.* The countries of Belgium, The Netherlands, and Luxemburg.

'Benelux' is an authorized abbreviation.

bentwing, *n.* An airplane with sweptback wing, esp. an F-84 or F-86. *Slang.*

Benzedrine tablet. A tablet containing Benzedrine sulfate (trade name for amphetamine sulfate) taken orally to counteract fatigue and sleepiness.

Bergstrom Air Force Base. An AF base near Austin, Texas, formerly known as the Del Valle Army Air Field, renamed for Captain John A. E. Bergstrom, killed at Clark Field in the Philippines, 8 December 1941.

Berlin airlift. An operation by the AF and the RAF from June 1948 to September 1949 for the purpose of flying food and supplies into West Berlin.

The Berlin airlift was to circumvent a Russian blockade against all surface traffic across the Russian zone into West Berlin. The AF carried about three fourths of the total tonnage.

Bermuda, *n.* The British designation for the A-34.

Bernoulli's law. [Fr. Daniel *Bernoulli* (1700–82), Swiss scientist.] A law of physics stating that as the velocity of a fluid increases, its internal pressure decreases.

An important application of this principle is made in giving lift to an aircraft by means of airfoils, which can be so designed as to increase the velocity of the airflow over their surfaces, and thus decrease its internal pressure. This decreased pressure of the airflow gives lift to the wings (or airfoils) over which it flows. See **lift,** *n.*, note.

beta activity. A form of radioactivity in which beta particles are emitted from the radioactive body.

beta particle. An electron originating within and emitting from a radioactive substance, often producing harmful physiological effects.

beta radiation. The radiation of beta particles.

betatron, *n.* A device that magnetically accelerates electrons, used chiefly to produce very hard X rays.

Betty, *n.* A name given by the Allies to the Japanese Mitsubishi OB-01, a twin-engined, naval bomber.

bevatron, *n.* [*B*illion *e*lectron *v*olts + *atron*.] An apparatus designed to bombard atomic nuclei with protons, i.e., with the nuclei of hydrogen, at such speeds as to shatter the nuclei and to charge positively the subatomic particles.

The bevatron, developed at the Berkeley Radiation Laboratory, hurls the protons at speeds of 300,000 miles in 1.85 seconds. Cf. **cosmotron,** *n.*, **cyclotron,** *n.*

BF (*auth abbr*). 'Belgian Fourragère.'

b/f (*abbr*). 'Brought forward.'

BG (*abbr*). **1.** 'Brigadier General.' See **brig gen** (*auth abbr*). **2.** *auth.* 'Beach group.'

BGR (*auth abbr*). 'Bombing and gunnery range.'

bhd (*auth abbr*). 'Beachhead.'

BHP (*abbr*). Also **bhp** (*abbr*). 'Brake horsepower.'

BI (*auth abbr*). 'Background investigation.'

biannual, *a.* For AF purposes: Occurring or issued twice a year, usually at periods either less or greater than six months. See **biennial,** *a.*, **semiannual,** *a.*

bias, *n. Specif.* The direct-current voltage between two elements of a vacuum tube; grid bias.

bias construction. The construction of a parachute canopy so that the fabric threads of the gores meet the peripheral hem at a 45-degree angle.

BIB (*abbr*). 'Baby incendiary bomb.'

bicycle gear. An airplane landing gear in which the main weight of the plane is carried by wheels or sets of wheels set one behind the other under the longitudinal center of the fuselage, the wings being supported by small outrigger wheels.

The B-47 bomber, for example, uses a bicycle gear.

bidirectional, *a.* Of a loop antenna: That may receive from two opposite directions at any given position of maximum reception.

biennial, *a.* For AF purposes: Occurring or issued every two years. See **biannual,** *a.*, **semiannual,** *a.*

BIF (*abbr*). 'Bombardier's Information File.'

big brass. Top brass. *Slang.*

big friend. A friendly bomber. *Slang*, esp. among fighter pilots.

Biggs Air Force Base. An AF base at El Paso, Texas, named for Lieutenant James B. Biggs, WW I fighter pilot, killed in France, 1918.

big noise. *Slang.* **1.** A large bomb. **2.** An important official.

Big Photo. An aircraft belonging to the Strategic Air Command participating in training missions with the Air Defense Command.

Big Week. A period in WW II (20–25 Feb 1944) during which Allied air superiority in the European Theater of Operations was established.

During the Big Week, Anglo-American strategic bomber attacks were made against German aircraft factories, and German fighters were attrited in air-to-air action.

Bikini bomb. Any of the test atom bombs exploded near the island of Bikini in the Pacific Ocean.

bil (*auth abbr*). 'Billet.'

bilateral infrastructure. Infrastructure required

for the use of one nation's forces within the territory of another.

billet, *n.* (bil) Quarters for a military person in a private home or nonmilitary building.

Sometimes loosely applied to quarters of any type if used by the military.

billet, *v. tr.* and *intr.* To assign quarters to a *person* or *persons,* usually in a nonmilitary residence or building; to be so assigned.

bill of lading. (blading) A document by which a transportation line acknowledges receipt of freight and contracts for its movement.

A US Government bill of lading (GB/L) is used when a federal agency pays the freight charges for shipment by common carrier, and frequently for shipments by contract carrier.

billow cloud. A cloud composed of nearly equally spaced parallel bands of thick cloud, usually having clear sky intervening between the bands. Also called a 'wave cloud,' or 'windrow cloud.'

bimetal thermometer. A thermometer that uses as a sensing element two dissimilar metals adhering face-to-face.

The unequal rates of heat expansion in the two metals causes the bimetal part to curl and uncurl, thus activating an indicator.

bimonthly, *a.* For AF purposes: Occurring or issued every two months. See **semimonthly,** *a.*

bimotor, *n.* Short for 'bimotor airplane.'

bimotored, *a.* Having two motors or two engines. Sometimes used in reference to an airplane. But see **motor,** *n.*, note. Also see **twin-engined,** *a.*

bin, *n.* In warehousing: An individual compartment or subdivision of a storage unit. Cf. **bay,** *n.* (sense 3).

bin card. A card attached to a bin, listing its contents.

binder, *n.* The wheel brake of an airplane. *Slang.*

bingo, *interj.* 'Running low on fuel.' Used as a radio code word among jet pilots.

biological defense. Defense against biological warfare (which see).

biological halflife. The halflife of a radioactive isotope in an animal body.

biological warfare. (biowar) Warfare waged by the employment of living organisms, toxic bacteriological products, and chemical plant-growth inhibitors to produce death or casualties in man, animals, or plants; defense against such warfare.

bioradiology, *n.* Radiobiology.

biowar (*auth abbr*). 'Biological Warfare.'

biplane, *n.* An airplane having two plane surfaces or wings on each side of the fuselage, one placed above the other.

bipropellant, *n.* A rocket propellant consisting of two unmixed chemicals fed to the combustion chamber separately. Cf. **monopropellant,** *n.*, **multipropellant,** *n.*

bird cage. *Slang.* **1.** A directional gyroscope. **2.** The place in a jet plane where several converging lines (fuel, oil, hydraulic) suggest a 'bird cage.'

bird colonel. A familiar appellation for a colonel. Cf. **full colonel.**

bird dog. A radio direction-finder. *Slang.*

bird-dog, *v. tr.* To pursue a *matter* persistently. *Slang.*

birdman, *n.* An aviator. *Colloq.*

biscuit gun. A traffic-control projector. *Slang.*

It has been suggested that this application arose from the humorous notion that a 'biscuit gun' was used to shoot food up to hungry pilots circling for a landing.

bisignal zone. The outer part of a zone formed by any two overlapping patterns transmitted by radio and in which two signals are heard, as in an Adcock radio range (which see). Also called a 'twilight zone.' Cf. **twilight band.**

Bisley, *n.* The Blenheim V.

Bison, *n.* A name for a sweptback four-jet Russian bomber, first observed at the Moscow 1954 May-day show.

Bitburg Air Base. An air base at Bitburg, Germany, named for the city.

bitch, *v.* **1.** *intr.* To complain. *Slang.* **2.** *tr.* To spoil or botch *something.* Often with *up. Slang.*

bite, *n. Specif.* The slice of air thrust backward by the revolution of an aircraft propeller.

To increase the bite, to change the propeller blade angle in order to thrust more air backward.

bite, *v. tr.* Of aircraft propellers: To cleave the *air* in order to give the aircraft thrust.

biv (*auth abbr*). 'Bivouac.'

bivouac, *n.* (biv) An assembly of troops on a piece of terrain, sometimes without shelter; a temporary encampment; the site of such an assembly or encampment. Also attrib. with *area, training,* etc.

biweekly, *a.* For AF purposes: Occurring or issued every two weeks. See **semimonthly,** *a.*

bi-zone system. *Supply.* A two-zone system.

BJCEB (*auth abbr*). 'British Joint Communications-Electronics Board.'

BJSM (*auth abbr*). 'British Joint Services Mission.'

bk (*auth abbr*). 'Book.'

bkpg (*auth abbr*). 'Bookkeeping.'

bkr (*auth abbr*). 'Baker.'

bks (*auth abbr*). 'Barracks.'

BL (*auth abbr*). 'Bombline.'

B/L (*abbr*). **1.** 'Bill of lading.' See **blading** (*auth abbr*). **2.** 'Basic letter.'

black, *v.* With *out.* **1.** *intr.* Of flying personnel: To suffer a blackout (sense 1). **2.** *tr.* To place a *city, ship,* or the like under a blackout (sense 2).

Black Book. An AF publication, handled as secret, summarizing USAF aircraft characteristics.

black box. Any unit, as a bombsight, robot pilot, or piece of electronic equipment, that may be put

into, or removed from, a radar set, an aircraft, or the like, as a single package. *Colloq.*

The units, commonly housed in black-colored boxes, are used for ready maintenance.

Black Cat. A Navy nickname for the Catalina in WW II.

black fog. A fog containing a large amount of soot, as may occur over large industrial cities.

black light. Infrared light.

blackout, *n.* Also **black-out. 1.** A temporary or transient loss of vision or consciousness owing to a fall in blood pressure in the head with a resultant insufficiency in oxygen: See note. Attrib. with *turn, dive,* etc. **2.** A passive defense, esp. against aircraft, in which all lights in a house, city, ship, or the like are extinguished or obscured. Attrib. with *conditions, curtain, light, shutter,* etc. **3.** *Radio.* In the Arctic, a condition in radio reception occurring when receiver sets fail to pick up any signals whatever.

In sense 1, the phenomenon may occur when the body is rapidly accelerated in the direction of the head. See **grayout,** *n.*, **redout,** *n.*

black powder. A low-pressure explosive made of saltpeter, sulfur, and charcoal.

Black powder may be used for spotting charges in practice bombs or for other special purposes, but is no longer used as a propellant in US military small-arms or artillery ammunition.

black propaganda. Propaganda, the source of which is falsified or concealed.

Black Widow. A popular name for the F-61.

blade, *n.* **1.** That part of a propeller arm or rotary wing that bites the air, i.e., from the shank outward. **2.** Also a propeller arm itself, or a rotary wing. See **rotor blade.**

blade angle. A propeller-blade angle or a rotor-blade angle. See separate entries.

blade area. Propeller-blade area or rotor-blade area. See separate entries.

blade back. The front side of a propeller blade, which is cambered or curved. See **blade face.**

blade base. A blade butt.

blade butt. That end of a propeller blade or arm that is joined to the hub.

blade damper. A spring or hydraulic device installed on the lag hinge of a helicopter rotor blade to reduce oscillation in the horizontal plane.

blade element. Any segment of a propeller or rotor blade contained between two blade sections.

blade face. The flat or nearly flat side of a propeller blade, which faces backward to the direction of the aircraft's motion.

blade folding. The swinging of rotor blades back into one compact group to facilitate storage or transportation of the helicopter.

blade loading. The load placed on the rotor blades of a helicopter, determined by dividing the gross weight of the helicopter by the planform area of all the rotor blades.

blade neck. The blade shank.

'Blade neck' is applied esp. to fixed-pitch propellers.

blade pitch. The blade angle.

blade section. A cross section, taken chordwise, of a propeller or rotor blade.

blade shank. The part of a propeller arm between the blade (which see, sense 1) and the hub.

blade-span axis. A span-wise axis of a rotor blade, esp. the axis about which the blade is feathered.

blade stall. An increase of drag on a rotor blade resulting from the reaction when the angle of attack of a retreating blade is greater than that at which maximum lift is produced.

A rotor blade in its backward swing requires a greater angle of attack than in its advance because of the lessened relative velocity of the wind.

The term 'blade stall' is also applied to propeller or compressor blades when their angle of attack is such that excessive drag is induced or a loss of efficiency results. See **compressor stall.**

blade station. A point or line on a propeller arm or rotor blade that designates a distance from the hub or other reference point.

Propeller blade stations are commonly designated at six-inch intervals, and are used as reference lines for locating blade markings, antiglare areas, the proper point for measuring the blade angle, etc.

blade track. The path described by the propeller or rotor blade tips when the blades are in proper alignment and the propeller or rotor is rotating. A blade is said to be *in,* or *out of, track.*

blade twist. 1. The twist built into a propeller or rotor blade, so that the pitch angle at the root is greater than that at the tip. **2.** The deformation imparted to a rotor blade, from root to tip, caused by unequal air forces acting upon it.

blade-width ratio. The ratio of the chord of a given propeller blade section to the propeller diameter. Cf. **mean blade-width ratio.**

blading (*auth abbr*). 'Bill of lading.'

blank, *v. tr.* To cut off the *beam* in a cathode-ray tube.

blanket, *n.* A smoke concentration laid down over a friendly area to prevent enemy observation from the air.

blanket travel order. Sometimes *pl.* An authorization to make an indefinite number of trips within a particular area during a specified period of time.

blanket work order. An order which authorizes the repair, modification, or manufacture of any indefinite number of like items. Also called 'open work order.'

blast, *n. Specif.* The brief and rapid movement of air or other fluid away from a center of outward pressure, as in an explosion; the pressure accompanying this movement.

This term is also commonly used as the equivalent of 'explosion,' but the two terms may be distinguished. See **explosion, *n.***

blast, *v. tr.* **1.** To shatter a *building* or other object with an explosive. **2.** *Specif.* To riddle an *airplane* or other target with a burst of gunfire.

blastard, *n.* The V-1, or German flying bomb. *British slang.*

blast bomb. A light-case bomb.

blast chamber. A combustion chamber.

blast deflector. A shield around certain gun emplacements in an airplane to deflect blast. See **blast tube.**

blast effect. 1. An effect resulting from blast. **2.** The space in which the violence of a blast may be felt, as 'he . . . pulled up out of the blast effect' (G. Kenney).

blast gate. A waste gate.

blast pressure. The impact pressure of the air set in motion by an explosion.

blast tube. 1. A tube to deflect blast surrounding the barrel of a gun mounted in an airplane. **2.** A duct for conveying cooling air to the magneto of an aircraft engine.

In sense 1, the blast tube may either be attached to the gun barrel or supported by the airplane structure. See **blast deflector.**

blast wave. The air wave set in motion by an explosion.

blast wind. The air set in motion by an explosion.

BLB mask. Any one of several types of oxygen masks designed by Boothby, Lovelace, and Bulbulian.

bldg (*auth abbr*). 'Building.'

bleed, *n.* An outlet by which to bleed a line or chamber; the fluid removed through such an outlet. See **cabin-pressure bleed.**

bleed, *v. tr.* To drain or divert all or part of the content of a fuel, air, or hydraulic *line* or *chamber.*

Bleeding may be merely a draining, or it may be done to remove air from a fuel or hydraulic line, or to utilize a part of a fluid for auxiliary purposes.

Blenheim, *n.* A British twin-engined, WW II airplane, developed by Bristol and designed or modified variously as a bomber, fighter, fighter-bomber, or night fighter.

The different types of Blenheims were identified by the addition of a numeral, as Blenheim I, Blenheim IV, etc. The Blenheim V, used both as a bomber and fighter-bomber, was also called the 'Bisley.'

Blériot, *n.* **1.** A French airplane credited with being the first powered monoplane to fly. **2.** Used in the names of aircraft manufactured by Blériot Aéronautique, as in *Blériot Penguin.* Now *hist.*

Named after Louis Blériot (1872–1936), a French inventor and pioneer aviator, who flew his monoplane across the English Channel in 1909, the first heavier-than-air aircraft to do this. The Blériot's wings were partly supported by guy wires attached to a mast.

blimp, *n.* A nonrigid dirigible; sometimes also, a semirigid dirigible.

'Blimp' is a WW I word, said to be derived from a name given a British class of nonrigid airship, known as type 'B-Limp.' The blimp is used esp. by the Navy in antisubmarine radar and sonar operations, and as radar pickets.

blind, *a.* **1.** Of a place on an aircraft: Blocking the vision of a person in the aircraft, as in the 'blind underside.' **2.** Of actions: Done under conditions of low visibility, looking either in a horizontal or vertical direction. **3.** *Specif.* Of or pertaining to instrument flying.

blind approach. An approach for a landing under conditions of a low ceiling or undercast and sometimes of limited visibility on the ground, usually made with the aid of instruments and radio. Sometimes abbreviated 'BA.' Cf. **weather minimums.**

blind approach beacon system. A combination radio and radar runway approach system.

Interrogation from the landing airplane results in information presented on a radarscope within the plane, which enables the radar operator to determine the plane's relative position in respect to the longitudinal center and end of the runway.

blind approach training. Training in making blind approaches. Abbreviated 'BAT' or 'B.A.T.'

blind-bomb, *v. tr.* and *intr.* To drop bombs on a *target,* usually with the aid of instruments, as with radar, when the target cannot be seen from the bombing plane; to engage in this activity.

blind bombing. The action of bombing a target that cannot be physically seen from the bombing plane. Attrib. with *attack, mission,* etc. Cf. **overcast bombing.**

blind flight. Flight in which the pilot cannot see out, esp. an instrument flight.

blind flying. Flying without being able to see out; *specif.,* instrument flying, esp. under a hood. Attrib., as in *blind-flying instrument.*

blind landing. *Specif.* An instrument landing. See **ground controlled approach, instrument landing system.**

blind navigation. The navigation of an aircraft under conditions of no forward or vertical visibility with the aid of instruments, radio, or electronic equipment.

blind spot. 1. Any part of an airplane that obstructs the sight of the pilot or crew. **2.** Any direction off a flying aircraft from which an attack can be directed without the attacker exposing himself to defensive gunfire.

blind takeoff. An airplane takeoff made under conditions of no visibility, usually made with the aid of instruments or radio.

blinker, *n.* A device from which light is, or may be, emitted in flashes, used esp. in signaling.

blip, *n.* A spot of light on a radarscope, or an irregularity in the base line on a radarscope, esp.

such a spot or irregularity representing the relative position of a reflecting object, as of an airplane. Also called 'pip.'

blip-scan ratio. The ratio between a single recognizable blip on a radarscope and the number of scans necessary to produce it.

The blip-scan ratio of any given radar set varies with range, antenna tilt, level of operator and set performance, target aspect, wind, etc.

blister, *n.* A bulge or blister-like protuberance on an airplane, usually dome-shaped and often transparent, from which a person may observe or operate a flexible gun. Also attrib., as in *blister gun, blister gunner,* etc.

A blister is ordinarily smaller than a turret, and does not rotate. See **turret,** *n.*, note.

blistering gas. Any of several gases which produce burning, inflammation, or destruction of tissues, either externally and internally. Such gases were formerly listed as 'vesicants.'

blitz, *n.* [Short for 'blitzkrieg.'] A smashing, surprise assault with military forces, intended to overwhelm in a single military action the defending forces.

The blitz may consist of a single attack or a series of coordinated rapid attacks. It is usually delivered by land and air forces together, but a lightning bomb attack is sometimes called a 'blitz' or 'air blitz' (which see). *The Blitz,* the German bombing attack on Britain in 1940.

blitz, *v. tr.* To attack a *nation, city,* or *defense line* with a sudden military assault; to smash or overwhelm.

blitz can. A jerry can. *Slang.*

blitzkrieg, *n.* [German, 'lightning war.'] A blitz.

blk (*abbr*). 'Block.'

blksm (*abbr*). 'Blacksmith.'

bln (*auth abbr*). 'Balloon.'

bloc (*auth abbr*). 'Blockade' used in combination only.

block, *n. Specif.* An airplane chock.

block, *v. tr. Specif.* To chock an *airplane.*

blockade, *n.* (bloc) *Specif.* Short for 'air blockade.'

blockbuster, *n.* Any large light-case bomb considered powerful enough to destroy a city block. *Colloq.*

The blockbuster, varying in weight from two to eleven tons, was widely used during WW II in Europe.

block construction. The construction of a parachute canopy so that the threads of the gores are parallel to the peripheral hem.

block cover. Aerial reconnaissance for ground commanders that obtains current information on the enemy's semipermanent and temporary installations and troop concentrations or movements; the information thus obtained.

Block cover is normally made to a depth into enemy territory equal to the maximum range of friendly artillery. See **basic cover.**

blocking oscillator. A relaxation oscillator circuit incorporating a condenser-resistor combination that prevents anode current from rising beyond a certain value, used for generating short-time, large-amplitude pulses.

block shipment. A shipment of supplies to an overseas theater, providing balanced stock for a given average force for a specific number of days.

For example, a block shipment might consist of thirty days' supply for an average force of 10,000 persons.

block speed. The time taken by an airplane between a departure point and a destination, measured from the moment the blocks are removed from around the wheels at the departure point and replaced at destination, expressed in statute or nautical miles per hour for the shortest distance.

The length of the route is not a consideration in block speed. For example, if the shortest distance is 400 miles, and the time lapse is 2 hours, even if the airplane has flown 600 miles, the block speed is 200 mph.

block time. Arrival time or departure time. Said in reference to the practice of placing blocks or chocks about the wheels of an airplane when an airplane comes to rest after a flight, or removing them when the airplane begins to taxi preparatory to flight. Cf. **block speed.**

Blohm and Voss Bv 141. A German single-engine reconnaissance monoplane, used in WW II.

This airplane was notable for its unusual, asymmetrical design, having the cabin mounted in the wing, separate from the fuselage, and the horizontal tail surfaces set off-center.

Blohm and Voss Ha 139. A German four-engine seaplane of WW II, designed for reconnaissance, mine-laying, and ambulance service.

blood and nerve poison. Poison, esp. poison gas, which affects the blood or nervous system. Former nomenclature lists this as 'systemic poison.'

blood chit. A piece of cloth carried by an aircrewman bearing an inscription in several languages that identifies him as a member of the US military establishment, and promises a reward for his return to US or friendly control.

blooding, *n.* A practice among certain veteran combat pilots in WW II of giving a novice tail protection to enable him to shoot at an enemy airplane, without need of defensive action. *Colloq.*

blooming, *n.* The expansion and consequent distortion of the target spot on the face of a cathode-ray tube.

blossom, *v. intr.* Of a parachute: To open.

blouse, *n.* The coat of the service uniform. *Popular.* See **coat,** *n.*

blow, *v.* **1.** *tr.* To release air from a gas *tank.* **2.** *To blow up,* to enlarge a *photograph, map,* or the like; to fill out the details of a *plan.* **3.** *To blow out,* to flame out.

blowback, *n.* **1.** The recoil of an unlocked bolt in

a firearm. Attrib. with *action, gun,* etc. **2.** The forcing of exhaust gas into the intake manifold of an engine during the period when intake and exhaust valves are open at the same time.

blowby, *n.* The escape of gases past the valves, piston rings, or head gasket of an engine during the compression and power strokes.

blower, *n.* **1.** A supercharger geared to the crankshaft of an aircraft engine and built into the engine. Cf. **turbosupercharger,** *n.* **2.** An impeller in such a supercharger, esp. in a centrifugal-type supercharger. **3.** A radio. *British slang.* **4.** *Electronics.* A small electric fan used to cool a magnetron or to blow warm dry air along a wave guide.

blowout, *n.* A flameout in a jet engine.

blow pipe. A jet airplane. *Slang.*

blowtorch, *n.* A jet engine or an airplane using a jet engine as its propulsive force. *Slang.*

blowup, *n.* **1.** An enlarged photograph. **2.** A plan or idea filled out in its details. *Colloq.*

blue, *n.* or *a.* **1.** Short for 'Air Force blue.' **2.** Blue sky, as in 'the wild blue yonder.' **3.** *Blues,* the AF blue uniform.

blue alert. An air defense alert that follows an earlier alert, i.e., the yellow alert, usually entailing a complete blackout, a silencing of all civilian radio stations, and the stationing of air raid wardens and fire-watching brigades for action at their posts. Cf. **red alert.**

blue instrument rating card. The highest instrument rating card formerly issued by the RCAF. See **green instrument rating card.**

blue streak request. A high-priority requisition on an air depot in the Air Materiel Command for projects or programs specifically authorized by Headquarters USAF, or by the Commanding General, AMC. Abbreviated BSA (which see).

Authorization for use of this request is made by Headquarters AMC.

bluing, *n.* Also **blueing.** *Specif.* The act or process of using certain corrosive agents to impart a blue, artificial coat to the surfaces of a firearm, chiefly to prevent rust and corrosion; the blue finish that results from this.

BM (*auth abbr*). 'Bench mark.'

B/M (*abbr*). 'Bill of material.'

bmdr (*auth abbr*). 'Bombardier.'

BMEP (*abbr*). 'Brake mean effective pressure.'

BMNT (*auth abbr*). 'Beginning morning nautical twilight.'

bmr (*abbr*). 'Bomber.'

bn (*auth abbr*). 'Battalion.'

bndy (*auth abbr*). 'Bindery.'

BO (*abbr*). 'Blackout.'

b/o (*abbr*). 'Back order.'

boa cumulus. A cumulus boa. Sometimes shortened 'boa.'

boat, *n.* A small surface-going vessel.

In the Naval service, a ship is not properly called a 'boat.' A boat is small enough to be carried on a ship. See **ship,** *n.* Cf. **flying boat.**

boattail, *n.* The tapering rear section of certain bullets and shells. Attrib. with *bullet, design, projectile,* etc. See **square base.**

boat-tailed, *a.* **1.** Of bullets and shells: Tapering to the rear. **2.** *Specif.,* of shells: Tapering to the rear from the rotating band.

BOB (*auth abbr*). 'Bureau of the Budget.'

Bob, *n.* A code name for the Russian Il-4, an improved version of the DB-3F, a twin-engine, long-range bomber and torpedo-carrier, developed from the TSKB-26, a twin-engine transport plane flown from Moscow to Miscou Island, New Brunswick, in April 1939.

bobbing, *n.* The fluctuation of the target spot on a radarscope.

body, *n.* **1.** A person. Used impersonally, as in strength reports, e.g., 'three bodies are needed to meet our authorized strength.' *Colloq.* **2.** A group or force, as in 'a body of men.' **3.** *Nontechnical.* **a.** The fuselage or hull of an airplane; in some airplanes, as the P-38, the nacelle housing the crew. **b.** The main structure or envelope of an airship; an airship hull. **4.** The cylindrical part of a shell between the bourrelet and rotating band.

body armor. Armored clothing.

Boeing, *n.* [The *Boeing* Airplane Company.] Used in the names of military aircraft, as in *Boeing Flying Fortress, Boeing Superfortress;* also used in the names of jet engines.

Boeing aircraft include the B-17, B-29, B-50, B-47, B-52, and C-97.

Bofors, *n.* [*Bofors* Armament Works, Sweden.] A 40 mm automatic cannon of a type developed in Sweden and adopted for manufacture and use by the US and Britain in WW II. Also attrib. with *cannon, gun.*

The Bofors normally serves as an antiaircraft weapon.

bog, *n.* A piece of wet spongy ground, esp. one filled with decayed moss or other vegetable matter.

As distinguished from a marsh or swamp, in contexts dealing with airfield construction, a bog usually connotes a smaller area, and is characterized by its decaying vegetable matter; a *marsh* is a tract of wet treeless land, often periodically inundated, supporting grasses, cattails, and like growth; a *swamp* is a tract of wet spongy land characteristically dominated by trees or shrubs.

bogey, *n.* **1.** Any flying aircraft that the observer or observers cannot identify. **2.** Any of the supporting rollers on an endless steel belt, as of a tank.

bogie, *n.* Variant of 'bogey.'

BOI (*auth abbr*). 'Basis of issue.'

boiler, *n.* A worn-out or obsolete airplane or airplane engine. *Slang.*

Bolingbroke, *n.* A WW II twin-engine bomber and general-purpose airplane, similar to the Blenheim, flown by the RAF and RCAF.

Bolling Air Force Base. An AF base at Washington, D.C., named for Colonel Raynal C. Bolling, Assistant Chief Air Service, killed in France, 1918.

Bolo, *n.* A popular name for the B-18.

bolt, *n.* The sliding mechanism in some types of firearms which closes the breech and contains the firing pin.

bom (*auth abbr*). 'Bombing,' 'bombardment,' or 'bomber.'

bomb, *n.* **1.** In a broad sense, an explosive or other lethal agent together with its container or holder, which is planted or thrown by hand, dropped from an aircraft, or projected by some other slow-speed device (as by lobbing it from a mortar), and used to destroy, damage, injure, or kill. **2.** *transf.* Anything similar to this object in appearance, operation, or effect, as a leaflet bomb, smoke bomb, photoflash bomb, a bomb-like container or chamber, etc. See **bomb testing,** sense 2. **3.** In specific senses: **a.** An aerial bomb. See note. **b.** An atomic bomb. Often called 'the bomb.' **4.** Attrib. in various meanings, dependent upon the second element in the combination: See note. **5.** Bombing: See note.

In sense 1, 'bomb' includes grenades, aerial bombs, infernal machines, mortar shells, etc., but does not include cannon shells, torpedoes, aircraft rockets, or mines. Guided missiles, ballistic missiles, explosive robot planes and similar devices are, however, sometimes popularly referred to as 'bombs' or 'flying bombs.' See **charge,** *n.,* sense 1, **dynamite bomb.**

In sense 3a, the word 'bomb' is often modified by a designating attributive, as in *armor-piercing bomb, chemical bomb, conventional bomb, earthquake bomb, fragmentation bomb, general-purpose bomb, glide bomb, high-explosive bomb, light-case bomb, practice bomb, semi-armor-piercing bomb, service bomb,* etc.

In sense 4, 'bomb' designates (a) the physical features or parts of an aerial bomb, as *bomb casing, bomb fuze, bomb nose;* (b) the military actions in which aerial bombs are used, as *bomb attack, bomb raid;* (c) storage spaces, equipment, or instruments for handling aerial bombs, as *bomb depot, bomb lift, bomb train;* (d) the movement, motion, or action of an aerial bomb after release from an aircraft, as *bomb burst, bomb drop, bomb velocity;* (e) activities connected with handling aerial bombs, as *bomb packing;* and (f) effects of an aerial bomb, as *bomb crater.*

In sense 5, 'bomb' is a back formation of 'bombing' as used in the combinations, *bomb formation, bomb run, bomb shelter,* etc. See **back formation.**

bomb, *v. tr.* and *intr.* **1.** To drop a bomb or bombs on a *target,* as a city, railyard, body of troops, etc.; (*intr.*) to engage in this activity. Cf. **torpedo bombing. 2.** With *up:* **a.** To load an *aircraft* with bombs. **b.** *intr.* To load up with bombs.

bomb (*abbr*). 'Bombardment.'

bombable, *a.* Of a target: Providing no insurmountable difficulties to bombing; within range for bombing.

bomb aimer. A bombardier. *British.*

bomb-aiming, *n.* The action of aiming bombs at a target or aiming point. Attrib. with *equipment, error, technique,* etc.

bombard, *v. tr.* **1.** To hit a *target,* as a city, fortification, or the like, with bombs, shells, grenades, or other explosive missiles. **2.** To subject a *substance* or its *atomic nuclei* to the impingement of rays or small particles.

bombardier, *n.* (bmbdr) **1.** A rated aircrew member who operates the bombing equipment on a bomber. **2.** The aeronautical rating of such a person. See **aircraft observer.**

bombardier-navigator, *n.* A person qualified to fulfill the duties both of bombardier and navigator aboard an airplane.

bombardier's information file. A file of up-to-date papers or documents containing information on bombing procedures, use and care of equipment, and other pertinent data.

bombardier trainer. An airplane specially designed for the training of bombardiers. Cf. **bombing trainer.**

bombardment, *n.* (bom) **1.** A sustained attack upon a city, fort, or the like with bombs, shells, rockets, or other explosive missiles; the action of bombarding. Attrib. with *airplane, attack, crew, equipment, group, squadron, training,* etc. **2.** Bombardment aviation. Used only in such phrases as 'medium bombardment,' 'very heavy bombardment,' as in 'this force consists of very heavy bombardment.' **3.** The action of bombarding atomic nuclei with rays or small particles; an instance of this action.

bombardment aircraft. *sing.* or *pl.* Aircraft designed or used for bombing. See **bomber,** *n.*

bombardment aviation. That aviation chiefly developed for aerial bombardment. See **aviation,** *n.,* sense 2a.

bombardment wing. An AF combat wing organized for bombardment.

bomb ballistics. The special branch of ballistics concerned with bombs dropped from aircraft.

bomb bay. Also **bombay,** *n.* The compartment or bay in the fuselage of a bomber where the bombs are carried for release.

bomb-bay bin. A large bin designed to fit into an empty bomb bay, normally used for carrying parts of a flyaway kit (which see).

bomb-bay door. One of the doors in the belly of an airplane, directly underneath the bomb bay.

bomb-bay tank. A fuel tank carried in the bomb bay of an airplane, often jettisoned after use.

bomb blast. The blast (which see) that results from the explosion of a bomb.

bomb capacity. The capacity of an airplane for carrying bombs. Cf. **bomb load.**

bomb carpet. The fall of bombs or the bombfall pattern produced in carpet-bombing (which see); the area struck by carpet-bombing.

bomb carrier. Anything that carries or holds bombs, as a bomber or bomb rack.

bomb-carrying capacity. Bomb capacity.

bomb cluster. A cluster (sense 1).

bomb command. *Specif.* The command exercised by a bomb commander. See next.

bomb commander. *Specif.* One of the officers who in succession commands a team or crew responsible for handling or keeping an atomic bomb as it moves from the custody of the Atomic Energy Commission through various stages until it ultimately is released from an airplane.

bomb complete round. A complete aerial bomb, including all of the components, such as arming wires, fuzes, etc., necessary to attach the bomb to a release mechanism and necessary to make the bomb function after release. Cf. **complete round.**

bomb damage. 1. The physical damage resulting from the detonation of a bomb or from forces set in motion by such detonation, as blast, heat radiation, fire, and radioactivity. Sometimes called 'primary bomb damage.' **2.** The effects on a nation's economic, political, and social structure which develop directly from accumulated physical damage caused by bombing. Sometimes called 'secondary bomb damage.'

'Bomb damage' is sometimes used in both meanings at once.

bomb damage assessment. A judgment on the extent of bomb damage, either physical or economic; the procedure involved in making this judgment.

This assessment may be made by aerial photography for primary bomb damage, but it may also be done on the ground. See next.

bomb damage survey. Bomb damage assessment (which see) performed by ground parties.

bomb disposal. (BD) A procedure for handling, disarming, or destroying unexploded bombs or sometimes other explosive ordnance.

bomb disposal dump. An area, usually in the open, where disarmed explosive ordnance is gathered.

bomb disposal unit. A unit composed of personnel with special training and equipment which disarms, supervises safe removal of, or destroys explosive ordnance, as bombs and mines, and makes reports on such ordnance.

bomb door. Short for 'bomb-bay door.'

bomb dump. An area, usually in the open, where bombs are kept available for immediate use.

bomber, *n.* (bom) An airplane specifically designed to carry and drop bombs. Attrib., as in *bomber attack, base, fleet, flight, formation, group, mission, operation, pilot, raid, range, sortie, squadron, unit,* etc. See **B** (*abbr*), sense 1.

Bombers are sometimes distinguished by designating attributives that refer to their functions, as *attack bomber, day bomber, dive bomber, fighter-bomber, intercontinental bomber, night bomber, reconnaissance bomber, strategic bomber, tactical bomber, tactical light bomber, torpedo bomber,* etc. See separate entries. Bombers are also often distinguished by reference to their weight categories, as *light bomber, heavy bomber, medium bomber,* and *very heavy bomber.*

bomber command. Usually *capitalized.* **1.** Generically, any air command with a primary mission of bombing. **2.** One of the major divisions or commands of the RAF, charged with strategic bombing. **3.** During WW II, one of the major subdivisions of certain numbered air forces, organized to meet special operational bombing requirements, as the VIII Bomber Command of the Eighth Air Force. **4.** In certain overseas air forces, as the Far East Air Force, an operational command with primary duty of carrying out bombing missions. **5.** *Ellipsis.* The headquarters of a bomber command, as 'Savage spoke to the officer at Bomber Command.'

bomber commander. The general officer in command of a bomber command.

bomber crew. The aircrew that mans a bomber on a bombing mission.

The bomber crew is composed of a pilot, copilot, navigator, bombardier, radio operator, gunners, and, on the larger bombers, a flight engineer. Sometimes one person doubles in two capacities, as with the navigator-bombardier.

bomber escort. 1. One or more fighters or bombers serving friendly bombers as escort. Attrib. with *mission.* **2.** The action of such escort, as in 'the Spitfire was designed for bomber escort.'

bomber wing. A wing, either American or British, organized for bombardment. Normally *British.* Cf. **bombardment wing.**

bombfall, *n.* **1.** The fall of a single bomb or of many, either in train or simultaneously. **2.** The bombs themselves while falling. **3.** The points of impact on the surface resulting from this fall. **4.** The pattern or configuration thus formed.

bombfall pattern. The pattern made by a bombfall. See **pattern,** *n.*

bomb fin. One of the airfoils attached to the rear of a bomb in order to afford directional stability. Attrib. with *assembly.* See **box-type bomb fin.**

bomb gear. A general term applied to the bomb rack, and other devices for carrying and dropping bombs.

bomb impact plot. A bomb plot.

bombing, *n.* (bom) The action of dropping bombs from an aircraft with the purpose of hitting a target.

Attrib., as in *bombing accuracy, bombing device, bombing effectiveness, bombing mission, bombing result, bombing squadron, bombing technique, bombing training,* etc.

'Bombing' is also the second element in combinations where the attributive designates (**a**) the type or method of bombing, as in *area bombing, blind bombing, carpet bombing, density bombing, dive bombing, glide bombing, horizontal bombing, interdiction bombing, mass bombing, offset bombing, overcast bombing, pattern bombing, precision bombing, radar bombing, saturation bombing, shuttle bombing, skip bombing, toss bombing, train bombing* (which see under separate entries); (**b**) the altitude from which bombing is done, as in *high-altitude bombing, low-altitude bombing, low-level bombing, medium-altitude bombing, minimum-altitude bombing* (which see under separate entries); (**c**) the purpose for which bombing is done, as in *strategic bombing, tactical bombing;* (**d**) the type of bombs used in bombing, as in *fragmentation bombing, incendiary bombing;* (**e**) the range from base at which bombing is done, as in *long-range bombing, medium-range bombing;* or (**f**) the conditions under which bombing is done, as in *day bombing.*

bombing, *a.* Of a person or aircraft: That bombs.

bombing altitude. The absolute altitude at which bombing is done. See **absolute altitude.**

bombing bug. A target device which simulates evasive action, used in bombing training. An occasionalism. *Slang.*

bombing command. A bomber command.

Bombing Encyclopedia. A collection of materials of a statistical nature used as a reference for all installations or objectives, economic or military, considered for potential strategic air attack, maintained by the Director of Intelligence, Headquarters USAF.

Bombing Encyclopedia number. The number assigned to a group of materials on a specific target within the Bombing Encyclopedia. The number consists of two parts: the World Aeronautical Chart Number and the assigned target number.

bombing error. 1. An error in bombing made for whatever reason. **2.** An instance of a bomb missing the desired mean point of impact for whatever reason. See **error,** *n.,* sense 2.

bombing pattern. 1. A pattern used for bombing a target. **2.** A bombfall pattern.

bombing radius. The radius of action for any given bomber. See **radius of action.**

bombing range. 1. An area or site designated for bombing practice. **2.** The range or distance that bombers may operate from a base, as in 'the city was within bombing range.' **3.** A capability of a bomber that indicates the distance it can fly from point of takeoff to a target under operating conditions: See **range,** *n.,* sense 2.

bombing run. A bomb run.

bombing table. A table giving the bombsight settings required for dropping a particular type of bomb at various speeds and altitudes.

bombing trainer. A ground trainer which simulates the conditions of actual bombing, used for training bombardiers.

One of these, the A-6 bombing trainer, simulates a bombing compartment situated above a screen upon which a moving picture of the terrain is projected.

bombline, *n.* (BL) A line or boundary, usually marked by terrain features, pyrotechnics, or other devices, that marks the limit to or beyond which bombs may be dropped without endangering friendly ground forces or without causing undesired damage or loss. See **bomb safety line, forward bombline, strategic bombline.**

bomb load. 1. The weight or number of bombs carried in an airplane; the bomb or bombs carried. **2.** Sometimes loosely used in sense of 'bomb capacity.'

In sense 1, the weight of the load depends upon the airplane's flying altitude, hours in the air, etc.

bomb-navigation system. A radar system used in bombers for both navigation and bombing.

bomb pattern. A bombfall pattern.

bomb plot. An annotated map or diagram of a bombed area, showing the location of each bomb impact. Sometimes called a 'bomb impact plot.'

bombproof, *n.* A bombproof shelter.

bombproof, *a.* Of a shelter, building, or other installation: Resistant or impervious to the effects of bomb explosions.

bomb rack. A framework or mechanical holder for bombs while being carried to a target, usually located under the aircraft or in a bomb bay.

bomb release. 1. An electrical or mechanical device for the releasing of bombs from an aircraft. Attrib. with *handle, mechanism,* etc. **2.** The action of releasing bombs from an aircraft.

bomb-release circle. In radar bombing, a circular track of light on the face of a PPI scope, representing the desired dropping angle of a bomb.

When the moving target spot on the PPI scope encounters the bomb-release circle, the proper dropping angle has been established and the bomb or bombs are dropped.

bomb-release line. (BRL) An imaginary line around a target area at which a bomber, traveling toward it at a constant speed and altitude, releases its first bomb so that it and others will strike the target area.

bomb-release point. The point in flight on a bomb run at which a bombing airplane releases its bomb load.

This point is determined by reference to the aiming point, which is on the ground.

bomb run. The flight course of a bombing airplane from the initial point (which see, sense 1) to the bomb-release point; more generally, the flight course just before the release of bombs; the action of flying this course.

In dropping certain guided bombs, the airplane's bomb run continues until the bomb strikes the surface.

bomb safety line. A bomb line behind which bombs should not be dropped in order to protect ground forces.

bomb(s) away. A phrase used as a signal by the bombardier to indicate to the pilot and other members of an aircrew that the bombs have just been released; the instant when the bombs are released.

bomb shackle. A device which attaches the bomb to the bomb rack, and which, when actuated, releases the bomb.

bomb shelter. A bombproof shelter.

bombsight, *n.* (bomst) A device which, in the more advanced types, determines, or enables a bombardier to determine, the point in space at which a bomb or bombs must be released from an aircraft in order to hit a target.

bomb strike camera. An aerial moving picture camera especially developed for photographing bombs dropping and striking a target.

bomb testing. 1. The testing of an explosive bomb, esp. an atomic bomb. **2.** The testing of fuels or spark plugs in bomb-like containers or chambers.

In sense 1, bomb testing entails a check upon all mechanical, electrical, or electronic devices used in bringing the bomb to the point of explosion, but does not necessarily entail an explosion in itself.

In the bomb testing of a spark plug, the plug is screwed into a chamber into which air is introduced under pressure, and current is supplied to the plug; if the plug fires under a given amount of air pressure, it is assumed that the plug will function properly under that pressure encountered in an engine cylinder.

bomb trailer. A trailer for the handling of bombs on the ground.

bomb wing. A bombardment wing.

bomb yoke. A lever in the belly of a dive bomber, which is fitted to a bomb and which swings it clear of the propeller upon release.

bomphlet, *n.* A propaganda pamphlet dropped from aircraft. *RAF slang.*

bomphleteer, *n.* One who drops propaganda leaflets from an aircraft. *RAF slang.*

bomst (*auth abbr*). 'Bombsight.'

bonded, *a.* Of aircraft: Having contact or connections between all metallic parts. See next.

bonding, *n. Specif.* A system of connections or contacts which insure that the metal parts of an aircraft form a continuous electrical unit, thus preventing the arcing of static electricity.

boneyard, *n.* Any place, usually in the open, where wrecked or worn-out parts and equipment are gathered. *Slang.*

booby trap. An antipersonnel device, usually concealed, set to explode when an unsuspecting person touches off its firing mechanism, as by stepping upon, lifting, or moving a harmless-looking object.

booger, *v. To booger off,* to bug out. *Slang.*

booking, *n. Specif.* The action or function of procuring and arranging film programs for an AF theater.

booking list. *Specif.* A list of AF theater programs booked for a given period.

book message. A written message, copies of which are sent out to two or more persons, each copy bearing a single and different address.

boom, *n.* A long pole or spar that extends outward from something, used to support or guide something: **1.** A beam running from the root to tip of an airplane. **2.** A tail boom that supports or helps support a tail assembly. **3.** A retractable and maneuverable pipe carried by a tanker aircraft for conveying fuel in the air-refueling of another aircraft. Also called 'flying-boom.' **4.** An instrumentation boom (which see).

boom operator. The person on a tanker aircraft who manipulates the boom.

boost, *n. Specif.* Short for 'boost pressure.'

boost, *v. tr. Specif.* To supply an *engine* with more air than it ordinarily would induct at sea level.

boost control. Supercharger control. See separate entry.

booster, *n.* Any device used to add power for moving something, or to provide more thrust; short for 'booster charge,' 'booster rocket,' 'aileron booster,' 'elevator booster,' etc.

booster bottle. A rocket used for a jet-assisted takeoff. *Popular.*

booster charge. An explosive, as in certain bombs, which, when detonated, sets off the main explosive charge.

The booster charge is more sensitive to ignition than the main charge.

booster coil. An electric coil connected to a battery that supplies high-tension current for starting an engine.

booster magneto. An auxiliary magneto for supplying high-tension current to the distributor when starting an engine.

booster motor. A motor which helps move a control surface of an aircraft when the pilot applies pressure to his cockpit controls. See **booster system.**

booster pump. Any pump which increases the pressure in a fuel, hydraulic, air, or other system.

booster rocket. A rocket that increases or helps increase the speed, range, or altitude of the airplane, rocket, or other vehicle to which it is attached. See **rato,** *n.*

booster system. An assembly, usually electric or hydraulic, which provides a power supply that moves or helps move control surfaces on an aircraft in response to pressure exerted by the pilot on his controls.

boost gauge. A manifold-pressure gauge for a supercharged engine.

boost pressure. Manifold pressure in excess of standard atmospheric pressure, resulting from the action of a supercharger.

boot, *n.* Short for 'deicer boot.'

bootleg, *a.* Of an activity: Unauthorized or unscheduled, as 'bootleg flying time.'

BOQ (*auth abbr*). 'Bachelor officers' quarters.'

Bordeaux Air Base. An air base at Bordeaux-Merignac, France, named for the city.

border clearance. A clearance or procedure for passing aircraft, personnel, or materiel across a foreign border.

bore, *n.* The cavity, or its diameter, of an engine cylinder or gun barrel.

The size of a gunbore is usually expressed in caliber.

bore, *v. To bore holes*, to fly about without special mission. *Slang.*

bore axis. The longitudinal center line of a gunbore.

boresafe fuze. A fuze for cannon projectiles that is so constructed that the premature detonation of the bursting charge is prevented if any of the more sensitive elements should detonate before the projectile leaves the bore.

boresight, *n.* An instrument inserted in the bore of a gun to determine the bore axis and its harmonization with the sights of the gun.

boresight, *v. tr.* **1.** To sight along the bore axis of a *machine gun* or along the camera axis of a *gun camera* in a fighter aircraft so as to determine the extension of the axis in the process of harmonization. See **harmonize,** *v.* **2.** To harmonize. Considered *loose* usage.

boresight datum line. A fixed line in an airplane, indicating the line of flight when the airplane is in normal level flight.

boresight target. A target used in boresighting.

boresite, *n.* Variant of 'boresight.'

boss, *n.* A thick place on a shaft, rod, or the like, esp. to provide support for threads or a bearing; *specif.*, the thick place at the hub on a wooden propeller.

Boston, *n.* A British designation for the A-20 (which see, note).

Bosun, *n.* A code name given a Tupolev-designed, twin-jet light bomber, somewhat larger than the Butcher, and first seen in quantity during the 1951 Moscow air show.

bottle, *n.* (btl) A container of glass, earthenware, metal, or the like, with a narrow neck and mouth, and without handles.

This term is applied to objects that resemble an ordinary bottle in some respect. See **bailout bottle, jato bottle, oxygen bottle.**

bottle fatigue. Fatigue resulting from heavy drinking. *Jocular.*

bottom dead center. The dead center position of an engine piston and its crankshaft arm when at the bottom of its stroke.

bottom rudder. The action of turning an airplane's rudder downward when in a bank, as in 'he gave the plane bottom rudder'; the resultant position after this action; also the cockpit control for this action. Cf. **top rudder.**

bottom turret. A turret in the bottom of an airplane fuselage.

bounce, *n.* **1.** The action of 'bouncing.' See next. **2.** *Electronics.* The fluctuation in magnitude of target echoes on a radar scope.

bounce, *v.* **1.** *tr.* To attack an enemy *airplane* from the air, usually from a higher altitude, taking the enemy unaware. **2.** *intr.* Of an airplane on landing: To rebound when the wheels strike the surface with too much force. Cf. **balloon,** *v.*, sense 1.

boundary for gross errors. A line around a target at a given distance from the center of the target, beyond which any bombing errors are considered gross bombing errors.

boundary friction. A type of friction that exists when most of the oil film covering two bearing surfaces has been wiped off or otherwise reduced.

Boundary friction is so-called because it is intermediate between dry friction and fluid friction.

boundary layer. *Aerodynamics.* A thin layer of air next to an airfoil, distinguishable from the main airflow by distinctive flow characteristics of its own set up by friction. See next. Also see **laminar boundary layer, turbulent boundary layer.**

The boundary layer is sometimes considered to end where its velocity is 99 percent of the free-stream value. The width of a boundary layer increases with the length of the surface over which it is formed.

boundary layer control. The design or control of airfoils and certain airfoil attachments to reduce or remove undesirable aerodynamic effects, as parasite drag, caused by the boundary layer; the science of such design or control.

boundary light. Any one of the lights indicating the boundary or limits of a landing area.

The boundary light is normally mounted on a boundary marker.

boundary marker. 1. A painted object, as a cone, disk, or other device, used to mark the boundary of a landing area. The landing area may or may not have boundary lights. **2.** A boundary marker beacon.

boundary marker beacon. A fan marker beacon (which see) located near the approach end of the runway in an instrument landing system. Also called an 'inner marker beacon.'

bound vortex. *Aerodynamics.* A hypothetical vortex circulating around the center-of-pressure line of an airfoil.

The bound vortex is an idealization and simplification of the actual aerodynamic forces acting on a wing, and is used for mathematical purposes.

Bourdon tube. A metallic, C-shaped or coil-shaped tube open at one end to receive gas or fluid pressures, used in certain instruments as a pressure-measuring element.

The Bourdon tube is used in fuel-pressure gauges, hydraulic-pressure gauges, and other instruments. It was named after Louis Pierre Marie Bourdon (1799–1854), French mathematician.

bourrelet, *n.* That section of a large-caliber projectile between the ogive and the body, and of slightly larger diameter than the body, which rides on the lands in a rifled barrel.

bow, *n.* The forward end of an aircraft, esp. of an airship. Attrib. with *turret.* Cf. **nose,** *n.*

'Bow' (pronounced 'bough') is not commonly applied to an airplane. Like certain other nautical terms, its main application is to airships.

bowheavy, *a.* Of an airship: Having a tendency to sink at the bow or nose. Cf. **nose-heavy,** *a.*

bowser, *n.* A refuelling truck or boat. *Slang.*

Box, *n.* A code name for the A-20 Havoc, supplied to Russia under Lend-Lease. Sometimes designated 'B-3' by the Russians.

box, *n.* Short for 'box formation.'

box, *v. tr. To box a storm,* to fly around the center of a storm, esp. a hurricane or typhoon, following a box-shaped flight path, in order to determine wind direction, velocity, and movement of the storm.

box barrage. In antiaircraft artillery fire, an antiaircraft barrage delivered in a box-shape pattern by guns surrounding a defended target.

Boxcar, *n.* A popular name for the C-82 or C-119.

box formation. Any of various flight formations in which the elements fly in a box-like arrangement, esp. a combat box (which see); any of the elements or flights so flying, if also in a box-like arrangement.

box girder. A girder built up of plates and beams and having a square or rectangular cross section.

box kite. Any type of early biplane constructed with vertical surfaces parallel to the line of flight between the wings, the whole roughly resembling a box kite. Attrib. with *construction, type,* etc. *Slang.*

box pallet. A pallet on which a box framework is constructed.

A box pallet is used for supplies of odd shapes and sizes which cannot support the weight of other pallets stacked on top of them. See **pallet,** *n.*

box spar. Any hollow spar of square or rectangular cross section.

box-type bomb fin. A bomb-fin assembly designed like a box, open at both ends.

BP (*auth abbr*). **1.** 'Base pay.' **2.** 'Beach party.'

BPO (*auth abbr*). 'Base post office.'

br (*auth abbr*). 'Branch.'

B.R.20. A twin-engine Italian bomber developed by Fiat and used during WW II, popularly called the 'Cicogna' (Stork).

bracket, *n. Specif.* Bomb or shell explosions or craters on two sides of a target.

bracket, *v. tr.* **1.** In flying: To make a series of trial approaches upon a *point* or *line* to establish the proper approach; to cross and recross a radio-range *beam* to establish the proper heading. **2.** To fire shells or drop bombs on two sides of a *target.* Hence, **bracketed,** *a.*

bradyhemarrhea, *n.* A local or general stagnation or slowing down of the blood flow to a rate insufficient to meet physiological requirements.

brain box. A device, esp. an electronic device, used to control a mechanism. *Slang.*

brain bucket. A crash helmet. *Slang.*

brainwash, *v. tr.* To manipulate various psychological and morale factors so as to induce a *person* to reveal confidential information or to subscribe to false statements.

brake, *n.* Any retarding mechanism, or device, esp. on the landing wheels of an airplane; a brake pedal.

brake, *v. tr.* and *intr.* To slow down an *airplane* on the ground or bring it to a stop; (*intr.*) to slow down or come to a stop.

brake disc. A disc on a landing-gear wheel which receives the braking pressure. See **multiple-disc brake, single-disc brake.**

brake drum. A drum-like disc connected to a wheel or other revolving part, which receives the pressure of the brake shoe.

brake horsepower. The difference between the horsepower delivered by an engine and that consumed by friction; the actual horsepower received by the propeller of an aircraft engine. Often shortened 'horsepower.'

The horsepower of an aircraft engine is normally stated as its brake horsepower. See **propulsive efficiency.**

brake juice. The hydraulic fluid in a braking system. *Slang.*

brake line. The tubing which carries the hydraulic fluid in a braking system.

brake mean effective pressure. That part of the mean effective pressure (which see) which produces the brake horsepower of the engine.

brake parachute. A deceleration parachute.

brake pedal. The pedal used by a pilot to slow down or stop his airplane on the ground.

brake puck. One of the small discs which bear against the sides of the brake disc in a single-disc brake (which see).

brake shoe. The part of an expanding brake which presses and rubs against a brake drum.

braking chute. A deceleration parachute.

braking distance. The distance within which an airplane can be brought to a stop when rolling on the ground at any given speed.

braking-pitch position. The pitch at which propeller blades may be set to give negative thrust and provide braking power for the airplane.

branch, *n.* (br) **1.** In Headquarters USAF, and certain other headquarters, as that of the Far East Air Force, a functional organization immediately below the division level (see note). **2.** Any of certain subdivisions, so designated, in many organizations throughout the AF, as in 'Arctic Branch of the Arctic-Desert-Tropic Information Center.' **3.** Generically, any of the functional activities of aviation, as in 'air defense branch.' **4.** Any of the three military services of the United States, as in 'USAF branch of the service.' **5.** In air navigation, either a lower branch or an upper branch. See **lower branch, upper branch.**

Within each directorate in Headquarters USAF, specialization is carried through four levels: division, branch, section, unit.

brass, *n.* **1.** A 'brass hat' or sometimes a high-ranking civilian. Usually *collective. Slang.* See **top brass. 2.** Empty brass cartridge shells, used in such contexts as 'collect your brass after firing.' *Colloq.*

brassed off, *a.* Of a person: Angered, disgusted, dejected. *Slang.*

brass hat. A high-ranking military officer. *Slang.* See **brass,** *n.*, sense 1.

Bravo (*code*). An authorized word for the letter 'B.' See **Alfa** (*code*).

breadboard model. An uncased assembly of an instrument or other piece of equipment, as a radio set, having its parts laid out on a flat surface and connected together so as to permit a check or demonstration of its operation.

break, *n.* **1.** The action of breaking off in aerial combat. **2.** The sudden drop of an airplane at the moment of stall. **3.** A fault in an electrical circuit. **4.** A certain type of presentation of a reflected pulse on a radarscope, appearing as a line perpendicular to the base line. *British slang.*

break, *v.* **1.** *tr.* To discontinue aerial *combat* suddenly. **2.** *intr.* Of a pilot or airplane: **a.** To swerve or change course suddenly. Sometimes with *off.* **b.** *To break away,* to peel off from a formation. **3.** *tr. Communications.* To interrupt a received transmission in a *circuit* in order to send signals to the transmitting station on the same circuit. **4.** *To break cloud,* to make an appearance or come through a cloud.

breakaway, *n.* The action of an airplane in peeling off from a formation or in suddenly changing its course.

breakaway cockpit unit. An ejection cockpit capsule.

breakdown voltage. The voltage at which an insulator or dielectric ruptures, or at which ionization and conduction take place in a gas or vapor.

breakthrough, *n.* **1.** A penetration of the defenses of an enemy. **2.** Any sudden success in scientific or technological advancement that opens the way to a new era, as in 'the breakthrough occasioned by the electronic computer has made it possible to compute the amount of nuclear material required.'

break-up pattern. A predetermined or planned pattern that a formation of aircraft may assume for any special purpose, as before landing or before entering a stretch of cloudy weather.

breather tube. A tube providing an opening in the crankcase of an engine to equalize the pressure in the crankcase with atmospheric pressure.

Breda 65. An Italian fighter, bomber, and reconnaissance airplane used in WW II.

Breda 88 Lince. An Italian twin-engine fighter and bomber used in WW II, popularly called the 'Lince' (Lynx).

breech, *n.* The rear part of a gun; *specif.*, the opening at the rear where the projectile and charge are inserted.

breechblock, *n.* The part of a gun, esp. a cannon, which closes the breech. Cf. **bolt,** *n.*

The breechblock usually contains the firing pin, and in many types of guns it is also used to chamber the round.

breech mechanism. The reciprocating assembly at the rear of a gun which receives the round of ammunition, inserts it in the chamber, fires the round by detonating the primer, and extracts the empty case.

Bréguet, *n.* One or other of the airplanes built by the Frenchman, Louis Charles Bréguet (1880–), such as a trainer used in the flying schools about 1911 and 1912, or such as a single-engine, two-seat biplane bomber and observation plane of WW I, also used by the A.E.F.

Bremsstrahlung, *n.* [Ger. 'braking radiation.'] In atomic physics, an X-radiation caused by the collision of an atomic nucleus with an atomic particle such as a beta particle.

Bren machine gun. A light machine gun, widely used in WW II, developed in Czechoslovakia and designed for infantry use. It was adopted as a standard weapon by Great Britain and other countries.

brennschluss, *n.* [Ger. 'combustion termination.'] Flameout in a rocket motor or rocket engine,

i.e., when the fuel has been expended or shut off. Cf. **burnout,** *n.*, sense 2.

This word is used esp. with respect to rocket missiles; 'burnout' or 'flameout' with respect to jet engines.

brevet machine. Also **brevet airplane.** An early name for a trainer airplane flown by a student in his last phase of training, after which he was given a pilot's certificate or brevet. Also called 'certificate machine.'

Used about 1911 at the flying schools, esp. in England. See **taxi,** *n.*

Brewer Trophy. A trophy established by Frank C. Brewer in 1943 in honor of his two sons, who served in the Army Air Forces, given annually to an individual, group of individuals, or organization 'for the greatest achievement in the field of Air Youth Education and Training.'

Brewster, *n.* [*Brewster* Aeronautical Corporation, now defunct.] Used in the names of airplanes, as in *Brewster Buccaneer, Brewster Buffalo,* etc.

brg (*abbr*). **1.** *auth.* 'Bearing.' **2.** 'Bridge.'

brghd (*auth abbr*). 'Bridgehead.'

bridge-busting, *n.* The destroying or disabling of bridges by airplane attacks. *Slang.*

bridgehead, *n.* (brghd) A position taken and held by attacking troops on the hostile side of a river or defile. Attrib. with *airfield, operations,* etc. See **airhead,** *n.*

bridle, *n.* A line or sling of rope or cable branching out into two or more ends.

A bridle is used to distribute the pull of a rope. It is used in towing or in mooring to reduce yaw.

brief, *v.* **1.** *tr.* To give a *person* or *persons,* esp. an *aircrew,* a briefing. **2.** *intr.* To undergo a briefing.

briefed, *a.* **1.** Of persons: Instructed or informed regarding a flight, operation, or mission. **2.** Of areas, routes, targets, and the like: Covered, reported on, or established in a briefing.

briefing, *n.* A brief explanation of something; *specif.*, the instruction or lecture given to an aircrew or air passengers before a flight, regarding procedures to be followed, route, weather conditions, target, destination, enemy activity, or any other subject pertinent to the flight or mission; the action of giving such instruction. Attrib. with *aid, chart, information, officer, room,* etc.

brig (*auth abbr*). **1.** 'Brigade.' **2.** 'Brigadier.'

brigade, *n.* (brig) In the Army and Marine Corps, a unit with its own headquarters, composed of two or more regiments.

brigadier general. (brig gen) A commissioned rank or person in the AF, immediately above colonel.

Brigand, *n.* A post-WW II RAF twin-engine, midwing airplane designed by Bristol to be used as a day or night fighter, dive bomber, or torpedo-bomber.

brig gen (*auth abbr*). Also **BRIGGEN** in communications. 'Brigadier general.'

bring, *v. tr.* **1.** *To bring down.* **a.** To shoot down an enemy *aircraft.* **b.** To land an *aircraft* or bring it to a lower altitude. **2.** *To bring in for landing,* to direct an aircraft for landing through ground-controlled approach.

brisance, *n.* The power of an explosive to shatter substances close to or surrounding it.

Bristol Fighter. An RAF WW I two-seated, single-engine fighter, developed by Bristol.

Bristol Hercules. A British WW II radial aircraft engine manufactured by the Bristol Aeroplane Co., Ltd., and used in the Sterling III and IV, Halifax III and VII, Lancaster II, Wellington X, and the Beaufighter VI.

Brit (*auth abbr*). 'British.'

British angular rate bombsight. A British bombsight (Mark XIV) that measures angular rate (which see).

British Commonwealth Air Force. A rarely-used designation for the air forces of Great Britain and the British dominions considered collectively.

British thermal unit. (BTU) The heat necessary to raise the temperature of one pound of water one degree Fahrenheit at or near its point of maximum density.

British ton. A long ton.

BRL (*auth abbr*). 'Bomb-release line.'

BRLG (*abbr*). 'Bomb, radio, longitudinal, generator-powered.'

'BRLG' is used as a designation for a kind of radio bomb-fuze that causes a bomb to burst at a predetermined distance from the ground.

broadband, *n. Electronics.* A band having a wide range of frequencies.

broad beam antenna. *Radar.* An antenna that sends out a broad search beam.

broadcast, *n.* **1.** Any message, code, program, or the like, delivered over any of a wide range of radio frequencies. **2.** The action of sending any such message, etc. Attrib., as in *broadcast band, broadcast frequency, broadcast station,* etc.

broadside, *n.* The side of an aircraft, considered as a direction for attack.

broadside, *adv.* Toward or from broadside.

broadside array. *Electronics.* An antenna array having its direction of maximum radiation perpendicular to the line or plane of the array.

broadside firing. Firing at the side of a target.

brochure, *n.* Used attributively as an opprobrious term, as in *brochure buying,* buying an item only on the basis of the seller's description; *brochure aircraft,* an aircraft represented as having features or capabilities that have not been demonstrated.

brolly, *n.* A parachute. *Slang.*

bronze oak-leaf cluster. A decorative bronze device awarded a member of the armed services in lieu of another decoration identical to one already awarded him, the device being affixed to the ribbon of the original decoration.

For instance, a person already awarded an air medal receives for the second, third, and fourth awards of the air medal a separate bronze oak-leaf cluster for each award. See **oak-leaf cluster, silver oak-leaf cluster.**

Bronze Star. A Bronze Star Medal.

Bronze Star Medal. (BSM) A decoration awarded for heroic or meritorious achievement or accomplishment in direct or indirect participation in operations against an enemy, except for aerial flights. See **decoration,** *n.*

Brookley Air Force Base. An AF base at Mobile, Alabama, originally known as Bates Field, renamed for Captain Wendell H. Brookley, a test pilot killed in 1934.

Brooks Air Force Base. An AF base at San Antonio, Texas, named for Lieutenant Sidney J. Brooks, killed in 1917 during cadet training, awarded a commission posthumously.

browned off, *a.* Of persons: Disgusted, disgruntled. *Slang.*

Browning automatic rifle. (BAR) A standard weapon for US ground troops, developed by John M. Browning, American inventor (1855–1926), but since modified.

This rifle, in later models, is so made that its cyclic rate of fire is adjustable.

Browning machine gun. Any one of certain .30 and .50 caliber machine guns designed by, or modified from designs by, John M. Browning.

brownline run. A listing of items by stock-list number, nomenclature, quantity, and usually by unit and total prices.

A brownline run is prepared by electrical accounting machines.

brown-nose, *v. tr.* To curry favor with a *person. Slang.*

brownout, *n.* A partial reduction in the illumination of an area, used as a conservation measure.

A brownout usually affects primarily the lighting of signs and advertising displays, and to a lesser extent the necessary lighting of a community.

brst (*auth abbr*). 'Broadcast.'

Bryan Air Force Base. An AF base at Bryan, Texas, named for the city.

BSA (*abbr*). **1.** 'Blue streak request (action).' **2.** 'Boy Scouts of America.'

bsc (*abbr*). 'Basic.'

B-scan, *n.* **1.** A scan for presentation on a B-scope. **2.** A B-scope. *Popular.*

B-scope, *n.* A radarscope which presents the range of a target by a vertical displacement of the target signal on the face of the scope, and the bearing by a horizontal displacement. See prec.

BSDL (*abbr*). 'Boresight datum line.'

BSE (*auth abbr*). 'Base support equipment.'

BSM (*auth abbr*). 'Bronze Star Medal.'

bstrk (*abbr*). 'Bomb service truck.'

BT (*abbr*). **1.** 'Bombing table.' **2.** 'Basic trainer.'

BT-9. A single-engine, low-wing, basic-training plane developed by North American.

The BT-9 was first produced in 1936 and was still in use at the time of Pearl Harbor. It was popularly called the 'Yale.'

BT-13. A single-engine, low-wing, basic-training plane developed by Consolidated Vultee, and popularly called the 'Valiant.'

Several variants of the BT-13, using Pratt and Whitney Wasp engines, were manufactured; with a Wright engine, the plane was designated the BT-15.

bt (*auth abbr*). 'Boat.'

BTC (*abbr*). 'Basic training center.'

btl (*auth abbr*). 'Bottle.'

BTO (*auth abbr*). **1.** 'Bombing through overcast.' **2.** 'Branch transportation officer.'

btry (*auth abbr*). 'Battery.'

BTU (*abbr*). 'British thermal unit.'

btwn (*auth abbr*). 'Between.'

BU (*abbr*). 'Base unit.'

bu (*abbr*). **1.** *auth.* 'Builder.' **2.** *auth.* 'Bureau' when used in combinations. **3.** 'Bureau' when not combined.

BuAer (*auth abbr*). 'Bureau of Aeronautics.'

bubble acceleration. The movement of the bubble in a bubble sextant in response to a change in velocity. See **acceleration error.**

bubble canopy. A cockpit canopy molded in one piece and having no external bracing or divisions.

bubble horizon. 1. A circle on the celestial sphere parallel to the celestial horizon, formed by the intersection of the sphere with the plane of the sensible horizon as established by a bubble sextant. **2.** The plane established by a bubble sextant, otherwise called the 'sensible horizon.' See **celestial horizon.**

bubble sextant. A kind of sextant that measures angular altitudes above the plane of the sensible horizon as established by a bubble set into a field.

The bubble sextant is the type of sextant normally used in aircraft. When the bubble is in the center of the field, the sextant is level, i.e., it forms a line at right angles with a line between the bubble and the earth's center.

Buccaneer, *n.* A popular name for the A-34.

Buck, *n.* A code name for the Russian Pe-2 or Pe-3.

buck, *v.* **1.** *tr.* Of airplanes or aircrews: To fly into, against, or through rough *weather, gunfire,* or the like. *Slang.* **2.** To forward a *letter, document,* or the like with a buck slip attached. **3.** *To buck for,* to exert oneself for something, as for a promotion. *Slang.*

Buckaroo, *n.* A popular name for the YT-35.

bucket, *n.* One of the blades or vanes attached to the turbine wheel in a jet engine or to the wheel of a gyroscope.

The buckets catch the jet blast or airstream in a jet engine, and thus the wheel is rotated. *To throw a bucket*, to have a bucket fall out of line.

bucket o' bolts. An airplane engine. *Slang.*

bucket seat. A seat in an aircraft designed to fit the contours of a seat-pack parachute; one of the depressions in a plastic or metal panel that serves as a bench down each side of the cargo space within certain transport aircraft.

bucket-type latrine. A latrine having refuse buckets beneath the seats.

buck private. The lowest military rank, immediately below private first class. *Slang.*

A buck private now corresponds to a basic airman in the AF.

buck sergeant. The lowest grade of sergeant, immediately above corporal and immediately below staff sergeant. *Slang.*

A buck sergeant now corresponds to an airman 1st class in the AF.

buck slip. A slip or sheet of paper attached to a document, letter, or the like, to direct it from one person or office to another. Also 'buck sheet.'

BUCO (*abbr*). 'Buildup Control Office.'

bud (*auth abbr*). 'Budget.'

Budd, *n.* [Edward G. *Budd* Manufacturing Company.] Used in the names of aircraft, as in *Budd Conestoga.*

buddy ride. An airplane flight taken by two flying training students with one piloting the plane under simulated instrument flying conditions, the other ready to take control when necessary.

budget, *n.* (bud) A fiscal program for a specified ensuing period reflecting estimates of receipts, proposed obligations and expenditures, resulting balances, and means of financing; the document which sets forth this program.

A budget for a succeeding period is frequently supported by comparative figures for the current and preceding fiscal periods.

To defend the budget, to present a justification for a proposed budget. This action is often elaborate, including the presentation of arguments, exhibits, and other materials.

budgetary reservation. An amount of appropriated funds or contract authorizations set aside by the Director of the Bureau of the Budget for savings or contingencies and against which obligations shall not be incurred. See **obligation,** *n.*

budget call. A request to subordinate commands for listing budgetary needs.

budget officer. An officer of a department, agency, or bureau charged with the direct responsibility of preparing, submitting, and defending a budget, and for controlling the use of authorized appropriations and funds.

Budget of the United States. A budget for the Government of the United States submitted annually by the President to the Congress, reflecting estimated receipts, expenditures and appropriations proposed, the condition of the Treasury, and comparative amounts for current and preceding years with such other detail required by law.

Budty, Acctg, & Disbg (*abbr*). 'Budgetary, Accounting, and Disbursing.'

Buffalo, *n.* A popular name for the F2A.

buffeting, *n.* The knocking about sustained by an aircraft surface when turbulence is encountered, esp. under conditions of compressibility; the irregular oscillations that result from this circumstance.

buffeting limit. The limit to which buffeting may be sustained without materiel failure.

bug, *n. Slang.* **1.** Usually *pl.* A defect in a vehicle, piece of equipment, organization, procedure, or the like. **2.** The cluster added to a decoration. **3.** The key used in radio or wire telegraphy.

bug, *v. intr.* To retreat in panic or haste, as in 'they bugged out of Seoul,' or the 'Bug-out Boogie!' *Slang* used in Korean war.

bug juice. Propeller deicing fluid. *Slang.*

build, *v. tr. To build in*, to install an *accessory* in a piece of equipment as a permanent fixture; to incorporate a *feature* or *capability* into a piece of equipment, as an airplane, at the design stage of its development.

buildup, *n.* **1.** The process of developing a military force or organization to a prescribed strength, or of accumulating a specified stock or stocks of munitions or levels of supply; the force, organization, or stock so created. **2.** In an amphibious operation, the process of bringing into the objective area additional forces subsequent to the initial assault and the followup action.

built-in, *a.* Of an accessory, feature, or capability: Incorporated in a piece of equipment, as in 'built-in tie-down.' See next and **build,** *v.*

built-in range. The range an aircraft can attain without extra fuel tanks and without refueling.

built-up area. An area, as a city or air base, containing structures, roads, and other installations.

built-up engine. An engine with its accessories added, installed or ready to be installed in an aircraft.

bul (*auth abbr*). 'Bulletin.'

bulk air freight. Air freight of large quantity, dimension, or weight.

Bulk air freight is distinguished from low-weight, high-value freight.

bulk allotment. An allotment made to meet overall requirements without specifying the breakdown of distribution to meet subordinate requirements.

The manpower authorization voucher (which see) represents a kind of bulk allotment.

bulkhead, *n.* A partition or frame serving to

divide, support, or give shape to, the fuselage, float, or hull of an airplane.

In a monocoque fuselage, the bulkhead may consist of a vertical reinforcing member made hollow like a hoop or made solid. The bulkhead is at right angles to the longitudinal axis.

bulk material. Material procured for issue so as to be used as needed, as for fabrication.

Units of measure for bulk material are pounds, linear feet, square feet, gallons, and the like.

Bull, *n.* A code name given the Russian Tu-4.

bullet, *n.* The projectile fired, or intended to be fired, from a small arm. See **ball,** *n.*, note.

Sometimes the word 'bullet' is used to refer to a complete round of ammunition, i.e., the bullet, cartridge case, powder, and primer.

bullet drop. The vertical drop of a bullet. See **vertical drop.**

bullet group. The bullet holes in a target made by fire from a given small arm from one position, and caused by ballistic variations or inaccurate aim. Usually shortened to 'group.'

bulletin, *n.* (bul) A publication containing information or advisory matter, and issued by any AF headquarters unit. See **Air Force Bulletin.**

bullet pattern. The hole pattern of a bullet group.

bulletproof, *a.* Proof against, or resistant to, bullets or the serious effects of bullets.

bulletproof fuel tank. A self-sealing fuel tank.

bullet pull. The energy required to pull a bullet from its case.

The bullet pull is used as a measure of the uniformity and efficiency of the crimp holding the bullet in the case.

bump, *n.* **1.** A local disturbance in the air, as a gust of wind that causes a flying aircraft to rise suddenly; the rising of the aircraft caused by this disturbance. **2.** A touchdown made when doing 'circuits and bumps' (which see).

bump, *v. tr.* To cause a *person* to lose his seat on an airplane or other conveyance by showing a higher priority for the seat.

bumper, *n.* A protective device, as that of a cushion on the nose of a pontoon or on the hull of a flying boat.

bumper missile. A two-stage rocket, *specif.*, one consisting of the Wac Corporal rocket mounted on the nose of a V-2 type rocket.

bump method. *Aerodynamics.* A method of testing aircraft models at supersonic speeds when the free-stream speed is subsonic, by mounting the model on a bump in the wall of a wind tunnel or by mounting it on an airplane wing where the local speed exceeds that of the free stream.

buncher beacon. A surface-based, electronic beacon used for positioning a number of aircraft over a given point.

bundle, *n.* **1.** A package or group of packages dropped by parachute to friendly troops cut off from their normal source of supply. Attrib. with *pusher.* **2.** *Electronics.* A package of chaff.

bungee, *n.* Any of certain tension devices, as a set of springs, a rubber cord used by itself, or a cable attached to springs; material consisting of such devices. See **shock cord.**

A bungee is used, for example, in certain aircraft to assist in retracting landing gear. The origin of the word is uncertain.

bunk, *n.* A cot or bed, usually for a single person; loosely, any sleeping place.

bunker, *n.* **1.** A mound of earth or structure serving as protection for a storage area, gun emplacement, personnel, etc. **2.** A storage space for fuel oil or coal aboard a ship.

Bunker Hill Air Force Base. An AF base near Bunker Hill, Indiana, formerly a Naval Air Station.

bunk fatigue. Fatigue duty composed of sleep or rest. *Jocular.*

bunk flying. Off-duty discussion of flying techniques or experiences by men gathered around their bunks. *Slang.*

buoyancy, *n. Specif.* **1.** The upward or lifting reaction of an airplane to the air moving across its lifting surfaces. **2.** The upward reaction of an airship, resulting from the lighter-than-air gas in its envelope.

burble, *n.* Separation in the boundary layer of air about a streamlined body, resulting in divergent velocities and pressures, esp. over the upper surface of an airfoil; burbling.

Burble causes loss of lift and increase of drag.

burble angle. A critical angle of attack for an airfoil.

burble point. A point reached in an increasing angle of attack at which burble begins. See prec. and cf. **critical angle of attack.**

burbling, *n.* Burble.

Bureau of Aeronautics. (BuAer) A Navy bureau, created in 1921, 'charged with matters pertaining to naval aeronautics as may be prescribed by the Secretary of the Navy.'

The Bureau of Aeronautics has the responsibility of designing, procuring, and maintaining Navy aircraft and aviation equipment.

Bureau of Aircraft Production. A bureau in the War Department established on 20 May 1918, responsible for procurement of planes, engines, and other air equipment for use of the air arm.

This bureau grew out of the old Equipment Division of the Signal Corps. It and the Division of Military Aeronautics constituted the Air Service between 1918 and June 1920.

burial officer. An officer assigned duty to supervise personally the military aspects of a funeral for a military person.

This officer may be a graves registration officer or any other available officer except a chaplain.

Burlington Municipal Airport. A municipal airport near Burlington, Vermont, at which certain working space is provided for USAF units.

burner, *n.* **1.** A combustion chamber, or can, in a jet engine. **2.** A fuel-injection nozzle in the combustion chamber of a jet engine.

burner basket. An inner liner of a jet engine.

burner ring. In a turbojet engine, a ring consisting of the fuel manifold together with the fuel nozzles for each combustion chamber.

burnout, *n.* **1.** The rupturing of the combustion-chamber walls in a jet engine due to overheating. **2.** A flameout in a jet engine caused esp. by lack of fuel. Cf. **brennschluss,** *n.*, **flameout,** *n.*

burnt velocity. The velocity of a rocket, rocket-powered aircraft, or rocket-powered projectile when fuel combustion terminates.

burst, *n.* **1.** Continuous fire from an automatic weapon, as from an aircraft machine gun, sometimes described as *long* or *short*. **2.** The explosion of a shell, as of an antiaircraft shell.

burster, *n.* A comparatively small explosive charge contained in certain kinds of ammunition, as in a chemical bomb, which bursts the container and disperses the contents, or allows them to disperse.

bursting charge. 1. The explosive charge in a mine, bomb, projectile, or the like that breaks the casing and produces fragmentation or demolition. **2.** A burster. *Loose* usage.

Burtonwood, *n.* A locality near Warrington, Lancashire, England, site of the USAF Burtonwood Air Depot and an RAF station.

bury, *v. tr.* In communications: To place the *elements* of a message in other than their usual place in a message; to hide or conceal a *message* in the text of another.

bus, *n.* An airplane. *Jocular.* See **taxi,** *n.*

bus bar. A metallic rod used to carry a large current or used to make a common connection between several circuits.

bus board. A control panel.

bush airplane. An airplane used in operations in bush country.

bushel of revs. A hypothetical quantity of something intangible.

In the same category as a left-handed monkey wrench or sky hook.

bush pilot. 1. A pilot who flies over bush country, as in Canada or Alaska. **2.** A pilot accustomed to flying without benefit of ground-based navigational aids, prepared airfields, or the like.

business machine. Any of various electrically operated machines which make and maintain records and accounts and provide means for rapid selection of different data.

These machines usually employ standard cards, which when punched can be classified for different purposes.

bust, *v. tr.* To reduce a *person* in rank or position, usually as a disciplinary measure. *Slang.*

Butcher, *n.* A code name given the Russian Il-28, a twin-jet light bomber seen in Soviet air shows and in Korea.

Butler hangar. A temporary-type prefabricated metal hangar with walls and roof curved together as in a cylinder, designed esp. for use in a theater of operations.

butterfield, *n.* A kind of confusion reflector made of wire mesh. See **confusion reflector.**

butterfly bomb. A small fragmentation or antipersonnel bomb equipped with two folding wings which rotate and arm the fuze as the bomb descends.

The butterfly bomb was developed by Germany and adopted for use by the US.

butterfly tail. A type of airplane tail assembly having the stabilizer and elevators set at an acute dihedral, forming a V.

butter paddle. A short, wide-bladed propeller. *Slang.*

button, *n. Specif.* A trigger button.

button, *v. tr. To button up,* to bring an *action* to completion; to end the preparation of an *aircraft* for flight; to close *something. Slang.*

buttoned-up, *a.* Ready to go; finished; closed down. *Slang.*

buy, *v. tr.* To indorse or agree to an *assertion, plan* or *proposal;* to fall for a *deception. Slang.*

Buys-Ballot's Law. *Meteorology.* A natural law that if an observer in the northern hemisphere stands with his back to the wind, the area of lower barometric pressure is on his left. See **coriolis force.**

buzz, *n. Specif.* A noise set up by the vibrations of a control surface.

buzz, *v. tr.* To fly low over, or to dive at, a *place* or *object. Colloq.* Cf. **drag,** *v.*

Buzzing, while often done in horseplay, may also be done to attract attention or to make an observation.

buzz bomb. The V-1 of WW II, so named for the buzzlike noise of its pulse-jet engine. *Colloq.*

BW (*auth abbr*). 'Biological warfare.'

BX (*abbr*). 'Base exchange.'

bypass, *n.* **1.** A path for a current or fluid to be carried around something, as in electricity; a path for a current around one or more elements in a circuit. **2.** A route used as an alternate when some obstruction makes use of a normal route impracticable.

bypass, *v. tr. Specif.* To go around a *person* or *office;* to avoid *channels.*

bypass relief valve. A valve for regulating fuel or oil pressure in an engine by allowing excess fluid to bypass the pump.

C

C (*letter* or *code*). See **Charlie** (*code*). Used in the designations of various objects, as in *C-1*, a kind of autopilot; *C-2*, a food-heating unit; *C-5*, a type of tow equipment; *C-20*, a ramjet engine developed by Marquardt Aircraft Company.

C (*abbr*). **1.** *auth.* 'Cargo,' in designations of transport aircraft, as in *C-47*. **2.** *auth.* 'Centigrade' in combination only. **3.** *auth.* 'Change' in combinations only. **4.** 'Calculated weight' of an aircraft, as distinguished from actual or estimated weight. **5.** 'Celestial.' See **cel** (*auth abbr*). **6.** *auth.* 'Combat' or 'Chief' in combinations only. **7.** 'Curtiss-Wright Corporation' or 'Culver Aircraft Corporation' when used in the designations of Naval aircraft. **8.** 'Carrier operation version' when used in Naval aircraft designations to indicate an aircraft so modified. **9.** 'Control,' when used in Naval designations of guided missiles used as test vehicles.

C-1 vest. A vest worn by an aircrew member, incorporating a survival kit.

C-45. A light, twin-engine, transport plane developed by Beechcraft. Popularly called the 'Voyager' in the US and the 'Expeditor' in Britain. See **T-11,** note.

C-46. A twin-engine, transport airplane developed by Curtiss.

The C-46 was used in WW II for cargo and glider towing, and it was also used as a paratroop carrier and ambulance. It is popularly called the 'Commando.'

C-47. A twin-engine, military transport version of the Douglas DC-3, designed esp. to carry heavy cargo and troops.

The C-47 is popularly called the 'Skytrain' by the Americans, or the 'Dakota' or 'Dakota I,' by the British. See **R4D.**

C-53. A modified version of the Douglas DC-3, designed as a troop and hospital transport, and used in WW II.

The C-53 was popularly called the 'Skytrooper' by the Americans, the 'Dakota' or 'Dakota II' by the British. See **R4D-3.**

C-54. A four-engine, military transport version of the Douglas DC-4.

The C-54 is popularly called the 'Skymaster.' See **R5D.**

C-56. A military version of the Lockheed Lodestar, a twin-engine transport.

Other military versions of the Lodestar were designated 'C-57,' 'C-59,' 'C-60,' and 'C-66.' See **R5O.**

C-69. The former designation for the C-121.

C-74. A four-engine, transport airplane developed by Douglas. See **C-124.**

The C-74 is used in long-range combat transport missions, and is popularly called the 'Globemaster I.'

C-75. A four-engine, low-wing transport airplane developed by Boeing.

The plane was designed primarily as a civilian personnel carrier.

C-82. A twin-engine, high-wing monoplane developed by Fairchild.

The C-82 is used as a cargo and troop transport and also for paratroop operations. It is popularly called the 'Packet,' or the 'Flying Boxcar,' and has been redesigned and designated the 'C-119.'

C-87. A WW II conversion of the B-24 bomber, designed to carry cargo, and popularly called the 'Liberator Express.'

C-97. A four-engine, double-decked, heavy transport military airplane, developed from the Boeing Model 367. Cf. **KC-97 E.**

The C-97 is popularly called the 'Stratofreighter.'

C-118. A four-engine, military transport airplane developed by Douglas.

The C-118 is essentially a modification of the C-54, with more power and a larger fuselage. A modification is designated the 'C-118A.'

C-119. A twin-engine, twin-boom, transport airplane, developed by Fairchild from the C-82, and popularly called the 'Packet' or 'Flying Boxcar.'

The C-119H is an extensively redesigned Packet fitted with wings of increased span (148′ as against 109′ 3″ in the C-119C) and square-tipped rudders.

C-121. A four-engine, low-wing transport airplane developed by Lockheed, having three vertical stabilizers. Commercially or generically called the 'Constellation.'

C-122. A twin-engine, high-wing monoplane transport aircraft developed by Chase primarily for assault operations.

C-123. A two-engine, high-wing troop-and-cargo transport, developed by Chase.

The XC-123A was the first US transport airplane to fly with turbojet power. Other versions of this airplane are powered with radial air-cooled engines.

C-124. A four-engine, low-wing transport airplane, developed by Douglas, and popularly known as the 'Globemaster II.'

The C-124 is a highly-modified version of the C-74.

C-125. A three-engine, high-wing transport airplane, developed by Northrop.

The C-125 is intended to operate from improvised airstrips, and to replace the glider as an airborne assault vehicle and rescue aircraft. It is popularly known as the 'Raider.'

C-130. A four-engined turboprop, heavy transport airplane developed by Lockheed, noted for its high wing and high tail. Also called 'Hercules.'

C-131. A twin-engine military transport version of the Convair-Liner 240, an airliner with double-wheel tricycle landing gear, the nose wheel being steerable. Also called 'Samaritan.'

CA (*abbr*). **1.** *auth.* 'Clerical Aptitude Test.' **2.** 'Civil affairs.'

CAA (*abbr*). **1.** *auth.* 'Civil Aeronautics Administration.' **2.** Formerly, 'Civil Aeronautics Authority.'

CAA-type certificated aircraft and equipment. Aircraft and aircraft engines, propellers, and other equipment manufactured in accordance with Civil Air Regulations and related CAA requirements.

CAB (*auth abbr*). 'Civil Aeronautics Board.'

Cab, *n.* A code name for the Russian Li-2, the USSR version of the C-47. During WW II a great many C-47's were supplied to Russia under lend-lease.

cabane, *n.* A framework of struts attached to the top of a fuselage for supporting a wing.

cabane truss. A cabane and an arrangement of wires to aid in bracing a wing attached to the fuselage.

cabin, *n.* An inclosed compartment in an aircraft for cargo, passengers, or crew members. Cf. **cockpit,** *n.*

Attrib. with *accommodation, baggage, emergency exit, furnishings, heater, plane, pressurization, window,* etc.

cabin heater duct. A duct for conveying heated air to an aircraft cabin.

cabin job. An aircraft, esp. a light commercial airplane, having a cabin. *Colloq.*

cabin pressure. The air pressure in an aircraft cabin.

cabin-pressure bleed. A special outlet from a power plant installation, as a turbojet engine compressor, for pressurizing an aircraft cabin; the air supplied to the cabin from the power plant.

cable, *n. Specif.* A rocket cable (which see).

cabotage, *n.* In commercial aviation, the carrying of cargo or passengers originating and terminating within the borders of a given nation. Hence, *cabotage rights.*

cab rank. An air-alert formation of patrolling fighters and fighter bombers, usually in line astern, employed by the RAF on immediate call for close ground support.

The cab rank was originated by the RAF Desert Air Force during the Italian campaign of WW II.

CAC (*abbr*). 'Chief of Air Corps.' Now *hist.*

cadet, *n.* **1.** An aviation cadet. **2.** A person being trained in the AFROTC. **3.** A student in a service academy. **4.** *Capitalized.* A popular name for the L-6 in WW II.

Attrib., esp. in senses 1 and 3, as in *cadet examining board, cadet flight training, cadet mess,* etc.

cadet officer. A cadet appointed as an officer over his fellow cadets only. Cf. **student officer.**

CADF (*auth abbr*). 'Central Air Defense Force.'

CADO (*abbr*). 'Central Air Documents Office.' *Hist.*

cadre, *n.* A group of persons, normally composed of both officers and airmen, forming the core around which a new unit is to be developed. Attrib. with *personnel, strength, training,* etc.

CAG (*auth abbr*). 'Carrier air group.'

cage, *v. tr.* To lock the *gyroscope* of a gyro-controlled *instrument* in a fixed position with reference to its case.

CAirC (*auth abbr*). 'Caribbean Air Command.'

caisson disease. A sickness caused by going from a high pressure to a normal atmospheric pressure. Cf. **aeroembolism,** *n.*

This type of sickness is common to deep-sea divers.

cal (*auth abbr*). 'Caliber.'

calbr (*auth abbr*). 'Calibration.'

calculated risk. A risk of known proportions considered to be present if a given action is undertaken, but one deliberately accepted if alternative actions are believed inadequate for attaining the objective, or believed to involve greater risks.

caliber, *n.* Also **calibre.** (cal) **1.** The diameter of a projectile, as of a bullet or shell; the diameter of the bore of a gun barrel. **2.** A measure for the length of a cannon bore from the face of the breech block to the muzzle, expressed in multiples of the diameter of the bore. See note.

In rifled arms, the caliber is measured from the surface of one land to the surface of the land directly opposite.

In the US and Great Britain, the calibers of small arms and their ammunition are usually expressed in hundredths or thousandths of an inch; when so expressed, the designation usually represents a close approximation rather than an exact measurement. In continental Europe, calibers are normally expressed in millimeters.

A bore of 10 calibers length (sense 2) is as long as its caliber (sense 1) multiplied by ten.

calibrate, *v. tr.* **1.** To mark a scale of given value on an *instrument* or *tool.* **2.** To rectify instrument *readings* to compensate for error; to convert a *reading* into another value by applying corrections. See **calibrated airspeed. 3.** To determine the caliber of an *object* by reference to a measure, as that of the rifling in a gun barrel or of a projectile. **4.** To aim a *gun* by finding corrections for it based upon observation of the placement of its shots.

calibrated airspeed. The indicated airspeed rectified to compensate for error in the airspeed indicator or the pitot-static system.

In certain precise flying operations, CAS takes into

account the effects in the pitot-static system of the aircraft's attitude with respect to the airstream, as well as error in the airspeed indicator.

calibrated altitude. The indicated altitude rectified to compensate for instrument error.

calibrated pressure altitude. The indicated pressure altitude as corrected for instrument error. See **pressure altitude.**

calibrator, *n.* A person or instrument that calibrates.

California Arrow. A dirigible balloon built by Captain T. S. Baldwin (1860–1923), and successfully flown in Washington, D.C., in 1905.

California Bearing Ratio. The relative stability or supporting quality of a soil compared to the stability of crushed stone as determined by the California Bearing Test.

California Bearing Test. A test for the bearing or supporting qualities of soil or other material used as a foundation or subgrade for a prepared surface, as for an airfield runway. See prec.

calisthenics, *n.* Bodily exercise or exercises, usually without the aid of special equipment; the science of such exercise.

call contract. A contract made for a specified amount of supplies or equipment to be received in lots from time to time as they are called for.

call mission. An air-support or counterair mission that begins with a ground or air alert prior to the briefing or the radioed instructions.

The mission is considered on call pending completion of the briefing.

call sign. A sign used as a radio signal by aircraft to identify themselves to friendly forces; a sign identifying one or more facilities, commands, authorities, or units.

'Call sign,' in communications usage, is often preceded by a modifying attributive, designating the type or purpose of the sign, as *collective call sign, net call sign, tactical call sign, visual call sign,* etc.

call signal. A call sign used as a signal.

calorimeter, *n.* An instrument that measures quantities of heat, or that uses heat to measure other quantities; *specif.*, in electricity, such an instrument that measures resistance or current by means of an element heated by the current. See **water calorimeter.**

CAM (*auth abbr*). 'Commercial air movement.'

cam, *n.* A part mounted on a shaft and used to impart a reciprocating or alternating motion to another part by bearing against it as it rotates.

cam (*auth abbr*). 'Camouflage.'

camber, *n.* Also **cambre.** The curve of an airfoil section from the leading edge to the trailing edge.

Camber, which may be of the upper surface line, the lower surface line, or the mean line between them, is usually expressed as the ratio of the length of the curved line to the length of the straight line between the edges. See **lower camber, mean camber, upper camber.**

Cambridge cockpit. A mockup of an airplane cockpit containing apparatus to measure one's ability to use controls duplicating those of an airplane.

Cambridge exhaust-gas analyzer. A device used to indicate the fuel ratio in the cylinders of an internal-combustion engine by analyzing the exhaust gases.

Cambridge Research Center. An Air Force research center at Cambridge, Massachusetts, under the Air Research and Development Command, concerned with electronic, atomic, geophysical, and other scientific research. In full, 'Air Force Cambridge Research Center.'

camera, *n.* A boxlike chamber provided with an aperture through which light strikes a film or other light-sensitive material so as to record the image of an object reflecting the light; esp. an aerial camera.

camera axis. An axis perpendicular to the surface of a photographic lens and passing through the center of the lens or series of lenses. Cf. **center point.**

camera gun. A gun camera.

camera-gunnery training. The training of gunners with the aid of gun cameras. See **gun camera,** sense 1.

camera magazine. A pack holding the film for use in an aerial camera or gun camera.

camera mount. Any device used to mount an aerial camera or gun camera.

Some types of aerial camera mounts are automatically controlled to aid in taking aerial photographs.

camera station. 1. The position or station in an aircraft occupied either by a photographer or by an aerial camera, depending upon the type of equipment used: See note. **2.** Also, in technical use, the point in space occupied by the camera lens at the moment of film exposure.

In remote-controlled camera systems, the camera station is the station occupied by the camera; with directly-operated cameras, the camera station is the station occupied by the photographer.

cam follower. A part that rides a cam; a contour follower (which see).

camouflage, *n.* (cam) The disguise or concealment, or the art and activity of disguise or concealment, of persons, areas, equipment, or installations to deceive or divert the enemy; the materials used for this purpose.

camouflage, *v. tr.* To conceal or disguise by camouflage. Hence, **camouflaged,** *a.*

camouflage detection film. Color film sensitive to infrared light, used in photographing locations suspected of camouflage.

Photographs made from such film more readily reveal the camouflaged objects than ordinary film.

camouflage netting. A fabric netting painted or

otherwise decked out so as to camouflage; the netting itself.

camouflet, *n.* An underground cavity made by an underground explosion which fails to rupture the surface of the earth; the explosive that makes this cavity.

A deep-penetration bomb may cause a camouflet.

camp, *n.* A place with temporary or semipermanent facilities for sheltering and feeding military personnel.

campaign, *n.* **1.** A military operation or series of operations undertaken as a major phase or aspect of a war or of an overall strategic operation. **2.** A whole military expedition conducted for a special purpose, as in the 'Nicaraguan campaign.'

campaign ribbon. Any ribbon worn to indicate service in a particular campaign.

Campbell Air Force Base. An AF base at Hopkinsville, Kentucky, named for nearby Fort Campbell.

camshaft, *n.* A shaft having cams, the rotation of which raises and lowers the valves of an engine.

Can (*auth abbr*). 'Canadian.'

can, *n. Specif.* Any one of the individual combustion chambers in a turbojet engine.

can, *v. tr. Specif.* To prearrange a *procedure* or *procedures* to be followed in an emergency; to prearrange an *operation* or predetermine an *amount.*

Hence, a *canned flight plan,* a flight plan outlining the procedure to be followed in a given emergency; a *canned load,* a predetermined load of cargo carried, determined without reference to the allowable cabin load.

can (*auth abbr*). 'Cancel.'

CanAirDef (*auth abbr*). 'Air Defense Command Headquarters, St. Hubert, Province of Quebec, Canada.'

CanAirDiv (*auth abbr*). 'Canadian One Air Division Headquarters, Metz, France.'

CanAirHed (*auth abbr*). 'Air Force Headquarters, Ottawa, Ontario, Canada.'

CanAirLift (*auth abbr*). 'Air Transport Command Headquarters, Rockcliffe, Ontario, Canada.'

CanAirLon (*auth abbr*). 'Air Member, Canadian Joint Staff, London, England.'

CanAirMat (*auth abbr*). 'Air Material Command Headquarters, Ottawa, Ontario, Canada.'

CanAirPeg (*auth abbr*). 'Fourteen Training Group Headquarters, Royal Canadian Air Force, Winnipeg, Manitoba, Canada.'

CanAirTac (*auth abbr*). 'Canadian One Tactical Air Command Headquarters, Edmonton, Alberta, Canada.'

CanAirTrain (*auth abbr*). 'Training Command Headquarters, Royal Canadian Air Force, Trenton, Ontario, Canada.'

CanAirVan (*auth abbr*). 'Canadian 12 Air Defense Group Headquarters, Vancouver, British Columbia, Canada.'

CanAirWash (*auth abbr*). 'Air Member Canadian Joint Staff, Washington, D.C.'

canard, *n.* [F. 'duck.'] An airplane having its stabilizer and elevators forward of the wing.

Canberra, *n.* An RAF twin turbojet bomber, developed by English Electric.

The Canberra is built in the US by Martin and designated the B-57.

cand (*auth abbr*). 'Candidate.'

C&A (*abbr*). 'Constituted and will be activated.'

C&E (*auth abbr*). 'Clothing and equipage.'

C&GSC (*auth abbr*). 'Command and General Staff College.'

candidate, *n.* (cand) A person who offers himself, or is offered by others, for an office, position, or rank, esp. an officer candidate.

candle, *n. Specif.* A unit of luminous intensity equal approximately to the luminous intensity of a ⅞-inch sperm candle burning at 120 grains an hour. See **international candle.**

candle power. The luminous intensity, as of a searchlight, equal to the luminous intensity of a given number of candles. See prec.

canister, *n.* **1.** That part of a gas mask containing a filter for the removal of poisonous gases from the air being inhaled. **2.** A metal case to be fired from a gun, containing metal pieces which scatter when the case breaks. **3.** *General.* A container.

canister respirator. A gas mask.

canned track. The track of an assumed aircraft used for training or testing the air defense system. See **track,** *n.,* sense 7.

cannelure, *n.* A groove in a bullet for containing a lubricant or into which the cartridge case is crimped; a groove in a cartridge case providing a purchase for the extractor.

cannibalize, *v. tr.* **1.** To obtain *personnel* from another *unit* or *units,* so as to build up an organization's strength. **2.** To obtain *parts* from one *aircraft* to help make another operational.

canning, *n.* The process of putting something into a can or drum for transport, storage, or handling, and of identifying the contents of each can. Cf. **packaging,** *n.*

cannon, *n.* **1.** Any gun larger than 0.60 caliber. Also *collective.* Cf. **small arm. 2.** *Specif.* An aircraft cannon.

In Army usage, 'cannon' covers howitzers, all longer-barreled cannon, and breech-loading mortars. See **gun,** *n.*

cannon burst. A burst (which see, sense 1) from an automatic cannon.

canopy, *n.* **1.** A cockpit canopy. **2.** A parachute canopy. **3.** Any overhanging cover, as in 'a canopy of airplanes.'

canopy bubble. A bubble canopy.

CanServCol (*auth abbr*). 'Canadian Services College.'

Canso, *n.* An RCAF name for the PBY.

canteen, *n.* **1.** A flask for carrying water. **2.** A place furnishing food, drink, commodities, and sometimes entertainment and recreational facilities for the benefit of military persons.

cantilever, *n.* A beam or other member supported at one end only.

Used attributively to designate airplane components so constructed, as in *cantilever axle, tailplane, wing,* etc.

cantonment, *n.* A group of temporary buildings erected for military purposes, esp. for the housing of personnel. Attrib., as in *cantonment area.*

Cant Z.501. An Italian single-engine flying boat for light bombing and reconnaissance, used in WW II.

Cant Z.506B. An Italian three-engine bomber-torpedo-reconnaissance seaplane, used in WW II. Popularly called the 'Airóne' (Heron).

Cant Z.1007. A WW II Italian three-engine bomber.

Canuck, *n.* The popular RCAF name for the twin-jet CF-100.

CanUKUS (*auth abbr*). 'Canada-United Kingdom-United States.'

CanUKUS JCECS (*abbr*). 'Canadian-United Kingdom-United States Joint Communications-Electronics Committees.'

CAP (*auth abbr*). **1.** 'Civil Air Patrol.' **2.** 'Combat air patrol.'

cap (*auth abbr*). 'Capacity.'

capability, *n.* A power or capacity to do a particular thing, arising from a feature, condition, faculty, ability or the like.

Capabilities are attributes of people or things. The capabilities of an aircraft refer to its particular rate of climb, its degree of maneuverability, its range, its range of speeds, and the like. Cf. **characteristic,** *n.*, **limitation,** *n.*, sense 2.

capacitance, *n. Electricity.* A term variously applied, as to the capacity of a condenser to hold an electrostatic charge, to the property of a circuit that opposes change in voltage, or to the ratio of a charge in a conductor to its potential.

capacitor, *n.* A device for adding capacitance to a circuit; a condenser.

capital expenditure. An expenditure made to acquire something durable, as land, buildings, and equipment.

Caproni Ca.135. An Italian twin-engine medium bomber of WW II.

Caproni Vizzola F.5. An Italian single-engine fighter of wood-and-metal construction, used in WW II.

cap strip. A continuous wooden strip around the edge of a wing rib.

capsule, *n. Specif.* An airtight, ejectable airplane cockpit or cabin.

capt (*auth abbr*). 'Captain.'

captain, *n.* (capt) **1.** A commissioned rank or person in the AF, Army, or Marine Corps, immediately above first lieutenant; (*capitalized*) the title of this person. **2.** A commissioned rank, person, or his title, in the US Navy, corresponding to colonel in the AF. **3.** A name sometimes applied to an officer in charge of an aircraft or group of aircraft; an aircraft commander or pilot.

Use of this term in sense 3 is not uncommon, esp. among the British and in commercial airline parlance, but it has no official status in the AF. Cf. **skipper,** *n.*

captive balloon. A balloon moored by a cable to a winch on the ground. See **balloon,** *n.*

In the past, captive balloons were used in warfare for purposes of observation; now they are employed chiefly as barrage balloons.

capture, *n.* **1.** The seizure by force of a person, persons, thing, or geographical location. **2.** Such seizure considered as a capability residing in a military force. **3.** Such seizure considered as a military objective.

Persons are subject to capture, likewise a fort, a ship at sea, a vehicle or other piece of equipment, a city, a country, or a military position. Capture implies action taken to neutralize and overcome resistance on the part of the body made captive.

capture intelligence. Military intelligence arising out of information gleaned from the examination of captured enemy documents and materiel, and from the interrogation of enemy prisoners of war, deserters, and civilians; the activity of obtaining this intelligence; the organization performing the service involved.

car, *n.* The structure attached to a balloon or other airship for carrying cargo, passengers, and equipment or for housing an engine. See **subcloud car.**

carbine, *n.* **1.** A light-weight shoulder arm or rifle having a short barrel. See **rifle,** *n.* **2.** *Specif.* The US 0.30 caliber M1 carbine and its modifications.

carbon, *n.* One of the chemical elements; *specif.*, carbon residue (which see).

carbon dioxide system. A system using carbon dioxide for extinguishing fire in an aircraft.

carbon fin. A jet vane (which see) made of carbon and placed directly in the jet stream of a rocket.

carbon monoxide. A poisonous gas emitted from the exhaust of an internal-combustion engine, as a piston engine or a jet engine.

carbon residue. A deposit of carbon which forms on engine pistons, etc., being the result of the incomplete combustion of fuel.

carbon tetrachloride. A liquid widely used as a fire extinguisher.

carburetor, *n.* A device for mixing fuel and air in the proper proportions to form a combustible

mixture and for conveying this mixture to passages leading to the cylinders of an internal-combustion engine.
Attrib., as in *carburetor control, diaphragm, heater, intake,* etc.

card, *n. Specif.* A compass card.
See **green instrument card, white instrument card.**

card compass. A magnetic compass that uses a compass card. Also called a 'card magnetic compass.'

cardinal point. A direction that is to the north, south, east, or west. Cf. **quadrantal point.**

career, *n. Specif.* A calling or occupation offered AF military persons, requiring study and pursuit of a given field of endeavor. See **career field.**

career appointment. In the Civil Service, an appointment held by a person who has stood competitive examination and served a substantially continuous three-year period satisfactorily.

career booklet. A booklet describing any one of the careers offered by the AF and giving information on job standards and requirements.

career-conditional appointment. In the Civil Service, an appointment held by a person who has not yet completed satisfactorily a substantially continuous three-year period of service, but has stood competitive examination.

career counseling. The act of orienting an AF military person with regard to the AF career program and of advising him in the choice of a career field in accordance with his interest and aptitude.

career development. The process of assignment, reassignment, and training an AF military person within a given career field to acquaint him with the occupations within that field and establish a groundwork for his advancement.

career employee. In the Civil Service, a person with a career appointment.

career field. One of the fields offered AF military persons, consisting of occupations grouped on a functional basis, each requiring similar basic skills and knowledge.
The relationship of the occupations within a given career field is such that a complete knowledge of, and skill in, one or two of the basic occupations provides familiarity with all other occupations within the field.

career field subdivision. A grouping of occupations within a career field, requiring closely similar skills and knowledges.

career guidance. The evaluation of the qualifications of AF military persons by interviewing, counseling, testing, or by other valid techniques, in order to recommend assignment to a career field.

career gunner. A gunner on a bomber, whose sole duty is to operate a machine gun. *Jocular.*

career officer. A regular or reserve officer on extended active duty who intends to remain in service so long as regulations permit.

career program. A program developed to provide a systematic method of selection, training, promotion, and administration of AF military personnel.

career reservist. A reserve officer on extended active duty having the intention of remaining in that status so long as regulations permit; *specif.*, such a reserve officer with at least five years of continuous active service on his current tour.

caretaker, *n. Specif.* A person charged with looking after, or helping to look after, an inactive AF installation or facility or nonoperative materiel.

caretaker status. The status of an inactive installation or facility, or of materiel not being actively used, when safeguarded by a caretaker against damage or deterioration.

cargo, *n.* Any goods or materiel shipped, or consigned for shipment, by an aircraft or vessel, esp. air cargo.
Cargo is distinguished from any goods or material carried for use in the operation of the aircraft or vessel.
Attrib., as in *cargo capacity, carrier, door, manifest, mission, space,* etc.
Although the abbreviation of 'cargo' is used to designate transport aircraft, the use is purely arbitrary, and 'cargo' does not mean 'transport.' See **C** (*abbr*), sense 1.

cargo aircraft. A transport aircraft for carrying cargo.

cargo bay. An opening in an aircraft for loading cargo.

cargo chute. A cargo parachute.

cargo compartment. A compartment in an aircraft equipped with tie-down rings and other fittings for securing cargo.

cargoliner, *n.* A large airplane, esp. a commercial airplane, for carrying cargo.

cargo load. The weight or amount of cargo carried; the cargo itself.
The size of the cargo load carried by an aircraft varies with the aircraft's flying altitude, hours in the air, etc.

cargo net. An air-cargo net.

cargo parachute. A parachute used for dropping cargo from the air.

cargo ton mile. A unit of measure, being one ton of cargo moved one mile.
Example: Five tons of cargo moved 1,000 miles = 5,000 cargo ton miles.

Carib (*auth abbr*). 'Caribbean.'

Caribbean Air Command. (CAirC) One of the overseas commands of the AF, covering the Caribbean area and having its headquarters at Albrook AFB, Canal Zone.

Carlinga cockpit. A cockpit mockup, developed in Italy prior to WW II, for testing prospective flying personnel for psychological disorders.

CARP (*abbr*). 'Computed air release point.' Used in connection with paradropping.

carp, *n.* A bombsight attachment for aid in the control of certain guided missiles, such as the razon bomb.

carpet, *n.* **1.** Any one of a group of airborne electronic devices for radar jamming; any system using such equipment. Attrib. with *jammer.* **2.** The ground. *Slang.*

carpet, *v. tr.* To cover a target *area* with bombs.

carpet-bomb, *v. tr.* and *intr.* To bomb an *area* using carpet-bombing techniques; to engage in carpet-bombing. See **bomb carpet.**

carpet-bombing, *n.* The laying down of bombs in a creeping pattern to cover the area as with a carpet.

carr (*auth abbr*). 'Carrier.'

carrier, *n.* (carr) **1.** An aircraft carrier. Attrib., as in *carrier air group, force, operation, plane, takeoff,* etc. **2.** An aircraft that carries cargo, mail, or passengers; a military or commercial air cargo organization; an air carrier. **3.** *Electricity.* An electromagnetic current or wave that may be modulated for transmission purposes; a carrier system (which see). **4.** In analysis of a weapons system, that component that brings the weapon or warhead to the target. See **vehicle,** *n.,* sense 3, **weapon system,** note.

See **troop carrier, weapons carrier.**

carrier aircraft. 1. An aircraft based on, and operating from, an aircraft carrier. **2.** A carrier (sense 2). **3.** An aircraft used as a carrier for another aircraft. See **mother aircraft,** sense 2. Cf. **composite aircraft.**

carrier-based, *a.* Of aircraft: Based on, and operating from, an aircraft carrier.

carrier-controlled approach. An aircraft carrier control system that ascertains the position of incoming planes by radar, and relays to the planes by radio information for use in making approaches.

carrier plane. An airplane with wheeled takeoff and landing gear designed for use on an aircraft carrier, distinguished from a landplane or seaplane.

carrier repeater. An amplifier in a carrier system.

carrier system. *Electricity.* A system permitting a number of independent communications over the same circuit.

carrier wave. The radio-frequency component of a transmitted wave, which may be modulated for transmission purposes. Often called a 'carrier' (which see, sense 3).

carry-around oxygen bottle. A metal bottle containing oxygen that may be carried about in an aircraft and used by an aircrew member. Sometimes called a 'carry-around oxygen cylinder,' also a 'walk-around oxygen bottle.'

The carry-around oxygen bottle is slightly larger than the bailout oxygen bottle.

Carswell Air Force Base. An AF base at Fort Worth, Texas, originally known as Fort Worth Army Air Field, renamed for Major Horace S. Carswell, Jr., Medal of Honor, a bomber pilot killed in China in 1944.

Cart, *n.* A code name for the Russian Tu-70, a transport version of the Tu-4.

Cartesian control. A special kind of guided-missile control dependent upon two sets of control surfaces, each producing movement perpendicular to the movement produced by the other.

cartographic photograph. A photograph, esp. an aerial photograph, obtained for, or used for, the making of a map or chart, or for preparing other photogrammetric materials.

Cartographic photographs are obtained usually by special photographic missions, but sometimes in conjunction with combat reconnaissance missions. See **aerial photograph.**

cartridge, *n.* A case containing the charge, primer, and usually a projectile or flare, for ready use in a firearm, esp. a small arm, or in a flare gun; also, popularly, a cartridge shell. Attrib., as in *cartridge belt.*

cartridge shell. A shell case for small arms.

cartridge starter. An engine starter activated by an exploding blank cartridge of the shotgun type. Also called a 'combustion starter.'

cartwheel, *n.* A flight performance in which an airplane is made to roll from a steep bank. Hence, **cartwheel,** *v.*

CAS (*abbr*). 'Calibrated airspeed.'

C/AS (*abbr*). 'Chief, Air Staff.'

cas (*auth abbr*). 'Casual' or 'casualty.'

Casablanca directive. A directive, issued as a result of the Casablanca conference (14–24 Jan 1943), having as its object the destruction of the German military, economic, and industrial system by the RAF and the USAAF, and concomitantly, the undermining of German morale.

cascade, *n.* In aerodynamic theory, a regular succession of like propeller blade sections hypothetically presented to the eye of an observer viewing from the side, as an airplane propeller moves forward through the air.

case, *n. Specif.* That part of a cartridge for holding a charge, primer, and usually a projectile. Also called a 'cartridge shell' or 'shell case.'

case ejection chute. A chute or passage through which empty shells are ejected after being fired in a machine gun.

casemate, *n.* A bombproof structure used as a powder magazine, gun emplacement, or the like.

case report. A report on an action item, prepared by an inspector general. *Case report, special,* a

report on an item brought to notice outside the course of a regular inspection.

cash award. An award in cash given to stimulate constructive suggestions or ideas among civilian employees.

castellated, *a.* Resembling a castle, as a castellated cloud. See next.

castellated nut. A nut divided by slots to receive a cotter pin, and thus resembling a castle.

Castle Air Force Base. An AF base at Merced, California, formerly known as Merced Army Air Field, renamed for Brigadier General Frederick W. Castle, a bomber pilot, killed in Europe, 1944.

castor, *v. intr.* Of airplane wheels: To swivel about on a vertical axis.

castor landing gear. An airplane landing gear having its wheels rotatable about an axis perpendicular and vertical to the wheel axle.

casual, *n.* (cas) A military person awaiting duty assignment or transportation from a station at which he is not assigned or attached. Cf. **transient,** *n.*

casualty, *n.* (cas) **1.** *Specif.* Any military person whose services are lost because of death, injury, capture, desertion, sickness, or internment. **2.** *General.* A person, military or otherwise, killed or injured.

Casualties (sense 1) are usually considered divided into two main groups: the battle casualty and the nonbattle casualty. See separate entries. See also **combat casualty.**

casualty agent. A toxic or lethal chemical agent that can be used effectively in the field.

casualty assistance. Assistance, financial and otherwise, rendered by the AF to dependents of deceased personnel.

casualty assistance chaplain. A chaplain who aids in administering casualty assistance.

His duties do not include legal assistance.

casualty bag. A bag used in the arctic in which an injured or sick person is placed to afford him protection and warmth.

casualty rate. The rate of casualties for a given period of time; also a projected rate used for planning purposes.

CAT (*abbr*). 'Carburetor air temperature.'

cat, *n.* **1.** One of the radar stations used in Oboe (which see). **2.** Short for 'catapult' or 'caterpillar tractor.' **3.** *Capitalized.* Short for 'Catalina' (the PBY).

cat (*auth abbr*). 'Category' or 'catalogue.'

catafighter, *n.* A fighter modified to be catapulted for takeoff.

Catalina, *n.* A popular name for the Consolidated Vultee PBY-5 in its various models, as well as for the same aircraft manufactured by other manufacturers, the PBN-1, PB2B-1. Often shortened to 'Cat.'

cat-and-mouse technique. The navigational and bombing system or technique used in Oboe (which see).

cataplane, *n.* An airplane designed or modified to be catapulted.

catapult, *n.* A device for pushing an airplane, rocket missile, or the like into the air from a ramp, rack, or track, usually at a high initial speed; a device for ejecting a person from an airplane. Cf. **launcher,** *n.*

catapult, *v. tr.* **1.** To propel an *airplane, rocket missile,* or the like from a catapult. Cf. **launch,** *v.* **2.** To eject a *person* from an airplane by means of a catapult. Usually *reflexive* or *passive.*

catapult plane. Any airplane designed or modified to be catapulted.

catapult point. A specially reinforced point on an airplane or other flying machine for receiving the thrust or pressure of a catapult.

catapult readiness. Readiness wherein a manned airplane rests on a catapult for quick launching.

Caterpillar Club. An unofficial club for aircrewmen qualified for membership by having been required to bail out of a damaged or disabled aircraft.

The 'Caterpillar Club' was so named because of the association of the silk in a parachute with the caterpillar.

caterpillar landing gear. A landing gear equipped with endless belt treads.

The caterpillar landing gear is used to distribute the weight of an airplane over a larger area than is permissible with a conventional landing gear.

cathedral, *n.* [See **anhedral,** *n.*, note.] A negative dihedral. See **dihedral,** *n.*

cathode, *n.* A negative electrode, esp. the electrode in a vacuum tube from which electrons are emitted.

cathode grid. A suppressor grid.

cathode ray. The stream of electrons emitted from a cathode.

cathode-ray direction finding. A British method of direction finding by radar.

The term 'cathode-ray direction finding' is not used in the USAF.

cathode-ray indicator. A cathode-ray tube with a calibrated screen to indicate position.

cathode-ray oscilloscope. An oscilloscope (which see, note) incorporating a cathode-ray tube, used esp. as the indicator in a radar set to portray the echoes on its screen.

cathode-ray screen. The luminescent screen of a cathode-ray oscilloscope or tube, which receives the cathode-ray beam.

cathode-ray tube. A vacuum tube in which the deflection of an electron beam indicates on a fluorescent screen instantaneous values of the actuating voltages or currents.

CAtk (*auth abbr*). 'Counterattack.'

CATOR (*abbr*). 'Combined air transport operations room.'

cat's eye. A fighter equipped for night operations.

catwalk, *n.* Any narrow structure or beam used as a walk or bridge, as along the keel of a rigid airship or in a bomb bay.

Cau (*auth abbr*). 'Caucasian.'

cavitation, *n.* **1.** The formation of a vacuum around a body or object, as a propeller, moving at a speed above a certain critical point. **2.** The formation (or collapse) of bubbles in water or vapor, caused by an applied force or moving body; the effects of such phenomena.

cavity, *n.* In specific senses: **a.** A depression or hollow in a tracer bullet that holds the tracer compound. **b.** The inside of a cartridge shell or casing that holds the propelling charge. **c.** A fuze cavity.

cavity magnetron. A magnetron having a number of resonant cavities forming the anode, used as a transmitting oscillator in the microwave frequencies.

CAVU (*auth abbr*). [Pronounced as a word.] 'Ceiling and visibility unlimited.'

Used as a word, as in 'the weather was CAVU,' or 'we waited for CAVU,' or 'it was CAVU weather.'

Caydet, *n.* A popular name for the PT-13, PT-17, PT-18, and PT-27.

Cayley, Sir George (1773–1857). An aeronautical theorist and experimenter, called 'the father of British aeronautics.'

CB (*abbr*). **1.** 'Control branch.' **2.** *auth.* 'Construction battalion.'

C.B. (*abbr*). 'Center of buoyancy.'

Cb (*abbr*). 'Cumulonimbus.'

CBCC (*auth abbr*). 'Conviction by civil court.'

CBI (*abbr*). 'China-Burma-India.'

cblmn (*abbr*). 'Cableman.'

cbn (*auth abbr*). 'Carbine.'

C-bomb, *n.* The cobalt bomb.

CBR (*abbr*). **1.** *auth.* 'Chemical, biological and radiological warfare.' **2.** 'California Bearing Ratio.'

CC (*auth abbr*). **1.** 'Combat command.' **2.** 'Control center.' **3.** 'Common carrier.' **4.** 'Channel Command.'

C/C (*abbr*). 'Change of course.'

Cc (*abbr*). 'Cirrocumulus.'

CCA (*abbr*). 'Carrier-controlled approach.'

CCAF (*abbr*). 'Chinese Communist Air Force.'

CCB (*abbr*). 'Close control bombing.'

CCF (*abbr*). 'Chinese Communist Forces.'

CCM (*abbr*). 'Combat cargo mission.'

CCN (*abbr*). 'Contract change notification.'

CCPO (*abbr*). 'Central civilian personnel office.'

CCr (*auth abbr*). 'Combat crew.'

CCRC (*abbr*). 'Combat crew replacement center.'

CCS (*abbr*). In WW II 'Combined Chiefs of Staff.' Applied to a staff made up of Allied chiefs of staff.

CCTS (*abbr*). 'Combat crew training school.'

CD (*auth abbr*). 'Coastal defense radar' (for detecting surface vessels).

C.D. (*abbr*). 'Confidential document.'

CDD (*auth abbr*). 'Certificate of disability for discharge.'

CD film. 'Camouflage detection film.'

cdr (*auth abbr*). 'Commander.' *Navy.*

CDS (*abbr*). 'Climatological data sheet.'

cdt (*auth abbr*). 'Conduct.'

CDU (*abbr*). 'Coastal defense radar' (for detecting U-boats).

CE (*abbr*). **1.** *auth.* 'Corps of Engineers.' **2.** 'Circular error.'

C-E (*abbr*). 'Communications-electronics.'

CEA (*abbr*). 'Circular error average.'

CEAPD (*auth abbr*). 'Central Air Procurement District.'

cease fire. 1. An order to stop shooting. **2.** A truce.

CEBAR (*abbr*). 'Chemical, biological, and radiological' (warfare). See **CBR** (*abbr*).

CEI (*auth abbr*). 'Communication Electronic Instructions.'

ceiling, *n.* **1.** Short for 'absolute ceiling.' **2.** A capability of any given airplane or airborne missile measured by its absolute ceiling, as in 'the ceiling of the airplane has been raised.' **3.** The maximum height at which an aircrew or passengers can fly, either with or without special equipment. **4. a.** A complete or almost complete overcast, esp. an overcast of clouds above a given area limiting vertical visibility. **b.** The height of the lower surface of such an overcast. Used in assessing weather conditions. **c.** Clearness in the air for looking upward, as in 'ceiling and visibility unlimited.' See **visibility,** *n.*, sense 2. **5.** The upper limit on assignments or on allocations, as in 'personnel ceiling' or 'troop ceiling.'

In sense 3, the ceiling varies according to the equipment that is being used.

See **absolute ceiling, combat ceiling, hovering ceiling, operational ceiling, service ceiling, static ceiling;** cf. **overcast,** *n.*

ceiling balloon. A small free balloon that rises at a known rate of ascent, used to determine the height of a cloud ceiling.

The timing of the ascent of the balloon is stopped when the balloon enters the ceiling and becomes obscured from the observer.

ceiling-height indicator. An instrument for measuring the height of a cloud ceiling with the aid of a ceiling projector.

ceiling projector. A projector that throws a spot

of light on the underside of a cloud ceiling to aid in determining its height. See prec.

ceiling unlimited. The atmospheric condition when no ceiling exists.

Formerly, an unlimited ceiling was assumed as long as there was a clear sky extending 9,750 feet above the point of observation; since the advent of high-flying aircraft, however, this limit is no longer in effect.

ceiling zero. The atmospheric condition when a ceiling is at a height of 50 feet or lower.

ceilometer, *n.* An electronic device for measuring and recording the height of a cloud ceiling.

cel (*auth abbr*). 'Celestial.'

celestial altitude. The vertical angle between an observer's celestial horizon and a line joining a celestial body with the earth's center.

For practical purposes, this is the same as the angular altitude of a celestial body.

celestial axis. The axis around which the celestial sphere apparently rotates by reason of the earth's rotation. The celestial axis passes through the earth's axis.

celestial coordinate. One or other of two coordinates on the surface of the celestial sphere used to locate a celestial body.

Two sets of celestial coordinates are commonly used. In the equinoctial system, the coordinates are a declination circle and an hour circle; in the horizon system, the coordinates are the vertical circle that passes through the celestial body and an altitude circle.

celestial equator. The equator of the celestial sphere, assumed to be the extension of the plane of the earth's equator.

celestial fix. A fix determined by observation of celestial bodies.

celestial horizon. A great circle on the celestial sphere, established by a plane passing through the center of the earth, perpendicular to the zenith-nadir axis of an observer, and intersecting the celestial sphere; also, the plane that establishes this great circle.

For most purposes of air navigation, the celestial horizon and the bubble horizon (which see) are considered to be identical. From another point of view, the celestial horizon is considered to be a great circle on the celestial sphere embracing both circles made by the intersection of the celestial sphere by the rational horizon and the sensible horizon. See **parallax,** *n.*, **rational horizon, sensible horizon.**

celestial intercept. In celestial navigation, an imaginary line extending from an assumed position to intercept a line of position and used to compute the altitude of a given celestial body; the distance and direction of a line of position from an assumed position. Sometimes called an 'altitude intercept' or 'intercept.'

celestial landfall. A method or procedure of reaching a destination by using as a course line a celestial line of position which goes through both the position of the aircraft and the destination. Often called a 'landfall.'

celestial meridian. Any great circle on the celestial sphere that passes through its poles, esp. either half of such a circle between the celestial poles. Cf. **lower branch, upper branch.**

A celestial meridian is a projection of a meridian on the earth. Cf. **hour circle.**

celestial navigation. A means of navigation by which a geographical location is determined by reference to celestial bodies.

celestial navigation guidance. The automatic directing of guided missiles through the employment of celestial navigation: See note.

The missile is equipped with gyroscopes, telescopes, mechanically or electrically recorded navigational tables, and other instruments and devices that sight stars, calculate positions, and direct the missile.

celestial pole. One of the poles of the celestial sphere, corresponding to the north or south pole of the earth, assumed to extend into space along the line of the earth's axis. See **elevated pole.**

celestial sphere. An imaginary sphere of infinite radius, assumed for navigational purposes, the center of which coincides with the center of the earth.

celestial triangle. An astronomical triangle on the surface of the celestial sphere, whose vertices are the zenith, an elevated pole, and a celestial body.

In celestial navigation this triangle is used to compute the angular altitude and the azimuth of the celestial body.

cell, *n.* **1.** The gas cell of an airship. **2.** A thunderstorm cell. **3.** A cellule.

cellular unit. A military unit made up of a number of individually organized cells or teams which may operate independently of one another, in order to provide flexibility.

cellule, *n.* A term used technically to designate a wing on one side of a fuselage, complete with struts, trusses, and panels, or that part of a wing between fuselages or nacelles where appropriate. Also called 'cell' or 'plane cell.'

cellulose nitrate. Any of several esters of nitric acid used as explosives or propellants, produced by treating cotton or some other form of cellulose with a mixture of nitric and sulphuric acids. Popularly called 'nitrocellulose.'

Guncotton ($C_{12}H_{14}O_4(NO_3)_6$) is one of the cellulose nitrates.

cem (*auth abbr*). 'Cemetery.'

cen (*auth abbr*). 'Center' or 'central.'

cens (*auth abbr*). 'Censor' or 'censorship.'

censor, *v.* (cens) *Specif.* **1.** *tr.* To examine *correspondence, documents, radio broadcasts, photographs,* or other like material emanating from a source subject to control, so as to delete information, esp. military information, that might be useful to an enemy or potential enemy or that might be otherwise harmful to the power and

prestige of a nation or its allies; to delete from such *material* the *information* desired to be withheld. **2.** *intr.* To engage in such activity.

center, *n.* (cen) **1.** A place where services of some special sort are centralized either for convenience of location or for facilitating coordinated services. **2.** The organization or activity at such a place. **3.** By extension and without special reference to place: Any organization in which services or control of a particular sort are centralized, as in 'control center,' 'Arctic, Desert, Tropic Information Center,' etc. **4.** In the Air Research and Development Command, an echelon comparable to that of a numbered air force.

'Center' usually appears in combinations, as in 'photographic intelligence center,' 'repair center,' 'medical center,' or 'training center.' Context is required to assign its use to a particular sense, and it often has connotations of both a place and an organization.

center-fire, *a.* **1.** Of a cartridge: Having the primer in the center of the head, or base. **2.** Of a firearm: Using center-fire cartridges.

Center-fire cartridges and center-fire small arms are distinguished from rimfire types. See **rimfire,** *a.*

center frequency. *Electronics.* Resting frequency.

center line. Also **centerline,** *n.* **1.** A line running along the longitudinal center of any given object, as along a runway, an airplane fuselage, a rocket, etc. **2.** *Aerial photog.* A line on a vertical photograph drawn from its center point to the transposed center point of an overlapping photograph. **3.** A line perpendicular to the base line at its center between two radio transmitters. Signals sent out simultaneously from the transmitters will arrive at the same instant at any point along this line.

In sense 2, the center line shows the line of flight of the photographing airplane.

center of buoyancy. The point at which the upward forces of a displaced liquid or gas act upon the displacing object, as upon a pontoon or airship.

center of distortion. The point in an aerial photograph from which distortional effects radiate; the isocenter (which see).

These distortional effects are caused by tilting the camera from a level position.

center of gravity. The point at which the combined force (resultant) of all the weight forces in a body, as in an airplane, are concentrated for any position of the body.

center of impact. 1. In bombing, the center of the area of greatest concentration in a bombfall pattern. **2.** *Gunnery.* The center of a dispersion pattern.

center of lift. The mean of all the centers of pressure on an airfoil.

center of mass. *Mechanics.* A point in a given body that represents the mean position of the matter in that body.

center of pressure. The point in the chord of an airfoil section which is at the intersection of the chord (prolonged if necessary) and the line of action of the combined air forces (resultant air force). Cf. **center of lift.**

At certain angles of attack, the center of pressure may be located to the rear of the trailing edge of an airfoil.

center-of-pressure coefficient. The ratio of the distance of a center of pressure from the leading edge of an airfoil to its chord length.

center-of-pressure line. A line connecting, or composed of, the centers of pressure of an airfoil.

center-of-pressure travel. The movement, or the amount of movement, of the center of pressure along a chord of an airfoil as the latter is inclined through its normal angles of attack.

The center-of-pressure travel is measured from the leading edge of an airfoil and expressed in percentages of the chord length.

center of thrust. A line corresponding with the longitudinal axis of a propeller shaft, about which the forces of thrust are balanced. Cf. **axis of thrust.**

center point. *Aerial photog.* The point on an aerial photograph corresponding in position to the camera axis. Also called the 'optical center' (which see) or 'principal point.'

center section. The central panel or section of an airplane wing.

In a wing having no clearly defined center section, the limits of the center section may be arbitrarily defined by the points of attachment of the wing to the fuselage, to struts, or the like.

centimeter wave. A microwave one centimeter in length.

Central Air Base. An air base at Iwo Jima Island, Volcano Islands.

Central Air Defense Force. (CADF) A major component of the Air Defense Command, providing air defense for the central US.

The CADF covers approximately twenty states included in the south and southeast sections of the country and in a belt extending from the Texas Gulf to the Canadian border.

central fire control. The fire control of weapons from a central location. Attrib., as in *central fire control gunner.*

Central fire control is often employed in antiaircraft batteries or in some bombers, as in the B-29.

Central Intelligence Agency. (CIA) An organization under the National Security Council that coordinates the intelligence activities of government departments and agencies, correlates and evaluates intelligence relating to national security, and provides for disseminating this intelligence within the government.

The CIA, as such, was established by the National Security Act of 1947.

Central Intelligence Board. A panel of the Central Intelligence Agency.

Central Medical Establishment, Aviation. An AF establishment designed to provide special aeromedical service not otherwise available, to an air force in a theater of operation.

This establishment is designed for use only in wartime, as in WW II.

central procurement. The consolidated procurement of equipment, supplies, or nonpersonal services accomplished by special agencies designated for such procurement. Cf. **local purchase.**

central standard time. (CST) The standard mean time of the central standard time zone, i.e., between approximately 82.5 degrees and 97.5 degrees west longitude.

centre-zero meter. A British aircraft instrument that aids an aircraft to orbit at a preselected radius from a radio beacon.

By keeping the needle of the meter on zero, a pilot can describe the required orbit.

centrifugal, *a.* Moving or directed away from the center of rotation, as in 'centrifugal acceleration.'

centrifugal compressor. A compressor that makes use of a rotating impeller, the air or fuel-air mixture entering the impeller axially and leaving the impeller at the circumference with increased velocity, some of which velocity is converted into pressure energy so as to increase the compression ratio.

See **axial-flow compressor, mixed-flow compressor,** and **radial-flow compressor.** See also **compressor,** *n.*

centrifugal-flow jet engine. A turbojet engine that uses a centrifugal compressor.

The centrifugal-flow jet engine may be either an axial-flow jet engine or a radial-flow jet engine, or a combination of the two.

centrifugal tachometer. A tachometer dependent for its operation upon the centrifugal action of weights disposed about a shaft rotated by the engine.

centrifugal-type supercharger. A supercharger that compresses air or a fuel-air mixture by centrifugal force. See **impeller,** *n.*, note.

centrifuge, *n. Specif.* A machine for inducing artificial gravity by means of centrifugal force, used in testing the ability of flying personnel to withstand above-normal gravitational forces.

centripetal, *a.* Moving or directed toward the center of rotation, as in 'centripetal force.'

centripetal acceleration. Acceleration caused by centripetal force.

CEP (*abbr*). 'Circular probable error.'

The original expression appears to have been 'circular error probability.'

ceramel, *n.* A cermet.

ceramic liner. A liner, made of ceramic materials and fired to a high temperature, installed in the firing chamber of a rocket motor or jet engine, to resist the heat and so protect the metal wall of the chamber.

ceramics, *n.* **1.** The art or science of shaping and firing clay, oxides, or the like, esp. to provide heat-resistant insulators for certain engine parts; the art or science of applying heat-resistant glazes to certain engine parts. **2.** *Collective.* The articles produced by this art.

ceremonial departmental flag. A ceremonial flag of a specific size (4′4″ × 5′6″) for one of the military departments; in the AF, such a flag on which the Air Force coat of arms is displayed with a scroll inscribed 'United States Air Force.'

ceremonial flag. A flag specially made for use in ceremonies.

This flag is usually trimmed in silk on three edges. See **color,** *n.*, note.

ceremony, *n. Specif.* A formal military parade, review, observance, or the like.

cermet, *n.* A product made of ceramic material bonded to metal. Also called 'ceramel.'

cert (*auth abbr*). 'Certify' or 'certificate.'

certain, *n.* An instance in which a hostile aircraft is destroyed, vouched for by corroborating testimony or evidence; the destroyed aircraft so vouched for. Cf. **probable,** *n.*

Example of use: 'He was credited with 4 certains and 3 probables.'

certificate acceptance. Acceptance of a contractor's or manufacturer's certification of materiel as to quality and quantity.

certificate machine. A brevet machine. *Hist.*

certificate of expenditure. A statement declaring that expendable items have been used or are required for immediate use.

certificate of service. A certificate issued to an officer or airman when discharged or released from active duty showing that he has completed a given period of military service.

certifying officer. A person authorized to attest to the accuracy or legality of facts, esp. facts in support of a demand for payment or facts involved in a property transaction.

Cessna, *n.* [The *Cessna* Aircraft Co., Inc.] Used in the names of aircraft, as in *Cessna Airmaster*, *Cessna AT-17*, *Cessna Model 140*, etc.

cetane, *n.* A semisolid or liquid paraffin hydrocarbon ($C_{16}H_{34}$) found in petroleum. Also known as 'hexadecane.'

cetane number. A number indicating the relative ignitability of a fuel oil.

CF (*auth abbr*). 'Counterfire.'

CF-100. An RCAF twin-jet, low-wing, all-weather fighter, developed by Avro of Canada, and popularly called the 'Canuck.'

c/f (*abbr*). 'Carry forward.'

CFA (*abbr*). 'Cowl-flap angle.'

CFC (*abbr*). 'Central fire-control.'
CFE (*abbr*). 'Contractor-furnished equipment.'
cfm (*auth abbr*). 'Confirm' or 'confirmation.'
CFR (*abbr*). 'Contact flight rules.'
cfr (*abbr*). 'Chauffeur.'
CFSSB (*auth abbr*). 'Central Flight Status Selection Board.'
cft (*auth abbr*). 'Craft.'
cftmn (*auth abbr*). 'Craftsman.'
CG (*auth abbr*). **1.** 'Commanding General.' **2.** 'Coast Guard.' **3.** 'Cargo glider.'
C.G. (*abbr*). 'Center of gravity.'
CG-4. A high-wing, fabric-covered glider for carrying men and equipment, developed by Waco and used in WW II. It was popularly known as the 'Hadrian.'
CG-13. A large high-wing transport glider, developed by Waco and used in WW II.
CGAS (*auth abbr*). 'Coast Guard Air Station.'
cgo (*auth abbr*). 'Cargo.'
CH (*abbr*). **1.** 'Chain Home.' **2.** 'Compass heading.'
Ch (*auth abbr*). **1.** 'Chaplain.' **2.** 'Chief of.'
ch (*auth abbr*). 'Change.'
chacom (*auth abbr*). 'Chain of command.'
chaff, *n.* A type of confusion reflector consisting of narrow metallic strips of various lengths which, dropped from aircraft, create false signals on radarscopes.
Attrib., as in *chaff dispenser.*
chain, *n. Specif.* A network of radio or radar stations operating as a group for determining the position of aircraft. See **loran chain.**
Chain Home. An early-warning and aircraft height-finding radar system used in the British Isles.
The word 'Home,' as used in this and the following entries, refers to the British Isles, i.e., 'home service.'
Chain Home Beamed. A type of radar system for inland aircraft reporting in the British Isles.
Chain Home Extra Low. A radar system used in the British Isles for detecting low-flying aircraft.
Chain Home Low. A type of radar system used in coastal locations in the British Isles for reporting low-flying aircraft.
chain of command. (chacom) The succession of commanding officers from superior to subordinate through which command is exercised. Sometimes called 'line of authority.'
chain of communication. The chain of persons through which a letter or other communication passes from the writer to the addressee.
Chain Overseas Extremely Low. A British radar system used in coastal locations for reporting very low-flying aircraft.
Chain Overseas Low. A radar system using 'Chain Home Low' equipment, but set up in a place other than the British Isles.
chain reaction. A series of reactions, esp. in nuclear fission, in which one reaction leads to others of the same kind.
chairborne troops. Nonflying AF military personnel. *Jocular.*
challenge, *n.* **1.** *Electronics.* An interrogation (which see, sense 3). **2.** A process carried out to ascertain whether an unknown person is friendly or hostile.
challenger, *n. Electronics.* An interrogator or interrogator-responser.
challenging signal. The signal sent out by the interrogator component of an interrogator-responser.
chamber, *n. Specif.* **1.** A decompression chamber or combustion chamber. **2.** The compartment at the rear of a gun barrel that holds a charge or cartridge; one of the compartments in the cylinder of a revolver.
chamber, *v. tr.* To insert a *round* of ammunition in the chamber of a firearm or gun.
chamber flight. A simulated flight in a decompression chamber, during which the occupant or occupants are subjected to atmospheric pressures encountered at various altitudes.
Chambley Air Base. An air base at Chambley, France, named for the city.
Champion, *n.* A popular name for the **L-16.**
chan (*auth abbr*). 'Channel.'
Chance Vought. [*Chance Vought* Aircraft Division, United Aircraft Corporation.] Used in the names of aircraft, as in *Chance Vought F4U, Chance Vought Kingfisher,* etc.
Chance Vought Corporation was formed in 1917. It eventually became a division in United Aircraft Corporation in 1934, and was merged with Sikorsky Aircraft in 1939 to constitute the Vought-Sikorsky Division. See **Vought-Sikorsky,** *n.*
chandelle, *n.* [French: See note.] An abrupt and steep climbing turn made in an airplane, in which the airplane's momentum provides additional acceleration for the climb. Hence, **chandelle,** *v.*
The purpose of the chandelle is to change the direction of flight and gain altitude at the same time.
In French, 'chandelle' was used in reference to the perpendicular flight path of the maneuver, considered to be like an upright candle.
change release. A document correcting inaccuracies or omissions in contracts in regard to stock number, part number, and nomenclature.
channel, *n.* (chan) **1.** A system or means through which something passes or by which something is effected, as a *channel* of distribution or a *channel* of liaison. **2.** *Through channels,* through a command channel or other military channel. **3.** *Electricity.* An electrical path over which transmission is made from one station to another; a

band of radio frequencies wide enough to allow a transmission, as a communication channel.

In sense 1, see **command channel, military channel, technical channel.**

channel letter. An identifying letter assigned to a communication channel between two stations when two or more channels are maintained between these stations.

channel number. A combination of letters and figures identifying a station, a channel, and a transmission.

channel of command. A command channel.

channel of communication. 1. a. A channel especially set up to enable communication between one part of the military establishment and another with or without reference to a command channel. **b.** A chain of communication. **2.** A communication channel (which see).

In sense 1, the channel of communication is to promote efficiency in getting a job done.

channel-wing airplane. An airplane having its wings made in the shape of half circles, forming channels.

Chanute Air Force Base. An AF base at Rantoul, Illinois, named for Octave Chanute (1832–1910), a civil engineer and a pioneer aviation engineer, friend and advisor to the Wright brothers.

Chanute Award. An annual award established by the Institute of Aeronautical Sciences in 1939 in honor of Octave Chanute and given 'for a notable contribution made by a pilot to the aeronautical sciences.' Cf. **Chanute Air Force Base.**

chap (*auth abbr*). 'Chapter.'

chapel flag. A blue flag, marked with the appropriate religious symbols in white, displayed in AF chapels. It is of a size to match the national flag.

chaplain, *n.* (Ch) **1.** A clergyman commissioned as an officer, who is responsible for the religious welfare of service-connected personnel, and who advises the commander on all matters pertaining to the religious life, morals, morale, and the like within a given command. See **casualty assistance chaplain. 2.** *Capitalized.* A title of address used instead of the title of a rank, i.e., 'Chaplain Jones' instead of 'Captain Jones.'

Chaplain Corps. (ChC) A corps of qualified clergymen commissioned as officers in the Air Force.

chaplain's assistant. An airman assigned to help a chaplain in the execution of details involved in the performance of the chaplain's duties.

A chaplain's assistant acts as a receptionist for the chaplain, performs clerical work, and may hold interviews.

chaplain's flag. A blue flag, marked with appropriate religious symbols in white, used to indicate a place where divine services are held or to denote the presence of a chaplain.

Chaplains' Service. An administrative service in the AF provided by the Chief and Deputy Chief of AF Chaplains and all other chaplains in the USAF.

chaplain training. The training of AF chaplains in administrative duties.

char (*auth abbr*). 'Characteristic.'

characteristic, *n.* (char) *Specif.* A quality or property that inheres in a piece of equipment and affects its manner of performance or its range of capabilities.

The characteristics of an aircraft are such qualities as responsiveness to control, sturdiness, stability, balance, and resilience. Tendencies by an aircraft to stall at a certain speed, to roll over in a turn, to dip a wing in level flight, to remain stable at high speeds, etc.—these are characteristics. The term is sometimes less precisely used for 'capability' or 'feature.' Cf. **capability,** *n.*, and **feature,** *n.*

charge, *n.* (chg) *Specif.* **1.** A given quantity of explosive, either by itself or contained in a bomb, shell, mine, or the like, or used as the propellant for a bullet or shell. **2.** That with which a bomb, shell, mine, or the like is filled, as a *charge* of explosive, thermite, bacteria, etc. Also called the 'fill,' 'filler,' or 'filling.' **3.** In small arms, a cartridge or round of ammunition.

charge, *v. Specif.* **1.** *tr.* To fill a *bomb, mine, shell,* or the like with a charge. **2.** *To charge a gun,* to operate the bolt so as to chamber a round of ammunition.

charge of quarters. (CQ) A noncommissioned officer responsible for the care and policing of a given area for a given period of time; the responsibility involved in this activity.

charger, *n.* Short for 'gun charger.'

charge-weight ratio. The ratio of the weight of a charge, esp. an explosive charge, to the total weight of the complete bomb, shell, or the like, that contains the charge.

charging cable. A cable attached to the bolt of an aircraft machine gun or cannon for drawing back the bolt manually in order to charge the piece.

Charleston Air Force Base. An AF base at Charleston, South Carolina, named for the city.

Charlie, *n.* A light-weight radar apparatus for warning and fire control against surface craft.

Charlie (*code*). A word authorized for the letter 'C.' See **Able** (*code*) and **Alfa** (*code*).

chart, *n.* **1.** A map representing a given surface of the earth and especially designed for sea or air navigation; *specif.*, any of the several kinds of aeronautical charts drawn to a particular scale. See **hydrographic chart. 2.** Any such map or aeronautical chart considered functionally. **3.** A diagram showing relationships, as in an organizational or flow chart.

In sense 1, a chart differs from a map (which see, sense 2) in having an overlay of special information for purposes of navigation. See **aeronautical chart.**

In sense 2, 'chart' is used not so much in reference to a publication of a particular scale, as to a map that has a special use. See **air objective chart, Gnomonic Tracking Chart, jet arrival let-down chart, Loran Chart, Strategic Planning Chart,** and **tactical chart.** See also **Universal Plotting Chart.**

chart analysis. The analysis of a chart or charts to discover their function, purpose, or characteristics.

chart board. A small portable board upon which charts and other data pertaining to a flight or mission are mounted.

chart comparison unit. A device permitting simultaneous viewing of a navigational instrument presentation and a chart so that one appears superimposed upon the other.

charting photography. The making of aerial photographs to provide data for aeronautical charts; the art of this activity.

chart projection. Any one of the several methods by which the surface of the earth or the celestial sphere is represented on a plane surface; a map or chart produced by one of these methods, as by a Mercator projection.

Chase-me-Charlie. A German remote-controlled glider with an explosive load and rocket booster, used in WW II. *British slang.*

chaser, *n. Specif.* A term used in WW II for a German interceptor or pursuit plane.

chassis, *n. Specif.* **1.** The landing gear assembly of an airplane, including struts, axles, wheels, pontoons, and the like. **2.** A base upon which the upper part of a cannon moves back and forth.

Chateauroux Air Depot. An air depot at Chateauroux, France, named for the city.

chatter, *n.* A low-speed vibration which can be heard or felt in a piece of machinery or other equipment.

Chaumont Air Base. An air depot at Chaumont, France, named for the city.

CHB (*abbr*). 'Chain home beamed.'

ChC (*auth abbr*). 'Chaplain Corps.'

check, *n.* (ck) *Specif.* **1.** A test or examination of an aircraft or any part of it. **2.** A routine examination made during, or prior to, a flight or other operation, or phase thereof, as before takeoff or landing, to see that all procedures have been observed and that proper functioning is prevailing. **3.** A check flight.

check, *v.* (ck) *tr.* and *intr.* **1.** *To check in,* to report in. **2.** *To check out,* to take a check flight or a checkout course; to give a *pilot* a check flight.

check climb. One of two or more airplane climbs made to determine the airplane's approximate service ceiling.

The check climb is always made at a speed determined by the sawtooth climb (which see). Two or more check climbs must be made to establish the service ceiling.

check flight. 1. A flight on which a pilot or another aircrew member or members are checked for proficiency in the performance of their duties. Also called a 'check ride,' or 'check-out flight.' See **proficiency flight. 2.** A flight made in an aircraft to determine whether the coverage of a given radar installation has altered. See **radar calibration.**

In sense 1, a check flight may be given an experienced pilot if being introduced to an unfamiliar airplane.

check indorsement. An indorsement used to forward a letter without comment.

check list. Any list of items written out to guard against memory failure, esp. such a list carried in an airplane, setting forth procedures or instructions required to be followed during preflight, takeoff, landing, flight, etc.

Check lists vary with the plane, and check lists for any given plane may vary between squadrons, but they do not conflict with the appropriate flight operating instructions.

checkout, *n.* Instruction or training given a pilot to familiarize him with a given aircraft. See **check flight.**

check pilot. The pilot who checks another pilot on a check flight.

check point. A known or designated point or feature, as a landmark beacon, mountain, city, or the like, used as a reference in air navigation or for orientation in flying.

Check points may be identified, in some cases, with the aid of radar.

check ride. A check flight.

check sheet. *Specif.* A form listing all points of a given aircraft that are to be examined in the course of an inspection.

checkup, *n.* An examination performed on people or things as to health, fitness, condition, readiness, etc.

check valve. A valve that automatically prevents a reverse flow.

cheese antenna. A cylindrical reflector having two plates perpendicular to it spaced so as to permit the propagation of more than one mode in the desired direction of polarization.

CHEL (*abbr*). 'Chain Home Extra Low.'

Cheli Air Force Station. An AF depot located near Maywood, California, formerly called the 822nd AF Depot, renamed for Major Ralph Cheli, Medal of Honor, died 6 March 1944 while a prisoner of the Japanese.

chem (*abbr*). 'Chemical.' See **cml** (*auth abbr*).

chemical agent. Any chemical substance that causes a reaction, esp. one which by its direct action produces a lethal or toxic effect, smoke, incendiary action, or any combination of these.

Toxic chemical agents are usually gases, and are classified into persistent and nonpersistent categories.

chemical air attack. An air attack made with

ammunition, esp. bombs, containing a lethal or toxic chemical agent.

chemical ammunition. Any ammunition, as bombs, shells, bullets, flares, or the like, containing a chemical agent or agents.

chemical bomb. A bomb, esp. an aerial bomb, having a chemical agent for its main charge; *specif.*, one having poison gas for its main charge.

Most chemical bombs have bursters to break the case and spread the charge. See **incendiary bomb, napalm, *n.*, smoke bomb.**

chemical fuel motor. A motor, esp. a rocket motor, that uses a chemical as fuel which does not depend upon the atmosphere for oxidation.

chemical grenade. A grenade charged with a chemical agent, as a smoke-producing or incendiary mixture. See **frangible grenade, smoke grenade.**

chemical warfare. (CW) The tactics and technique of using chemical agents in offensive action, or of employing defensive measures against such actions; that branch of a military force responsible for using such actions or measures.

chemosphere, *n.* A layer of atmosphere, considered by Wares to begin at approximately 20 miles and to extend to 50 miles above the surface of the earth, in which photo-chemical activity is predominant.

The thickness of this layer varies. From certain points of view, the chemosphere is considered to be an extension of the stratosphere. See **mesosphere,** *n.*, and **stratosphere,** *n.*

Cheney Award. An annual award of a certificate, bronze plaque, and five hundred dollars, administered by the USAF and presented 'for an act of valor, extreme fortitude, or self-sacrifice in an humanitarian interest performed in the preceding year in connection with aircraft. The act need not necessarily be of a military nature.'

The award was established in honor of Lt. William Cheney, A.S., who was killed in an air collision in Italy, 20 January 1918. The award was first given in 1927, but was suspended from 1940–45. The rules and regulations governing the award are in AFR 35–4.

cherry-blossom maneuver. A Japanese airplane maneuver employed by three-plane fighter formations when attacked, in which the planes loop and chandelle in such a manner that two of them are in a position to counterattack the attacking planes. Now *hist.*

The RAF termed this maneuver the 'Prince of Wales.'

chest, *n. Specif.* A chest for dental equipment.

AF dental chests have code numbers identifying them according to the service for which they are used, as *Chest 60*, a chest containing all the dental supplies required to render dental service in the field, *Chest 61* or *62*, a chest containing all the equipment necessary for a dental prosthetic laboratory set up in the field.

chest-pack parachute. A parachute pack that is detachable from the harness and is clipped onto a chest harness when needed.

The chest-pack parachute is sometimes worn for use as an auxiliary parachute.

chest strap. The strap of a parachute harness which buckles across the chest.

chest-to-back acceleration. Acceleration of the body in the direction from the chest to the back.

chevron, *n.* **1.** A mark or insigne in the shape of a caret or V, worn to indicate rank, class, or service. See **overseas chevron. 2.** Anything in the shape of a chevron, as the painted marks sometimes used as runway markings.

In sense 1, V-shaped chevrons, with the points replaced by a pierced star in a circle, are worn by airmen to indicate class or rank. The devices beneath the chevrons of sergeants are technically known as 'wing-shaped arcs,' although they are often popularly called 'chevrons.'

Cheyenne fog. An upslope fog occurring on the eastern slope of the Rocky Mountains, and caused by the westward flow of air from the Missouri Valley.

chg (*auth abbr*). 'Charge.'

Chgo (*auth abbr*). 'Chicago.'

Chicago piano. An antiaircraft weapon, consisting of four automatic cannon mounted together; a kind of pom-pom (which see). *Slang.*

chick, *n.* A code word for an aircraft, esp. a fighter aircraft.

chicken colonel. A cant or familiar appellation for a colonel. Cf. **full colonel.**

Chicom (*auth abbr*). 'Chinese communist.'

chief, *n.* Usually *capitalized* in specific titles. A leader or head of an organization, division, staff, team, or operation.

'Chief' is applied to any of many AF military or civilian persons of widely varying rank or grade exercising equally varying degrees of command. The word is used in such titles as *Chief of Staff, line chief, Chief of the Officers' Section, crew chief*, and *Chief, Administration Division*. The word is also found in such obsolete titles as *Chief, Army Air Forces* and *Chief of Air Corps*. 'Chief' is also used adjectivally in such titles as *chief clerk* and *chief nurse*.

Chief of Air Force Chaplains. (CofAFCh) The ranking chaplain in the AF, who advises the Chief of Staff on matters pertaining to the welfare and religious life of AF personnel and who administers and supervises the chaplains' program in the USAF.

chief of staff. (CofS) *Capitalized* when used as a specific title. **1.** The senior or principal member or head of a staff. **2.** Short for 'Chief of Staff, United States Air Force.' **3.** The principal assistant in a staff capacity to a commander, usually the head of a coordinating staff.

In sense 3, the CofS is without inherent power of command by reason of assignment, except that vested in him by delegation. In lower echelons, the corresponding title to 'chief of staff' is 'executive officer.'

Chief of Staff, United States Air Force. The ranking military officer in the USAF, directly under the Secretary of the AF.

The Chief of Staff, USAF, serves in three capacities: (1) as the chief AF staff officer advising the Secretary of

the AF, (2) as the commanding general (except that he is not so called) of the USAF, and (3) as a member of Joint Chiefs of Staff. 'Under the direction of the Secretary of the Air Force, the Chief of Staff shall exercise command over the air defense command, the strategic air command, the tactical air command, and such other major air commands as may be established by the Secretary . . . and shall have supervision over all other members and organizations of the Air Force' (*Air Force Organization Act of 1951*). See **air staff** and **Headquarters United States Air Force.**

Chief of the Air Staff, Royal Air Force. The opposite number in the RAF to the Chief of Staff, USAF. See **Air Council,** sense 1 and note.

chief warrant officer. (CWO) The higher of the two warrant officer grades; a person holding this grade.

There are three separate pay levels in the chief warrant officer grade in the AF.

Chimney, *n.* A code name for any of a series of German early-warning radar stations used in WW II. Also called 'Wasserman.'

These stations measured range, bearing, and height. The radar tower consisted of a very tall single mast.

chine, *n.* The corner where the bottom of a hull or pontoon intersects the sides.

Chinese landing. *Slang.* **1.** A down-wind landing. **2.** A landing made with one wing of the landing airplane low, named after the mythical Chinese aviator, 'Won Wing Low.'

chinook, *n.* **1.** A foehn wind on the eastern side of the Rocky Mountains between Colorado and the lower Mackenzie River, commonest during winter and spring when it melts the snow. **2.** Any warm wind accompanying a thaw, such as a warm west wind along the Pacific coast from Oregon northward.

chin turret. A turret installed immediately beneath and slightly behind the nose of a bomber.

chirping, *n.* A high-pitched, chirping, continuous-wave noise of varying frequency, heard in radio receivers and caused by an instability in the receiver or transmitter.

Chitose Air Base. An air base at Chitose, Japan, named for the city.

CHL (*abbr*). 'Chain Home Low.'

chmn (*auth abbr*). 'Chairman.'

chock, *n.* A block of wood or other material, or a rigid framework of metal, usually designed so that it fits in the angle between an airplane tire and the ground, to aid in preventing the ship from rolling.

chock, *v. tr.* To place chocks around the *wheels* of an *airplane* to keep it from rolling.

choke, *n.* **1.** *Electricity.* A coil used to impede the flow of pulsating direct current or of alternating current in a circuit. **2.** *Electronics.* A groove in a metal surface, preventing the escape of microwave energy.

choke coil. A coil winding of small resistance and large inductance, used to impede or throttle a current.

choke-out, *n.* A condition that exists in a wind tunnel when a shock wave forms in the throat of the tunnel, blocking any increase in air velocity.

chokepoint, *n.* A point in a line of transportation where vehicles are congregated or likely to be congregated, as at a railroad yard.

chokes, *n.* A manifestation of decompression sickness characterized by coughing, a deep and usually burning chest pain, and an inability to breathe deeply. Distinguished from 'throat chokes.'

choking gas. Any of several gases harmful to the breathing organs.

Such gases are also known as 'lung irritants.'

chomp, *v. tr. To chomp on the binders,* to apply the wheel brakes of an airplane. *Slang.*

CHOP (*auth abbr*). 'Change of operational control.'

chop, *v. tr.* **1.** To close a *throttle* or to diminish or shut off the flow of fuel to an *engine* by sudden motion; hence, to lessen *power.* **2.** To switch a *transponder* rapidly on and off again for purposes of recognition.

chopper, *n.* **1.** An electrical device for interrupting, at regular intervals, continuous wave signals, either in a transmitter or receiver. **2.** Any apparatus for regularly interrupting an electrical current or beam of light. **3.** A helicopter. *Slang.*

chord, *n. Specif.* An assumed straight line tangent to the lower surface of an airfoil section at two points, or a straight line between the leading and trailing edges of an airfoil section, or between the ends of the mean line of an airfoil section; the distance between the leading and trailing edges of an airfoil section. See **mean aerodynamic chord, mean chord.**

chordwise, *adv. Specif.* In the direction of the chord of an airfoil section; directed, moving, or placed along this chord.

chow, *n.* Food; any mealtime, as breakfast, lunch, or dinner. *Colloq.*

chow line. 1. The line formed by persons to be served food. **2.** A line formation, used by Japanese fighter pilots during WW II, above and parallel to a formation to be attacked. In such a formation, the fighters were readily able to attack one by one in diving turns. *Slang.*

Christmas tree. A small standard placed on the map of a plotting table to show the track of an aircraft or of a formation of aircraft.

Plaques on a Christmas tree carry the track number, give the number of aircraft in a formation, and tell whether the aircraft are friendly, enemy, or unidentified.

chromosomal aberration. Chromosomal mutation affecting inherited characteristics.

chromosomal mutation. A change in the in-

herited characteristics in the structure of a chromosome, such as may be caused by nuclear radiation. Also known as a 'chromosomal aberration.'

chronic altitude sickness. *Specif.* A chronic sickness caused by oxygen starvation, esp. among persons living at high altitudes for long periods of time.

Chronic altitude sickness usually disappears when the affected person goes to a lower altitude.

chronic exposure. *Specif.* The continued exposure to small doses of nuclear radiation. Cf. **acute exposure.**

chronometer, *n.* A highly-accurate clock or watch employed in air and surface navigation.

ChSM (*auth abbr*). 'China Service Medal.'

CHT (*abbr*). 'Cylinder-head temperature.'

chuckhole, *n.* A relatively small hole or depression, as may occur in a prepared surface, as in a runway. *Colloq.*

chuffing, *n.* An uneven or nonuniform burning of a powder charge, as in a rocket motor. See **chugging,** *n.*

chugging, *n.* An irregular combustion of liquid fuels in a rocket engine, due to incorrect mixture or poor chamber design.

chute, *n.* **1.** Short for 'parachute.' **2.** Any passage or slide through which objects are directed, as a *case ejection chute, feed chute,* or *link ejection chute* (which see under separate entries).

chute boot. A container on a sounding rocket to carry its parachute.

chutist, *n.* A parachutist. *Colloq.*

CI (*auth abbr*). **1.** 'Counter Intelligence.' **2.** 'China Nationalist.' Nationality Condensation Code.

Ci (*abbr*). 'Cirrus.'

CIA (*auth abbr*). 'Central Intelligence Agency.'

Ciampino Airfield. An airfield near Rome, Italy, at which facilities are provided for a MATS terminal.

CIB (*abbr*). 'Central Intelligence Board.'

CIC (*auth abbr*). **1.** 'Counterintelligence corps.' *Army.* Also in combination, as *CIC agent.* **2.** 'Combat information center.'

cicu (*abbr*). 'Cirrocumulus.' See **Cc** (*abbr*).

CID (*abbr*). 'Criminal Investigation Division.'

CIF (*auth abbr*). 'Cost, insurance, and freight.'

Cigar (*code*). A type of electronic communications-jamming device, either airborne or ground-based, used against German communications in WW II.

Cigarette (*code*). A type of electronic communications-jamming device, used against German bombers in WW II.

CIIC (*auth abbr*). 'Counter Intelligence interrogation center.'

CIM (*abbr*). 'Communications improvement memorandum.'

CINC (*auth abbr*). 'Commander in Chief,' used only in combinations.

CINCAFMed (*auth abbr*). 'Commander in Chief, Allied Forces, Mediterranean.'

CINCAirEastLant (*auth abbr*). 'Air Commander in Chief, Eastern Atlantic Area.'

CINCAL (*auth abbr*). 'Commander in Chief, Alaskan Command.'

CINCAlAirCenEur (*abbr*). 'Commander in Chief, Allied Air Forces, Central Europe.'

CINCarib (*auth abbr*). 'Commander in Chief, Caribbean Command.'

CINCAWI (*auth abbr*). 'Commander in Chief, American West Indies Station (Brit).'

CINCEastLant (*auth abbr*). 'Commander in Chief, Eastern Atlantic Area.'

CINCEI (*auth abbr*). 'Commander in Chief, East Indies Station (Brit).'

CINCent (*auth abbr*). 'Commander in Chief, Allied Forces, Central Europe.'

CINCEur (*abbr*). 'Commander in Chief, European Command.'

CINCFE (*auth abbr*). 'Commander in Chief, Far East.'

CINCFESta (*auth abbr*). 'Commander in Chief, Far East Station (Brit).'

CINChan (*auth abbr*). 'Allied Commander in Chief, Channel.'

CINCLant (*auth abbr*). 'Commander in Chief, Atlantic.'

CINCMAirChan (*auth abbr*). 'Allied Maritime Air Commander in Chief, Channel.'

CINCMed (*auth abbr*). 'Commander in Chief, British Naval Forces in the Mediterranean.'

CINCNE (*auth abbr*). 'Commander in Chief, US Northeast Command.'

CINCNELM (*auth abbr*). 'Commander in Chief, US Naval Forces, Eastern Atlantic and Mediterranean.'

CINCNorEur (*abbr*). 'Commander in Chief, Northern Europe.'

CINCNorth (*auth abbr*). 'Commander in Chief, Allied Forces, Northern Europe.'

CINCPac (*auth abbr*). 'Commander in Chief, Pacific.'

CINCPOA (*abbr*). 'Commander in Chief, Pacific Ocean Areas.'

CINCSouth (*auth abbr*). 'Commander in Chief, Allied Forces, Southern Europe.'

CINCUSAFE (*abbr*). 'Commander in Chief, United States Air Forces in Europe.'

CINCUSArEur (*auth abbr*). 'Commander in Chief, U.S. Army, Europe.'

CINCWestLant (*auth abbr*). 'Commander in Chief, Western Atlantic Area.'

cine-gun, *n.* A gun camera. *RCAF.*

CIPAP (*auth abbr*). 'Authority is granted to make such changes in above itinerary and to proceed to such additional places as may be necessary for accomplishment of this mission.'

cipher, *n.* Any manner of secret writing that substitutes other letters of the alphabet for the letters intended, or transposes the letters of a plain text, or substitutes a different alphabet or set of symbols for the usual alphabet; an enciphered message.

Various methods are used in cipher. See **code,** *n.*

cipher alphabet. The conventional letters, numerals, and other signs of a written language, together with the characters or symbols which replace the conventional symbols in any given cryptographic system.

The cipher alphabet is thus made up of two components: the cipher component and the plain component (which see under separate entries).

cipher component. That component of a cipher alphabet containing the symbols which replace the letters and other characters of plain text. Cf. **plain component.**

ciphony equipment. [*Ciphony* = *cipher* + telephony.] Any equipment attached to a radio transmitter or receiver or to a telephone for scrambling or unscrambling voice messages.

cir (*auth abbr*). 'Circular.'

circ (*auth abbr*). 'Circumstance.'

circle of equal altitude. A circle on the surface of the earth, having as its center the substellar point of a given celestial body, from any point on or above the circumference of which the angular altitude of the body is the same. Also called a 'circle of position.'

Either of the two points of intersection where two such circles overlap will provide a definite fix for a navigator who knows his position well enough to eliminate one of the points.

circuit, *n.* **1.** The path of an electrical current or of magnetic lines of force. **2.** *Specif.* A radio or telephone communication link between two or more points capable of providing one or more communication channels. **3.** A name applied to a flying maneuver practiced in flying schools, consisting of flying a circular course. See **circuits and bumps.**

circuit breaker. An electromagnetic device attached to a circuit for automatically opening or interrupting a circuit when the latter is overloaded.

circuit discipline. In communications, the observance of rules governing the use of equipment, prescribed frequencies, operating procedures, and the like. See **discipline,** *n.*, sense 5b.

circuit outage. The state of a circuit when out of commission.

circuit ringing. The resonant sound heard in the receiver of a radio when cycles of oscillation are set up in a low-frequency circuit by reception of a pulse of radio-frequency energy, to which the circuit is resonant.

circuits and bumps. A repeated flight sequence in which a pilot circles a field, touches the runway, takes off again without stopping, and repeats the process a number of times, undertaken as a phase of training. *Slang.* See **touch-and-go landing.**

circular, *n.* (cir) A publication used to disseminate, within a given command, instructions or other matter of a general application and temporary duration.

In the AF, circulars are now mostly replaced by memorandums, AF letters, and the like.

circular error. 1. A bombing error measured by the radial distance of a point of bomb impact, or mean point of impact, from the center of the target, excluding gross errors. **2.** With an airburst atomic bomb, the bombing error measured from the point on the ground immediately below the bomb burst to the desired ground zero. See **ground zero.**

circular error average. The bombing error in a given bombing attack, expressed as the average radial distance of the bomb impacts, or mean points of impact, from the center of the target.

circular probable error. 1. The probable bombing error expressed in terms of the radius of a circle centered on the desired mean point of impact (DMPI) of a bombfall and containing half of the expected bombfall, excluding gross errors; also sometimes applied to the actual bombing error. **2.** With an airburst atomic bomb, the probable bombing error expressed in terms of the radius of a circle centered upon the desired ground zero (DGZ), the radius from that point being projected horizontally to the point below the bomb burst. Gross errors are also excluded in atomic bombing. **3.** With reference to guided missiles, a probable error expressed in terms of the radius of a circle within which one half of a given number of missiles can be expected to fall. Gross errors are usually excluded.

See **CEP** (*abbr*).

circular scan. A radar scan in which a given point on the directed beam describes a circle in space with the antenna at the center. Hence, **circular scanning.** See **scan,** *n.*, note.

circular system. A system for controlling guided missiles: See note.

The missile automatically sends out a signal to two

radio stations, and times the echoes to keep itself on course.

circulation, *n.* **1.** *Meteorology.* The motion of the air, caused esp. by differential heating at the surface of the earth, as distinguished from its motion of rotation with the earth. **2.** *Aerodynamics.* Circulatory flow.

circulation map. A traffic circulation map.

circulatory flow. *Aerodynamics.* The flow of air, hypothetically circular, about an airfoil profile in motion relative to the air.

The concept of circulatory flow is based upon the observed reaction of a moving fluid in which a vertically immersed cylinder is rotated. If the immersed cylinder is stationary, the fluid streams past the cylinder in symmetrical flow, and no cross-fluid forces act on the cylinder; if the cylinder is rotated, however, an asymmetrical flow is set up past the cylinder, resulting in a net sideward (or cross-fluid) force, corresponding to lift on an airfoil. The asymmetrical airfoil, in combination with the airstream moving past it, creates an effect analogous to that of the symmetrical cylinder rotating in a fluid.

circum (*auth abbr*). 'Circumference.'

circumnavigate, *v. tr.* To sail or fly around the *globe.*

Circumnavigation in the air age may be accomplished in any direction. See **direction,** *n.,* sense 2a.

circus, *n.* **1.** An air armada primarily made up of a powerful fighter force sent out to bring enemy fighters into action. **2.** An aerobatic circus.

In sense 1, the circus may engage in bombing but with the intention of drawing enemy fighters into action.

cirrocumulus, *n.* (Cc) A cloud layer with an ice crystal content, composed of small flakes or masses of cloud without shadows.

Patches of cirrocumulus, when gathered into regular groupings, give what is called a 'mackerel sky'; when without order or pattern, the patches give what is called a 'curdled sky.' The cirrocumulus occurs at 20,000 to 40,000 feet.

cirrostratus, *n.* (Cs) A thin, whitish, stratiform cloud layer, having an ice crystal content and occurring at altitudes of 20,000 to 40,000 feet.

Cirrostratus does not blur the outlines of the sun or moon, but gives them 'haloes.' When greatly diffused, it gives the sky a milky appearance.

cirrus, *n.* (Ci) A separate and detached thin stratiform cloud without shadows, having an ice crystal content and occurring in varied shapes, as tufts of hair, thin filaments, bands, feathered filaments, etc.

Cirrus usually occurs at altitudes between 20,000 to 40,000 feet, but may be found at any level.

CIS (*auth abbr*). 'Central Instructor School.'

cist (*abbr*). 'Cirrostratus.' See **Cs** (*abbr*).

cit (*auth abbr*). 'Citation' or 'citizen.'

citation, *n.* (cit) *Specif.* **1.** A specific mention of a person or unit in orders or other documents for some commendable or meritorious action. **2.** A written narrative statement of a meritorious action or deed for which a decoration is awarded.

city control number. A four-digit number assigned to identify a city considered a target or potential target.

Cities within a given country are assigned city control numbers in such a manner that a numerical arrangement of the numbers will result in an alphabetical arrangement of the cities. Provision is made so that new cities may be added to the list without disturbing the numbers already assigned.

city fog. A mixture of smoke and fog occurring over a city, esp. a city that uses large amounts of soft coal. Also called 'smog.' See **black fog.**

civ (*auth abbr*). 'Civil' or 'civilian.'

Civil Aeronautics Act. An Act passed in 1938 that combined and clarified governmental authority and regulations regarding the nation's airlines and which created the Civil Aeronautics Authority (now the Civil Aeronautics Board), empowering it to issue to responsible companies certificates conveying rights to designated air routes.

Civil Aeronautics Administration. (CAA) An administrative organization created in 1940 out of the Civil Aeronautics Authority.

The CAA develops and maintains airway navigation aids and establishes traffic control and procedures, enforces aircraft airworthiness requirements, airline operation procedures, and flight crew proficiency, conducts research and development toward improvement in aircraft, and disseminates technical information. It cooperates with the AF through the Civil Air Branch.

Civil Aeronautics Authority. An organization, created by the Civil Aeronautics Act of 1938, but deprived of most of its functions in 1940.

The Civil Aeronautics Board and the Civil Aeronautics Administration took over the responsibilities of this authority.

Civil Aeronautics Board. (CAB) A board within the framework of the Department of Commerce that issues certificates to civil airlines, fixes rates, promulgates air safety standards and requirements for the airworthiness of aircraft, and investigates aircraft accidents.

civil affairs. 1. The affairs or activities of the government or people of a country, or of an area thereof, that is under military occupation or in which military forces are present; those affairs which are the result of the relationship between the civilian population and the military forces. **2.** Sometimes *capitalized.* The military persons concerned with civil affairs; the activities of such persons.

The mission of Civil Affairs in the occupied territory of an enemy or of a formerly hostile nation is to maintain order, promote security, relieve combat personnel from civil administration, eliminate sabotage, prevent civilians from interfering with the military command, and to aid the civil government in reestablishing its administration and services or to aid in establishing a new administration. Some of these duties may also be a part of the mission of Civil Affairs in friendly territory.

Civil Air Branch. A branch of the Directorate of Plans (Operations), Headquarters USAF, that provides policy guidance on matters concerned with civil aviation.

Civil Air Patrol. (CAP) A volunteer, semimilitary

civilian auxiliary air organization, supervised and administered by the AF, and trained and equipped to assist in national and local emergencies.

civil airway. An airway designated and approved by the Civil Aeronautics Administration as suitable for interstate, overseas, or foreign air commerce.

Civil airways are available to the aircraft of the USAF.

civil aviation. Aviation engaged in by commercial or private concerns. Distinguished from military aviation.

civil day. A mean solar day. *Obs.* See **Greenwich mean time.**

civil defense. 1. The defense by civil authorities, both local and national, of the civilian population, designed to minimize the effects of enemy action against all aspects of civil life. **2.** The civil services set up to achieve this defense.

Civil defense is largely passive, but the activities of the Ground Observer Corps, which is a part of civil defense, are active air defense measures, since this corps provides the active air defense with information regarding low-flying aircraft. The civil defense organization works in close cooperation with the military services and is aided and largely trained by the services.

civilian, *n.* (civ) A person who is not a member of an armed service by virtue of enlistment, commission, or warrant; a person neither obliged nor permitted to wear military dress. Cf. **military personnel.**

Civilians are often employed by a military service, and sometimes are subject to military jurisdiction, but when so employed, they usually retain freedom of action in such matters as resigning from their jobs, choosing their own living quarters, etc.

civilian, *a.* Of or pertaining to a civilian or civilians.

civilian auxiliary. An organization made up of civilians, as the Civil Air Patrol, which operates its service in close coordination with a military service.

civilian component. 1. Any component of a military service made up of civilians, esp. any of the reserve components belonging to the USAF. **2.** Sometimes loosely used to refer to a civilian auxiliary.

civilian contract school. Any of several civilian schools having a contract with the AF to offer instruction to certain AF personnel.

civilian institutions program. A program administered by the Institute of Technology, USAF, whereby certain selected officers of the Air Force are assigned a duty station at an academic university or industrial plant, where they receive professional education or on-the-job training. See **Institute of Technology.**

At a university, the AF assumes the cost of tuition and fees, books, supplies, etc. This program is not to be confused with operation bootstrap, nor with the program of the United States Armed Forces Institute.

civilian requirements. The total material requirements of the civilian population during an emergency, consisting of both consumers' and capital goods.

civil twilight. 1. That part of the twilight period that occurs, for computation purposes, when the sun is between the horizon and a point about 6 degrees below the horizon, the latter measured at the middle of the sun. **2.** The light diffused during this period.

This twilight on clear days permits ordinary outdoor activities. See **twilight,** *n.*

civvies, *n.* Civilian clothes. *Slang.*

CJTF (*auth abbr*). 'Commander Joint Task Force.'

ck (*auth abbr*). 'Check.'

ckpt (*auth abbr*). 'Cockpit.'

ckt (*auth abbr*). 'Circuit.'

CL (*abbr*). 'Carload.'

cl (*abbr*). **1.** *auth.* 'Class,' when used in combinations. **2.** 'Climb' of an aircraft. **3.** *auth.* 'Carload.'

claim, *n.* An assertion made by a pilot, pilots, or other crew members claiming credit for having destroyed, damaged, or having probably destroyed or damaged, an enemy aircraft, locomotive, or the like.

Clam, *n.* A code name for the Russian Il-18.

clamping circuit. *Electricity.* **1.** A circuit that maintains either of the amplitude extremes of a wave form at a certain level of potential. **2.** A circuit that clamps the base of a wave form to a given potential or current value.

clamshell door. A cargo-loading door on the underside of an airplane, consisting of two curved panels that swing apart lengthwise like a clamshell. Often *pl.*

clandestine, *a. Specif.* Of certain undercover activities: Not only covert but unauthorized.

clank, *v. To clank up,* to become nervous. *Slang.*

clar (*auth abbr*). 'Clarify.'

Clark Air Force Base. An AF base at Angeles, Luzon Island, Philippine Islands, named for Major Harold M. Clark, killed in an accident over the field in 1920.

clas (*auth abbr*). 'Classify' or 'classification.'

clasp, *n.* Any small metal device worn either on the suspension ribbon of a service medal or on the ribbon bar to denote an additional award of the medal or to identify the nature of the service for which the medal was awarded.

class A agent. A commissioned or warrant officer entrusted with public funds by an accountable disbursing officer so as to make specified payments, as those made monthly to troops. In full, **class A agent officer.**

class A bearing. A bearing taken in direction-finding, which may be considered accurate to within plus or minus 2 degrees.

class A uniform. The service uniform of an officer or airman. Not an official term.

class B agent. A commissioned or warrant officer entrusted with public funds by an accountable disbursing officer so as to make collections or payments for him. In full, **class B agent officer.**

A class B agent is given general authority to act for, or in the name of, the accountable disbursing officer.

class B bearing. A bearing taken in direction-finding, which may be considered accurate to within plus or minus 5 degrees.

class C agent. An officer or civilian appointed and authorized to make local cash purchases as allowed or prescribed by AF regulations. In full, **class C agent officer.**

This agent is appointed by the commander of an AF installation.

class C bearing. A bearing taken in direction-finding, which may be considered accurate to within plus or minus 10 degrees.

classification, *n.* (clas) The grouping, or result of grouping, of supplies, equipment, properties, persons, documents, etc., made either for convenience, efficiency, or security, and based upon any valid criteria.

The most usual classifications cover the following: **a.** Supplies, properties, or equipment, classified as to kind, type, status, condition, or purpose for which made. **b.** Aircraft, classified as to physical or mechanical features (as those of a helicopter, glider, airplane, balloon, etc.), type or purpose (as that of a bomber, fighter, etc.), status, condition, or limitations (as to weight and balance, etc.). **c.** Persons, classified as to skill, education, physical fitness, or other criteria. **d.** Documents, lectures, information, equipment, films, etc., classified as to the degree of security required. See **confidential,** *a.*, **secret,** *a.*, **top secret.**

classification and audit roster. An informational roster or list, completed by the statistical servicing agencies for each AF unit under their servicing jurisdiction and audited by the unit for agreement with its records, used as a means of keeping personnel information current, and as a check on the qualifications of personnel for the duties they are performing. Sometimes called a 'classification and audit list.'

classification board. A board of officers and warrant officers organized for the purpose of recommending actions regarding assignment and reassignment of AF specialties to AF military personnel.

classification yard. A railroad yard where cars of incoming trains are separated and reformed into new trains preparatory to dispatching over separate outgoing lines.

classified, *a. Specif.* Of documents, lectures, information, equipment, films, and the like: Having a security classification.

clean, *v.* **1.** *To clean up.* **a.** *tr.* To mop up an *enemy* or an *area.* **b.** *intr.* To make a place tidy or clean. **2.** *To clean the engine,* to open the throttle of an idling airplane engine briefly in order to keep the engine from cooling or from getting too rich a fuel mixture.

clean, *a.* Of landing gear, flaps, etc.: In a retracted position, as in 'the brakes are in a clean position.' *Colloq.*

clear, *n.* **1.** *The clear,* a portion of the sky free or relatively free of clouds. **2.** *In the clear,* in plain text. Said of a message not transmitted in cipher or code.

clear, *v. tr.* **1.** To approve or authorize, or to obtain approval or authorization for (a) a *person* or *persons* with regard to their actions, movements, duties, etc.; (b) an *object* or group of *objects,* as equipment or supplies, with regard to quality, quantity, purpose, movement, disposition, etc.; (c) a *request,* with regard to correctness of form, validity, etc. **2.** *Specif.* To give one or more *aircraft* a clearance. **3.** To give a *person* a security clearance. **4.** To fly over an *obstacle* without touching it. **5.** To pass a designated *point, line,* or *object.* The end of a column must pass the designated feature before the latter is cleared. **6. a.** To operate a *gun* so as to unload it or make certain no ammunition remains. **b.** To free a *gun* of stoppages. **7.** *To clear an engine,* to open the throttle of an idling engine to free it from carbon. **8.** *To clear the air,* to gain either temporary or permanent air superiority or control in a given sector.

clear, *a.* Of the sky: Free of clouds or having only a few scattered clouds.

If less than one-tenth of the sky is covered by clouds, it is reported as 'clear.'

clear-air turbulence. The turbulence or gustiness in unclouded air, as distinguished from storm turbulence.

A special problem with clear-air turbulence is its detection prior to flying through it.

clearance, *n.* (clnc) **1.** A procedure or action usually involving the completion, checking, or correlation of papers, forms, or records pertaining to requests, movement of persons, equipment, supplies, etc.; hence, an authorization or approval of a request, movement, etc. See **clear,** *v.*, sense 1. **2.** *Specif.* Short for 'flight clearance' or for 'security clearance.' **3.** The action of passing over an obstacle without collision, as in 'the clearance over the trees.' **4.** Permission. Considered *loose* usage. Cf. **landing permission.**

In the sense of 'flight clearance,' see **aircraft clearance, air traffic clearance, local flight clearance.**

clearance capacity. The estimated capacity of the available means of transportation leading inland from a given beach or port to transport cargo from that beach or port, such estimated capacity

being expressed in weight (long or short tons) or measurement tons per day.

The available means of transportation include roads, railroads, and inland water routes. The estimated capacity is based upon an evaluation of the physical facilities of the transportation net in the area. Air transportation, if available, would also affect the estimate. See **port capacity.**

clearance limit. A point along a route beyond which an aircraft cannot fly under the air-traffic clearance issued.

cleared area. *Specif.* The graded or otherwise prepared area at either side or end of a runway, from which trees, boulders, or other objects have been removed.

Clear zones are a part of the cleared area.

clear ice. A transparent ice deposited in layers on the airfoils of an airplane in flight. Also called 'glaze.'

Clear ice may be either smooth or rough, and in some instances it causes deformation of the airfoil curve, resulting in greatly increased drag.

clearing station. 1. A station through which supplies, equipment, or traffic is routed to other points. **2.** *Specif.* A ground medical station to the rear of a combat zone that receives casualties from collection stations, gives additional treatment, and classifies and makes further disposition of the casualties.

clearing unit. A ground medical organization that operates one or more clearing stations.

clear text. Plain text.

clear zone. A part of the cleared area located at either end of a runway to minimize accident risk on takeoff or landing. Also called a 'clearance zone' or 'overrun.'

climatic hangar. A hangar within which various climatic conditions are simulated for the testing of personnel and equipment.

climatic study. The study of the climate of a given area to solve problems of a general or specific nature.

climatic test. A test to determine the efficiency of personnel or materiel under any given set of actual or simulated climatic conditions.

climatic zone. One or other of several zones on the earth's surface with respect to latitude and climate.

The climatic zones are roughly parallel to the equator around the earth, but are wide or narrow according to actual climate. AF literature recognizes at least seven zones: The two polar zones, the two variable or temperate zones, the two tropical zones, and the equatorial zone.

climatization, *n.* The act or process of designing materiel to provide for its satisfactory functioning within a given range of temperatures under any climatic conditions.

climatological data sheet. A data sheet containing a summary of predicted seasonal averages of weather conditions relating to winds, temperature, and precipitation over a defined area and their effects on aerial bombing.

climb, *n.* **1.** The action of an airplane ascending, esp. under power; the distance covered by this action. **2.** The capability of an airplane to climb, as 'the plane was inferior in speed, climb, and ceiling'; a rate of climb.

climb, *v. intr.* Of an airplane: To ascend or gain altitude, esp. under power. Also said of persons within an airplane.

An airship *ascends;* an airplane *climbs;* both *descend.*

climb and acceleration time. The time required for an airplane to climb from rest at sea level to combat speed at combat altitude, using military rated power.

climb indicator. A rate-of-climb indicator.

clinometer, *n.* An instrument for measuring an angle of elevation, as that between a gunbore and the horizontal. See **inclinometer,** *n.*

Clinton County Air Force Base. An AF base at Wilmington, Ohio, named for the county.

clip, *n. Specif.* **1.** A metal clamp for holding ammunition ready for insertion into certain kinds of small arms. **2.** Popular for box magazine (see **magazine,** *n.*, sense 2 and note).

clipped-wing airplane. An airplane having wings squared off at the tips.

An example of the clipped-wing type airplane is the Mustang (the F-51).

clipper, *n.* **1.** Any large transoceanic commercial airliner. **2.** *Electronics.* A vacuum tube and its associated circuits which eliminate certain unwanted parts of a signal.

clk (*auth abbr*). 'Clerk.'

CLL (*auth abbr*). 'Chief of Legislative Liaison.'

CLMA (*auth abbr*). 'Clothing monetary allowance.'

cln (*auth abbr*). 'Colon.'

clnc (*auth abbr*). 'Clearance.'

clo (*auth abbr*). 'Clothing.'

clobber, *v. tr. Slang.* **1.** To destroy or inflict serious damage upon an *area, installation, force,* or *object,* esp. from the air; to smash or kill. **2.** *To clobber up,* to foul up or confuse. **3.** *To clobber in,* to make a crash landing.

cloche stirrer. [French *cloche* bell.] A jocular name for a pilot, used in the early days of aviation (*circa* 1912).

clock, *n.* Used in phrases, as *12 o'clock, 3 o'clock,* etc., to indicate direction in terms of an assumed dial of a clock.

In an airplane, 12 o'clock is the horizontal direction straight ahead; 9 o'clock is the horizontal direction at right angles portside to the longitudinal axis; etc.

clock basher. A technician who works with aircraft instruments. *RAF slang.*

close air support. Air support or cooperation provided friendly surface forces, consisting of air

attacks with guns, bombs, guided airborne missiles or rockets on hostile surface forces, their installations or vehicles so close to surface operations as to require detailed coordination between air and friendly surface forces.

In close air support, the control of aircraft and their use remains a function of the air arm. Also called 'air-ground support,' 'ground support,' 'close tactical air support.' See **air control center,** note, **air support,** sense 2, **direct air support;** cf. **general air support.**

close-air-support mission. An air mission performed in close air support of friendly ground forces.

close column. A column of motor vehicles following one another as closely as is safely possible.

A close column is usually formed when it is desired to move a large volume of traffic a short distance in a minimum period of time.

close control. The control exercised by an air controller, using radio and radar, over friendly aircraft in a tactical air situation.

Close control is employed in tracking aircraft, monitoring combat flights, vectoring aircraft for interception, providing accurate navigational assistance, keeping flight leaders advised on their courses and on other matters pertaining to their mission.

close-control radar. Radar used in close control.

close-cooperation mission. A close-air-support mission. See **air support,** note.

closed area. *Specif.* An area designated by international authority in or over which transport of any kind is prohibited.

closed circuit. An electrical circuit over which the current passes without being broken. Distinguished from an open circuit (which see).

closed-circuit signaling. The sending of electrical signals over a closed circuit by increasing or decreasing the current.

closed-cycle turbine. A gas turbine in which the working gas circulates continuously within a closed unit, heated by the combustion of fuel outside the circulating system. Also called an 'aerodynamic turbine.' Cf. **open-cycle turbine.**

close escort. An escort that maintains its position in the immediate vicinity of the escorted aircraft or other vehicles.

close formation. A flight formation in which the airplanes fly at a minimum distance from one another.

Bombers often fly in a close formation to protect one another against fighter attacks.

close-hauled, *a.* Of barrage balloons: Floating only a few feet above the ground and ready to be sent up upon short notice.

close interval. 1. The interval or space between any two soldiers side by side in a formation, measured by placing the palm of the hand on the hip so that the elbow just touches the arm of the next man in line. **2.** The smallest prescribed interval between two units standing abreast in formation.

close-order drill. A marching drill done at normal or close interval.

Close-order drill may be performed in marching, parades, and reviews, or in exercises involving the manual of arms.

close stick. A stick of bombs released in close train or salvo. Cf. **open stick, salvo,** *n.*, note.

close support. 1. Close air support. **2.** Air protection given flying aircraft, esp. through continuous escort. Cf. **indirect support,** sense 1.

close-support mission. A close-air-support mission.

close tactical air support. Close air support.

close-talking microphone. A microphone designed to be used close to the mouth of the person speaking.

close train. *In close train,* one immediately after another, as in 'the bombs were released in close train.' Cf. **salvo,** *n.*, sense 2.

closing plug. A plug used to close a hole in the casing of certain explosive ammunition after the body has been filled with an explosive; a plug to protect fuze cavities until the fuze is inserted.

clothes line. A kind of external radio aerial on an airplane, suggesting a clothes line. *Slang.*

clothing, *n.* (clo) *Specif.* A category of supply items, consisting of articles of wear.

Commonly used in the phrase 'clothing and individual equipment.'

clothing allowance. Short for 'clothing monetary allowance.' Cf. **uniform allowance.**

clothing maintenance allowance. A sum of money periodically allowed an airman for the upkeep of his clothing.

clothing monetary allowance. (CLMA) **1.** An amount of money given under certain circumstances to an airman in place of an initial issue of clothing. **2.** Also *loosely,* a clothing maintenance allowance.

cloud, *n.* **1.** A visible concentration of water particles or ice crystals suspended at a considerable height in the air. See **fog,** *n.* **2.** Attrib., as in *cloud bank, cloud dive, cloud flying, cloud layer.*

Clouds are variously named, as in the following: Altocumulus, altostratus, anvil cloud, banner cloud, billow cloud, cirrocumulus, cirrostratus, cirrus, crest cloud, cumulonimbus, cumulus, cumulus boa, foehn cloud, fractocumulus, fractonimbus, fractostratus, lenticular cloud, mammatocumulus, Moazagotl cloud, nimbostratus, riffle cloud, scarf cloud, stratocumulus, stratus, and tonitro-cirrus (which see under separate entries).

cloud base. The lower surface of a cloud.

cloudburst, *n.* A sudden downpour of rain, usually in a thunderstorm.

cloud cover. 1. Partial or complete cover of the sky by clouds. **2.** The protection from being seen

afforded by flying into or behind a cloud, as in 'every advantage of cloud cover was taken.'

In sense 1, cloud cover is measured in tenths, as in 'there was 4/10ths cloud cover.'

cloud deck. The upper surface of a cloud.

cloud physics. The physical processes involved in the formation, movement, action, and effects of clouds; the science or knowledge of these processes.

Special applications of cloud physics are made with regard to weather forecasting, flying, and cloud seeding.

cloud seeding. The art or activity of sowing clouds from an aircraft with an inoculant, such as dry ice particles or silver iodide crystals, so as to induce precipitation.

cloud vertigo. A vertigo or dizziness sometimes suffered by fliers as a result of losing orientation when going through cloud.

Clovis Air Force Base. An AF base at Clovis, New Mexico, named for the city.

clr (*auth abbr*). 'Clearing.'

clrm (*abbr*). 'Classroom.'

cltgl (*auth abbr*). 'Climatological.'

cltgr (*auth abbr*). 'Climatographer.'

clubmobile, *n.* A wheeled vehicle with facilities for furnishing recreational services in isolated, maneuver, or combat areas.

CLUS (*auth abbr*). 'Continental limits United States.'

cluster, *n. Specif.* **1.** A collection of small bombs held together by an adapter for dropping. See **aimable cluster. 2.** A pyrotechnic signal device that releases a group of stars or fireballs; the group of stars so released.

See also **aptitude cluster, oak-leaf cluster.**

cluster adapter. Any device used to fasten small bombs together for dropping. See **aimable cluster adapter.**

clutch control. In a helicopter, the control over the rpm of the rotor shaft through the reduction gear of the transmission.

clutter, *n.* Unwanted signals, echoes, or images that appear on a radarscope and interfere with observation of the desired signals. See **grass,** *n.*, **snow,** *n.*

CM (*abbr*). **1.** *auth.* 'Court-martial.' **2.** 'Centimeter' or 'centimeters.' **3.** 'Countermortar.'

cm (*auth abbr*). 'Mechanic.'

CMA (*abbr*). 'Clothing monetary allowance.'

CMAIIss (*auth abbr*). 'Clothing monetary allowance, initial issue.'

CMAS (*auth abbr*). 'Clothing monetary allowance, standard.'

cmbt (*auth abbr*). 'Combat.'

CMC (*auth abbr*). 'Commandant of the Marine Corps.'

cmd (*abbr*). 'Command.' See **comd** (*auth abbr*).

cmdg (*abbr*). 'Commanding.' See **comdg** (*auth abbr*).

cmdr (*abbr*). 'Commander.' See **comdr** (*auth abbr*).

cmdty (*auth abbr*). 'Commodity.'

CME (*abbr*). 'Central Medical Establishment.'

See **Central Medical Establishment, Aviation.**

CMF (*auth abbr*). 'Court-martial forfeiture.'

cml (*auth abbr*). 'Chemical.'

CmlC (*auth abbr*). 'Chemical Corps.'

cmm (*auth abbr*). 'Comma.'

CMMR (*auth abbr*). 'Hereby confirmed and made a matter of record.'

cmnce (*auth abbr*). 'Commence.'

cmpl (*auth abbr*). 'Complete.'

cmt (*abbr*). 'Comment.'

CN (*abbr*). **1.** 'Compass north.' **2.** *auth.* 'Commonwealth Nation.'

cn (*abbr*). 'Cannon.'

CNA (*auth abbr*). 'Chief of Naval Air' used in combinations only.

CNATra (*auth abbr*). 'Chief of Naval Air Training.'

cncr (*auth abbr*). 'Concurrent.'

cnf (*auth abbr*). 'Confine.'

CNGB (*auth abbr*). 'Chief, National Guard Bureau.'

CNM (*auth abbr*). 'Chief of Naval Material.'

CNO (*auth abbr*). 'Chief of Naval Operations.'

cnrt (*abbr*). 'Concrete.'

C.N.S. (*abbr*). 'Control net system.' Chiefly *British.*

CNT (*abbr*). 'Celestial navigation trainer.'

cntn (*auth abbr*). 'Contain.'

cntr (*auth abbr*). 'Contribute.'

cnvt (*auth abbr*). 'Convict.'

CO (*abbr*). **1.** *auth.* 'Commanding Officer.' **2.** 'Chain Overseas.' **3.** 'Corps observation,' as formerly used (*circa* 1920) in designations of US Army aircraft.

co (*auth abbr*). 'Company.'

c/o (*abbr*). 'Care of.'

Coach, *n.* A code name for the Russian Il-12, a twin-engine transport with retractable tricycle landing gear.

Two versions of this airplane exist, the difference between them being in additional fin fairing.

coal, *n. To pour on the coal,* to go fast; to open up the throttle. *Slang.*

co-altitude, *n.* Zenith distance.

Coastal Command. A British air-sea organization providing reconnaissance, air-sea rescue, shipping and fleet protection, etc.

During WW II, Coastal Command activities extended from the British Isles to Spitzbergen, Iceland, and West Africa. The organization falls under the operational control of the predominant partner, normally the Navy.

coastal frontier. A geographical division of a coastal area, established for organization and command purposes to insure the effective co-

ordination of military forces operating within that area.

coastal frontier defense. The defense of coastal frontiers, esp. those of the US and its territories and possessions, by the armed forces; that part of the armed forces organized for such defense.

Coast and Geodetic Survey. A bureau in the Department of Commerce charged with topographic and hydrographic survey of the coast and with primary triangulation and precise leveling within the interior.

This bureau sells and distributes certain aeronautical charts.

Coast Guard. Short for 'United States Coast Guard.'

coast watcher. A person inside enemy-held territory who looks out for, and reports by radio, any coastwise movement, esp. of shipping.

In WW II, coast watchers were used on the islands in the Pacific.

coat, *n. Specif.* That part of the service or dress uniform worn about the upper part of the body. Sometimes popularly called a 'blouse.'

The coat of the service uniform is distinguished from the jacket in that the latter is waist-length only, while the coat is longer and has side pockets.

coaxial cable. A transmission line having at least one conductor within another conductor of larger diameter. Also called a 'coax,' 'coax cable,' 'concentric cable,' or 'concentric line.'

A coaxial cable may be either flexible or rigid.

coaxial rotor system. A rotor system on a helicopter in which two sets of blades are mounted one above the other on coincident axes, each revolving in an opposite direction to the other so as to neutralize torque.

cobalt bomb. A theoretical atomic or hydrogen bomb encased in cobalt, the cobalt of which would be transformed into deadly radioactive dust upon detonation.

This bomb is theoretical only in the sense that it is considered too dangerous to use, since the dust would attack friend, foe, and neutrals. In the process of detonation, cobalt 59 would be converted into cobalt 60.

cobs, *n.* Bell-shaped deflections produced on an oscilloscope by frequency-modulated, continuous-wave jamming.

COC (*abbr*). 'Air division combat operations center.'

cock, *v. tr.* **1.** To set a *bomb-release mechanism* so as to make ready to drop the bomb or bombs. **2.** To draw back the hammer, bolt or plunger of a *firearm* to make ready for firing.

cockerel, *n.* An IFF in an airplane, as in 'let your cockerel crow,' i.e., turn your IFF on. *Slang* or *code.* Chiefly *British.*

cocking lever. A lever for drawing back (sometimes also for lowering) the striker or hammer of an automatic firearm or the mechanism of a bomb-release gear.

cockpit, *n.* (ckpt) **1.** A space, either open or provided with a canopy, in the fuselage of an aircraft for the accommodation of the pilot when flying the aircraft. **2.** In large airplanes, that space set apart from the cabin for the accommodation of the pilot and sometimes copilot.

In sense 1, the cockpit may accommodate other persons in addition to the pilot. In certain dual-control aircraft, the pilot and copilot may occupy the same cockpit, as in the C-45, but in a dual-control tandem airplane, as in the T-6, there are two cockpits. Cf. **flight deck.**

cockpit canopy. The transparent cover for the cockpit of an aircraft.

cockpit check. A brief course of instruction or test given a pilot in the cockpit of an aircraft to familiarize him with the location and operation of instruments, switches, controls, etc., before flying the craft.

cockpit combing. The lining around the edge of an open cockpit. Such a lining is usually of channel metal, padded with horsehair and leather, foam rubber, or the like.

cockpit drill. A procedure by which a pilot makes ready to take off; the practice of this procedure.

cockpit failure. [Coined by analogy with 'mechanical failure.'] A popular term for 'pilot error.'

cockpit flight signal. Any voice or hand signal used by a pilot to give instructions to his crew during flight.

cockpit inspection. An inspection made by the pilot in his cockpit before takeoff, assuring himself of the fitness and workability of the instruments, controls, etc.

Coco (*code*). A formerly authorized word for the letter 'C' in the Alfa code.

cocooning, *n.* The action of spraying or otherwise enveloping a piece of equipment with a plastic protective substance. See **mothballing,** *n.,* note.

code, *n.* **1.** A system of signals for communication, such as the Morse code or the semaphore code. **2.** An abbreviated set of arbitrary symbols, usually words, that represent units of plain text, used either for brevity or security; an encoded message.

A secret message written in code (sense 2) requires the use of a code book or its equivalent. A secret message written in cipher requires knowledge of the cipher key. See **air-ground liaison code, coordinate code, identification panel code, International Code, map reference code, panel code.**

code beacon. A light beacon that flashes a characteristic series of dots and dashes by which it may be identified.

code book. A book or document listing code words or other symbols with their equivalent meanings.

co-declination, *n.* Polar distance.

code delay. An arbitrary interval of time introduced, in addition to other time intervals, be-

tween pulsed signals sent by master and slave transmitters. Also called a 'coding delay.'

The code delay is used as a security measure or to allow a navigator to resolve ambiguity in plotting a line of position.

code element. One of the separate elements or events present or occurring during the transmittal of a code message, e.g., the presence or absence of an electrical or electromagnetic impulse.

code group. 1. A combination of letters or numerals, or both, comprising a unit in a coded message. **2.** A fixed arbitrary combination of symbols assigned to represent an element of plain text in a code book.

coder, *n.* An electronic device in a radar beacon or in an interrogator or interrogator-responser for coding pulsed signals.

code word. A word assigned a meaning other than its conventional meaning.

coding delay. A code delay.

codress, *n.* A message having the address concealed in the encrypted text. Cf. **plaindress,** *n.*

coefficient A. The coefficient of constant compass deviation, caused by misplacement of the lubber line of a compass in relation to the longitudinal axis of the carrying aircraft.

This misplacement results in a constant error for all headings of the airplane.

coefficient B. The coefficient of semicircular compass deviation caused by magnetism in the body of the carrying aircraft along its longitudinal axis.

The maximum effect of coefficient B occurs on east or west headings.

coefficient C. The coefficient of semicircular compass deviation caused by magnetism in the body of the carrying aircraft along its lateral axis.

The maximum effect of coefficient C occurs on north or south headings.

coefficient D. A quadrantal deviation in a compass caused by temporary magnetism induced in the body of the carrying aircraft by the presence of soft iron in the load or equipment being carried.

The maximum effect of coefficient D occurs on intercardinal headings, i.e., NE, SE, SW, and NW.

coefficient E. A quadrantal deviation of negligible effect. See **quadrantal deviation.**

COEL (*abbr*). 'Chain overseas extremely low.'

CofAFCh (*auth abbr*). 'Chief of Air Force Chaplains.'

CofF (*auth abbr*). 'Chief of Finance.'

coffee grinder. *Slang.* **1.** A kind of radio-direction-finder tuning device. **2.** A piston-type aircraft engine.

CofS (*auth abbr*). 'Chief of Staff.'

COG (*abbr*). **1.** *auth.* 'Convenience of the Government.' **2.** 'Commander of the guard.'

CoGard (*auth abbr*). 'Coast Guard.'

cognizance, *n.* (cog) *Specif.* Jurisdiction or responsibility, as that of one government agency in representing the US Government to a civilian agency when two or more government agencies are concerned. See **cognizant agency.**

For example, the Army, the Navy, or the AF may have cognizance, by agreement, for quality control at the plant of a manufacturer who has contracts with all three departments.

cognizant agency. The bureau, office, technical service, command, headquarters, or other appropriate organization under whose sponsorship or responsibility a project is pursued.

COI (*auth abbr*). 'Communication operation instructions.'

coincidence-type range finder. An optical range finder for use with one eye only.

coke-bottle shape. A popular name given to the shape of certain aircraft with an indented fuselage designed after the area-rule concept.

COL (*abbr*). 'Chain overseas low.'

col (*auth abbr*). 'Colonel' or 'college.'

co-latitude, *n.* A part of the observer's meridian on the celestial sphere, being the angular distance from the observer's zenith to the elevated pole.

cold chamber. Any chamber that induces low artificial temperatures for testing equipment.

cold front. 1. Strictly speaking, the forward boundary on the earth's surface of an advancing cold air mass that is underrunning and displacing a warmer air mass. **2.** Also used in other senses, as determined by the meanings of 'front' (which see, senses under C).

A cold front is usually characterized by showers or thunderstorms, a marked shift in wind direction, and a drop in temperature. This activity is sometimes called a 'line squall.'

cold-front thunderstorm. A frontal thunderstorm caused by a cold air mass underrunning a warm air mass.

cold low. A low-pressure atmospheric area of predominantly low temperature.

cold meat. An easy mark or 'sitting duck.' *Slang.*

cold soak. The exposure of equipment to low temperature for a long period of time, esp. in a cold chamber, to insure that the temperature of the equipment is lowered to that of the surrounding atmosphere.

cold turkey. *Slang.* **1.** Cold meat. **2.** Used adverbially: Without mincing words.

cold war. A hostile encounter between nations or groups of nations that stops short of actual armed conflict, but uses the weapons of politics, diplomacy, economics, espionage, police action, and propaganda to gain advantage.

coleopter, *n.* A jet aircraft with an annular wing. Also called a 'flying barrel.'

This aircraft is so designed that it takes off vertically and lands vertically.

colinear array. An array of half-wave antennas in phase.

The antennas are held in phase in order to produce maximum radiation in a plane perpendicular to the axis of the array.

coll (*auth abbr*). 'Collect.'

collate, *v. tr.* In intelligence usage: To sort and group *information* by type to facilitate its comparison and study.

collateral training. Training in standard subjects, such as military training, physical training, security training, weapons training, recognition training, etc., given along with training in a career field.

collection, *n.* (coll) In intelligence usage, the gathering of information essential to a given problem and its transmission to a processing unit.

Reconnaissance aviation, interrogation officers, translator teams, espionage agents, and technical intelligence teams are all involved in the activity of collection.

collection station. 1. Any place in a forward area for collecting and sorting salvaged materials. **2.** A medical station in the forward combat zone where battle casualties are prepared to be sent to a clearing station in the rear.

collective pitch control. A helicopter control for changing the pitch of all the rotor blades simultaneously; the control exercised through this device.

collector ring. 1. A circular conductor for conveying electrical current to a gun turret, permitting full rotation of the turret without twisting the incoming cables. **2.** A hollow ring used to collect exhaust gases, as in a turbosupercharger. See **exhaust-collector ring.**

collide, *v. intr.* Of a moving aircraft: To smash into another moving object, esp. another flying aircraft.

Collier Trophy. Short for 'Robert J. Collier Trophy.'

collimating mark. A fiducial mark.

collision course. A course taken by an attacking or intercepting craft or missile toward an object or target, which, if maintained, will cause the attacking or intercepting body to collide with, or to pass directly over or under, the object or target. Cf. **collision vector.**

collision course interception. The interception of a target craft or object by an attacking craft flying a collision course. See prec.

collision vector. A vector which, if maintained by a craft or missile, will end in collision at a given point between the craft or missile and some other object, esp. one that itself moves with a certain velocity.

colm (*auth abbr*). 'Column.'

colonel, *n.* (col) **1.** A commissioned rank or person in the AF, Army, or Marine Corps, immediately above lieutenant colonel; (*capitalized*) the title of this person. **2.** *Capitalized.* The title of address for a lieutenant colonel. **3.** The person of a lieutenant colonel. *Loose* usage.

Use of 'colonel' as a title of address or as a title of direct reference is considered proper when applied to either a colonel or a lieutenant colonel. For example, if Smith has the rank of lieutenant colonel, he may be addressed as 'Colonel Smith,' or be referred to as 'Colonel Smith.' It would not be proper, however, to say 'Smith is a colonel.' See **lieutenant colonel, military title.**

color, *n.* In the *pl.*, a term applied collectively to the United States ceremonial flag and to one or more of the ceremonial departmental flags.

Practice in the use of 'color' or 'colors' when referring to flags has undergone considerable change in the AF. The word 'color' (singular) is no longer used to refer to an individual flag; instead 'ceremonial flag' is used. This latter term applies to either the US flag or a flag of one of the military departments, each of a size $4'4'' \times 5'6''$ and trimmed in silk on three edges. Likewise, 'organizational flag' is now used instead of 'standard' in reference to the flag of an organization ($3' \times 4'$) used in a ceremony.

To the colors, a phrase signifying field music sometimes played at ceremonies, which receives the same homage as the National Anthem.

colored smoke. Any smoke of a distinctive color used by people on the ground in accordance with a prearranged code to enable aircraft to identify or locate targets, drop zones, friendly troops, front lines, etc.

color filter. A device used in connection with the lens of a camera to prohibit the passage of all but one segment of the spectrum to the film, or to modify or intensify certain frequencies in the spectrum.

color gradient. Shadings of color on certain maps or charts to indicate elevations in terrain; a scale on a map or chart showing the colors used and naming the elevations they represent.

color guard. The color bearers and guards that handle the colors in a ceremony.

Colt, *n.* A code name for the Russian An-2.

Columbus Air Force Base. An AF base at Columbus, Mississippi, named for the city.

column, *n.* (colm) **1.** A formation of files in which the men, equipment, vehicles, airplanes, or groups thereof are placed one behind the other forming a line. **2.** *Cryptog.* A vertical sequence of individual symbols or groups thereof. **3.** A control column.

column cover. Fighter cover for a column moving on the ground that provides protection against either air or ground attack.

com (*abbr*). **1.** *auth.* 'Commission,' 'committee,' or

'complement.' **2.** 'Command.' See **comd** (*auth abbr*).

ComAirCent (*auth abbr*). 'Commander Allied Air Forces, Central Europe.'

ComAirCentLant (*auth abbr*). 'Air Commander, Central Subarea.'

ComAirLant (*auth abbr*). 'Commander Air Force, US Atlantic Fleet.'

ComAirNoreChan (*auth abbr*). 'Air Commander, Nore Subarea Channel.'

ComAirNorLant (*auth abbr*). 'Air Commander, Northern Subarea.'

ComAirNorth (*auth abbr*). 'Commander Allied Air Forces, Northern Europe.'

ComAirPac (*auth abbr*). 'Commander Air Force, US Pacific Fleet.'

ComAirPlymChan (*auth abbr*). 'Air Commander, Plymouth Subarea Channel.'

ComAirSouth (*auth abbr*). 'Commander Allied Air Forces, Southern Europe.'

ComAlAirNorEur (*abbr*). 'Commander, Allied Air Force, Northern Europe.' *Hist.*

ComAlNavNorEur (*abbr*). 'Commander, Allied Naval Forces, Northern Europe.' *Hist.*

COMATS (*auth abbr*). 'Commander, Military Air Transport Service.'

comb (*abbr*). **1.** *auth.* 'Combine' or 'combination.' **2.** 'Combat.'

combat, *n.* (cmbt) **1.** The action or situation in which hostile military forces are in direct contact; air combat. **2.** Used adverbially for 'in combat,' as in 'the boys who flew combat went home.'

'Combat' is variously understood according to circumstances, but usually it involves direct participation in a fight, or the endurance of the direct and immediate force of an enemy attack; however, cf. **combat mission** (sense 1b).

'Combat' cannot always be used as a synonym of 'battle' (e.g., 'he fought a battle,' but not 'he fought a combat'), but in reference to air warfare, it is preferred wherever possible to the term 'battle.' See following entries.

combat aid. Any communication system, fire-control system, or radar warning and intercept equipment used by an aircrew in carrying out combat.

combat air base. An air base used esp. for aircraft flying combat missions.

combat aircraft. Aircraft especially designed for combat, as a fighter or bomber.

combat aircrew. 1. An aircrew that flies on combat missions. Usually shortened to 'combat crew.' **2.** *Restrictive.* An aircrew organized and trained for combat.

In sense 1, an aircrew that flies a supply mission into combat airspace is considered a combat aircrew. See **combat mission,** sense 1b, **tactical aircrew.**

combat air patrol. (CAP) An air patrol over any area or force for the purpose of intercepting and attacking hostile aircraft before they are able to reach their objective. Hence, **combat air patrol mission.**

combat airspace. Airspace where combat either takes place or can be expected to take place.

combat air supply. Air supply to friendly forces in a combat area; the activity involved in such endeavor. Cf. **combat cargo mission.**

combat air-support operation. An air-support operation in a combat area.

combat altitude. 1. An altitude designated for combat operations, as that of a bomber over its target. **2.** An aircraft capability indicating the altitude to which the aircraft can climb and still retain its combat capabilities, as in 'the jet's combat altitude extended to 20,000 feet.'

combatant, *n.* One who engages in combat.

Pronounced with the accent either on the second (somewhat preferred in the military) or on the first syllable.

combatant, *a.* **1.** Of persons: Having particular ability at fighting; serving, or ready to serve, in combat. **2.** Of things: Used in fighting; having capabilities for fighting. **3.** Of action or service: Involving combat.

combat area. An area where combat either takes place or is expected.

Some areas designated as combat areas may never see any combat. Cf. **combat zone.**

combat aviation. Combat aircraft, esp. fighter planes; the art or practice of operating such aircraft. See **aviation,** *n.*

combat boot. A shoe having a leather cuff attached, which serves as a legging.

combat box. A box formation used with certain airplanes during, or when expecting, combat.

This term was esp. applied to a B-17 formation of 3 flights of 6 airplanes each during WW II.

combat-capable, *a.* **1.** Of a pilot or other crew member: Trained to a prescribed proficiency so as to operate a given airplane as a weapon. Also said of a crew as a whole. **2.** Of training: Provided so as to bring a pilot or other crew member up to prescribed proficiency for handling his airplane as a weapon. See **combat-ready,** *a.*

This term is a training term, and signifies a level of training acquired after so many hours of training.

combat cargo mission. A mission by cargo-type aircraft to deliver supplies, equipment, or special personnel (as technicians) to friendly forces in a combat area.

Troop carrier or evacuation missions are not considered combat cargo missions.

combat casualty. A battle casualty (see **casualty,** *n.*, note); *specif.*, a combat crew member who becomes a casualty in the performance of combat duty.

Certain noncombat casualties are sometimes designated combat casualties so as to simplify the handling of personal effects.

combat ceiling. The pressure altitude at which a

fighter can climb at a maximum rate of only 500 feet per minute, or at which a bomber can climb at a maximum rate of only 200 feet per minute.

combat command. In the AF, a command organized for combat, as distinguished from a training or service command. See **Air Force Combat Command.**

AF usage of this term is general, not specific as it is in the Army.

combat control team. In WW II, a team dropped into enemy territory to give navigational aid to airborne assault elements.

combat crew. (CCr) A combat aircrew.

Attrib., as in *combat crew replacement center, combat crew training school,* etc.

combat duty. 1. Military duty or service in a combat area. **2.** Those activities involved in fighting directly against the enemy.

In sense 1, 'combat duty' is sometimes applied to equipment as well as men, as 'over half my planes had been on continuous combat duty' (G. Kenney).

combat effectiveness. The quality of being effective in combat. Said of a person, unit, or thing.

Unlike operational readiness (which see), combat effectiveness is judged in terms of the operation, not in terms of the concept of the operation.

combat fatigue. A nervous disorder or tiredness arising from the strains or demands of combat; battle fatigue.

combat flight. 1. A flight (sense 6 or sense 8) organized to give combat to the enemy. **2.** The flying of a combat mission.

combat flying hour. A flying hour spent in the performance of a combat mission.

combat flying range. The flying range of an aircraft under combat conditions. See **range,** *n.,* sense 1.

combat flying unit. A flying unit organized for combat, or for direct support of combat, as in air refueling, reconnaissance, air supply, etc.

combat force. A military force organized esp. for combat.

combat fuel allowance. That amount of fuel allowed a fighter for use in direct combat, being over and above the amount required to reach combat airspace and to return to a base for landing.

combat group. 1. a. The primary-mission group of a combat wing, as distinguished from the supporting groups of the wing. See **supporting group, wing,** *n.,* sense 11. **b.** In WW II, a group organized to engage in combat. **2.** *General.* Any AF group in a combat area.

combat hours. Short for 'combat flying hours.'

combat information. Uninterpreted information gleaned through contact with the enemy and used to develop combat intelligence.

combat intelligence. 1. Military intelligence used in conducting combat operations and either developed from combat information or produced by a higher headquarters. **2.** The organization providing combat intelligence.

In general, combat intelligence (sense 1) is intelligence concerning the local situation, covering meteorological conditions, enemy terrain, etc.

Some of the responsibilities of combat intelligence (sense 2) are the briefing and interrogating of combat crews, the procurement and maintenance of maps, charts, objective folders, and target materials, and the preparation of mission reports to higher echelons. It also has staff responsibility for instruction in evasion and escape, recognition, survival, etc.

combat jacket. Popular for the jacket of the service uniform. See **battle jacket.**

combat loading. The loading of troops, supplies, and equipment into one or more troop carrier aircraft or into a vessel in a manner permitting their rapid unloading in a desired priority during an assault.

combat maneuvers. 1. Those tactics and techniques used by aircrews when engaging the enemy in combat. **2.** Air-combat maneuvers.

combat mission. 1. *Specif.* in the AF: **a.** An air mission (sense 2) in which combat aircraft are sent into combat or into a combat area with some risk of being attacked. **b.** By extension, an air mission involving supply, administrative, or reconnaissance aircraft when such aircraft are exposed to possible enemy attack. **c.** An instance of an aircraft being flown upon either of such air missions, as in 'the B-36 had ten combat missions.' **2.** The purpose of an air mission when sent into combat, as in 'his combat mission was to destroy the depot.' **3.** Any mission belonging to an organization, office, or person that directly supports a force in combat, as in 'the combat mission of the depot was to supply new engines'; or that involves the use of combat units, as in 'the combat mission of the USAF provides for air attacks upon strategic targets.'

In sense 1a, combat missions include bombing and strafing missions even should no opposition be met either from the ground or in the air.

combat mission folder. A collection of air target materials pertinent to a specific combat mission, carried by aircrews to aid in accomplishing the mission.

combat operations. 1. Those operations involving combat or directly supporting it; combat. **2.** A combat operations section.

combat operations center. Short for 'air division combat operations center.'

combat operations section. The AF section at an air operations center that plans, controls, and coordinates air operations in support of surface forces.

The combat operations section may act independently

of, or in conjunction with, the air-ground operations section of the air operations center.

combat order. Any order containing instructions pertaining to operational or administrative practices in combat or air-combat maneuvers.

The basic types of combat orders are as follows: administrative order, letter of instruction, and operation order. See separate entries.

combat position. 1. A job in a combat organization. **2.** An assigned station or location taken for combat.

combat radius. The radius of action for any given airplane on a combat mission with a specified load and flight plan. See **radius of action.**

combat range. The range or distance from a base which a given airplane can fly on a combat mission, according to a specified sequence of operations. See **range,** *n.*

combat readiness. Operational readiness for combat. Applied esp. to persons, organizations, or equipment. See **combat-ready,** *a.*

Combat readiness is judged in terms of the concept of the combat operation. See **operational readiness,** note.

combat readiness training. (CRT) The continuing flying training required of a rated person not on primary flying duty in order to maintain his flying proficiency. Formerly called 'minimum individual training' (MIT).

A minimum number of hours is required for a fixed period of time. Training is usually achieved incidental to the performance of essential missions, as in administrative flights, assisting in search and rescue, air demonstrations, etc.

combat-ready, *a.* Of a pilot, other crew member or a whole crew: Ready for combat as measured by the experience of working with an operational unit after having already become combat-capable during training.

'Combat-ready' is applied esp. to a whole crew, and signifies the highest level of proficiency attainable by the training process.

combat reserve. A combat force held in reserve for immediate use if needed during a combat operation.

combat-serviceable, *a.* Of used clothing and equipment: Complete and fit for combat service.

combat speed. The highest speed obtainable in level flight at combat weight with military rated power at combat altitude.

combat team. In the AF, any group of men that acts as a team in carrying out combat.

Usage in the AF is usually general, not specific as it is among members of the Army.

combat time. 1. The time spent by men or equipment on combat missions. **2.** *Specif.* The time spent while engaging in direct combat, used esp. in computing the fuel consumption of fighters.

combat tire. 1. A special heavy-duty truck tire designed to be used for a limited period without air if necessary. **2.** An aircraft tire made especially for use under combat conditions.

combat vehicle. (cveh) A land or amphibious vehicle, with or without armor or armament, designed for specific functions in combat or battle.

The installation of armor or armament on vehicles other than combat vehicles does not change their original classification.

combat weight. The basic weight of any specified aircraft for a given combat mission. See **basic weight.**

combat wing. 1. a. An AF wing in which the primary mission group is organized for combat. See **combat group, group,** *n.*, sense 1a, **wing,** *n.*, senses 11 and 12. **b.** In WW II, a unit, used as an intermediate level of command, having two or more combat groups in it. **2.** A type of bomber formation sometimes used over enemy territory, normally made up of approximately fifty aircraft, and often divided into three elements or combat boxes.

In sense 1a, a combat wing varies in size and in the amount of assigned equipment according to its mission. A medium bombardment wing, for example, may have as many as 65 or 70 aircraft assigned. To support and use this equipment, a complex organization is maintained. Some 3,000 people, most of whom are highly skilled, may belong to this unit: combat crews for both jet bombers and tanker aircraft; maintenance specialists for all kinds of electrical, electronic, hydraulic, and mechanical equipment; persons responsible for runways, roads, buildings, power installations, etc.; others for security; others for communications; others for command and staff work; others for survival training; and others for food services.

combat wing-base. An air base occupied by a combat wing.

combatworthy, *a.* Of men or equipment: Qualified, ready, or suitable for combat.

combat zone. (CZ) **1.** *Specif.* A region in a theater of operations where fighting takes place, or where space is designated for the operations of friendly combat forces, extending from the front line to a line or boundary designated by the theater commander. **2.** A combat area. *Popular.*

In sense 1, the size of a combat zone depends upon the size of the forces assigned, the nature of the operations contemplated, the character of the lines of communication, terrain features, and enemy capabilities. For purposes of computing aircraft requirements, the combat zone is normally considered to be from 50 to 100 miles in depth.

combination fuze. A fuze combining two different types of fuzes, esp. one combining impact and time fuzes.

A combination fuze may be set so that either or both elements will function.

combination storage. The storage together of different kinds of ammunition or explosives in accordance with pertinent directives.

combination vehicle. A towing ground vehicle and a trailer together.

Combination vehicles do not include tractors and semitrailers.

combined, *a.* Of a force, organization, operation, agency, plan, mission, etc.: Belonging to or carried out by two or more allied nations. Sometimes *loosely* used in the sense of 'joint.' See **unified command.**

combining glass. *Gunnery.* A reflector plate in a computing gunsight that reflects two reticle images.

combustion chamber. 1. A chamber or cylinder-like assembly in a rocket engine, jet engine, or the like where the propellant is exploded. Also called a 'blast chamber,' 'burner,' or 'firing chamber.' See **can,** *n.* **2.** The space between a piston and the cylinder head of a reciprocating engine at the end of the compression stroke.

combustion starter. A cartridge starter.

combustion turbine starter. An engine starter developing its power from an exploding mixture acting against a turbine.

combustor, *n.* A name given to the assembly of flame holder, igniter, injection system, and combustion chamber of a ramjet engine.

ComCm (*auth abbr*). 'Communications countermeasure(s) and deception.'

comd (*auth abbr*). 'Command.'

comdg (*auth abbr*). 'Commanding.'

comdr (*auth abbr*). 'Commander.'

comdt (*auth abbr*). 'Commandant.'

comeas (*auth abbr*). 'Countermeasures.'

ComFourATAF (*auth abbr*). 'Commander, Fourth Allied Tactical Air Force, Central Europe.'

ComIceDeFor (*auth abbr*). 'Commander, Iceland Defense Force.'

ComJEF (*abbr*). 'Commander, Joint Expeditionary Force.'

coml (*auth abbr*). 'Commercial.'

comm (*auth abbr*). 'Communication.'

command, *n.* (comd)

A. 1. The exercise of leadership and power of decision over a person, persons, unit, or forces to effect unity of effort in carrying out a task or mission, as in 'his command of the task force was effective'; the authority that arises from the exercise of leadership and power. **2.** *Specif.* The authority, responsibility, and leadership exercised by the Chief of Staff, USAF, in giving overall operational direction to any one or all of the major air commands, as in 'the Chief of Staff . . . shall exercise command over the United States Air Force' (National Security Act of 1947). **3.** The linkage of powers as exercised by the commanders in a military hierarchy, as in 'chain of command' or 'level of command.' **4.** The status of authority and responsibility held by an officer in charge of, and responsible for, a unit or persons subordinate to him, as in 'the captain in command of the squadron'; the control exercised in this status. **5.** An order, esp. one given by a commander of general rank, as in the phrase, 'BY COMMAND OF GENERAL EDWARDS.' Cf. **order,** *n.* **6.** Tactical superiority or control, as in 'command of the air.' **7.** *Electronics.* Control exercised over an airborne guided missile or other pilotless air vehicle through transmission of electronic signals.

The degree of authority or responsibility exercised under senses A1 and A2 depends upon the command structure and the qualities of leadership in the commander. For example, by law the Chief of Staff exercises command (sense 2) over the major air commands, but each of these has its own commander, who also exercises command (sense 1).

Limitations on command are established by law, regulation, and custom, but within the framework of these limitations there still remain both power and responsibility for decisions. See **structure,** *n.*, note.

B. 1. A unit or establishment, usually a wing or larger, over which an officer exercises authority; a base operated by such a unit. See **air command. 2.** *Specif.* **a.** A designation in the official names of the major air commands, as in the Air Defense Command, Strategic Air Command, and Tactical Air Command. **b.** A designation for an operational subdivision of an air force, as a bomber command or fighter command. **c.** The headquarters of a command. **3.** The geographical area in which the commander exercises control over AF units operating within the area.

Used attributively, 'command' may refer to either a command or to a commander, as in *command comptroller,* the comptroller at a command headquarters; *command car,* a car used by a commander; *command departure point,* a departure point designated by a commander; *command directive,* a directive originating from an identified command headquarters, esp. the headquarters of a major air command. Cf. following entries.

command, *v. tr. Specif.* To govern the movements and reactions of an airborne *guided missile* or other pilotless *air vehicle* by electronic signals.

command and staff exercise. An exercise conducted entirely on a discussion basis, without deployment of actual forces.

commandant, *n.* (comdt) Any of certain commanding officers in the AF training and educational system, as the commandant of students, or the commandant of a service school.

See also **headquarters commandant,** and cf. **superintendent,** *n.*, sense 1.

command chain. A chain of command.

command channel. 1. Usually *pl.* The channel in a chain of command through which orders, reports, requisitions, and the like pass either from superior to subordinate or from subordinate to superior, whichever is appropriate. Sometimes called 'channels.' Cf. **military channel. 2.** A channel in a radio communication system reserved for commands.

command chaplain. A chaplain on the staff of a major commander.

command communication aircraft. An aircraft carrying all the communication equipment necessary for commanders or their representatives to communicate with all echelons concerned in an operation, esp. a troop-carrier operation.

command control. 1. The control that comes to a commander by virtue of sound organization, clear lines of responsibility, rapid communication, and unity of command as in 'this activity is organized to assure a greater degree of command control.' **2.** The control of a commander, as distinguished from another kind of control, as in 'command control of the aircraft lay with the group commander, but ground control lay with the aircraft controller.' **3.** Loosely used for 'operational control,' 'administrative control,' 'command jurisdiction,' and sometimes in redundant use simply for 'control.' **4.** *Electronics.* Command guidance.

In sense 1, the element 'control' has the same force as it has in the term 'statistical control.' See **control,** *n.,* sense 2.

command decision. A decision made by a commander, or by a person acting for the commander, involving the policies, mission, and status of the command.

command echelon. That part of an organization that exercises command over it, consisting of the commanding officer and his deputies; a headquarters.

A commander's staff may be considered a part of the command echelon when it acts for the commander.

command element. 1. Any part of a command. **2.** An element in the command echelon of an organization that exercises command.

In sense 2, the command elements are distinguished from the staff elements, and normally consist of the commander, the vice commander, the deputy commanders, and sometimes the chief of staff. In any given organization, the command element may consist solely of the commander, or of himself with a vice commander and deputies, or of himself with deputies. See **staff element.**

commander, *n.* (comdr) **1.** An officer who occupies a position of command; anyone who commands and leads. **2.** The official title given such an officer, as in 'FOR THE COMMANDER.' **3.** *Navy.* (cdr) A commissioned rank or person, immediately above lieutenant commander, and corresponding to lieutenant colonel.

Former practice (before 1954) in the AF was to use 'Commanding General' or 'Commanding Officer' as a title.

commander in chief. (CINC in combinations only) **1.** The officer or official having supreme command of the armed forces of a country. In the United States, this is the President. **2.** The commander of a theater of war. **3.** The commander of a force directly under the Joint Chiefs of Staff, as in 'the commander in chief of the Strategic Air Command,' or 'the commander in chief of the Unified Continental Air Defense Command.' **4.** *Capitalized.* The title of any such officer or official.

commander of the guard. The officer or sergeant of the guard responsible for the instruction and discipline of, and the performance of duty by, the guard.

The COG is responsible to each of the officers of the day as each assumes and relinquishes their duties.

commander's call. A meeting of officers and airmen, usually at squadron level, to provide the commander opportunity to disseminate information and to review policies and objectives. Formerly called 'airmen's information hour.'

The commander's call is at least once a month.

command guidance. A type of electronic guidance of guided missiles or other guided aircraft wherein signals or pulses sent out by an operator cause the guided object to fly a directed path. Also called 'command control.'

The signals sent may be based on information derived from telemetering, ground-based radar, visual reference, etc. See next.

command-guided missile. A missile guided by a system that requires two radars, one to watch the target, the other to track the missile.

A computer combines the data from each radar to give the missile flight directions.

command headquarters. A headquarters from which authority is exercised over subordinate commanders; *specif.,* the headquarters of a major air commander.

'Command headquarters' is never applied to Headquarters USAF. It usually distinguishes the headquarters of a major air command from the headquarters of a numbered or named air force, or of an air division, wing, or group.

commanding general. (CG) A general officer commanding an installation or organization, such organization normally being a wing or larger organization. Usually called a 'commander' in the Air Force. See **commander,** *n.*

commanding officer. (CO) A commissioned officer, esp. other than a general officer, commanding an organization or installation. Usually called a 'commander' (which see).

command jurisdiction. 1. The sphere in which a commander exercises his command. **2.** The jurisdictional control exercised in this sphere, esp. as it relates to the control or responsibility reserved by a commander over a person or unit of his command even when such person or unit is attached to another command for operational and administrative control and for logistic support. See **jurisdictional control.**

command level. The level in a hierarchy of com-

manders at which command for a given operation is exercised.

command line. A line on a letter, regulation, directive, order, or the like that shows its source of authority when signed by someone subordinate to the commander.

The command line appears only on correspondence to a unit or individual lower in the chain of command. Examples: BY COMMAND OF GENERAL KENNEY, BY ORDER OF COLONEL SMITH. Cf. **authority line.**

command net. A communication net that connects the headquarters of a command with some or all of its subordinate echelons, and over which commands are sent.

commando, *n.* **1.** Any soldier belonging to one of the specially selected groups of soldiers in the British Armed Services trained for hand-to-hand fighting, surprise raids, and other shock tactics. **2.** *Capitalized.* A popular name for the C-46.

In sense 1, this word 'commando' is often popularly applied to similar troops of any nation, esp. in attributive uses, as *commando raid, commando tactics,* etc. The American equivalent of the commando is the ranger.

command of the air. The power to use airspace as desired.

Command of the air may refer to control exercised through superior military force, or it may simply refer to the fact that possession of certain equipment and facilities make it possible to use airspace for whatever purpose is indicated, as, for example, in delivering supplies to a marooned party on the icecap.

command pilot. The highest aeronautical rating in the AF, granted active senior pilots having the required qualifications; a person holding this rating.

Under current regulations, a command-pilot rating requires 15 years' service as a heavier-than-air aircraft pilot, 3,000 hours of flying time as a pilot or copilot, and a current green instrument card or CAA airline transport rating.

command post. (CP) In a combat or simulated combat situation, the place or station of the headquarters of a unit or organization, where a commander and his staff perform their activities; the forward echelon of a divided headquarters.

command post exercise. (CPX) A field exercise involving only the commander, his staff, and communication personnel.

command set. A radio set in an aircraft used to receive or give commands, as between one aircraft and another or between an aircraft and the ground.

command-support aircraft. Aircraft made available to a command in addition to normally authorized aircraft, to keep up the basic aircraft inventory when pipeline supply and maintenance prove inadequate: See note.

Under the Mutual Defense Assistance Program (MDAP), 'command-support aircraft' is defined as those aircraft provided a country to enable it to maintain its basic aircraft inventory. See **basic aircraft inventory.**

command surgeon. A surgeon on the staff of a major air command. See **surgeon,** *n.,* sense 2.

CommCen (*abbr*). 'Communication center.'

Commendation Ribbon. (CR) A ribbon and medallion awarded to military persons who distinguish themselves by meritorious achievements or service. See **decoration,** *n.*

commercial, *a.* Of an airplane: Used as a common carrier by a company or private firm.

commercial, *adv.* By means of a commercial aircraft, as in 'he flew commercial.'

commercial aviation. 1. Aircraft operated by a commercial concern for profit, as distinguished from military or private aviation. **2.** The business and activity connected with employing such aircraft.

commercial item. An article designed for, and available on, the open market.

commercial-service authorization. An authorization granted a military installation or organization to use commercial services or facilities in the military interest.

commie (*auth abbr*). 'Communist.'

commissary, *n.* (comsy) **1.** A facility on a military installation for selling subsistence articles, esp. groceries, to military personnel or their dependents, and for providing subsistence supplies to various messes, dining halls, or other authorized consumers. **2.** A commissary store.

A commissary on an AF base differs in many respects from a base exchange. It is under the control of the base supply officer; it sells food, tobaccos, and certain other articles more or less at cost; its profits, if any, revert to the treasury. A base exchange, on the other hand, is under an exchange officer; it sells not only certain subsistence items but sundries and luxuries; it sells at a reasonable profit; and its profits go to nonappropriated funds.

commissary sales officer. The officer responsible for the maintenance of a commissary and its accounts.

commissary store. A store in which subsistence and certain other items are sold to military personnel and their dependents.

commissary store officer. A commissary sales officer.

commission, *n.* (com) **1.** A written order giving a person rank as an officer in any of the services; the rank given by this order. **2.** *In commission,* ready for service or use; *out of commission* (esp. of aircraft), not operational for lack of parts or repairs.

commissioned officer. An officer having a commission, as distinguished from a warrant officer or noncommissioned officer.

commit, *v. tr. Specif.* **1.** To assign, place, or use a *unit* in such a way that it inevitably becomes engaged in combat. **2.** To put *oneself* in a position where withdrawal or change in a course of

action becomes impossible, as in 'running low on fuel and flying on the deck he was committed to landing,' or 'he committed himself to attack.' Used *reflexively* or in the *passive*.

commitment, *n. Specif.* **1.** An amount of money officially designated for payment of future obligations. **2.** In military air transport, an assigned transport mission as determined by higher headquarters. **3.** In flying, an act that commits a person to a course of action. See **commit,** *v.*, sense 2.

committed flying hours. In the Military Air Transport Service, the number of hours that a given unit is committed to fly for a given period, as determined by higher headquarters. Cf. **non-committed transport hours.**

commodity loading. The loading of various kinds of cargo together so that any one kind can be unloaded without disturbing the other cargo.

commodore, *n.* (como) **1.** A wartime commissioned rank in the Navy, immediately above captain, and corresponding to brigadier general; a person holding such rank. **2.** A rank in the Coast Guard equivalent to a brigadier general in the AF; a person holding this rank.

common-denominator target. A target which, if destroyed or damaged, would have a pronounced effect on the war-making capability of a nation.

common infrastructure. Infrastructure required for the common use of allied forces, provision for which is not considered the responsibility of any one nation but of all.

common item. 1. A supply item common to two or more services. **2.** Any of a class of supply items that are commonly used and have general application, as hardware, paints, dopes, metals, gases, petroleum products, chemicals, office supplies, etc.

common-use circuit. *Electricity.* A circuit used by two or more services on a concurrent or alternating basis.

CommSeeAct (*auth abbr*). 'Communication Security Activity.'

Comms Oprs (*abbr*). 'Communications operations.'

communication, *n.* (comm) **1.** Often *pl.* The act or fact of conveying information from one person to another. **2.** Often *pl.* The ways and means by which such communication is achieved. **3.** Usually *pl.* A system of land, air, or water routes or facilities for transporting persons and goods; the act of transporting persons and goods. See **line of communication. 4.** That which is communicated; a message, esp. a written or printed message. **5.** *pl.* **a.** An organization that develops, operates, and maintains services for communicating; sometimes a staff section responsible for this activity. **b.** A system of facilities used for communicating, esp. a system of electrical or electronic facilities. **c.** Short for 'communications-electronics.'

'Communication' is often used in official military contexts to exclude reference to regular mail services.

communication and electronics. Also **communications and electronics.** Communications-electronics.

communication center. Also **communications center.** (CommCen) **1.** A facility or place through which the principal communications of an organization are routed; the organization or group of people responsible for this facility. **2.** A focal point for lines of communication, esp. in a theater of operations.

In sense 1, this center is often organized into a message center and cryptographic, teletype, telephone, and radio sections.

communication channel. Also **communications channel.** That part of a circuit connecting two or more terminals for conveying communications.

A communication channel is usually distinguished from a channel of communication (which see, sense 1).

communication check. Also **communications check.** *Specif.* A communication search.

communication intelligence. Intelligence developed from listening in on, intercepting, or observing enemy, or potential enemy, communication transmissions; the organization that gathers and develops this intelligence.

communications chief. A noncommissioned officer in a combat squadron who supervises the radio facilities of the squadron, superintends the maintenance of aircraft radio equipment, and distributes work among personnel under his supervision.

communications countermeasure. (ComCm) Usually *pl.* Any electronic countermeasure (which see) against communications.

communication search. Also **communications search.** A search for an aircraft conducted by utilizing communication facilities.

communication security. Also **communications security.** The observance and practice of security regulations and methods in regard to transmitting and handling electrical and radio communications; the security resulting from this activity. See **transmission security.**

communications-electronics, *n.* A field of specialization covering radio and wire communication, electronic devices and their uses.

Radar and other radiation devices and systems included in the field of communications-electronics are those for air traffic control and navigation, enemy aircraft warning and interception, ground control and tracking of aircraft

and guided missiles, and communications countermeasures. Sometimes shortened 'communications.'

communications operations. A field of specialization, designated as a career field in the AF, covering the techniques involved in the operation of radio and wire communications.

Communications operations includes telephone, teletypewriter, facsimile, ground and airborne radio communications, communications security, and communications interception. It does not include communication maintenance nor radar operations.

communications zone. (comz) In a theater of operations, that area adjoining the combat zone, and containing lines of communication, establishments for supply and evacuation, and other facilities or agencies required for the immediate support and maintenance of troops in the field.

commutation, *n.* **1.** *Electricity.* The mechanical process of converting alternating current, which flows in the armature of a direct-current generator, to direct current as furnished to the conductor. **2.** An allowance or payment of money made in lieu of something else. See **allotment,** *n.*, sense 1.

An example of sense 2 would be a *commutation of quarters*, an authorized money allowance made when living quarters are not supplied in kind.

commutator, *n.* That part of a direct-current generator that makes electrical contact with the brushes, connects the armature conductors to the external circuit, and accomplishes commutation.

ComNAB (*auth abbr*). 'Commander, Naval Air Bases.'

ComNavFE (*auth abbr*). 'Commander, Naval Forces, Far East.'

como (*auth abbr*). 'Commodore.'

comp (*abbr*). **1.** *auth.* 'Component.' **2.** *auth.* 'Composite' or 'composition.' **3.** 'Complement.'

compac, *n.* A kit or collection of aircraft supplies used in WW II, calculated to last an air base for 30 days during normal combat operations.

ComPAF (*auth abbr*). 'Commander, Pacific Air Force.'

company, *n.* (co) The basic administrative and tactical organization of the Army and Marine Corps, being comparable, as a tactical organization, to an AF flight.

company-grade officer. A commissioned officer below the rank of major.

This term is still used to refer to AF captains and lieutenants. Cf. **field grade.**

compartment, *n. Specif.* A section or space in or of an aircraft for the accommodation of passengers, cargo, fuel, etc. Cf. **cabin,** *n.*

compass, *n.* An instrument used to determine direction.

Following are various types of compasses: aperiodic compass, astrocompass, card compass, earth-inductor compass, gyro flux-gate compass, gyrosyn compass, magnetic compass, radio compass, and sun compass (which see under separate entries). Cf. **directional gyro.**

compass bearing. A bearing measured relative to compass north.

compass calibration. The process of compensating a magnetic compass and determining the amount of residual deviation after compensation. See **compass compensation, compass swinging.**

Since residual deviation is negligible in a gyro flux-gate compass or gyrosyn compass, the complete process of calibration is not necessary, compensation being all that is required.

compass card. A lightweight card on which compass directions are inscribed, having a magnetized sensing element which causes the card to turn when mounted horizontally upon a free pivot, so as to align the sensing element with the horizontal component of the earth's magnetic field. See **magnetic north.**

compass compensation. The adjusting of a magnetic compass so as to correct for deviation, or, in the case of a gyro flux-gate compass, to calibrate the compass indicator. See **compass calibration, compass swinging.**

Compensation of the magnetic compass is accomplished by placing small magnets in a certain manner in proximity to it or by changing the position of magnets built into the compass case so as to neutralize or change existing magnetic fields. Compensation of the gyro flux-gate compass or gyrosyn compass is accomplished mechanically.

compass course. A course measured relative to compass north.

compass deviation. The angular deviation of a magnetic compass. Usually called 'deviation' (which see, sense 1). Sometimes called 'magnetic deviation.' See **residual deviation.**

compass direction. The direction indicated by a compass, relative to compass north.

compass error. 1. Any error in the indication of a compass, esp. of a magnetic compass in an aircraft. See note. **2.** The angle between compass north and true north. Chiefly *British.*

In sense 1, see **heeling error, northerly turning error, speed error, swirl error.**

compass heading. A heading measured relative to compass north.

compassionate, *a.* Of a transfer, assignment, or reason: Given or sought for the comfort or convenience of a person and not necessarily in the military interest.

compass north. The direction indicated by the needle or other sensing element of a magnetic compass.

Compass north and magnetic north differ in that the former may be determined by other influences than the earth's magnetic field.

compass rose. 1. A graduated circle, usually marked in degrees, indicating directions and printed or inscribed on a compass card or elsewhere, as upon an aeronautical chart. **2.** Such a

circle marked off on the ground to assist in groundswinging.

The compass rose is used to measure the angle from the compass needle to a heading, or it is used on charts for orientation and plotting purposes.

compass swinging. A procedure whereby a compass is turned from one magnetic heading to another in a horizontal plane to determine deviation.

With airplane compasses, the compass remains in the airplane and the plane is swung about. Deviation is usually determined on twenty-four different headings. Compass swinging in an airplane may be done by airswinging or groundswinging.

compatible storage. Combination storage.

compen (*auth abbr*). 'Compensate,' 'compensation,' or 'compensatory.'

compensating sight. A gunsight incorporating means to make corrections for wind, gravitation, target velocity, or other variables.

compensator, *n.* Any device used to offset or allow for undesirable forces or motions.

For example, on some small arms, a type of compensator may be used to hold down muzzle rise and reduce recoil; on a direction finder, a compensator is that part which automatically compensates for deviation in the direction indicator.

compensatory leave. Leave granted under Civil Service to an individual as compensation for overtime.

competitive status. The status of an individual under Civil Service which permits him to change from one position to another in the competitive service without further competitive examination, subject to the rules and regulations governing noncompetitive change. Cf. **career appointment.**

compile, *v. tr.* In intelligence usage: To group together *information* of identical or similar context.

compl (*auth abbr*). 'Upon completion thereof.'

complement, *n.* The full or complete number of men necessary to fill or man an aircraft, organization, team, etc.; the full or complete number of objects or articles required for a special place or purpose, as 'a complement of bombs for a given airplane.'

complete aircrew. An aircrew, as stipulated by a table of organization for a specific model aircraft, which can fill all of the crew positions or stations in that aircraft.

complete air superiority. General air superiority or air supremacy.

'Absolute,' 'complete,' and 'total' in reference to air superiority are really intensives, and are used by persons when seeking to express a high degree of air superiority. They are not used in official AF writings because they suggest a degree of attainability that is, in practice, not possible.

complete round. All of the components of ammunition necessary to fire a given gun or firearm once; also applied to all the components of an aerial bomb or piece of rocket ammunition. See **bomb complete round.**

complex reflector. *Electronics.* A structure or group of structures having many radar-reflecting surfaces facing in different directions.

complex tone. 1. A sound wave produced by the combination of simple sinusoidal components of different frequencies. **2.** A sound characterized by more than one pitch.

component, *n.* (comp) **1.** A constituent part of a whole, esp. one having no function apart from the whole, as the wing of an airplane or the command element of an organization. See **cipher component, engine component. 2.** *Specif.* Any one of the major membership branches of the USAF, i.e., the Regular Air Force, the Air Force Reserve, the Air National Guard of the United States, or the Air National Guard while in the service of the US.

In sense 1, 'element' and 'component' are often used synonymously. Cf. **element,** *n.*, sense 1.

composite, *a.* (comp) **1.** Of a group or wing: Having squadrons each equipped with a different kind of aircraft, as with fighters, bombers, etc. **2.** Of a wire communication system: Operating one telephone and two DC telegraph or teletypewriter circuits over one pair of wires. **3.** Of an attack force or other team, force, or organization: Having and operating different types or kinds of equipment, or composed of dissimilar elements, esp. composed of elements of two or more services. Cf. **joint,** *a.*

composite aerial photograph. An aerial photograph assembled from photographs taken simultaneously with a multilens camera.

A composite aerial photograph is made from two or more rectified oblique photographs, i.e., oblique photographs transformed to the plane of the vertical, and it may or may not contain also one true vertical photograph.

composite aircraft. An airplane carrying another, the two considered as a single unit.

composite missile. A multiple-stage missile.

composite overlay. An overlay prepared for use with the mosaic of an urban area study, showing all structures over one story in height and all structures other than wood within the mosaic.

composite takeoff. The takeoff of a large aircraft carrying a smaller aircraft.

composition, *n.* (comp) *Specif.* An explosive material that may be cast or molded.

In this sense, the word 'composition' is found followed by a letter, or by a letter and a numeral, designating the kind of explosive, as *composition B, composition C-2*, etc.

compound compressor. A jet-engine compressor using two or more different systems of compression. See **compressor,** *n.*

compound engine. A reciprocating engine utilizing its exhaust gas to rotate a turbine.

Power developed by the turbine may be conveyed back to the engine shaft, or utilized to drive accessories.

compound stress. A combination of two or more stresses.

compressibility, *n.* **1.** The property of a substance that allows it to be compressed. **2.** A condition that exists when air or other fluid has been compressed, as when air or other fluid passes through a shock wave, esp. in reference to the air around or against an airplane flying at high speeds. See **accessibility,** *n.*, note.

In sense 2, compressibility of air against or around an airplane at transonic speeds may vary widely in degree, depending upon the airplane design, giving rise in some instances to various aerodynamic effects, such as buffeting, shift in the trim of an aircraft, aileron flutter, etc. See **transonic barrier.** Cf. **area-rule concept.**

Under compressibility, the airfoil encounters a given number of air particles in less time than it would under conditions of no, or negligible, compressibility.

compressibility burble. *Aerodynamics.* A disturbed flow of air produced by, and aft of, a shock wave.

This term has been incorrectly used for 'shock stall.'

compressibility drag. A parasite drag caused by extraordinary compression of air ahead of an aircraft at high speeds, esp. encountered by an aircraft not designed for sonic flight as it approaches the speed of sound.

compressibility effect. An effect on an aircraft or missile resulting from compressibility as the flow of air passes through the shock wave. See **compressibility,** *n.*

compressibility error. An error in the airspeed indicator caused by compressibility in the pitot tube.

compressible flow. *Aerodynamics.* A flow of air around a moving body, esp. at transonic speeds, markedly changed in pressure and density from its free-air state. See **compressibility,** *n.*, and cf. **incompressible flow, turbulent flow.**

compression, *n. Specif.* The stress or force exerted on a member by other forces or loads acting both toward and against each other through the member. Also called 'compressive stress' or 'crushing stress.'

Compression is the opposite of tension.

compression chamber. A strongly built chamber in which air pressure can be increased to two or more atmospheres. Cf. **low-pressure chamber.**

compression-ignition engine. A type of reciprocating engine using a fuel which is sprayed into the cylinder and ignited by heat resulting from the compression of the air charge in the cylinder.

compression ratio. The ratio of the volume of a gaseous mixture in an engine cylinder at the beginning of the compression stroke to its volume at the end of the stroke.

compression rib. An airfoil rib especially constructed to take the force of compression.

compression wave. *Aerodynamics.* A shock wave having the effect of increasing the density of air as the latter passes through it.

A compression wave is distinguished from an expansion wave.

compressive stress. Stress resulting from compression.

compressor, *n.* A machine or apparatus for compressing something, esp. for compressing air for delivery to the combustion chamber of an engine.

Compressors are classified into two groups. The *positive-displacement compressors* include the reciprocating compressor, the displacement blower without compression, the displacement blower with compression. The *centrifugal compressors* include the radial-flow compressor, the axial-flow compressor, and the mixed-flow compressor.

These compressors are coustructed in different ways and use various combinations of devices, as in the compound compressor, the multistage compressor, the single-stage compressor, and the supersonic compressor. See separate entries.

compressor chamber. The housing of a compressor in a jet engine.

compressor stall. A condition arising in the compressor of a jet engine when the compressor blades are set at such an angle that there is a breakdown of the smooth airflow, resulting in a loss of efficiency of the compressor to deliver air to the burner, and often leading to a flameout.

compromised, *a.* **1.** Of classified matter or equipment: Exposed or possibly exposed to an unauthorized person or persons. **2.** Of a cryptosystem: Misused in such a manner as to facilitate its solution by an unauthorized person or persons. **3.** Of an agent engaged in covert activities: Discovered or found out to be what he is.

compt (*auth abbr*). 'Comptroller.'

comptroller, *n.* (compt) An administrative AF officer responsible for keeping the financial accounts of the AF or the command or other organization to which he is assigned, furthering the efficient management of such service, command, or other organization, and advising and assisting in the attainment of the organizational mission.

The Deputy Chief of Staff Comptroller is the comptroller for the USAF.

computed altitude. The angular altitude of a celestial body above the celestial horizon from an assumed position, computed to facilitate the finding of a line of position.

The code or symbol for computed altitude is 'Hc.' See **assumed position.**

computer, *n.* A mechanical, mechanical-electric, or electronic instrument for the solution of, or for facilitating the solution of, mathematical problems, esp. those connected with gunnery,

bombing, or navigation; a person who computes or who operates a computer. See **analogue computer, course-line computer, digital computer, E-6B computer, gunsight computer.** See also **seven-o-one calculator.**

computing gunsight. A gunsight, esp. one for aircraft machine guns, that automatically calculates for wind, range, and other variables, and enables a gunner to hit his target.

Some types of computing gunsights may be used also for rocket-firing and bombing. See **gun-bomb-rocket sight.**

computing sight. Any sight that uses a computer, esp. an electronic computer, in aiming a projectile.

computor, *n.* Variant of 'computer.'

COMSTS (*auth abbr*). 'Commander, Military Sea Transportation Service.'

comsy (*auth abbr*). 'Commissary.'

comte (*auth abbr*). 'Committee.'

ComTwoATAF (*auth abbr*). 'Commander, Second Allied Tactical Air Force.'

ComZ (*auth abbr*). 'Communications zone.'

con (*auth abbr*). 'Control' or 'conversation.'

ConAC (*auth abbr*). 'Continental Air Command.'

CONAD (*abbr*). 'Continental Air Defense.'

conc (*auth abbr*). 'Concentration.'

concealment, *n.* **1.** The use of cover, blackout measures, darkness, camouflage, and smoke, or any combinations of these, to hide personnel, installations, movements, etc., from enemy observation; also the removal of organizational insignia or other identifying marks and the protection of records to keep from the enemy the organizational identity of troops opposing them. **2.** An object, phenomenon, activity, or measure that conceals.

concentration, *n.* (conc) *Specif.* **1.** A principle of warfare embodying the doctrine that effective offensive action requires the massing of superior combat power or striking force at a decisive point. **2.** The action of massing power or striking force at a single point.

In sense 1, the term is also called 'mass.' AF writers, as well as the British, prefer 'concentration.'

concentration area. 1. An area, usually in a theater of operations, where military personnel are assembled before beginning their assigned or normal operations. **2.** A given area upon which a volume of gunfire is placed within a limited period of time.

concentric cable. A coaxial cable.

concentric line. A coaxial cable.

concept, *n.* **1.** A notion or idea about the nature of a thing, e.g., of matter, electricity, or air power, as in 'Einstein's concept that mass and energy are forms of the same thing was yet untested.' **2.** A mental image or idea of how a thing should be done or established, i.e., an idea that guides, as, for example, a concept on how to carry out an operation, or how to set up an organization, or what elements should inhere in command, or what rules should govern a court-martial.

In sense 1, the concept is of a phenomenon. The concept is sound or unsound in proportion to its approximation of the true nature of the phenomenon. See **phenomenon,** *n.*, and cf. **air power,** sense 1 and note.

In sense 2, the concept is not of a phenomenon; hence, it is not judged by the criterion of trueness. It is, rather, an idea or plan of what can be, or has to be, done. For example, a concept (sense 1) of air power leads to notions of what actions should be undertaken so as to take advantage of what is considered known of air power. These notions are themselves called concepts, but concepts in sense 2. They include, for example, the concept of strategic bombardment, or the concept of tactical air support, or the concept of how to organize an office, concepts about which it would be improper to speak of their being true or not true.

Concepts are conceived, doctrines taught. When a concept is taught, that which is taught becomes doctrine. See **doctrine,** *n.*; also **logistic concept, strategic concept, tactical concept.** Cf. **theory,** *n.*

concertina, *n.* A coil of barbed wire that is compressed for carrying, but extended for use as an entanglement.

concur, *v. intr.* To agree or be in accord with a recommendation or proposal. Hence, **concurrence,** *n.*

Concurrence is an action incident to coordinating a plan or recommendation. Cf. **approve,** *v.*

concussion fuze. A bomb fuze designed to function in the air in response to the concussion produced by the explosion of a preceding bomb. Also called an 'airburst fuze' or 'air-pressure fuze.'

concussion grenade. An offensive grenade. See separate entry.

cond (*auth abbr*). 'Condition' or 'conditional.'

condensation, *n. Meteorology.* **1.** The act or process of changing from water vapor into water, and forming a cloud; the water so formed. **2.** In less exact usage, sublimation (which see).

condensation code. A code the purpose of which is to condense messages rather than to conceal their meaning.

condensation level. *Specif.* The lifting condensation level.

condensation nucleus. *Meteorology.* Any minute particle of matter floating in the atmosphere, around which a droplet of water condenses.

A condensation nucleus may be a particle of terrestrial or meteoric dust, pollen, volcanic ash, a spore, etc.

condensation trail. A visible trail of water droplets or ice crystals sometimes forming in the wake of an aircraft. Also called a 'contrail,' 'vapor path,' 'vapor scarf,' 'vapor streamer,' and esp. 'vapor trail.'

Vapor forms in supercooled air when disturbed by the passing of the airplane. It also forms from the water content of the exhaust in cold air.

condenser, *n.* A device for storing electrical energy; a capacitor.

conditional instability. The condition of a body of air the stability of which is dependent upon water vapor content and upward movement of the air.

In technical parlance, conditional instability is said to exist in a body of air when the lapse rate of the air lies between the dry and pseudoadiabats on an adiabatic diagram.

condor, *n.* **1.** A radio-navigation system utilizing a kind of transmission and equipment by means of which a navigator can find both range and bearing relative to the transmitting station. **2.** *Capitalized.* **a.** A popular name for the B-2 and for the similar civilian transport airplane. **b.** A popular name for the German FW-200.

conductance, *n.* The capability of a material to carry electric current.

conductor, *n.* Any wire, cable, or other object carrying an electric current.

conec (*auth abbr*). 'Connection.'

coned, *a.* Caught in a concentration of searchlight beams. *British.*

cone marker beacon. A Z marker beacon.

cone of dispersion. The cone-shaped airspace outlined by the flight paths of scattering projectiles fired from a fixed machine gun.

cone of fire. 1. The cone-shaped fire-coverage from a flexible gun emplacement. **2.** The fire-coverage produced by the fire of two or more guns converging on a single point; the fire delivered in this coverage.

cone of silence. 1. A cone-shaped extent of space extending upward from a radio-range transmitting station, and in which signals are unheard or greatly reduced in volume. **2.** An approximately cone-shaped extent of space extending from a radar transmitting set and through which pulses are not sent because of inadequate antenna coverage.

conf (*auth abbr*). 'Conference' or 'confidential.'

conference communications. Communication facilities so arranged that persons at three or more separate locations may participate in a single conversation.

confidence maneuver. Any flight maneuver or ground exercise in connection with an airplane, intended to promote confidence on the part of a student in the stability and safety of the aircraft.

confidential, *a.* (conf) Of classified material: Having such security status that its unauthorized disclosure could be prejudicial to the defense interests of the nation. See **security classification,** *n.*, note.

Often capitalized or written in full caps.

confined, *a.* (cnf) Kept in a prison or under guard in a specified place.

confinement facility. The prison of a guard house.

confirmed, *a.* Corroborated. See next.

confirmed victory. In aerial combat, a victory (which see) that has been corroborated. Cf. **certain,** *n.*

conflict, *n.* A state in which differences exist between two or more forces or nations, arising from the interests or objectives of one force or nation being incompatible, or appearing to be so, with those of another.

Conflict in some degree is considered to be a normal condition among nations. It may exist on very minor matters subject to resolution by diplomacy, or it may exist at various levels of complexity, and in some instances it may appear as armed conflict. See **armed conflict.**

confmod (*auth abbr*). 'Confidential-modified handling authorized.'

conformal projection. 1. A method of representing on a flat surface the true outline shape of geographic features for small areas. **2.** A map or chart made by this method.

The two conformal projections most used in air navigation are the Mercator projection and the Lambert conformal conic projection.

confusion, *n. Specif.* The confusion deliberately created in radar sets by use of jamming methods and devices; the methods and devices used for jamming. See next.

confusion reflector. *Collective.* Any of several kinds of electromagnetic-wave reflectors used in electronic countermeasures which, dropped from aircraft, create false signals on radarscopes, thereby confusing an enemy as to the location of the aircraft.

A confusion reflector may consist of lengths of wire, sheets of metal, or other metallic objects, but normally strips of metallic foil or paper are used as a confusion reflector.

Different names for confusion reflectors have been used, such as *angel, butterfield, chaff, rope,* and *window* (which see under separate entries).

Cong (*auth abbr*). 'Congress.'

congested area. *Specif.* An area over which heavy air traffic is normally conducted.

Congressional Medal of Honor. The Medal of Honor.

Congreve rocket. Any of the several types or kinds of artillery rockets invented by Sir William Congreve (1772–1828) and used by the British in the early 19th century.

conical orthomorphic projection. A Lambert conformal conic projection.

conical scan. In radar, a scan made by a beam describing a cone, the point from which the beam is radiated being at the apex of the cone. Hence, **conical scanning.**

coning angle. The average angle between the

root-to-tip axis of a rotor blade and a plane perpendicular to the axis of rotation.

coning stop. Any of the stops in a rotor blade assembly limiting the flapping of the blades.

conk, *v. intr.* Of an aircraft engine: To quit running of its own accord. Often with *out.*

Connie, *n.* A nickname for the Constellation.

conobjtr (*auth abbr*). 'Conscientious objector.'

cons (*auth abbr*). 'Consider' or 'consist.'

conservatory, *n.* A transparent airplane turret. *Slang.*

consol, *n.* An Allied version of the German sonne radio-navigation system. See **sonne,** *n.*

consol (*auth abbr*). 'Consolidate' or 'consolidation.'

console, *n.* A bank of buttons, switches, indicators, and the like, used for controlling electrical or electronic equipment and suggesting the console of an organ.

Consolidated, *n.* [*Consolidated* Aircraft Corporation, or *Consolidated* Vultee Aircraft Corporation.] Used in the names of aircraft, as in *Consolidated Coronado* or *Consolidated B-36.*

consolidated mess. A mess serving two or more different organizations. Also called a 'general mess.'

consolidated vehicle table. A list, by types, of all ground vehicles loaded on a ship, showing the units to which they belong.

Consolidated Vultee. [*Consolidated Vultee* Aircraft Corp.] Used in the names of aircraft, as in *Consolidated Vultee B-36, Consolidated Vultee Liberator,* etc.

const (*auth abbr*). 'Constitute' or 'construction.'

constab (*auth abbr*). 'Constabulary.'

constant-flow oxygen equipment. A kind of oxygen equipment designed to supply a continuous flow of oxygen to the user. Also called 'continuous-flow oxygen equipment.'

With constant-flow oxygen equipment, the supply of oxygen is governed by a manually operated valve or a barometric device.

constant power operation. The operation of an aircraft at the same engine power throughout a given flight, regardless of change in the gross weight of the aircraft.

If constant power operation is used on a bombing mission, for example, the speed of the bombing airplane will increase after the bomb load is dropped, enabling the plane to withdraw more quickly than it approached.

constant-pressure chart. A chart of a given geographical area depicting variations of height above mean sea level of a constant-pressure surface.

constant-pressure surface. An atmospheric surface, either level or undulating, on which the pressure is the same at all points.

constant-speed propeller. A propeller that tends to maintain the revolutions of an engine at a constant rate by automatically increasing or decreasing pitch.

Constellation, *n.* **1.** The generic name for the C-69, C-121, WV-1, or WV-2. **2.** A commercial version of one or other of these airplanes.

constitute, *v.* (const) *tr.* To give a *unit* a designation and place it upon the active or inactive list by authority of the Department of the Air Force.

A unit once constituted and later disbanded may be *reconstituted.* See **activate,** *v.,* note.

constituted unit. A unit designated by a Department of the Air Force Letter, which is on either the active or inactive list of the Department of the Air Force.

'Unit,' as used in this definition, refers either to a manning unit or to a nonmanning unit. See **unit,** *n.,* senses 1 and 2.

construction weight. The weight of any crewless rocket exclusive of fuel. Also called 'structural weight' (which see).

consultation, *n.* The action taken by a person or persons in seeking the counsel of another or others on a problem or course of action. See **coordination,** *n.*

consumption rate. The average number or amount of items expended or consumed during a given time interval.

Consumption rates may be given, for example, for rounds of ammunition per weapon per day, pounds of food per man per month, etc.

consv (*auth abbr*). 'Conserve' or 'conservation.'

cont (*auth abbr*). 'Continue' or 'continuation.'

contact, *n.* **1.** The act of an aircraft touching a runway or other surface after being airborne, as in 'the moment of contact.' **2.** An instance of an aircraft landing and later taking off, as in 'Stead AFB handled, 4,161 airplane contacts during the month.' **3.** *Ellipt.* and *adverbial:* By visual reference to the earth, as in 'the pilot flew contact to his target.' **4.** *To be in contact* or *to make contact:* **a.** To be, or to get, close enough to an enemy so as to see or strike him. **b.** To have or hold an enemy installation or the like in a radarscope. **c.** To be, or to get, in communication *with* a radio station or person. **5.** A signal that the ignition switch in a cockpit is in the on-position, used as a call to a person swinging an engine propeller.

contact conditions. Weather conditions permitting contact flying (which see) at a given altitude.

contact flight rules. Rules restricting aircraft being flown by contact flying methods to given minimum altitudes and limits of visibility.

The term 'contact flight rules' has been generally replaced by the term 'visual flight rules.'

contact flying. A method of flying in which a

pilot determines the attitude and position of his plane by visual reference to the horizon, to landmarks, or to clouds. See prec.

contact fuze. An impact fuze.

contact light. A runway light.

contact navigation. Navigation by pilotage.

contact reconnaissance. Aerial reconnaissance used in a fast-changing tactical situation, as during an amphibious invasion, or in a situation where a unit is isolated, in order to keep commanders informed and to minimize the danger of shelling or bombing friendly forces or to provide assistance where needed.

contact report. A report regarding the enemy made when contact is established with him.

A contact report is normally made by a field unit, aircraft, or ship that has contacted the enemy either visually or with the aid of radio, radar, or sonar. The first report, giving the information immediately available when contact is first made, is called the *initial contact report;* any subsequent report is called an *amplifying report.*

contain, *v. tr.* To cause the *enemy* to confine his effort to a particular action or front, thus preventing his withdrawal for employment elsewhere.

The enemy may be contained by stopping or engaging him, as well as by surrounding him.

contained war. A war in which hostilities are confined to a particular area. See **war,** *n.*

contamination dose. A deposit dose.

continental, *a.* (contl) **1.** Of or pertaining to the continental United States, as in 'continental defense,' 'continental limits,' or 'continental United States.' **2.** Of or pertaining to the North American continent.

Continental Air Command. (ConAc) One of the major air commands in the US, the headquarters of which is located at Mitchel AFB, New York.

The mission of the Continental Air Command is to discharge the field responsibilities of the Chief of Staff, USAF, with respect to the Reserve Forces, domestic emergencies, and miscellaneous administrative duties.

Continental Air Defense Command. A joint command established in the summer of 1954 to coordinate the operations of the three services in defense of the continental United States against air attack. Cf. **air defense command,** sense 2.

continental command. Any major air command the headquarters of which is located within the continental limits of the US.

continental United States. That part of United States territory that encompasses the forty-eight states, the District of Columbia, the coastal islands, and the extent within the three-mile limit, including the surface, the extents under water, and the airspace above this territory.

Alaska, Hawaii, and the US possessions are not included.

contingent, *n.* A quota or force, as of men, bombers, etc.

contingent item. 1. An item in the list of major end items in a master equipment authorization list authorized but contingent upon the authorization of other items. **2.** *pl.* and *capitalized.* The list of these items.

continuation training. Repeated collateral training.

continuing appropriation. An appropriation that is available for incurring obligations over an indefinite period of time or until the accomplishment of the purpose for which the appropriation is made.

continuing requirement. A requirement that persists over a period of time.

continuity, *n. Specif.* The condition existing in a circuit in which the electrical path is closed, permitting flow of current.

continuous cover. The constant escort or cover provided bombers during a combat mission, esp. during that part of the mission when the bombers are subject to enemy fighter attacks.

On long missions, continuous cover is provided by relays of fighters.

continuously pointed fire. Antiaircraft fire directed at and following the target aircraft.

continuous-pressure breathing. A kind of pressure breathing in which a minimum amount of pressure variation exists inside the mask. See **pressure breathing.**

continuous strip camera. An aerial camera designed for taking an unbroken still photograph of a strip of terrain on a roll of film.

The continuous strip camera has instead of a shutter a slit which remains open as the film moves past it. The speed of the film is governed by the ground speed of the photographing plane.

continuous wave. (CW) A radio or radar wave that maintains a constant amplitude and a constant frequency.

contl (*abbr*). 'Continental.'

contour, *n. Meteorology.* A line on a chart showing the contour of a constant pressure surface in the atmosphere.

This contour is analogous to a geographic contour line.

contour flying. 1. A bookish term for hedgehopping. **2.** Also, flying along the side of a mountain or ridge at a constant altitude.

contour follower. A cam-riding part hooked up so as to raise or lower a gun in an aircraft, or to actuate fire-interrupting devices, in order to avoid hitting any part of the aircraft. Also called a 'cam follower.'

contour gradient. *Meteorology.* The rate of altitude increase of a constant pressure surface for any given distance.

contour interval. The vertical distance, ex-

pressed in feet, between two sets of topographical features represented by contour lines on a map or chart. Also called a 'vertical interval.'

contour line. A line on a map or chart connecting topographic points of the same elevation.

contr (*auth abbr*). 'Contract' or 'contractor.'

contract, *n.* (contr) *Specif.* An agreement between the government and a contractor whereby the contractor commits himself to render specified services or to furnish specified articles to the government for recompense; a document attesting to or certifying such an agreement, including applicable changes and amendments, supplements, and exhibits.

See **call contract, cost-plus-fixed-fee contract, definitive contract, fixed-price contract,** and **requirements contract.**

contract administration. The performance, by a contracting officer or his authorized representative, of acts authorized to be performed either by the terms of an existing contract or in accordance with the provisions of public laws, executive orders, or the applicable regulations and instructions of the department assigned administrative responsibility for a contract. See **secondary responsibility.**

contract authorization. An authorization by Congress under which the government may become obligated by contract in anticipation of appropriations for payment of such obligation.

contract carrier. A civil transportation organization engaged in transporting persons or goods under contract.

contract cost audit. The audit, by the Auditor General, of contracts granted to civilian firms by the AF.

contracting officer. A military or civilian officer who has been appointed to enter into contracts on behalf of the government. Also called a 'procuring officer,' 'purchasing and contracting officer,' or an 'obligating officer.'

contract negotiation time. The time between the initiation of a purchase request and the awarding of a contract.

contractor, *n.* (contr) **1.** Any person, partnership, company, corporation, or combination thereof that enters into a contract. **2.** *Specif.* A prime contractor (which see).

In some official contexts, and usually by specific definition, the word 'contractor' means both the prime contractor and the subcontractor.

contractor-furnished equipment. Standard items of hardware, electrical equipment, and other standard production or commercial items furnished by a prime contractor as a part of a larger assembly.

contractor inventory. An inventory of property, government-furnished or otherwise, acquired and held by a person under a contract with the government or under a subcontract arising therefrom: See note.

More fully, such property is either that property, title of which is given to the government under the terms of a contract, which is in excess of the amount needed by the contractor to complete full performance under the terms of the entire contract, or that property which the government is obligated to take over under any type of contract as a result either of changes in the specifications or plans of the contract or subcontract thereunder prior to completion of the work.

contractor's inspector. A person authorized by the Commander, Air Materiel Command, to inspect, accept, or reject materials submitted by a contractor.

The contractor's inspector also examines the condition of government-furnished property being returned by a contractor.

contract surgeon. (CS) A civilian physician or surgeon who performs services for the AF under contract.

contrail, *n.* Short for 'condensation trail.'

contrarotating, *a.* Counterrotating.

control, *n.* (con) **1.** The authority or power exercised by a commander over a person, unit, piece of equipment, installation, or real estate, to command, direct, restrain, deploy, and use according to his own judgment as exercised within the sphere of such authority or power: See note. **2.** The guidance, direction, or restraint exercised by virtue of certain mechanisms or apparatuses, whether physical, organizational, or psychological, as in 'remote control,' 'statistical control,' etc. **3.** The guidance given an aircraft by a control tower, aircraft controller, GCI controller, or the like. **4.** The condition or status under which guidance, direction, and restraint are exercised, as in the phrases, 'to be brought under control' or 'to fall out of control.' **5.** An exercise of power in a given area or airspace so that the will of those exercising the power is carried out within that area or airspace, as in 'control of the air'; also an exercise of power over a person or a government so that the will of those exercising the power is carried out. See **air control,** sense 1. **6.** A lever, wheel, switch, cable, or other device by which the movement of another part or device is initiated, continued, or stopped. **7.** *pl.* In specific senses: **a.** That complete system of levers, pulleys, pedals, control surfaces, cables, throttles, booster motors, and other like or associated instruments and equipment by means of which control (sense 2) is exercised over the direction, movement, attitude, power, and speed of an aircraft; or in some contexts, that system used for control over the attitude and movement alone. **b.** Those devices

in the cockpit of an aircraft for moving only the control surfaces. **c.** The control surfaces of an aircraft. **8.** Sometimes *capitalized.* Short for 'control tower,' 'air traffic control center,' or any other activity exercising control.

In sense 1, control, as such, is jurisdictional, administrative, operational, or technical, or it may consist of different combinations of these, depending upon the kind and degree of control authorized. Like command (which see), control is not unlimited, for it is subject to law, regulation, and custom. Under normal assignments, jurisdictional, administrative, and operational controls are exercised by a single commander, and in cases where units are attached, operational control and administrative control are sometimes exercised by a single commander. In those instances where administrative control is exercised by one commander and operational control by another, with logistic support sometimes provided by still another, the line of demarcation between operational and administrative controls is not always easy to determine. The terms, however, have validity even when agreements between or among commanders become necessary to clarify the issues. In the case of jurisdictional control it remains always with the commander to whom the persons, units, or things are assigned.

In sense 1, see **administrative control, jurisdictional control, operational control,** and **technical control.** In sense 2, see **command control,** sense 1, **cost control, cruise control, cyclic pitch control,** and **guided-missile control.** In sense 3, see **ground control.**

control, *v. tr.* To exercise control over a *person, unit, thing, act, deed, movement,* or any other thing subject to control.

Meaning of the verb 'control' varies with the nature of the things controlled, and is therefore subject to definition in the same terms as the noun 'control' (which see).

control and reporting center. An operational center immediately subordinate to an air control center responsible in a certain area for control and reporting of aircraft and certain warning services. Formerly called 'tactical air direction center.' See **air control center,** note.

control area. A locality of given dimensions over which air traffic control is exercised. See **controlled airspace.**

control board. Any board or surface containing devices and indicators to aid in controlling machinery or equipment; a control panel.

control booster. Any device providing additional power for moving a control surface. See **booster motor.**

control cable. A wire or cable either leading from a control in the cockpit of an airplane to the control surfaces, or a wire or cable connecting two or more control surfaces. Cf. **control line.**

control center. Any installation or activity from which a given operation or series of operations is controlled, as in 'air defense control center' or 'tactical air control center.'

control channel. An electrical or radio-frequency channel through which, or by means of which, control is exercised.

control column. A steering column of a particular type used in certain airplanes, consisting of a wheel (or the equivalent) mounted at the upper end of a lever, the wheel being turned to operate the ailerons, the lever being pushed forward or pulled back to operate the elevators. Cf. **control stick.**

control communication system. In an air-defense situation, that system comprising all elements of communication necessary to order ground-alert aircraft into the air, to transmit instructions to airborne aircraft by ground personnel or flight leaders, and to govern passive defense agencies and antiaircraft artillery batteries.

control depot. A shipment control depot.

control force. Any force exerted or acting upon the control surfaces of an aircraft.

A control force may be exerted by a pilot or by aerodynamic forces acting upon the control surfaces.

control force measuring system. An assembly of dynamometers, amplifiers, and indicators used to measure the control forces during a flight test.

control force reversal. A phenomenon in which aerodynamic forces act upon control surfaces in such a manner that a pilot must operate his controls in reverse order to get the desired result.

control grid. The grid of a vacuum tube to which direct current voltage is applied to control the current of the anode. See **cutoff,** *n.*, **grid,** *n.* (sense 4).

The term 'control grid' arises from the necessity of distinguishing between this grid and the suppressor grid or screen grid in tubes having four or more electrodes. In three-electrode tubes, or triodes, the control grid, being the only grid present, is usually called simply a 'grid.'

controllability, *n.* A quality of an aircraft or other vehicle that makes for effectiveness and ease of control.

controllable-pitch propeller. A variable-pitch propeller so constructed that its blade angle may be changed to either one of two angles by the pilot from the cockpit while the propeller is rotating. Also called a 'controllable propeller.'

control lag. The time lag between the pilot's thrust on a control stick in a helicopter and the response by the rotor.

controlled airdrome. An airdrome at which air traffic control service is provided.

controlled airspace. An airspace of defined dimensions within which air traffic control is exercised. See **control area, control zone.**

controlled-devices countermeasure. Usually *pl.* Any electronic countermeasure (which see) against guided missiles, pilotless aircraft, proximity fuzes, or similar devices.

controlled interception. An interception during which the friendly aircraft are directed from an air or surface station.

controlled item. Any item of supply the distribution of which is specially monitored by a central authority.

Controlled items are normally items which are scarce, exceptionally costly, highly technical, or peculiar to certain units or missions.

controlled line. In a computing gunsight system, an imaginary line the direction of which is directly determined by the operator or servomechanism when tracking a target and used for reference.

controlled materials plan. A plan whereby the distribution to claimants of basic critical materials, as aluminum, copper, steel, and steel alloy, is controlled and allocated by a central agency.

controlled mosaic. A mosaic formed by combining two or more aerial photographs of a uniform scale oriented with respect to one another and fitted to points of reference appearing on the photographs, such points corresponding with known locations on the ground.

controlled source. *Intelligence.* A source of information available when need arises and responsive to the direction of an intelligence center.

controlled spin. A term sometimes applied to a normal spin.

controller, *n. Specif.* Short for 'aircraft controller' or for any one of the species of aircraft controller.

controller circuit. A circuit used to pass air defense information from the air defense controller of one installation to the air defense controller of another installation.

control lever. A control stick or the lever part of a control column.

control line. A line or cable leading from the control car of an airship for operating the control surfaces or other controls. Cf. **control cable.**

controlling plane. A control surface.

control net system. A system of control, homing, and direction-finding stations that locates and directs friendly fighters toward approaching enemy aircraft, working in conjunction with a radar system that detects, locates, and plots the position of the enemy aircraft.

control of the air. 1. A kind of control by which a nation is able through its own relative strength to maintain a dominant position with respect to air power and national air capacity, and to exert through this strength desired influence on the actions of another nation or nations either in peace or war. **2.** In a restricted sense, the physical control of airspace through the use of military air vehicles.

Although the terms 'control of air' (sense 1) and 'air superiority' are sometimes used as synonyms, the former has many implications that the other does not have. First, 'control of the air' does not necessarily imply the existence of physical conflict, and second, its application is not restricted to a purely military situation. Control of the air is exploited in peacetime, when, for example, an air force employs transport air vehicles to alleviate human suffering. Such control is dependent upon the active use of transport air vehicles and air terminals and possibly upon passive use of a superior fighting force; such control is based upon an understanding of air power in its economic and political implications, as well as upon its purely military implications. Control of the air is also exploited when, as a result of the effects of having air forces in-being, diplomats are placed in a favorable position of strength in their negotiations with other nations. Thus control of the air arises from an understanding of air power first, then from the creation of different types of equipment suited to the purposes of those possessing control of the air. It is global in nature but in its exercise air vehicles themselves need not be employed over all parts of the globe.

In sense 2, control of the air through force is relative. Seldom may such control be considered absolute because of the limitations of equipment, personnel, and facilities. Control of the air, however, is considered to be exercised when, by the use of energy and purposeful action, the air force is able to carry out whatever mission is required by the situation.

control panel. A surface or panel on which switches, rheostats, indicators, and the like are located for controlling and supervising electrical equipment.

control pedestal. A stand located between a pilot and copilot and having radio controls and other controls mounted on it.

control point. 1. a. In air navigation, a check point (which see). **b.** In amphibious operations, a position marked by a buoy or vessel as an aid to navigation for boats and vessels of the attack force. **2.** A radio station transmitting flight information for the control of air traffic. **3.** A point or level in an administrative or operational procedure at which control is exercised. **4.** *Aerial photog.* A point on a photograph, the actual position of which is known, used as a reference in assembling a controlled mosaic. **5.** A position along a route at which information and instructions are given for the regulation of supply or traffic.

control rod. 1. A rod for transmitting movements from the controls in the cockpit to the control surfaces of an aircraft. Cf. **control cable. 2.** A control stick or column.

control rotor. An auxiliary rotor, other than an antitorque rotor, by means of which a helicopter can be guided in flight.

control spoiler. A spoiler.

control stick. A lever used to control the altitude and movement of an airplane, used esp. in fighters.

In a fixed-wing airplane, the control stick moves the elevators by its back-and-forth movement and the ailerons by its side-to-side movement, and is distinguished from a control column (which see).

control-stick switch. A switch on a control stick that may be used for firing guns, releasing bombs, operating trim tabs, or the like.

control surface. 1. In a broad sense, any movable airfoil used to guide or control an aircraft, guided missile, or the like in the air, including the rudder, elevators, ailerons, spoiler flaps, trim tabs, and the like. **2.** In restricted usage, one of the main control surfaces, i.e., the rudder, an elevator, or an aileron.

In certain usage, the term (sense 1) has been made to include the vertical and the horizontal stabilizers. To avoid ambiguity, the phrase 'main control surface' is sometimes used for the restricted sense.

control tower. A facility at an airfield, usually a tower with its special equipment, for controlling the movement of airdrome traffic and for controlling ground vehicles in the takeoff and landing area; the personnel operating this tower.

control trimming tab. A trim tab.

control vessel. In an amphibious operation, a vessel from which waterborne traffic is directed to and from the beach. See **control,** *n.*, sense 3.

control wheel. The wheel on a control column.

control zone. An airspace of given dimensions, extending upward from the surface and including airspace of one or more airdromes, within which additional rules, other than those governing flight over control areas, apply for the protection of air traffic.

ConUS (*auth abbr*). 'Continental United States.'

conv (*auth abbr*). 'Convalescent.'

Convair, *n.* [*Con*solidated *V*ultee *Air*craft.] Used in the names of aircraft, as in *Convair B-36* or *Convair Liner 240.*

Convair XFY-1. An experimental delta-wing fighter developed by Convair for the Navy, and designed to take off and land vertically, the tail assembly and the delta wing being so designed as to bear the weight of the airplane. Also called 'Pogo.'

This airplane, powered by the twin-turbine Allison T-40 turboprop engine with counterrotating propellers, was first flown 2 Nov 1954.

convection, *n. Meteorology.* The vertical movement of a limited body of air; the process that causes this movement.

Convection consists of the rising of relatively warm, light air, and the sinking of relatively cold, heavy air. In addition to this process, identified as *thermal convection,* some meteorologists recognize *mechanical convection,* in which air rises on the windward side of an obstacle and falls on the leeward side.

convection current. *Meteorology.* A current caused by convection, esp. thermal convection; a thermal.

convective cell. A thunderstorm cell.

convective instability. *Meteorology.* The condition of a body of air having a distribution of temperature and moisture in such a manner that lifting of the body will cause it to become unstable. Also called 'potential instability.'

convening authority. A person authorized to convene the members of a board or committee. See **appointing authority,** esp. note.

conventional, *a.* **1.** Generally used; most often seen. Said of airplanes, tools, methods, etc. **2.** Sanctioned by tacit or explicit agreement. Said of a weapon, method of war, etc.

This term is relevant to developments; what is conventional today is outmoded tomorrow; what is unusual or unsanctioned today may be the usual or the customary tomorrow.

conventional airplane. A powered airplane of a design that reflects the usual kind of construction or appearance.

This term is a point-of-view term. For those living in the years between 1903 and 1925, it signified a biplane; for those living through WW II, it signified a propeller-driven monoplane; for those living in 1950, the term became ambiguous, signifying either the propeller-driven or the jet-propelled fixed-wing monoplane, or both. Some users in 1955 applied the term to the jet, reciprocating engine, turboprop, and helicopter airplanes.

conventional bomb. Any nonatomic bomb designed primarily for explosive effect, as distinguished from a chemical bomb, fragmentation bomb, incendiary bomb, or other special-purpose bomb.

conventional explosive. A nonatomic explosive.

conventional warfare. 1. Warfare conducted without the use of bacteriological, chemical, or atomic weapons. **2.** Warfare conducted without resort to guerrilla forces, to the use of evasion and escape procedures, or to the employment of subversive action. See **unconventional warfare.**

convergence, *n.* The act or state of two or more things tending toward the same point; *specif.* in meteorology, the condition existent when winds blow from different directions toward the same place.

convergency, *n. Specif.* The drawing together of any two meridians from the equator toward the pole.

convertiplane, *n.* Also **convertaplane** or **convertoplane.** An aircraft so built that it can perform, at the will of the operator, as any one of two or more different types of vehicles, esp. an aircraft that can be adjusted to fly either as a fixed-wing airplane or as a helicopter or autogiro.

convl (*auth abbr*). 'Conventional.'

convn (*auth abbr*). 'Convenient' or 'convenience.'

Conv't (*abbr*). 'Convertible,' in designations of Naval aircraft.

cookie, *n.* A large bomb. *Slang.*

cook-off, *n.* The accidental and spontaneous discharge of, or explosion in, a gun or firearm, caused esp. by an overheated chamber or barrel igniting a fuze, propellent charge, or bursting charge.

coolant, *n.* Any substance used to cool, esp. a liquid or gas used to cool any kind of engine.

cooling drag. An aircraft drag caused by the air-

flow that is taken into an aircraft and used for cooling an engine.

cooling fin. Any one of a number of vanes machined around a cylinder on an air-cooled engine in order to offer more surface area to the flow of cooling air.

cooling power. The amount of power required in an aircraft engine to compensate for cooling drag.

coop, *n.* A cockpit or cockpit canopy. *Slang.*

cooperation, *n.* **1.** The willing participation of two or more persons, units, or forces in carrying out jointly an action in order to achieve an objective of common interest, or to assist in achieving an objective of special interest to one (or more) of the persons, units, or forces; willing participation on the part of a single member of such a jointly operating group of persons, units, or forces. See **air support,** note. **2.** A principle of war embodying the thesis that success in war requires voluntary and spirited teamwork on the part of individuals, units, services, and allies (if any). **3.** Short for 'air cooperation' (which see in both senses), 'air-ground cooperation.'

In certain military situations, cooperation rather than the unity-of-command principle is relied upon to unify action.

cooperative mission. *Specif.* An air mission in air support of surface units.

Cooper bomb. A small, streamlined bomb developed by the British and used by the Allies during WW I.

coord (*auth abbr*). 'Coordinate' or 'coordination.'

coordinate, *n.* (coord) Any one of two or more magnitudes that determine position; *specif.,* in *pl.,* geographical coordinates. See **celestial coordinate, geographical coordinate.**

coordinate, *v.* **1.** *intr.* To carry out coordination *with* a person or a department. **2.** *tr.* To clear an *action* by coordination.

coordinate code. A code referring to coordinates on a map or chart by letters or numerals other than those printed on the map.

coordinate system. Any system that uses coordinates for establishing a position. See **fixed coordinate system** and **moving coordinate system.**

coordinating staff. In certain staff organizations, a group of staff officers who direct and coordinate the main staff actions of the command, as those of personnel, intelligence, operations, and maintenance or supply. Also called a 'general staff' (which see, sense 2).

coordination, *n.* (coord) *Specif.* The act of informing a department or person of a course of action so that he can either fit his own actions into the proposed course of action, or take steps to modify the proposed course of action to make it fit into his own.

coordination control. In joint or combined operations being conducted without a joint commander in direct command, a control delegated by a higher authority to the commander of one of the services authorizing him to decide what missions proposed by the other services should be carried out.

This term was first used in the Korean War on 8 Jul 1950 to delegate to the CG, FEAF, a prerogative considered to belong to CINCFE. The control thus delegated remained in effect throughout the war, said by a USAF evaluation board after the war to be 'a cumbersome make-shift.'

coordinative staff. A coordinating staff.

copilot, *n.* (CP) **1.** A pilot on certain aircraft who assists the first pilot in the performance of his duties. See **first pilot, pilot,** *n.,* senses 1 and 2. **2.** *transf.* An automatic pilot.

copter, *n.* Short for 'helicopter.' *Colloq.*

COR (*auth abbr*). 'Combat Operations Report.'

coriolis acceleration. An acceleration of a moving object, such as an airplane, to the right or left caused by coriolis force.

coriolis error. An error in a sextant observation, caused by coriolis force displacing the bubble in a bubble sextant.

coriolis force. [After Gaspard Gustave de *Coriolis* (1792–1843), French mathematician.] A deflecting force exerted (1) by the rotation of the earth upon any object in motion, as an airplane, bullet, air particle, or automobile, diverting the object to the right of velocity in the northern hemisphere, and to the left in the southern, or (2) by the rotation of a plane surface, as that made by a rotor blade, upon any object on the rotating plane.

Coriolis force is the force that tends to oscillate a rotor blade when flapping exists; also, a person tilting his head in a spinning Bárány chair will experience a sensation of falling, caused by coriolis force.

corkscrew, *n.* **1.** The action or performance of an airplane following a flight path resembling a corkscrew, as in a spiral or tailspin. **2.** *Specif.* An evasive maneuver performed in an airplane in which the plane is made to turn sharply right and left, alternately.

corkscrew, *v. intr.* Of an airplane or persons within: To turn, twist, or spiral, as in a corkscrew.

corl (*auth abbr*). 'Corollary.'

Cornell, *n.* A popular name for the PT-19, PT-23, or PT-26. See **primary trainer.**

corner, *n. Electronics.* A sharp bend in a wave guide.

corner reflector. A combination of metallic surfaces mutually intersecting to form an inside

corner, especially designed to reflect electromagnetic radiations efficiently.

A corner reflector may be used as a marker or as a component of a certain kind of antenna, or it may be used to render another object or location more conspicuous to radar search.

corollary unit. A former unit of the AF reserve assigned to a regular AF unit for training. Discontinued as of 30 June 1952.

A corollary unit was the same type of unit as the regular unit (or parent unit) and differed from a reserve unit trained at an AF reserve training center in that it was trained by, and utilized the equipment and facilities of, the parent unit.

Coronado, *n.* A popular name for the PB_2Y.

corp (*auth abbr*). 'Corporation.'

corporal, *n.* (cpl) **1. a.** In the US Army, an enlisted rank or person immediately above private first class, corresponding to airman 1st class in the AF. **b.** In the Marine Corps, an enlisted rank or person immediately above private first class, corresponding to airman 2nd class in the AF. **2.** Formerly in the AF, an enlisted rank or person immediately above private first class, but now designated 'airman 2nd class.'

corps, *n.* **1.** *General.* Any large identifiable group, as a cadet corps or AF officer corps. **2.** One of several groups of officers identified by the professional training of its members, such as the Medical Corps, the Veterinary Corps, etc. **3.** A major branch of an arm or service, as the US Army Signal Corps. Now *hist.* in the AF. See **air corps. 4.** An Army tactical unit usually made up of two or more divisions.

Written 'corps' in both singular and plural, but the 's' is not silent in pronunciation of the plural.

corr (*auth abbr*). 'Correspond' or 'correspondence.'

correction, *n.* (crtn) *Specif.* In air navigation, a quantity or factor applied to a sextant observation to compensate for any given observation error. See **observation error.**

correction Z. Z correction.

correlation, *n.* The act or procedure of systematically connecting in detail the relations between or among documents, plans, items of information, or the like. Cf. **collate,** *v.*, **coordination,** *n.*

correspondence, *n.* (corr) **1.** Any communication between persons by letter, indorsement, personal memorandum, or other written message. **2.** *Collective.* The letters, messages, and the like that pass between persons.

In a strict sense, correspondence does not include AF regulations, general orders, formal directives, or other publications.

corridor, *n.* *Specif.* Short for 'air corridor.'

Corsair, *n.* A popular name for the F_4U in its various models. Also applied to the SBU-1, the V-142, and certain other airplanes produced by Chance Vought.

cort (*auth abbr*). 'Escort' in combinations only.

COS (*auth abbr*). 'Civilian occupational specialty.'

cosecant-squared beam. An electronic beam that gives a coverage of approximately uniform intensity for both near and far objects.

The intensity of the cosecant-squared beam over a part of its pattern in a specified plane, usually the vertical, is proportional to the square of the cosecant of the angle measured from a specified direction in that plane, usually the horizontal.

cosmic noise. Radio static caused by an extraterrestrial phenomenon, such as sunspots.

cosmotron, *n.* An apparatus similar in purpose to the bevatron but on a smaller scale.

cost, *n.* That which is paid or sacrificed to gain or acquire something.

In fiscal practice, cost is usually measured in terms of money, but also in terms of material or labor expended. In operations, cost is measured in terms of the personnel and materiel sacrificed, of a position relinquished, of morale sacrificed, or of an objective abandoned.

cost accounting. An accounting system that records, classifies, summarizes, and predicts the costs of goods, services, functions, and activities, or the costs of operating programs and organizations; the keeping of this system.

Cost accounting is set up to show, for example, the separate costs of labor, materials, and overhead, or costs assignable to different organizations, or costs predictable under standard conditions.

cost control. The control over costs of operation that arises by virtue of cost accounting.

Through cost control, standard operating costs may be determined, which information may be used in planning, operating, and controlling AF activities from the standpoint of cost.

cost-plus-fixed-fee contract. A contract in which the government agrees to reimburse the contractor for costs incurred in producing the articles or performing the services covered by the contract, and to pay a fixed fee in addition. Often called a 'CPFF contract.'

COTA (*auth abbr*). 'Confirming telephone or message authority of.'

coulomb friction. A force or friction developed in certain electrical parts, as in a commutator or brush, which is opposite in direction to the direction of rotation or movement.

counterair, *n.* That part of an air force charged with, or engaged in, meeting the threat of a hostile air force. See next.

counterair, *a.* **1.** Of weapons, tactics, or operations: Designed to be used against aircraft or air operations. **2.** Of air attacks, operations, or missions: Directed against an enemy's air force in an effort to achieve control of the air.

counter-air-force, *a.* Counterair.

counterattack, *n.* An attack made in response to an enemy attack.

A counterattack may be made to regain losses, to neutralize or weaken the power of an attack, or to make reprisal only.

counterbalance, *n. Specif.* That portion of a balanced surface (which see) lying forward of the hinge line.

counterfire, *n.* **1.** Gunfire delivered in answer to the gunfire of an attacker. **2.** Gunfire intended to destroy or neutralize enemy weapons. *Army.*

counterintelligence, *n.* The activities taken to prevent enemy intelligence from accomplishing its mission; any organization carrying out such activities.

counterpoise, *n. Electronics.* A conductor or system of conductors used as a substitute for ground in an antenna system.

counterrecoil, *n.* The movement of the recoiling parts of a gun back to their normal position after firing.

counterreconnaissance, *n.* (crecon) Those activities designed to prevent enemy reconnaissance.

counterrotating, *a.* Of a rotating mechanism: Having two sets of blades or the like mounted coaxially and revolving in opposite directions. Also called 'contrarotating.' See **torque,** *n.*

countersabotage, *n.* Those activities designed to prevent sabotage.

Countersabotage is a part of the mission of the counterintelligence organization.

countertorque, *n.* A force opposing torque.

coupler, *n. Electricity.* A part used to connect two circuits.

courier, *n.* **1.** A special messenger or carrier. **2.** An airplane used in a courier service; also the regularly scheduled flight of such an airplane. Hence, *to send by courier.*

courier service. *Specif.* A service in which an airplane makes a regularly scheduled flight for the accommodation of passengers or the delivery of letters, small packages, etc.

course, *n.* (crs) **1.** In air navigation, a planned route or direction of flight by reference to a line on the earth. See note. **2.** A line of flight taken. **3.** A beam in a radio range which if followed keeps an aircraft on course. **4.** *Education.* **a.** A unit of a curriculum. **b.** A series of lectures, seminars, study periods, examinations, etc., leading up to the granting of a certificate of graduation, as in 'Air Weapons Course,' 'Air War College Course,' etc.

In sense 1, the course may be in reference to any directional line on or near the earth, such as that of a radio beam or a meridian. See **compass course, magnetic course, true course.**

Also in sense 1, the word is used in phrases: *To alter course,* to change from one course to another, with or without change of destination; *to set course,* to head an aircraft so that it will pursue the course desired; *to be on course,* to be flying along the course planned.

course light. A light projected along the course of an airway.

An airway beacon may be provided with two course lights that flash the number of the beacon in code; course lights are also colored to indicate whether the beacon is near either a lighted or unlighted airport, or to indicate if no airport is nearby.

course line. 1. A line representing the planned course of an aircraft. **2.** A line of position as plotted on a chart, lying parallel or almost parallel to the planned course of an aircraft, and showing whether the aircraft is to the right or left of the course. Cf. **speed line.**

course-line computer. An airborne electronic device that continually computes an aircraft's position in terms of its departure from course and its distance from destination. Also called an 'offset-course computer.'

The course-line computer works in conjunction with omnirange and distance-measuring-equipment transmissions.

course-line deviation. The departure of an aircraft from its planned course, expressed as a measurement of the difference between the planned course and the aircraft's track.

course made good. A resultant direction of flight shown by a straight line between the departure point and the point of the last fix. See **track made good.**

course of action. A sequence of actions designed to accomplish, or to help to accomplish, a job or mission; a scheme, plan, or line of conduct.

course selector. A navigational instrument, manually operated, that determines the course being flown by reference to a VHF omnidirectional radio-range station; the dial of this instrument.

court-martial, *n.* (CM) A military court for the trial of persons subject to military law; a trial by such a court. In the *pl.,* 'courts-martial.'

The types of courts-martial are the general court-martial, the special court-martial, and the summary court-martial (which see under separate entries).

court-martial, *v. tr.* To try a *person* in a military court.

court-martial order. A publication announcing the result of a trial by court-martial, or the mitigation, remission, suspension, or vacation of a sentence by a general or special court-martial.

The two kinds of court-martial orders are the *general court-martial order* (GCMO) and the *special court-martial order.* These terms are often capitalized.

court of inquiry. A body or board appointed to investigate military transactions, or imputations, or complaints against military personnel.

A court of inquiry is a fact-finding body only and is not a court of judgment.

courts-martial jurisdiction. The authority of a commander to convene courts-martial for the trial of persons assigned to his own command or of persons attached to his command for administrative support or control; the sphere of authority within which such authority is exercised.

Courts-martial jurisdiction over attached persons is

exercised, or not exercised, according to the terms of attachment. See **attach,** *v.*, note.

coventrize, *v. tr.* To bomb a *city* from the air so as to inflict large-scale destruction upon it similar to the German destruction of Coventry, England, during WW II. *Colloq.* Also 'coventryize.'

cover, *n.* **1.** That which conceals or protects, such as darkness, a topographical feature, a bank of clouds, a shell barrage, or a deceptive move. **2.** *Specif.* **a.** The protection given to a surface area or force, or to a force of airplanes in the air, by maintaining fighter or other airplanes in the air to repel or divert attack, esp. air attack. **b.** The airplanes giving, or designated to give, this protection. See **escort,** *n.*, **air cover.** **3.** Aerial reconnaissance; *specif.* in aerial photography, the photographic coverage of any given area; also, the photographs taken of that area. **4.** In covert intelligence or in evasion and escape, an agent or person who assumes an identity other than his real one; the assumption of this identity.

cover, *v. To cover into the treasury,* to be recorded in the treasury. Said of an amount or fund. See **appropriation refund** for example of use.

coverage, *n.* The extent to which something is reviewed, observed, or recorded, esp. the extent to which intelligence or photography covers a particular target or flight course, as in 'greater coverage was provided by radar.'

cover plan. A false plan promulgated to conceal an actual plan, but under which operations may proceed toward the accomplishment of the actual plan.

cover story. A fictitious personal history utilized by an evading airman forced down in enemy territory.

covert, *a.* [In the services, the first syllable of 'covert' is usually pronounced as a rime of 'go.'] Under cover; secret.

covert intelligence. Intelligence arising from information gleaned by covert operations.

covert operation. A secret or undercover operation conducted by one power against another.

covert propaganda. Propaganda issued from a falsified or concealed source. Also called 'black propaganda.'

cover trace. A sheet of tracing paper laid over a map or chart upon which a flyer traces the route he has followed on a mission.

covey, *n.* A formation of airplanes. *Colloq.*

cowl, *n.* A cowling.

cowled, *a.* Of an aircraft engine or other component: Covered with a cowling.

cowl flap. One of several shutters arranged around certain air-cooled-engine cowlings, which may be raised or lowered to regulate the flow of air around the engine.

cowl-flap angle. The angle of a cowl flap, measured in inches of gap or degrees of clearance.

cowl gill. A cowl flap. *British.*

cowling, *n.* A covering of metal, wood, or other material placed over or around an aircraft component or section for directing and regulating the flow of cooling air, for streamlining, or for protecting the part or section covered; *specif.*, an engine cowling (which see).

See **NACA cowling, ring cowling.**

cowl ring. Any broad or narrow ring-shaped engine cowling. See **ring cowling.**

CP (*abbr*). **1.** *auth.* 'Copilot.' **2.** *auth.* 'Command post.' **3.** (Sometimes **C. P.**) 'Center of pressure.'

cp (*auth abbr*). 'Camp.'

cpbl (*auth abbr*). 'Capability' or 'capable.'

CPC (*abbr*). **1.** 'Crafts, protective and custodial' as formerly used by Civil Service in job classification, as in *CPC-1*, etc. **2.** 'Civilian personnel circular.'

CPD (*auth abbr*). 'Civilian personnel division.'

CPFF (*auth abbr*). 'Cost-plus-fixed-fee.'

CPL (*abbr*). 'Civilian personnel letter.'

cpl (*auth abbr*). 'Corporal.'

CPM (*abbr*). 'Combat air patrol mission.'

CPO (*auth abbr*). 'Civilian personnel office(r).'

CPR (*auth abbr*). 'Civilian personnel regulations.'

CPRC (*auth abbr*). 'Civilian Payroll Circular.'

cps (*abbr*). 'Cycles per second.'

cptr (*auth abbr*). 'Carpenter' or 'capture.'

CPX (*auth abbr*). 'Command post exercise.'

CQ (*abbr*). **1.** *auth.* 'Charge of quarters.' **2.** By extension, 'a person in charge of quarters.'

CR (*abbr*). **1.** *auth.* 'Commendation Ribbon.' **2.** *auth.* 'Crossroads.' **3.** 'Change release.'

C/R (*abbr*). 'Certificate of retirement.'

cr (*abbr*). 'Career' or 'cruise.'

C.R.42. A single-seat, biplane fighter developed by Fiat and used by Italy during WW II. Popularly called the 'Freccia' (Arrow).

crab, *n.* **1.** The motion or maneuver of crabbing. **2.** *Aerial photog.* The deviation or offset of an aerial photograph with respect to the flight line.

crab, *v.* **1.** *tr.* To turn an *aircraft* partly into the wind to compensate for drift. **2.** *intr.* Of an aircraft or persons within: To fly forward and sideward simultaneously; to turn partly into the wind to offset sideward movement or drift.

crack, *v.* **1.** *tr.* To open slightly the *throttle* of an aircraft engine preparatory to starting the engine. **2.** *To crack up.* **a.** *tr.* To crash an *aircraft* by accident. **b.** *intr.* Of an aircraft: To crash by accident.

crackup, *n.* An act or instance of cracking up.

cradle, *n.* The stationary part of a cannon, esp. of a 20 mm aircraft cannon, in which the recoiling parts move and by which the cannon is fastened to a mount. See **engine cradle.**

CRAF (*abbr*). 'Civilian reserve air fleet.'

Craig Air Force Base. An AF base at Selma, Alabama, named for Lieutenant Bruce K. Craig, a test pilot killed in 1941.

cranked wing. An inverted gull wing.

crankshaft, *n.* A shaft driven by a crank; *specif.*, the shaft of an internal-combustion reciprocating engine by which reciprocating motion is changed into rotational motion.

crash, *n.* An act or instance of crashing; the scene of a crash.

crash, *v. tr.* and *intr.* To fly an *aircraft* against the earth or sea (or other body of water), or against an object on the surface so that the aircraft is damaged or destroyed. Also *intr.* in reference to aircraft or persons within. Cf. **collide,** *v.*

crash, *a.* Done with overriding speed. See **crash program.**

crash ambulance. An ambulance that stands by in case of a crash or crash landing.

crash boat. A motor boat used for rescue work in the event of aircraft crashes or forced landings in water.

crash crew. A crew trained for rescue work and fire fighting in connection with aircraft crashes.

crash helmet. A sturdy, padded helmet worn for protection, esp. for an aircraft crash. Sometimes called a 'hard hat.'

crash intelligence. 1. Intelligence developed from the study of crashed aircraft, whether friendly, enemy, or neutral aircraft. **2.** Often *capitalized.* An organization or activity providing this intelligence.

crash-land, *v.* **1.** *tr.* To land an *aircraft* in such a manner that a crash results, esp. to land an airplane with the wheels retracted. **2.** *intr.* Of aircraft: To land so that a crash results. See next.

crash landing. A landing during which a crash occurs, esp. a landing made in an airplane with its wheels retracted; the action of making such a landing.

In most official AF contexts, a crash landing is distinguished from a ditching (which see).

crash-locator beacon. An electronic beacon carried on a plane and designed to emit signals automatically in the event of a crash to lead searchers to the scene of the crash.

crash pad. A pad or cushion placed around the edge of a cockpit or elsewhere in an airplane as a guard against head injury.

crash position. A station a crew member occupies aboard a plane in the event of a crash, crash landing, or ditching.

crash program. A program set up under the pressure of an urgent requirement, emphasis upon speed being the principal consideration even though the effects of such speed may be harmful to other existing programs.

crate, *n.* An old or little valued airplane. *Slang.*

crater, *v. tr.* **1.** Of a person: To make craters on a *runway* or other area by dropping bombs on it. **2.** Of bombs: To make craters on a *surface.*

Crawfish (*code*). A code name for a type of electronic bomb release by which the leader of a formation may simultaneously release all the bombs carried by the aircraft in the formation.

craze, *v. intr.* Of a plastic, ceramic, or other material: To set up or develop a multitude of small surface cracks. Hence, **crazed,** *a.*, and **crazing,** *n.*

Crazing may be caused by extremes of temperature, and it may also be caused in plastics by certain cleaning fluids.

CrC (*auth abbr*). **1.** 'Crew Chief.' **2.** *Caps.* 'Control and reporting center.'

CRDF (*abbr*). **1.** 'Cathode-ray direction finding.' **2.** 'Canadian radio-direction finding/finder.'

crecon (*auth abbr*). 'Counterreconnaissance.'

credit sortie. A sortie (which see, sense 1) for which an aircrew, unit, or aircrew member receives credit towards completion of a tour of duty or towards qualifying for an Air Medal.

See also **crew credit sortie.**

credit system of supply. A system under which definite quantities of supplies are allocated organizations or installations for a prescribed period of time, the supplies being furnished as requisitioned and charged against the credit given by the allocation.

creep, *n.* An undesirable play or movement, or a tendency thereto, in a mechanism.

creeps, *n.* A set of symptoms associated with aeroembolism, in which a flyer suffers itching or tingling skin sensations, warm and cold flashes, and sometimes skin rash and irritation in the eyes.

crepuscular rays. Solar rays made distinguishable by dust particles in the air when the sun is shining upon them from behind a mountain or cloud or from near or below the horizon.

cresceleration, *n.* A progression of velocity increase or decrease per unit of time, in which each successive velocity increase or decrease is raised to a given power; the rate of such velocity increase or decrease.

For example, a velocity increase from 10 fps in the first second to 1,000 fps in the next second would be cresceleration to the third power. Cresceleration may also be expressed in G's.

crest cloud. A cloud, stationary in position, that may occur along the crest of a long mountain ridge, caused by the upward deflection of humid winds and their consequent cooling by expansion. Also called 'helmet cloud.'

crew, *n.* A detail or team manning or serving a piece of equipment or performing specific duties; *specif.*, short for 'aircrew.' Cf. **ground crew.**

Sometimes the crew of an aircraft is considered not to include the pilot, as in 'the pilot and his crew.' Except in such context, however, the pilot is a member of the crew.

crew, *v. tr. Specif.* To man an *aircraft* with, or as, an aircrew.

crew chief. (CrC) A noncommissioned officer who supervises a ground crew of aircraft mechanics.

In some instances a crew chief may serve also as an aircrew member.

crew credit sortie. A credit sortie (which see) given an aircrew.

crewman, *n.* (crmn) A member of a crew, esp. of an aircrew.

crewmate, *n.* A fellow member of a crew.

crew member. (cr/m) An individual serving on a crew; *specif.*, short for 'aircrew member.'

crews assigned. The complete number of aircrews assigned a unit, whether or not any members thereof are physically present for duty.

crews available. The assigned crews physically present within a unit and ready for duty.

crew-served, *a.* Of an aircraft, weapon, or other piece of equipment: Manned or operated by a crew.

CrewTAF (*abbr*). 'Crew Training Air Force.'

crim (*auth abbr*). 'Criminal.'

critical altitude. 1. The maximum altitude beyond which an aircraft engine cannot maintain normal rated power, or, in some contexts, beyond which it cannot maintain military rated power. **2.** The maximum altitude beyond which the propulsion system of a guided missile will not perform satisfactorily.

In sense 1, the critical altitude may be otherwise defined as the maximum altitude at which a supercharger can maintain a pressure in the intake manifold equal to the pressure existing in the engine without a supercharger during operation at sea level under normal rated power.

critical angle of attack. The angle of attack of an airfoil at which the flow of air about the airfoil changes abruptly in such a manner that lift is sharply reduced and drag is sharply increased. Also called the 'stalling angle of attack.' Cf. **burble point.**

critical closing speed. In wind-tunnel tests, the airspeed at which an open parachute begins to squid, i.e., close or collapse into longitudinal shape.

critical escape altitude. The highest altitude from which a man without a pressure suit and emergency oxygen bottle can safely bail out and fall freely to the upper critical parachute-opening altitude.

This altitude varies according to such circumstances as the physical condition of the person escaping, or the energy expended during the escape. Two factors are involved. One is the factor of the blood boiling because of extremely low atmospheric pressure; the other is the factor of a lack of oxygen tension in the atmosphere.

critical hop. In air transportation, the leg of a scheduled flight over which the allowable cabin load (sense 1) is the least.

critical item. An essential item which is in short supply or expected to be so.

critical leg. In air transport, that part of an air route that puts the greatest strain upon an aircraft because of distance, weather, or other factors.

The critical leg governs the allowable cabin load which may be carried over the route.

critical mach number. A mach number representing the speed of a given aircraft at which a mach number of one is attained at any local point on the aircraft. See **transonic speed.**

critical mass. The minimum mass, when related to a specific shape and environment, of a fissionable material necessary to sustain a nuclear chain reaction.

critical material. Any raw or partially-processed material essential in a national emergency and not expected to be available in quantity, quality, or time to meet requirements unless stockpiling action is taken. Cf. **strategic material.**

critical opening speed. In wind-tunnel tests, the airspeed during deceleration at which a parachute in longitudinal or squid form opens fully.

critical parachute-opening altitude. Either of two altitudes that marks a limit for safe bailout.

See **lower critical parachute-opening altitude, upper critical parachute-opening altitude.**

critical point. A point in flight from which it is equally quick to proceed to the destination or to return to the point of departure.

See **point of no return.**

critical speed. Any speed at which a given aircraft performance will change or end, e.g., the lowest speed of an aircraft at which proper control can be maintained; or the highest speed, either on the ground or in the air, at which an aircraft can be driven with safety; or the speed of an aircraft as a whole when a local point on the aircraft reaches the speed of sound.

critical target. A target which, if damaged or destroyed, would seriously hamper the war effort of a nation.

critical zone. In bombing, a zone in which the bomber must maintain direction if the bombs are to be dropped accurately.

critique, *n. Specif.* A critical discussion of a mission just performed, emphasizing mistakes and successes.

cr/m (*auth abbr*). 'Crew member.'

crmn (*abbr*). 'Crewman.'

CRO (*abbr*). 'Cathode-ray oscilloscope.'

Cross (*auth abbr*). 'American Red Cross' in combinations only.

cross, *v. tr. To cross the controls,* to use the controls of an airplane in ways opposite to the normal.

'To cross the controls' may mean either (1) to move the controls so that the control surfaces are in positions opposite to those they occupy during normal flight maneuvers, e.g., to depress the right aileron while holding right rudder, in order to correct certain movements of the aircraft, or (2) in flying an airplane on its side or in a bank, to use one control surface to fly in a certain direction when normally another control surface would have been used, e.g., to use the elevators to control the horizontal movement of the airplane (with respect to the earth) and the rudder to control its vertical movement.

cross bearing. A bearing drawn so as to cross another bearing, thus providing a fix at the point of intersection.

cross-country, *n.* A cross-country flight.

cross-country clearance. An aircraft clearance for a cross-country flight.

cross-country flight. A flight across land from one geographical location to another, involving landing at one or more places other than the point of original departure and requiring the practice of pilotage or other means of air navigation.

ICAO considers seventeen nautical miles the minimum distance for a cross-country flight.

cross-deck pendant. An arresting wire (which see) across the deck of an aircraft carrier.

crossfire, *n.* **1.** Two or more intersecting lines of gunfire. **2.** Interference in a telegraph or telephone circuit caused by another circuit.

cross hair. An inscribed line or a strand of hair, wire, silk, or the like used in an optical sight, transit, or similar instrument for accurate sighting.

A cross hair may or may not cross another strand or line.

crossing course. The horizontal course of an aircraft crossing the range of an antiaircraft gun, but not passing directly over the gun.

crossover, *n.* The action of an aircraft passing laterally over the top of another aircraft or target sleeve.

crossover tube. A tube between the combustion chambers in certain jet engines, permitting the passage of flame for ignition purposes.

cross-procurement, *n.* The procurement by one service of materiel for any or all of the other services.

cross-reimbursement, *n.* The reimbursement made by one service to another for materiel received or services performed.

cross section. A cutting, or esp. the representation of a cutting, taken at right angles to the axis of a wing, fuselage, or other object, and showing its appearance or shape.

cross-service, *n.* The service performed by one of the armed forces for any or all of the others. Hence, **cross-servicing,** *n.* and *a.*

crosstalk, *n.* Speech or signals transmitted in one circuit or channel being heard in another.

cross-tee, *adv.* Across the wind. See **wind tee.**

crosstrail, *n.* The minimum distance between the point of impact of a bomb and the track of the bombing plane, assuming that the plane stays on course after releasing the bomb.

cross-training, *n.* Training in two or more specialties within a career field.

crossunder, *n.* The action of an aircraft passing laterally under another aircraft or target sleeve.

Attrib., as in *crossunder fire,* fire delivered from a flexible gun in an airplane performing a crossunder.

crosswind, *n.* A wind blowing from such direction that its principal effect is to cause a given aircraft to drift or move laterally; a wind that blows across something. See **headwind,** *n.*

Attrib., as in *crosswind takeoff, landing,* etc.

crosswind, *adv.* Also **cross-wind.** In a direction across the wind, as in 'he landed crosswind.'

crosswind component. A component aerodynamic force, i.e., the crosswind force.

crosswind force. A component aerodynamic force acting perpendicularly to the forces of lift and drag.

crosswind landing gear. A landing gear with castoring wheels which, when on the ground, align themselves in the direction of the aircraft's motion, although the longitudinal axis of the aircraft may be at an angle to the run or roll, as in a crosswind.

crosswind leg. That leg of a landing pattern in which an airplane flies crosswind.

crown, *n.* The upper part of a parachute canopy.

crowsfoot, *n.* In balloon and airship riggings, a system of diverging short ropes for distributing the pull of a single rope; the pattern resulting when the strands at one end of a cord are spread out and cemented to a fabric.

CRP (*abbr*). 'Control and reporting post.'

CRPL (*auth abbr*). 'Central Radio Propagation Laboratory.'

crs (*auth abbr*). 'Course.'

CRT (*abbr*). **1.** *auth.* 'Combat readiness training.' **2.** 'Cathode-ray tube.'

crtgc (*auth abbr*). 'Cartographer.'

crtn (*auth abbr*). 'Correction.'

cruise, *v. intr.* Of aircraft: To fly at considerably less than maximum speed, esp. at cruising speed, at an approximately constant altitude.

cruise control. The operation of an aircraft with the object of obtaining the greatest practical efficiency for a given flight or mission.

Cruise control consists essentially of power settings for cruising speed, as well as propeller settings when propellers are used, so as to attain the maximum efficiency in terms of the desired speed or range. See **cruising speed.**

cruise control chart. A chart or graph showing the proper power settings to use for the desired cruise control for a given flight or mission.

cruising altitude. A given constant altitude, measured from sea level, which an aircraft maintains when cruising.

cruising ceiling. That altitude above which the rate of climb of a given airplane at a given weight is less than 300 feet per minute using normal rated power. See **combat ceiling.**

cruising radius. The distance from base that an aircraft starting with full tanks can cruise and return allowing a fuel reserve for safety: See note.

In those cases where it is possible to land and refuel before returning to base, the cruising radius is defined as the distance that the aircraft can cruise before landing to refuel. In most cases the aircraft is required to refuel while still having a fuel reserve, amounting, for example, to either 25% of the total fuel capacity or to enough for additional flying of 45 minutes.

cruising speed. A speed in level flight that results from a power setting recommended by the manufacturer for cruising under a given set of conditions.

Cruising speed at a given power setting varies with altitude and the direction of winds. Selection of the power setting is determined by the purpose, i.e., for maximum range, optimum operating efficiency, or the like.

cruit (*auth abbr*). 'Recruit' or 'recruiting,' in combinations only.

crushing stress. Compression.

crypta (*auth abbr*). 'Cryptanalyst,' 'cryptanalytic,' or 'cryptanalysis.'

cryptanalysis, *n.* (crypta) The process by which a cryptographic system is discovered by analysis of cryptograms intercepted, or by analysis of the machine that sends the cryptograms.

cryptanalyst, *n.* (crypta) One trained in cryptanalysis.

crypto (*auth abbr*). 'Cryptographer,' 'cryptographic,' or 'cryptography.'

cryptocenter, *n.* A center for the encrypting and decrypting of messages.

cryptoclearance, *n.* A security clearance given a qualified person to handle cryptographic materials.

A cryptoclearance is distinguished from other security clearances, i.e., possession of a Secret or Top Secret clearance does not of itself entitle one to handle cryptomaterials.

cryptocustodian, *n.* An officer or warrant officer in charge of and directly responsible for the issuing and accounting of cryptographic material.

cryptodistribution and accounting. The action of distributing cryptographic materials throughout the services by and through the agencies and offices established for that purpose and of accounting for such materials in compliance with security regulations.

Cryptographic materials are prepared by the National Security Agency and distributed to the proper agencies in each service.

cryptogram, *n.* A message encrypted either in code or cipher.

cryptographer, *n.* (crypto) One who encrypts or decrypts messages, or has a part in making cryptographic systems.

cryptographic system. A cryptosystem.

cryptography, *n.* (crypto) The art or science concerned with encrypting and decrypting.

cryptosecurity, *n.* The safeguarding of cryptographic systems, equipment, or the like.

cryptosystem, *n.* Any cipher or code employed in encrypting and decrypting.

crystal, *n.* (xtal) *Electronics.* Any specially selected, ground, and treated piece of quartz, silicon, germanium, or other material used in combination with other parts for such purposes as rectification or frequency control.

crystal correlation data. The data required for the fabrication of a specified part containing a crystal for use in electronic equipment.

crystallization, *n. Specif.* The act or process of becoming brittle. Said esp. of metals.

Normally, crystallization is an undesirable phenomenon in a metal, and may be caused by subjection of the metal to extremes of heat or cold.

crystal oscillator. An oscillator in which the frequency is controlled by a crystal.

CS (*abbr*). **1.** *auth.* 'Contract surgeon.' **2.** *auth.* 'Current series.' **3.** 'Coaling station,' as part of a symbol. **4.** 'Cryptographic system.' **5.** *auth.* 'Allied Forces, Southern Europe' (code).

C/S (*abbr*). **1.** 'Certificate of service.' **2.** 'Chief of staff.' See **CofS** (*auth abbr*). **3.** 'Call signal.'

Cs (*abbr*). 'Cirrostratus.'

cs (*auth abbr*). 'Commissaryman.'

CSA (*abbr*). 'Commercial-service authorization.'

CSC (*abbr*). **1.** *auth.* 'Civil Service Commission.' **2.** 'Civilian screening center.'

C-scan, *n.* **1.** A scan for presentation on a C-scope. **2.** A C-scope. *Popular.*

C-scope, *n.* A cathode-ray tube or screen that displays a signal with elevation indicated by a vertical displacement of the signal on the screen and azimuth by a horizontal displacement. See prec.

CSG (*auth abbr*). 'Combat service group.'
CSigO (*auth abbr*). 'Chief Signal Officer.'
CSM (*abbr*). 'Close-support mission.'
CST (*abbr*). 'Central Standard Time.'
CSta (*abbr*). 'Consolidating station.'
CT (*abbr*). **1.** *auth.* 'Communications technician.' **2.** *auth.* 'Combat team.' **3.** 'Crosstrail.'
CTAF (*auth abbr*). 'Crew Training Air Force.'
C.T.C. (*abbr*). 'Carbon tetrachloride.'
CTCC (*auth abbr*). 'Continental Division, Transport Control Center (Hq).'
CTE (*auth abbr*). 'Commander, Task Element.'
CTF (*auth abbr*). 'Commander, Task Force.'
CTG (*auth abbr*). 'Commander, Task Group.'
ctg (*abbr*). 'Cutting.'
ctl (*abbr*). 'Control.' See **con** (*auth abbr*).
ctr (*abbr*). **1.** 'Cutter.' **2.** 'Center.' See **cen** (*auth abbr*).
CTS (*auth abbr*). 'Courier Transfer Station.'
CTU (*abbr*). **1.** *auth.* 'Commander, Task Unit.' **2.** 'Combat training unit.'
Cu (*abbr*). 'Cumulus.'
cub, *n.* **1.** A generic term for any of several closely-similar types of small, light, cabin monoplanes used by all of the services for liaison, observation, or training. **2.** *Capitalized.* A two-seat, light cabin monoplane developed by C. G. Taylor in the 1930's.

The original cub (sense 2) was also called a 'Taylorcraft,' or 'Taylor Cub.' Also called the 'Piper Cub' after the Piper Aircraft Corp., successor of Taylor Aircraft Co.

cubage, *n.* Cubic content.
cuban eight. A flight maneuver in which the airplane begins a loop, makes a half-roll after passing the top of the loop (which puts the plane right side up and in a steep dive), and immediately repeats the process, thereby describing a flight path suggestive of the figure eight.

The cuban eight is often practiced to develop the technique used in the Immelmann.

cuff, *n.* A propeller cuff (which see).
culture, *n.* *Cartography.* Any works of man represented on a map or chart.
cumulonimbus, *n.* (Cb) A heavy mass of cumuliform cloud with great vertical development, the summits of which rise in the form of mountains or towers, the upper parts having a fibrous texture and often taking the shape of an anvil. See **anvil cloud.**

Cumulonimbus has an ice or water content and occurs at altitudes between 1,000 to 40,000 feet. It may deliver rain, snow, or soft hail.

cumulus, *n.* (Cu) A thick, massive cloud formation of water content, having a flat base and piled on top to resemble mountains or towers.

Cumulus has a mean lower level of 1,600 feet.

cumulus boa. A stream of low cumulus that embraces a mountain peak so as to suggest a boa neckpiece. Also called a 'boa cumulus.'
cunb (*abbr*). 'Cumulonimbus.' See **Cb** (*abbr*).
Cuno filtering unit. A kind of oil filter for aircraft engines. Named for the Cuno Engineering Corporation, Meriden, Connecticut.
curdled sky. Sky covered by a form of cirrocumulus (which see, note).
curly torpedo. A torpedo which steers a sinuous course among the ships of a convoy to increase the chance of a random hit.
curr (*auth abbr*). 'Current' or 'currency.'
current, *n.* (curr) **1.** A stream or flow of water or air. See **air current. 2.** A flow of electricity in a conductor.
current dead. Dead persons who have not yet received final disposition, and for whom the AF assumes responsibility in regard to recovery, care, and burial.

Those dead that are exhumed and returned from overseas, as in the period after WW II, are not considered current dead.

current intelligence. Intelligence of immediate value to the users, which is usually furnished to them without complete evaluation and interpretation in order to avoid delay.
current limiter. *Electricity.* A device that restricts the flow of current to a certain amount, regardless of applied voltage.
currently effective aeronautical rating. An aeronautical rating currently being utilized in the AF, and used as the basis for placing a person on flying status.
current records. Records that are kept up to date and frequently used.
curriculum, *n.* *Education.* The various courses taken together offered in a school or in a particular department of the school; a program of studies.
cursor, *n.* [L. 'runner.'] A calibrated transparent slide that moves back and forth over another surface so as to enable accurate readings.
curtain, *n.* *Specif.* A smoke concentration laid down between friendly and enemy lines.
Curtiss, *n.* [*Curtiss* Aeroplane and Motor Company or *Curtiss*-Wright Corporation.] Used in the names of aircraft, as in *Curtiss P-40, Curtiss Mohawk, Curtiss Commando* (the C-46).

Glenn Hammond Curtiss (1878–1930), American aviator and inventor.

curve of pursuit. A pursuit curve.
cushion, *n.* Anything in excess of requirements, as in 'a cushion of productive capacity' or 'a cushion of supplies.'

This term is often used in connection with bombing enemy targets. If the enemy's production or strength is damaged very little by striking at a given target, the enemy is said to have 'cushion' or 'target cushion.'

CUSRPG (*auth abbr*). 'Canada-United States Regional Planning Group.'

cust (*auth abbr*). 'Custodian' or 'custody.'

custody receipt. A receipt signed by a person stating that he has received custody of certain property or funds, and has accepted responsibility for such property or funds. See **responsibility,** *n.*, sense 3.

The custody receipt has replaced the memorandum receipt.

cut, *n.* In air navigation, the intersection of two lines of position; the smaller angle between those two lines.

cut, *v.* **1. a.** *tr.* To switch off an aircraft *engine.* **b.** *To cut the gun,* to close the throttle of an engine. **c.** *intr.* Of aircraft engines: To stop running. Often with *out.* **2.** *tr.* To set a time *fuze.*

cutaway, *n.* An object with a part of its covering or surface removed to show its interior construction or movements; a model or illustration of such an object.

Cutlass, *n.* A popular name for the F7U.

cutoff, *n. Electricity.* The minimum negative direct-current voltage necessary to apply to the control grid of a tube in order to stop the flow of current in the anode.

When the control grid is made negative by application of negative voltage, it opposes the action of the positive anode and tends to prevent electrons from leaving the cathode and passing to the anode, thus decreasing current.

cutoff point. A point on the trajectory of a ballistic missile or other airborne object at which the fuel is exhausted or cut off.

CV (*abbr*). **1.** *auth.* 'Collection voucher.' **2.** 'Aircraft carrier,' as used in CVA (attack), CVB (large), CVL (small), CVE (escort), CVS (seaplane). **3.** 'Combat vehicle.'

In sense 2, 'CV' is used as a code symbol more than an abbreviation. See **V** (*letter*), sense 2.

cvn (*auth abbr*). 'Convene.'

CW (*auth abbr*). 'Chemical warfare' or 'continuous wave.'

CWMTU (*auth abbr*). 'Cold Weather Materiel Test Unit.'

CWO (*auth abbr*). 'Chief warrant officer.'

CWS (*abbr*). 'Chemical warfare service.'

cybernetics, *n.* A field of comparative study concerned with the controls inherent in the nervous system and the controls of certain mechanical or electronic machines such as a digital computer.

cycle, *n.* **1.** A complete series of recurring values or events; *specif.*, the series of actions an internal-combustion piston engine must perform to operate and deliver power. See **four-stroke-cycle engine, two-stroke-cycle engine. 2. a.** *Electricity.* One positive alternation of current and one negative alternation. **b.** *Electronics.* The recurring alternation of an electromagnetic wave from one amplitude to another, beginning and ending at zero amplitude. **3.** In management parlance, a series of consecutive actions performed by a single worker. See **gang cycle.**

cycled reconditioning. A method or system of maintenance wherein aircraft are given a major overhaul and inspection at regular intervals.

cyclic control. Cyclic pitch control.

cyclic pitch control. The control exercised over a helicopter's rotor by changing the angle of attack of the rotor blades through a swashplate, as distinguished esp. from control by hub tilting; the device or mechanism for exercising this control. Also called 'pitch control' or 'cyclic control.' Cf. **direct control, hub tilting.**

cyclic rate. The rate at which a succession of movements repeats itself, applied esp. to the rate of fire of an automatic weapon; the maximum rate of fire for a given automatic weapon.

cyclogiro, *n.* Any airplane intended to derive support from airfoils rotated about an axis perpendicular to its plane of symmetry.

Up to present, this has been an experimental-type craft only.

cyclone, *n.* **1.** A circular low-pressure area over which a system of winds circulate. **2.** A storm arising from the circulation of these winds.

Cyclonic winds blow counterclockwise in the northern hemisphere, clockwise in the southern.

Cyclone engine. Any of several types of radial air-cooled aircraft engines designed and built by the Wright Aeronautical Corporation.

cyclonite, *n.* A white crystalline explosive, $(CH_2)_3N_3(NO_2)_3$, having high sensitivity and brisance. Also called 'RDX.'

Cyclonite is used with other explosives or substances to form explosive mixtures, and is used in certain bombs.

cyclotron, *n.* An apparatus for imparting high speeds to atomic particles by magnetically accelerating them in spiral paths, used esp. for bombarding atoms to produce transmutation and artificial radioactivity. Cf. **betatron,** *n.*, **bevatron,** *n.*, **cosmotron,** *n.*

cyl (*auth abbr*). 'Cylinder.'

cytohyperoxia, *n. Medicine.* Hyperoxia of a cell or cells.

cytohypoxia, *n. Medicine.* Hypoxia of a cell or cells.

CZ (*abbr*). **1.** *auth.* 'Canal Zone.' **2.** *auth.* 'Combat zone.' **3.** 'Communications zone.' See **ComZ** (*auth abbr*).

D

D (*letter*). See **Delta** (*code*).

D (*abbr*). **1.** 'Day of attack' or 'beginning date.' **2.** 'Director aircraft.' **3.** 'Drone control version,' in Naval designations of aircraft so modified. **4.** 'Douglas Aircraft Company, Incorporated,' in the designations of Naval aircraft.

This abbreviation in sense 1 is normally written in combination, as 'D + 2, 'D + 3,' etc., usually meaning 'day of attack plus 2 days,' etc., but sometimes meaning 'beginning date plus 2 months,' etc. Likewise, 'D − 2,' etc., is used.

DA (*abbr*). **1.** *auth.* 'Department of the Army.' Usually in combination, as in *DA Form.* **2.** In the USAF Security Service, 'distribution and accounting,' as used in reference to cryptographic materiel.

Daedalian Trophy. A large silver cup annually awarded the major USAF command having the lowest adjusted aircraft accident rate for each 100,000 flying hours during the preceding calendar year.

This trophy was given by the Order of the Daedalians, an organization of WW I pilots, and presented to the Army Air Corps 3 March 1937. Its award was suspended during 1941–1946. Awards are governed by AF Reg.

DAF (*auth abbr*). 'Department of the Air Force.' Often in combination, as in *DAF Special Order.*

DAFS (*abbr*). 'Duty Air Force Specialty.'

dah-dit, *n.* The sound representing the Morse Code dash and dot for the letter 'N.' See **Adcock radio range.**

DAI (*auth abbr*). 'Death from accidental injuries.'

daily, *a.* Required, done, or kept each day.

Used in special combinations, as with *activity report, aircraft gain and loss report, combat readiness report, issues, maintenance, movement orders, operations, inspections, patrols, reports, notices, sick report,* or *watch.*

daily aircraft utilization. The average number of hours flown per day by a unit's aircraft, or by an average aircraft in the unit. Hence, *daily aircraft utilization chart.*

This term requires special attention when used, because the unit's aircraft may be considered to include only in-commission aircraft in one instance, assigned aircraft in another, etc. If averaged on a 30-day basis, the total hours flown in the unit would be divided by 30 to determine the daily utilization by the unit's aircraft; it would be further divided by the number of aircraft to determine the daily utilization of the average aircraft. Cf. **aircraft inventory.**

Daimler-Benz, *n.* [After a German mfg. firm.] A German aircraft engine of WW II, used in the Messerschmitt 109 and certain other aircraft.

daisy chain. A string of two parabundles attached to each other in which the parachute of the upper bundle is opened by the aircraft static line, the lower by a static line attached to the upper bundle.

daisy-cutter, *n.* An antipersonnel fragmentation bomb fuzed to burst on impact. *Slang.*

Dakota, *n.* A popular British name for the C-47, called 'Dakota I,' or the C-53, called 'Dakota II.'

DALVP (*auth abbr*). 'Delay enroute authorized chargeable as ordinary leave provided it does not interfere with reporting on date specified and providing individual has sufficient accrued leave.'

dam (*auth abbr*). 'Damage' in combination only.

damage, *n.* An injury short of complete destruction inflicted upon persons, equipment, or installations.

Damage is sometimes classified as either 'minor' or 'substantial'; damage to friendly aircraft is either 'minor' or 'major.'

damage, *v. tr.* To cause injury short of complete destruction to *aircraft, airfields, materiel,* and the like.

damage assessment. Official evaluation of damage done to a target.

See **bomb damage assessment, detailed damage assessment.**

damage assessment table. A device for the graphic presentation of the results of damage assessment.

damaged, *a.* Of aircraft, materiel, installations, or the like: That sustain injury short of destruction.

This word is officially used in crediting gunners and fighter pilots with a score for damaging hostile aircraft, as '2 destroyed, 3 damaged.' A plane in flight is considered damaged when partially destroyed but still able to return to base.

damaged aircraft. An aircraft partially destroyed, but subject to repair. See prec., note. See **lost aircraft.**

damage potential. The damage which a projectile or explosive can be expected to do to a specific target.

damage radius. The distance at which, in terms of experience or theoretical calculations, certain types of damage can be expected from a specified type of explosive.

damp, *v. tr.* Frequently with *out.* **1.** To cause an oscillating *needle* or other *indicator* to come to rest. **2.** To cause an oscillating *object,* as an airplane or rocket, to cease oscillating. **3.** To absorb *shock.*

damper, *n.* A device that damps something, esp. a device on the main rotor head of a helicopter for absorbing the shock of the rotor blades when starting or stopping, and for maintaining smooth rotation of the blades during flight. See **shimmy damper.**

damping, *n.* The action of reducing the oscillations of a wavering body, or bringing an oscillating instrument to rest.

Damping may be brought about by direct action of the pilot or operator, or by use of specialized instruments, or by friction.

danger area. A surface area over which some invisible hazard to aircraft in flight exists, so designated by the Civil Aeronautics Administration.

danger cone. A cone or pennant on the cable of a captive balloon to warn aircraft of the presence of the cable.

DAO (*abbr*). 'Division ammunition officer.'

DAR (*abbr*). 'Daily Activity Report.'

daredevil, *n.* A pilot who takes great or unnecessary risk, as in stunt flying.

dark adaptation. Adjustment of the eyes to darkness.

Darky System. A network of low-power radio stations used in England during WW II to advise pilots of their approximate location.

dashboard, *n.* That place in a cockpit, usually a panel directly in front of the pilot, upon which most of the gauges and instruments required for the operation of the plane are located.

data sheets. Printed forms or sheets of paper containing a listing of the data desired on a specific subject.

date of departure. The official date or date of record on which an officer or airman leaves a station to go on leave or to another station.

date of rank. (DR) The date, according to regulations, from which an officer or airman holds a specified rank.

The date of rank for a temporary promotion differs from the date of rank for a permanent promotion.

DATO (*auth abbr*). 'Disbursing and transportation office.'

datum line. A base line or reference line from which calculations or measurements are taken.

datum plane. The plane or level reference surface in relation to which altitudes, contour lines, or the flight altitude for a photograph, are calculated. Cf. **standard datum plane.**

Dauntless, *n.* A popular name for the A-24.

Davis-Monthan Air Force Base. An AF base at Tucson, Arizona, named for Lieutenant Samuel H. Davis, killed in 1921, and for Lieutenant Oscar Monthan, a bomber pilot, killed in Hawaii in 1924.

Davis wing. A narrow-chord wing having comparatively low drag and a stable center of pressure, that develops lift at relatively small angles of attack.

David R. Davis designed this wing. It was used on the B-24 during WW II.

DAWG (*abbr*). 'Dynamic air war game.'

dawn, *n.* The twilight period before sunrise: See note. Also used in combination, as in *dawn attack, dawn patrol, dawn scout, dawn-to-dusk patrol.*

The twilight period varies in different latitudes and altitudes, and is subject to different interpretations. The guide used in the AF for determining the period is the *Air Almanac,* published three times each year.

dawn-to-dusk, *n.* The time interval from morning twilight until evening twilight. Also attrib., as in *dawn-to-dusk patrol, watch,* etc.

day, *n.* **1.** The period between sunrise and sunset; the hours of visibility. **2.** The period from one midnight to the next.

In sense 1, 'day' often connotes 'visual' in such combinations as *day attack, day bombardment, day mission.* See **day bomber, day fighter, day interceptor.** The AF uses the term in sense 2 in connection with personnel leaves or passes, in calculating per diem payments, etc.

day-and-night fighter. A fighter airplane equipped to fly and fight under all conditions, including instrument-flight conditions. See **all-weather fighter, night fighter.**

day bomber. In WW II, a heavily armed and heavily armored bomber designed for speed and combat capabilities, and for use during the day. Attrib., as in *day-bomber squadron.*

day bombing. Bombing during daylight; visual bombing.

day fighter. A fighter airplane designed primarily for use under conditions where the target can be seen. Also attrib., as in *day-fighter group, patrol.*

day interceptor. A fighter plane designed primarily for use under conditions in which hostile aircraft can be seen.

daylight, *n.* The light of day, esp. between sunrise and sunset that permits objects to be seen at a distance; also the time between sunrise and sunset.

Esp. used as an attrib. in *daylight attack, bomber, bombing, bombing defense, bombing raid, drop* (parachute), *embarkation hours, mission, offensive, operation, precision bombing, raider, strategic bombing, sweep, visual bombing.*

day of fire. A term formerly used for a basic load of ammunition for one day.

day of supply. The estimated average daily re-

quirement for various supplies by a person or force.

'Day of supply' is the unit of measure used in establishing theater reserves.

day room. A room set aside for the use of airmen during their leisure time.

A day room is generally presumed to have magazines, newspapers, books, games, and the like for leisure use.

DB (*abbr*). **1.** *auth.* 'Disciplinary barracks.' **2.** 'Depth bomb.' **3.** 'Day bombardment,' as formerly used (*circa* 1920) in designations of US Army aircraft. **4.** 'Long range bomber' (*Dal'nii bombovos*), used in the names of Russian aircraft from 1925 to 1945, as in *DB-3*, *DB-3F*, etc.

D/B (*auth abbr*). 'Deposit book.'

DB-7. An early version of the A-20 sent to England and France.

DBW (*abbr*). 'Differential ballistic wind.'

DC (*auth abbr*). 'Dental Corps,' 'defense counsel,' or 'District of Columbia.'

DC-3. The commercial designation of the C-47.

DC-4. The commercial designation of the C-54.

DC-6. The commercial designation of the C-118.

d.c. (*abbr*). 'Direct current.'

DC/AS (*abbr*). 'Deputy Chief, Air Staff.' *Obs.*

DCG (*abbr*). 'Deputy Commanding General.'

DCofS (*auth abbr*). 'Deputy Chief of Staff.'

DCS (*abbr*). 'Deputy Chief of Staff.' *Authorized* in combination: **DCS/C**, Deputy Chief of Staff, Comptroller; **DCS/D**, Deputy Chief of Staff, Development; **DCS/M**, Deputy Chief of Staff, Materiel; **DCS/O**, Deputy Chief of Staff, Operations; **DCS/OA**, Deputy Chief of Staff, Operations and Administration; **DCS/P**, Deputy Chief of Staff, Personnel; **DCS/PR**, Deputy Chief of Staff, Plans and Research.

DC/S (*abbr*). 'Deputy Chief of Staff.' *Obs.* See prec.

DD (*abbr*). **1.** 'Department of Defense.' **2.** *auth.* 'Dishonorable discharge.' **3.** 'Double drift,' as used in a navigator's log.

D/D (*abbr*). 'Donation on discharge.' See **donisch** (*auth abbr*).

DDALV (*auth abbr*). 'Days' delay en route authorized chargeable as leave.'

DDALVAHP (*auth abbr*). 'Days' delay at home or leave address within the continental limits United States authorized chargeable as leave, provided it does not interfere with reporting date specified. Advanced leave may be authorized where necessary.'

DDALVP (*auth abbr*). 'Days' delay en route authorized chargeable as leave provided it does not interfere with reporting on date specified and provided individual has sufficient accrued leave.'

D-day, *n.* The unnamed day on which hostilities, an operation, or an exercise commences, or is to commence; in mobilization planning, the day hostilities commence.

If more than one date of reference is mentioned in a single plan, any letter (except M) may be used in addition to D. $D+2$ normally means 'D-day plus 2 days,' but in mobilization planning it usually means 'D-day plus 2 months.' See **D** (*abbr*), **M-day,** *n.*

D-day force. A force in-being, ready to take offensive action on D-day, applied esp. to an air force.

DDD (*auth abbr*). 'Deadline delivery date.'

DE (*abbr*). **1.** 'Date of entry' or 'date of extension.' **2.** 'Deflection error.'

deactivate, *v. tr.* To discontinue or inactivate a *base* or *unit*. Hence, **deactivation,** *n.*

'Deactivate' is not considered good usage in the AF. See **activate,** *v.*, note.

dead ahead. 1. Straight ahead. **2.** Used as a noun, as in 'it is right of dead ahead.'

dead angle of fire. An angle from which an air gunner is unable to direct fire.

This may be due to equipment failure or to a blind spot (which see).

dead-beat stability. A condition characteristic of, or induced in, certain suspended objects, as the needle of an aperiodic compass, causing the object, when disturbed, to return to its original position without oscillation.

deadheading, *n.* The return flight of cargo transport aircraft from destination without cargo or payload; the riding of personnel in aircraft on such a flight. Hence, **deadhead,** *v.*

deadline, *n.* The date or hour at which an action or undertaking must be completed.

deadline, *v. tr.* To designate an *airplane* or other *equipment* as unfit for a particular use.

An airplane, for example, may be deadlined for parts or for repairs. To be deadlined for one purpose, as for combat use, is not necessarily to be deadlined for another purpose.

deadman, *n.* An improvised anchor used in soft or frozen ground, as on an airstrip, consisting usually of a buried log or pole.

dead reckoning. (DR) The procedure or method of estimating an aircraft's position in the air at any time by a calculation involving all or part of the following data: earlier known position, elapsed time, speed, heading steered, and effect of wind. Also attrib., as in *dead-reckoning navigation*. See **basic dead reckoning, precision dead reckoning.**

dead space. 1. A space within the range of a weapon but not covered by fire because of intervening obstacles, the nature of the ground, or the characteristics of the trajectory of the weapon. **2.** A space or zone within range of a radio transmitter, but in which a signal is not received.

dead-stick landing. A landing without engine power.

dead storage. *Specif.* Storage for, or of, motorized equipment not to be used for at least 30 days; the equipment put in such storage.

DEAL (*abbr*). 'Detachment equipment authorization list.'

debarkation, *n.* (debk) The unloading of troops, equipment, or supplies from a ship or an aircraft.

debarkation point. The point at which troops, equipment, or supplies are unloaded from a ship or aircraft.

debk (*auth abbr*). 'Debark' or 'debarkation.'

debrief, *v. tr.* To obtain intelligence information from a *person* in a debriefing session.

debriefing, *n.* [Coined as an opposite of 'briefing.'] The action or procedure of obtaining intelligence information from a person returned from enemy, or potentially enemy, territory. Attrib., as in *debriefing session.*

Debriefing may take the form of an interrogation or of a verbal report, or of both.

debug, *v. tr.* To eliminate *bugs* from AF equipment. *Slang.*

Dec (*auth abbr*). 'December.'

dec (*abbr*). 'Declination.'

decalage, *n.* The difference between the angular settings of a biplane's wings.

An angular setting is measured by the acute angle between the wing chord and the longitudinal axis of the aircraft. See **longitudinal decalage.**

Decca, *n.* A British hyperbolic navigation system similar in geometrical principle to loran.

deceleration, *n.* The action or process of velocity decrease; the rate of velocity decrease, often measured in G's.

'Deceleration' is coming into use as a substitute for 'negative acceleration.' The concept behind it is relevant to problems involved in aircraft design and the gravity forces felt by flying personnel.

deceleration device. Any of several devices for slowing down an aircraft either in flight or during the landing roll.

This term covers such devices as the deceleration parachute, the flaps on an airfoil, the arresting gear on an aircraft carrier, etc.

deceleration error. An error in a magnetic compass or bubble sextant reading caused by mechanical inertia during a decrease in velocity of the aircraft. Cf. **acceleration error.**

deceleration parachute. A special parachute attached to an airplane or glider and opened usually during landing roll to help slow the aircraft down. Also called a 'braking chute,' or 'brake parachute,' or 'drag chute.'

decelerative force. Any of the forces directed against an aircraft or its parts, or against persons in an aircraft, resulting from the linear or angular deceleration of the aircraft.

decelerator, *n.* Any device for slowing down a moving object, esp. one used to slow down a jet aircraft in flight.

deceleron, *n.* An aileron speed brake used esp. on certain types of jet aircraft.

decelostat, *n.* A device used with the brakes during landing roll to allow maximum braking without skidding.

deception, *n.* **1.** A precept of war that advantage can be attained by deceiving, confusing, and misleading the enemy. **2.** The action of deceiving, confusing, or misleading the enemy.

decimal file. A file organized according to a modified version of the Dewey-Decimal system; used esp. in the offices of adjutants general.

decipher, *v. tr.* To convert an enciphered *message* into plain text by means of a cipher. Cf. **decrypt,** *v.*

deciphering machine. A machine that reverses the action of an enciphering machine, and converts an enciphered message into plain text.

decision, *n.* **1.** A mental determination on a line of action, esp. by a commander after making an estimate of the situation. **2.** A clear and concise statement of the line of action determined upon.

decisive, *a. Specif.* **1.** Of a time or place: At which air superiority or some other issue is determined. **2.** Of an action: That results in gaining or losing air superiority or some other military advantage.

deck, *n.* **1.** A floor or level in a ship or large aircraft; sometimes short for 'flight deck' (which see). See **upper deck. 2.** A flight altitude just above the surface, as used in such phrases as 'to hit the deck,' 'to fly on the deck,' 'to dive toward the deck,' etc. *Colloq.*

In sense 1, in reference to the upper deck of an aircraft carrier, this word is used in such combinations as *deck arrester gear, deck-based airplane* (as distinguished from a land-based airplane), *deck catapult, deck run,* etc.

In sense 2, this word is used in such combinations as *deck level, deck-strafing sweep,* etc.

See **cloud deck.**

deck-landing, *n.* The action of landing an airplane on a carrier flight deck. Hence, **deck-land,** *v.*

deck-level attack. An attack delivered by aircraft flying just above the surface.

deck-loaded, *a.* Of material, equipment, or supplies: Loaded on top of a ship's deck rather than in the hold.

declassify, *v. tr.* To remove the security classification from a *document, piece of equipment,* or the like. Cf. **reclassify,** *v.*

declination, *n.* **1.** The angular difference in direction between magnetic north and true north, or between grid north and true north; hence, *magnetic declination* and *grid declination* (which see as separate entries). **2.** In astronomy

and celestial navigation, the angular distance of a celestial body from the celestial equator measured through 90° and named 'north' or 'south' as the body is north or south of the celestial equator measured on an hour circle.

declination circle. A circle on the celestial sphere, representing a projection of a terrestrial parallel.

declination diagram. A three-pronged or two-pronged diagram printed on the margin of a map using a military grid.

The three-pronged diagram shows the relation of magnetic north and true north to grid north. The two-pronged diagram shows the relation of true north to magnetic north. Adjacent to the latter diagram are notes giving the grid declination for the center of each gridded area.

decn (*auth abbr*). 'Decision.'

decode, *n.* That section of a code book used in decoding a message.

decode, *v. tr.* To convert an encoded *message* into plain text by means of a code book. Cf. **decrypt,** *v.*

decoder, *n.* An electronic device in a radar beacon or in an interrogator or interrogator-responser for decoding pulsed signals.

decompression, *n.* **1.** The process of decreasing the air pressure within a chamber, cabin, or the like. See **explosive decompression. 2.** The process by which a person is subjected to, or undergoes, a decrease in pressure, as in flying to high altitudes, or in coming out of a deep underwater dive. Attrib., as in *decompression sickness, decompression test,* etc.

A third sense, the process by which a person readjusts to normal atmospheric pressure after flying at high altitudes, is considered loose usage. A person coming down from the low pressure of a high altitude is, in fact, undergoing compression or recompression.

decompression chamber. A low-pressure chamber.

decompression sickness. Aeroembolism, esp. among personnel flying at high altitudes without benefit of special equipment.

Symptoms of this sickness include the bends, visual defects, chest pains, etc.

decon (*auth abbr*). 'Decontaminate' or 'decontamination.'

decontaminate, *v.* (decon) *tr.* To remove chemical, biological, or radiological contamination from, or neutralize it on, a *person, object,* or *area.* Hence, **decontamination,** *n.*, used attrib., as in *decontamination detachment, decontamination team,* etc.

decoration, *n.* **1.** An award to an individual in recognition of heroism, or meritorious or outstanding service or achievement. **2.** A ribbon, medal, or other symbol authorized for wear by a person receiving such an award.

Decorations awarded in the AF are of a military and civilian type. In the former, and in the order of precedence, are the Medal of Honor, *Distinguished Service Cross, *Distinguished Service Medal, *Silver Star, Legion of Merit, Distinguished Flying Cross, Soldier's Medal, *Bronze Star Medal, *Air Medal, Commendation Ribbon, and *Purple Heart. In the latter are the Medal for Merit, President's Certificate of Merit, Medal of Freedom, Exceptional Service Award. Under certain conditions, civilians are also eligible for those military decorations marked with an asterisk.

decoy, *n.* Any object or action, as a dummy installation, a flying aircraft, or a raid, used to attract attention and draw enemy action away from a real target or military operation. Attrib., as in *decoy aircraft, decoy airdrome, decoy force, decoy raid,* etc.

decrypt, *v. tr.* **1.** To convert a *cryptogram* or a series of electronic *impulses* into plain text by use of an electronic machine designed for the purpose. **2.** To decode or decipher.

ded (*auth abbr*). 'Deduct' or 'deduction.'

deep penetration. *Specific.* The action of flying far into enemy territory on a military mission. Attrib., as in *deep-penetration attack, raid,* etc.

deep penetration bomb. A bomb designed for deep penetration of the target before exploding.

This bomb in WW II had a charge approximately equal to 43% of the bomb's total weight.

def (*auth abbr*). 'Defense.'

defeat, *n.* **1.** A condition or situation resulting from being overcome in combat, battle, or war, or from being forced to give up a particular objective either in reaction to military force or in reaction to economic, political, or psychosocial pressures. **2.** An instance of one such situation or the other, as in 'he suffered two defeats.'

Defeat need not be in combat alone, although the term implies loss of power in some respect. This loss may be political, economic, or military. Thus defeat for a nation implies that the nation is no longer able to pursue a national objective. This may result without any prior military engagement, as when a nation recognizes its inability to control the air, or when a nation suffers a diplomatic reversal.

defeat, *v. tr.* To force an *enemy* to give up the initiative, to withdraw, or sue for peace.

defector, *n.* One who withdraws his support from a regime, cause, person, party, or the like.

'Defector,' esp. as used in ideological warfare, is not only a less opprobrious term than 'deserter' or 'traitor,' but a more accurate term as applied to persons who break from regimes that deprive them of their freedoms or keep them in economic want. A defector may or may not give aid to the enemies of his former allegiance.

defending air. That part of an air force charged with, or engaged in, the defense of an area or of another air force.

Usage: 'We gained dominance over the defending air.'

defending aircraft. A group of aircraft charged with, or engaged in, defending an area, installation personnel, or other aircraft; also a single aircraft so charged or engaged.

defense, *n.* (def) **1.** The means of warding off or resisting attack; the measures taken or used to defend an area, installation, or fighting force.

2. The status or attitude assumed in using these means or measures.

A defense may be passive or active; composed of physical installations or dependent upon operational action.

Defense Department. The Department of Defense.

defense in depth. 1. A defense consisting of a series of defense lines or installations spaced at intervals from the front back. **2.** A defense consisting of a large rear-area space into which units may withdraw and regroup.

defense visual flight rules. Visual flight rules as applied in an air defense area.

The VFR clearance of an airplane flying in, entering, or crossing an air defense area is stamped 'DVFR.'

defensive, *n.* The condition of a force protecting itself against hostile attack; the attitude taken to resist attack, esp. in the phrase, *to be* (or *go*) *on the defensive.*

In air-against-air operations, this term connotes either a sign of air inferiority or a temporary condition of adjustment in air tactics or strategy.

defensive, *a.* See note for special AF connotations.

1. Of places: **a.** From which aircraft are sent into the air to defend an area or other aircraft, as in *defensive base, defensive forward area,* etc. **b.** That offer protection against attack, as in *defensive coastal area, defensive installation, defensive line, defensive sea area, defensive sector,* etc. **2.** Of aircraft: Used to defend an area or other aircraft, as in *defensive airplane, defensive fighter,* etc. **3.** Of airborne equipment: Used in protecting personnel or equipment, as in *defensive air armament, defensive armor, defensive gun,* etc. **4.** Of actions: Engaged in to protect, or to reduce the effectiveness of enemy attack, as in *defensive air battle, defensive air-ground operations, defensive patrol, defensive tactics,* etc. **5.** Of a military force or organization: Used in defending an area or airborne equipment, as in *defensive air force, defensive air arm,* etc.

defensive air. Same as 'defending air.'

defensive air capability. An ability of a country to defend itself against air attack.

defensive air superiority. Local air superiority limited to defensive operations. *Rare.*

defensive bomber formation. A formation of bombers arranged in such a manner that the guns from the various planes protect the entire formation.

defensive bombing. The bombing of enemy airdromes and similar installations as a measure for limiting enemy offensive capabilities.

defensive fire power. The fire power of a bomber or other aircraft used to defend itself or other aircraft, esp. against attacking planes.

defensive formation. A flight formation that permits the employment of defensive fire power from the planes in the formation.

defensive gunnery. The guns on an aircraft used for its defense; the arrangement and handling of these guns.

defensive radar. A radar designed and located to provide early warning of enemy attack. Hence, **defensive radar chain.**

defensive weapon. A weapon used for defense; in some contexts, an interceptor-fighter.

deferment, *n.* (dfr) **1.** A delay or postponement in the recall of a reservist to active duty. **2.** A delay or postponement in the induction of a recruit under Selective Service.

deferment board. A board appointed to pass upon requests for deferment.

deferred officer. An officer considered, but not recommended, by a selection board for the permanent grade of captain, major, or lieutenant colonel.

deficiency, *n.* A shortcoming, or a lack of some quality needed for meeting a requirement. Said of either personnel or equipment.

definite, *n.* A certain (which see).

'The final score was nine definites, one probable, and two damaged.'

definition, *n.* In aerial photography, a term applied to the degree of sharpness with which an image is brought out, esp. as affected by the lens.

definitive contract. A contract listing in detail the items to be furnished and stating the unit cost of each item as well as the total cost.

deflagration, *n.* The slow combustion of a low explosive, as compared to the detonation of a high explosive.

deflection, *n.* **1.** The turning aside of a moving object from a directed course by reason of an outside force being exerted upon it, as that of a bullet in a crosswind; *specif.*, in bombing, the edging side movement of a falling bomb when exposed, for example, to the force of a crosswind, causing it to drop to the side of the airplane's track. Attrib., as in *deflection axis.* **2.** *Gunnery.* The differential between the target point and the point at which a gun is aimed when the gun is moving in a direction that imparts deflection to its missile. See note. **3.** In gunnery, the lead given a projectile when aimed at a moving target. *Loose* usage. **4.** A setting on a gun or bombsight that allows for deflection and permits sighting on the target or on an offset of the target. **5.** The bending of a rotor blade in either a horizontal or vertical direction.

In the specification of sense 1, this side movement may also be brought about by poor ballistic characteristics of the bomb or by abnormal movements of the airplane at the moment of release.

In sense 2, for example, forward deflection is imparted to the missile when the waist gunner aims his guns to hit a target at right angles to the motion of the aircraft. Used attrib., as in *deflection burst, deflection shot, deflection target.*

deflection angle. 1. An angle that measures the departure of a moving object from its directed course. **2.** The angle of a deflection shot in gunnery, measured between the line of sight to

the target and the line of sight to the aiming point. Cf. **lead angle.**

deflection error. 1. In bombing, the distance between the point of impact or the mean point of impact and the center of the target measured at right angles from the line of the aircraft's approach. **2.** In artillery, the distance to the right or left of the target between the point aimed at and the burst of the projectile, or the mean point of a salvo burst.

deflection probable error. The probable bombing error due to deflection, expressed in terms of distance between two lines parallel to the line of flight and equally distant from the desired mean point of impact, within which half of the bombs are expected to fall, gross errors excluded.

defoliant, *n. Specif.* A biological agent which destroys the leaves of green plants.

defuze, *v.* Also **defuse.** *tr.* To remove the fuze from a *bomb* or other explosive.

deg (*auth abbr*). 'Degree.'

degree square. An area one full degree in latitude and one in longitude, and identified by the coordinates of the southwest corner; this area as shown on a chart or map.

An area bounded by 21° W, 22° W, 40° N, and 41° N is the degree square 2240.

de Havilland. [The *de Havilland* Aircraft Co., Ltd., a British firm.] Used in the names of aircraft, as in *de Havilland Mosquito, de Havilland Vampire,* etc. See **DH** (*abbr*).

The de Havilland Aircraft of Canada, Ltd., also builds certain de Havilland aircraft.

dehorn, *v. tr.* To defuse a *bomb. Slang.*

deicer, *n.* [Pronounced *de-icer.*] Any of several devices used esp. during flight for keeping certain surfaces of an aircraft free of ice or for removing the ice after it has formed.

Technically this term should be applied only to devices for removing ice after it is formed. See **anti-icer,** *n.*

deicer boot. 1. A rubber strip on the leading edge of an airfoil actuated pneumatically to break ice which has formed. **2.** A rubber strip on the base and the leading edge of a propeller blade over which alcohol is sprayed to prevent the formation of ice.

deicer shoe. A deicer boot.

deicing, *a.* [Pronounced *de-icing.*) Of apparatus or equipment: Used for keeping surfaces free of ice, or esp. for removing ice after it has been formed. Hence *deicing boot, deicing equipment, deicing gear, deicing paste,* etc.

del (*auth abbr*). **1.** 'Delegate' or 'delegation.' **2.** *Capitalized.* 'Delaware.'

delacct (*auth abbr*). 'Delinquent account.'

De Laval nozzle. A converging-diverging nozzle, similar to the garden-hose nozzle, sometimes used as an exhaust nozzle on a jet engine.

delay, *n.* **1.** Short for 'delay en route.' **2.** A postponement of the date for reporting by an inductee or reservist recalled to active duty.

delay-action bomb. A delayed-action bomb.

delay-action fuze. A delay fuze.

delay board. A board responsible for granting or denying delays requested by reservists recalled to active duty.

delayed-action bomb. A bomb having a delay fuze.

Delayed-action bombs may be fuzed to explode a fraction of a second or several days after impact, according to the purpose for which a delay is needed. Bombs or other projectiles having short-delay fuzes are used to penetrate targets before exploding; bombs having medium-delay fuzes are used for the safety of the plane in low-altitude bombing, so that the plane may move away from the point of impact before the detonation; bombs having long-delay fuzes are normally used to deny territory to the enemy for a period of time, or to allow successive waves of planes to drop their bombs before any of them detonate.

delayed drop. A delayed parachute jump. *Colloq.*

delayed fuze. A delay fuze.

delayed jump. A delayed parachute jump.

delayed neutron. A neutron released after the lapse of a short time interval after an atomic explosion.

It is estimated that less than 1% of the neutrons released in an atomic explosion are delayed neutrons. Cf. **prompt neutron.**

delayed parachute jump. A parachute jump in which the jumper delays pulling the rip cord of his parachute beyond the normal delay. Also called 'delayed-opening parachute jump.'

delay en route. A provision in a travel order permitting a delay of a specified time during the course of travel; the time thus provided for.

Delay en route is normally chargeable to annual leave.

delayer, *n.* A substance mixed with the propellant of a dry-fuel rocket to decrease the rate of combustion.

delay fuze. Any impact fuze incorporating a means of delaying its action after contact with the target. Cf. **time fuze.**

Delay fuzes are classified according to the length of time of the delay. See **long-delay fuze, medium-delay fuze, short-delay fuze.**

delegate, *v.* (del) *tr. Specif.* To give *authority* to a subordinate; to pass on a *function* for a subordinate unit to carry out.

delinq (*abbr*). 'Delinquent.'

deliver, *v.* (dlvr) *tr. Specif.* **1.** To drop a *bomb* upon a target. **2.** To turn over an *item* of supply to the AF supply system. Said of a manufacturer, contractor, or entrepreneur. **3.** To bring or distribute *supplies* or *equipment* to an organization; to carry *troops* from one place to another.

delivery flight. An aircraft flight for the delivery of the aircraft being flown.

delivery pilot. *Specif.* A pilot who flies and delivers an airplane to a distant point from a factory or entrepreneur.

delivery test. A flight test to determine if the airplane is ready for delivery to the AF.

Dellinger effect. *Radio.* A sudden ionospheric disturbance in the daylight portion of the earth, affecting sky-wave transmission. Named for John Howard Dellinger (1886–), American physicist.

delt (*auth abbr*). 'Delete' or 'deletion.'

Delta (*code*). An authorized word for the letter 'D.' See **Alfa** (*code*).

delta hinge. A flapping hinge.

delta wing. An airplane or wing design in which the swept-back wings, looked at from below or above, give the airplane the appearance of an isosceles triangle, the trailing edges of the wings forming one straight line to become the base of the triangle.

The delta wing is a feature of certain transonic airplanes. The delta wing is not to be confused with the flying wing.

dem (*auth abbr*). 'Demote' or 'demotion.'

demand oxygen equipment. A type of aircraft oxygen equipment incorporating a demand regulator.

demand regulator. A device used in an aircraft oxygen system to supply oxygen automatically through a mask to a flyer according to his demand, the flow being controlled according to altitude.

DEML (*auth abbr*). 'Detached enlisted men's list.'

demob (*auth abbr*). 'Demobilize' or 'demobilization.'

demolition bomb. *Specif.* A bomb that explodes after a short penetration, accomplishing damage and destruction by both blast and underground explosion. Cf. **general-purpose bomb.**

A demolition bomb had a charge approximately equal to 50% of the bomb's total weight in WW II.

demolition duty. A hazardous military duty involving the demolition or disarming of explosives or the destruction of objects or obstacles by detonating planted or fixed explosives.

demolition squad. *Specif.* A civil defense team responsible for the demolition of hazardous walls, etc., resulting from fire or bombing raids.

demonstrate, *v.* (dmst) *tr.* To put on a show of military *power.*

demonstration, *n.* (dmst) **1.** A show of military power. **2.** An exhibition of military tactics or equipment, as in 'firepower demonstration.' Cf. **maneuver,** *n.*, sense 3.

demonstration air force. An air force charged with providing demonstrations of tactics or equipment for AAF schools. Now *hist.*

demonstration ammunition. Ammunition authorized for use in approved exhibitions of firepower.

demonstration flight. A flight made to demonstrate the capabilities of an aircraft or other airborne equipment, usually with the purpose of impressing a potential enemy.

demote, *v. tr.* To reduce a *person* in grade.

demotion, *n.* (dem) The action of reducing a person in grade.

den (*auth abbr*). 'Dental,' 'dentist,' or 'dentistry.'

denial, *n.* **1.** A restriction or limitation placed upon the ability of an enemy to use a place, facility, or service. **2.** Such a restriction or limitation considered as a military objective. **3.** Such a restriction or limitation considered as a capability residing in a military force.

In sense 1, denial may result from different applications, as from blockade, occupying a strategic position, destroying an important factory, or achieving control of the air. See **military objective.**

denitrogenation, *n.* A procedure by which an individual decreases the amount of nitrogen in his body by breathing nitrogen-free gases.

This procedure is sometimes followed in an attempt to prevent decompression sickness.

denpay (*auth abbr*). 'Dental pay.'

density altitude. The theoretical altitude of any place or point in the air determined by the altitude in which its air density would place it in standard atmosphere.

density bombing. Bombing done by dropping a given tonnage of bombs onto an area, in order to make certain of striking particular targets within the area. Cf. **area bombing, precision bombing.**

dent (*abbr*). 'Dental.' See **den** (*auth abbr*).

dental clinic. In the AF, a field or base facility for the treatment of oral disease, injuries, and deficiencies that come within the scope of the dental profession.

A dental clinic normally consists of one or more dental units housed together with x-ray equipment, oral surgery instruments, and essential dental laboratory facilities.

Dental Corps. *Specif.* A corps in the AF Medical Service whose members are Doctors of Dentistry.

dental equipment assembly. An assembly of equipment and supplies required for one dental officer and assistants to render essential dental treatment.

dental inpatient. An individual who is hospitalized because of a disease or injury within the scope of dental attendance and whose best welfare requires the services of a dentist.

dental officer. An officer with an Air Force

specialty in the dental occupational field, i.e., a member of the Dental Corps.

DEP (*abbr*). 'Deflection probable error.'

dep (*auth abbr*). 'Depot' or 'deputy,' both used in combinations only.

department, *n.* (dept) *Specif.* **1.** A designation for any of the main subdivisions of the executive branch of the government, as in 'Department of Defense.' **2.** A designation for any of the three main subdivisions of the Department of Defense, as in the 'Department of the Air Force.'

Since the Department of Defense (which see) has three departments in it, a certain ambiguity inheres in the word 'department.' The Department of Defense is now considered an executive department; the others are considered military departments. Between Jul 1947 and Aug 1949, however, the subordinate departments were also called 'executive departments.'

In addition to the specific senses, this word is sometimes used in a general sense to designate certain subdivisions of the USAF, of an office, school, or the like. See **Judge Advocate General's Department, USAF.**

departmental, *a. Specif.* **1.** Of or pertaining to one of the executive departments of the government. **2.** Of or pertaining to one of the three military departments in the Department of Defense.

The ambiguity that inheres in this word may, in most cases, be cleared up only through context.

departmental printing. Printing authorized or controlled by one of the military departments. Distinguished from 'field printing.'

departmental staff organization. A type of staff organization sometimes found in smaller military units, in which the subordinate sections (called departments) are headed by specialists.

For example, an accounting and disbursing office, with a disbursing department, fiscal department, and cost-reporting department, would have three specialists, each advising the accounting and disbursing officer.

Department of Defense. (DOD) **1.** The entire military establishment of the United States. **2.** A main subdivision of the executive branch of the federal government at the seat of government in Washington, D.C., charged with the administration, management, and policy determination of the entire military establishment of the US.

Under the National Security Act of 1947, the Department of Defense (sense 1) was designated the 'National Military Establishment.' It was redesignated the 'Department of Defense' in 1949. The Department of Defense includes the Department of the Air Force, the Department of the Army, the Department of the Navy, and such military establishments and agencies as are provided for by law.

Department of Space Medicine. A department of the School of Aviation Medicine studying the applications of medicine to flight at extremely high altitudes or through space.

Department of the Air Force. (DAF) **1.** Between 1947 and 1951, the executive or military 'Department of the Air Force at the seat of government and all field headquarters, forces, reserve components, installations, activities, and functions under the control or supervision of the Department of the Air Force' (National Security Act of 1947). **2.** Since 1951, the 'executive part of the Air Force Establishment at the seat of government' (Air Force Organization Act of 1951), including the Secretary of the Air Force, Headquarters USAF, and the supporting staffs.

See **Air Force Establishment.**

departure, *n.* (dept) The action or event of an aircraft leaving a place, as in '10 departures, 2 arrivals.'

Used attributively to designate places from which aircraft depart, as in *departure air base, departure area, departure field,* etc.

departure point. *Specif.* A point on the ground or water used to mark the beginning of a flight course toward a destination.

The departure point may be a point on the runway or a point on the ground over which the aircraft starts its flight course after it has left the takeoff pattern. For rendezvoused aircraft, the departure point is the point at which they begin their flight toward their objective.

dep control. A control arrangement for a pilot to guide or direct an airplane in flight, worked out by Armand Déperdussin, an early French airplane designer prominent about 1910.

'Déperdussin ... linked the ailerons to a Curtiss-type wheel and added rudder control worked by the pilot's feet. The column's forward and back motion still moved the nose down and up, while a roll of the wheel dropped and raised the wings' (*Pictorial History of the AAF* [1947], p 32).

dependent, *n.* (depn) *Specif.* A person recognized by AF regulations as having a claim upon an officer or airman for support. Often in combination, as in *dependent housing, dependent travel,* etc.

AF regulations recognize different classes of dependents.

Deperdussin, *n.* One or other airplane designed or built by Armand Déperdussin.

M. Armand Jean August Déperdussin was a prominent figure in aviation circles from 1910 to 1912. Reported as born in Liége, Belgium, he was a commercial salesman as early as 1895. In 1910 he had an interest in a flying school in England (see **taxi,** *n.,* note), and in 1912 he was awarded the French Legion of Honor. See **dep control.**

deplane, *v. intr.* and *tr.* To leave an airplane; to put an *animal* or *person* off an airplane.

deploy, *v. tr.* **1.** To send *personnel* or *units* to combat positions, or simulated combat positions, so as to cover an extended front or area. **2.** To spread out *personnel, forces,* or *equipment,* according to a plan, so as to meet a military situation. **3.** To release or open a *parachute.* Also *intr.,* as in 'the parachute deploys.'

Hence, **deployment,** *n.,* in all three senses.

In sense 3, the parachute is conceived of as a complex of elements, such as panels, shrouds, and risers, although the singular word 'parachute' is made the object of the verb. Cf. **open,** *v.,* **stream,** *v.*

depn (*auth abbr*). 'Dependent' or 'dependency.'

deposit dose. *Specif.* The residual radioactivity deposited on the surface after a nuclear explosion,

as by water falling as rain from the base surge of an underwater atomic explosion. Also called 'contamination dose.'

depot, *n.* [The 'e' is short, as in 'echo.'] (dep) **1.** An establishment for storing supplies or records, for maintaining equipment, or for assembling and processing personnel, or for any combination of these three activities. **2.** The installation for this establishment.

See **air depot, area depot, base air depot, overseas replacement depot, records depot, zonal depot.**

depot echelon maintenance. Depot maintenance.

depot maintenance. The maintenance, repair, or modification given aircraft or other equipment requiring major overhaul or complete rebuilding of certain parts, and usually provided for only at an air depot. Formerly called 'fourth-echelon maintenance.'

The more extensive shop equipment and the higher technical skill of personnel that enter into depot maintenance distinguish it from field maintenance.

depot modification. A modification of an airplane or other equipment done at an air depot.

depot overhaul. An overhaul carried out at a depot.

depot supply. That part of an air depot organization that handles supply.

depot wing. Short for 'air depot wing.'

depreciation, *n.* In accounting, the decrease in value of tangible property as a result of use, wear, tear, age, and obsolescence, but without loss of substance; the proportion of cost represented by this decrease.

depression, *n. Specif.* The meteorological designation for an extensive area of relatively low barometric pressure.

depression angle. The vertical angle between the horizontal and a line or object pointed downward, as the angle formed by the depression of a gun barrel below the horizontal.

depressor, *n.* A flash depressor.

depressurize, *v. tr.* To release the pressure from a pressurized *compartment* of an aircraft. Hence, **depressurization,** *n.*

dept (*auth abbr*). 'Depart,' 'departure,' or 'department.'

depth, *n.* **1.** The vertical dimension from the surface downward. **2.** The extent between objects seen at a distance. See **depth perception.** **3.** The spatial extent to which defenses are provided ahead of something being defended. See **defense in depth, depth of defense.**

depth bomb. A light-case aerial bomb designed for underwater explosion, for use against ships or submarines.

Water pressure created by the explosion of a depth bomb produces the damage done to the target.

depth charge. Any charge designed for explosion under water, esp. such a charge dropped or catapulted from a ship's deck.

depth of defense. The extent of defenses, radar and AAA, through which an aircraft must fly to reach its target.

depth perception. The ability to perceive or judge depth or spatial relationships.

deputy, *n.* (dep) **1.** *General.* A person authorized to act for, or in the place of, his immediate superior. **2.** *Specif.* **a.** A title given an officer who performs the duties of his superior during his absence, and normally assumes a responsible part of his superior's workload by acting for him or in his place, as in 'the Deputy to the Commander,' or 'the Deputy to the Chief of Staff.' **b.** In certain staff organizations, a title given a staff officer subordinate to a vice commander or to a vice chief of staff, heading one of the major subdivisions of the staff, as in 'Deputy for Materiel,' 'Deputy for Personnel.'

deputy, *a.* In functional titles: Serving as a deputy to a designated official, as in *Deputy Commandant, Deputy Commanding General, Deputy Director, Deputy Finance Officer,* etc.

deputy chief of staff. (DCofS) In certain staff organizations, the title given a staff officer subordinate to a vice commander or vice chief of staff, and heading one of the major subdivisions of the staff. *Capitalized* in specific titles.

Usage approves 'deputy chief of staff, personnel' (DCS/P), 'deputy chief of staff, operations' (DCS/O), etc. See **deputy,** *n.,* sense 2b.

deputy commander. The deputy to a commander.

This officer is sometimes called a 'vice commander' if the command uses the word 'deputy' in designating one or more other titles. For example, a commander having subordinate commanders, each subordinate having a deputy commander, will designate his own deputy a 'vice commander.'

deputy commander for administration. In the double deputy type of staff organization, the title given the commander's deputy held responsible for administration.

deputy commander for operations. In the double deputy type of staff organization, the title given the commander's deputy held responsible for operations.

deputy group. A deputy staff group.

deputy staff group. A group of staff officers consisting of the deputy chiefs of staff or the deputies for intelligence, operations, etc.

derax, *n.* [Probably from *de*tection plus *r*ange plus *x*.] An early name for 'radar.'

derivative, *n. Aerodynamics.* A resistance derivative (which see).

DEROS (*auth abbr*). 'Date eligible for return from overseas.'

des (*auth abbr*). 'Desert' or 'desire.'

desalting kit. A kit containing chemicals for making salt water potable.

descend, *v. intr.* **1.** Of an aircraft: To come down under control from one altitude to a lower; to lose altitude under control. Also said of persons within an aircraft. See **climb,** *v.*, **letdown,** *n.* **2.** Of a person or thing: To drop with the aid of a parachute.

descent, *n.* The action of an aircraft in descending, esp. preparatory to landing; the coming down of a parachutist. Cf. **letdown,** *n.*

descent lane. The line of flight designated for planes to follow in making their descents preparatory to landing.

desert, *n.* An arid region. Used attributively in connection with air operations in a desert area, as in *Desert Air Force, desert flying, desert operation, desert warfare,* etc.

desert, *v.* (des) *intr.* Of a person: To leave a military post or duty without proper authority and with the intention either of not returning or of avoiding dangerous or important duty. Hence, **deserter,** *n.* (des), **desertion,** *n.* (des).

desert-tropic emergency equipment. Survival equipment designed for and provided an aircrew for use if forced down in a desert or tropic area. Sometimes referred to as 'desert-tropic equipment.'

desiccator, *n.* A unit containing a chemical which absorbs moisture from the air.

Desiccators are used to keep the air inside packing cases or pieces of equipment dry.

design, *n.* A plan or scheme by which materials may be given form so as to serve some purpose; the shape and arrangement of a thing resulting from deliberate effort to adapt substance to a purpose; *specif.*, the plan by which an aircraft or aircraft part is built.

As the design of a part is subordinate to the design of a larger part to which it belongs, so is the design of the larger part subordinate to the design of the whole aircraft, for each part must be adapted in arrangement, shape, and size to the overall design to impart desired flight characteristics or to accommodate the aircraft to the use for which intended.

design altitude. The altitude or range of altitude at which an airplane or other airborne equipment is designed to function with optimum efficiency.

designate, *v.* (dsg) *tr. Specif.* To give a designation to a *unit,* other *organization,* or *establishment.* See **constitute,** *v.*

designation, *n.* (dsg) A name, or name and number, given a unit, other organization, or establishment by appropriate orders.

designator code. A code used for identifying airmen having certain professional, scientific, or technical qualifications.

design capability. *Specif.* The capability of an aircraft provided for in its design.

design competition. A competition in which different aircraft designers submit plans and drawings for an aircraft that will meet military specifications or requirements.

design contest. A design competition.

design contract. A contract to have an airplane or other piece of equipment produced in prototype according to a given design.

designee, *n.* Short for 'mobilization designee.'

Pronounced 'dez-ig-knee.' Cf. **assignee,** *n.*

design stage. The stage in the development of an aircraft in which its design is being prepared.

design study. An analytical study showing the capabilities or flight characteristics to be expected from an aircraft, or from one of its component parts, if built to a given design.

design weight. The assumed gross weight of an unbuilt aircraft or aircraft component arrived at by adding up the weights of materials expected to go into it in accordance with the structural requirements of its design, plus the weight of its expected load. See **minimum design weight.**

desk pilot. A rated pilot assigned duty at a desk. *Slang.*

desk work. Administrative work as distinguished from flying activity.

dest (*auth abbr*). 'Destroy' or 'destruction.'

destination, *n.* (destn) **1. a.** The place set for the end of an air trip, air mission, troop movement, haul, or journey. **b.** On a flight plan (DD Form 175), the particular airfield or airdrome at which the pilot expects to land. **2.** Loosely, the target of a bombing mission. See **objective,** *n.*, sense 2.

destn (*auth abbr*). 'Destination.'

DestPt (*abbr*). 'Destination point.'

destroyed, *a.* (dest) Of aircraft, materiel, installations, or the like: Ruined beyond repair and unfit for further military use.

In air combat, an enemy aircraft is officially considered destroyed (a) when it is seen to hit the ground or sea, (b) when it is seen to break up in the air or descend in flames, (c) when it is forced to descend and is captured, or (d) when it is a single-seated plane and abandoned by bailout.

destroyer, *n. Specif.* A name occasionally applied to certain twin-engined fighter-bombers before and during WW II, as to the FW-187 and A-20.

destruction, *n.* **1.** The action of so damaging a person, force, or thing that, for practical purposes, it can no longer function in its normal or intended purpose, and cannot readily be restored

to its condition before damage was done to it. **2.** This action considered as a military objective, or as a capability of a military force.

det (*auth abbr*). **1.** 'Detach' or 'detachment.' **2.** *Capitalized.* 'Detroit.' **3.** 'Detail.'

detach, *v.* (det) *tr. Specif.* To separate a *person* or *unit* temporarily from the organization to which regularly assigned.

detachable compartment. A compartment designed to be attached to, or detached from, an airplane.

As a trailer is used with a truck, this unit is intended to be parked or unloaded without delaying takeoff of the airplane. See **pod,** *n.*, sense 2.

detachable fuselage. A detachable compartment that forms a part of a fuselage.

detachable pod. A detachable compartment.

detached organization. An organization separated from its parent organization but dependent upon it, or upon another organization, for supplies and services.

detached service. The service of a person or unit at a place other than with the organization to which assigned.

detached unit. A unit serving away from the organization to which it is assigned and to which it remains assigned.

A detached unit may function as an independent organization or it may be attached to another organization. In the latter case it may also be called an 'attached unit.'

detachment, *n.* (det) **1.** *Specif.* A part of a unit separated from its organization of assignment for duty elsewhere. **2.** Applied to each of the AFROTC organizations on college campuses. These organizations are detached from Headquarters AFROTC, and do not include the cadets (i.e., the students). Cf. **unit,** *n.*, sense 5.

detachment equipment authorization list. An extract from the UPREAL pertinent to detachments of groups or squadrons under an UPREAL.

detachment of patients. An organization within a hospital to which patients are assigned.

detail, *n.* (dtl) *Specif.* One or more individuals assigned to do a special task, usually of a temporary nature.

detail, *v. tr. Specif.* To assign an *individual* to a detail. See prec.

detailed damage assessment. A type of detailed photo-interpretation report, concerned with damage assessment.

detailed interrogation center. In a combat theater, a center usually to the rear, where certain selected prisoners of war are interrogated at length and in great detail.

detailed photo-interpretation report. A detailed study prepared by a photo interpreter, usually illustrated with annotated photographs, mosaics, or other graphic materials.

These reports cover the functional analysis photo-intelligence report, the structural analysis photo-intelligence report, the damage assessment photo-intelligence report, the target complex photo-intelligence report, and the special photo-intelligence report.

detail-strip, *v. tr.* To disassemble completely a *machine gun, cannon,* or the like. Cf. **field-strip,** *v.*

detection, *n.* The act or action of discovering and locating something hidden or obscure, esp. (a) the enemy's aircraft, equipment, installations, etc., or (b) weak radio or radar signals.

Used attributively, to designate equipment or methods used in detection, as in *detection device, detection equipment, detection net, detection set;* or to designate units engaged in, or responsible for, detection, as in *detection squadron.*

determine, *v.* (detm) *tr.* **1.** To establish the character, and set the limits or bounds, of a *mission.* **2.** To decide a *matter* after investigation, reasoning, etc., esp. when conflicting interests or judgments require resolution.

In sense 1, 'the theater commander executes, but does not determine, his mission.' In sense 2, 'the Secretary of Defense determines the relative priorities of procurement programs.'

detm (*auth abbr*). 'Determine.'

detonate, *v. tr.* and *intr.* To set off a sudden and instantaneous combustion of an *explosive;* to explode.

detonating wave. The rapidly moving wave set off within an explosive by detonation, creating such high pressure as to cause explosion.

detonation, *n.* **1.** The sudden and instantaneous combustion of, or change in, an explosive matter, that with the buildup to a critical pressure causes an explosion; the explosion so produced; the noise accompanying the explosion. **2.** *Specif.* The instantaneous and abnormal combustion of an unburned part of fuel mixture in the cylinder of an engine.

In sense 2, when detonation occurs the sudden abnormal pressure inside the cylinder knocks rather than thrusts the piston down.

detonation suppressant. Fuel dope.

detonator, *n.* **1.** In an explosive train, that component which when detonated by the primer in turn detonates a less sensitive explosive (usually the booster), or when containing its own primer, initiates the detonation in the train. **2.** An explosive charge placed in certain equipment and set to destroy the equipment under certain conditions.

deuterium, *n.* The hydrogen isotope of mass number 2 (symbol H^2 or D); heavy hydrogen. Hence, **deuterium bomb.** See **nuclear fusion.**

Dev (*abbr*). 'Deviation.' Approved for use in a navigator's log.

dev (*auth abbr*). 'Develop' or 'development.'

develop, *v.* (dev) *tr. Specif.* **1.** To work out and extend the theoretical, practical, and useful applications of a basic *design, idea,* or scientific *discovery.* **2.** To design, build, modify, or improve the prototype of an *aircraft, engine, instrument* or the like as determined by a basic idea or concept. **3.** To build up *intelligence data* from raw facts or information.

development, *n.* (dev) *Specif.* **1.** The process or activity of developing a basic design, idea, or a piece of military equipment. Attrib., as in *development contract, development test pilot,* etc. **2.** The process by which a parachute opens.

In sense 1, the development of a piece of military equipment includes construction and testing of experimental models, but excludes operational or service testing. In sense 2, cf. **deploy,** *v.*, sense 3.

development period. The time interval or period required to develop a new airplane or other piece of military equipment.

deviation, *n. Specif.* **1.** The deflection of a compass needle from a position of magnetic north as a result of a local magnetic disturbance, measured from magnetic north and designated east or west. **2.** In frequency modulation, the amount the carrier increases or decreases when modulated. **3.** A departure from the specifications of a contract that may be authorized under the 'changes' article of the contract, provided no matter of safety is adversely affected. See **variation,** *n.*, sense 2. **4.** In statistics, the amount of difference between a value and the value of the standard.

In sense 1, cf. **magnetic variation.**

device, *n.* (dv) **1.** Anything invented to serve a particular purpose, esp. a mechanical or electrical contrivance. **2.** Short for 'atomic device.'

DEW (*abbr*). 'Distant early warning.'

Dew line. [From **DEW** (*abbr*).] A line of radar stations at about the 70th parallel on the North American continent, financed by the American government but undertaken in cooperation with the Canadian government. Cf. **mid-Canada line.**

Dewoitine, *n.* A name applied to certain French airplanes, such as the Dewoitine D-500, a fighter plane of WW II. Named for a M. Dewoitine.

dew point. The temperature at which air, under a given pressure and moisture content, becomes saturated with water vapor, and at which moisture content condenses out.

dew point depression. The lowering of the dew point by decreasing water content or pressure. Also called 'depression of the dew point.'

DF (*auth abbr*). **1.** 'Disposition form.' **2.** 'Direction finder' or 'direction finding.'

DFC (*auth abbr*). 'Distinguished Flying Cross.'

DFC ribbon. A ribbon worn in lieu of the Distinguished Flying Cross.

DFing, *n.* [Pronounced 'dee-effing.'] Direction finding. Cf. **radio direction-finding.**

D.F.M. (*abbr*). 'Distinguished Flying Medal.'

DF operator. An operator of direction-finding equipment.

DF plotter. One who plots the course of an aircraft from information obtained by means of direction-finding equipment.

DFR (*auth abbr*). 'Dropped from roll.'

dfr (*auth abbr*). 'Defer' or 'deferment.'

dftmn (*auth abbr*). 'Draftsman.'

DGZ (*abbr*). 'Desired ground zero.'

DH (*abbr*). 'De Havilland,' as used in reference to certain British-designed airplanes, as the *DH-4,* a two-place, bombardment biplane of WW I. Often written 'D.H.'

Many American-built DH-4's were used by the A.E.F. during WW I.

DH-4. A single-engine biplane used as a bomber in WW I, developed by de Havilland of England, but also built in the US.

The American DH-4, powered by a Liberty engine, reached France in May 1918, and was used in battle by August.

Dhahran Airfield. An air base at Dhahran, Saudi Arabia, named for the city.

DHC-2 Beaver. A light single-engine transport plane developed by de Havilland of Canada, a modified version of which is the L-20.

DIA (*auth abbr*). 'Date of initial appointment.'

diagnostic test. A test for measuring skill or knowledge prior to a course of study or period of training.

diam (*auth abbr*). 'Diameter.'

diameter, *n.* (diam) *Specif.* Propeller diameter. See separate entry.

diamond box. A box formation of four planes, three of which fly in a vee, the fourth to the rear behind the lead plane.

diamond formation. A diamond-shaped flying formation, as a diamond box or a diamond of vees.

diamond man. The man or plane in the last position in a diamond box.

diamond of vees. A diamond formation consisting of four three-plane elements, each element flying in vees.

Diana (*code*). In WW II, a German navigation system for day bombing.

diaphragm, *n. Specif.* A dividing partition, membrane, or capsule that expands, contracts, or vibrates, serving various purposes in certain airplane parts or instruments, as in an altimeter, an

airspeed indicator, etc. Hence, *diaphragm instrument*. See **nozzle diaphragm.**

diaphragm gas mask. A gas mask designed so that the wearer can speak audibly.

DICAB (*auth abbr*). 'This directive has been coordinated and approved by the Director of the Budget, DCS/Comptroller as to fund availability.'

dicing, *n.* [See note.] The action of flying a very low photographic mission over a heavily defended area, esp. for oblique photographs. Hence, *dicing coverage, dicing mission, dicing photography, dicing pilot.*

The origin of this usage is uncertain. One notion is that the pilot gambles unduly in flying a dicing mission.

dictionary, *n.* **1.** A reference work in which words and phrases of a given language or of a part thereto are arranged in some order, usually alphabetical, and defined in words of the same language. **2.** A glossary in which words or phrases of one language are translated into words or phrases of another language, as in 'an English-Spanish dictionary.'

DID (*auth abbr*). 'Daily Intelligence Digest.'

dielectric, *n.* A nonconducting substance or material through which, however, induction, magnetic lines of force, or electrostatic lines of force may pass. Air, celluloid, porcelain, glass, mica, and wood are dielectrics.

dietn (*abbr*). 'Dietitian.'

differential aileron linkage. A linkup between the ailerons and the control stick or column so that a given movement of the stick results in a greater upward displacement of one aileron than the downward displacement of the other.

differential analyzer. An electric analogue computer used esp. for the solution of problems in differential calculus. Hence, **differential analysis.**

differential ballistic wind. In bombing, a hypothetical wind equal to the difference in velocity between the ballistic wind and the actual wind at release altitude.

differential pay. Pay, such as incentive pay, differentiated from regular pay because of special or hazardous duty.

diffuser, *n.* A device for diffusing a fluid; *specif.*, a duct or vane designed to convey air into a manifold or combustion chamber while reducing its velocity and increasing its static pressure. Hence, *diffuser efficiency, diffuser vane.*

diffusion respiration. The maintenance of oxygen passage through the respiratory system to the blood in the absence of respiratory movements.

DIFOT (*auth abbr*). 'Duty in flying status involving operational or training flights.' Also used in combinations: See note.

DIFOTECH, duty as a technical observer in a flying status involving operational or training flights as a non-crew member; *DIFOTINS*, duty under instruction, etc.; *DIFOTRELAS*, for duty in a flying status involving operational or training flights as his own relief.

dig, *v. intr. To dig in.* **1.** Of personnel: To fortify or establish a position by digging fox holes or trenches for protection. **2.** Of gliders: To land in such a manner as to prevent a long landing skid. **3.** Of jet aircraft: To recover from a dive at such an angle as to cause excess gravitational pull upon the pilot.

digital computer. A computer that works on the principle of counting, as distinguished from measuring. See **analogue computer.**

Digital computers make up a family of computers, ranging from the abacus to the business-office adding machine, to electrical relay computers as used in telephone exchanges, to the complex electronic calculators, such as Eniac (which see). Electronic computers use either a decimal or binary system of notations.

dihedral, *n.* The upward or downward inclination of an airplane's wing or other supporting surface in respect to the horizontal; in some contexts, the upward inclination only; a dihedral angle.

If the inclination is upward, the dihedral is positive; if downward, negative. See **cathedral,** *n.*

dihedral, *a.* Of an aircraft wing or tailplane: Having an upward or, rarely, downward slant, from root to tip.

dihedral angle. The angle, esp. an upward angle, between the plane of the wing or other surface and a horizontal plane at the root of the wing or other surface.

dimout, *n.* Also **dim-out.** A condition at night when all lights are dimmed or shaded.

Dinah, *n.* A name given by the Allies to the Mitsubishi Ki 462, a twin-engine Japanese Army reconnaissance airplane of WW II.

dinghy, *n. Specif.* A collapsible pneumatic boat carried in aircraft for emergency use in water. Often called a 'liferaft.'

Some dinghies are for use of one person only; others for two or several.

dinghy drill. A drill or exercise simulating escape from a sinking aircraft by the use of a dinghy or liferaft. Also called 'ditching drill.'

dinghy procedure. The procedure or method of escaping from a sinking aircraft by use of a dinghy or liferaft.

dinghy release gear. A device used to release a dinghy from its place of storage in an aircraft.

dining hall. An AF term for 'mess hall.' Seldom used in popular speech.

DIO (*abbr*). 'Duty intelligence officer.'

diode, *n.* A vacuum tube or crystal having only two electrodes, i.e., a cathode and an anode.

dioxide capsule. A container for carbon dioxide,

which when punctured permits the dioxide gas to inflate a belt, dinghy, or the like. Also called 'CO_2 bottle,' 'CO_2 cartridge,' or 'CO_2 cylinder.'

dip, *n.* **1.** *Geophysics.* The vertical inclination of a compass needle that is free to move vertically in response to a magnetic line of force; the angle of this inclination, measured from the horizontal. Also called 'inclination.' **2.** In air navigation, the angular distance of the apparent horizon below the sensible horizon.

In sense 1, dip is north or south depending on whether the north-seeking or south-seeking end of the compass needle dips below the horizontal; north dip is regarded as positive.

In sense 2, the dip is due to the elevation of the eye of the observer above the level of the apparent horizon.

dip, *v. tr. To dip one's wings,* to lower one wing, generally as a sign of recognition or acknowledgment.

dipole antenna. A special antenna with two poles, each approximately one-quarter wave length long.

This antenna is used chiefly in radar conical scanning.

dipropellant, *n.* A misnomer for 'bipropellant.'

dipstick, *n.* A graduated rod or stick for measuring the contents of a tank or similar container.

DIR (*auth abbr*). 'Depot inspection and repair.'

dir (*auth abbr*). 'Direct,' 'direction,' or 'director.'

direct, *v.* (dir) *tr.* **1.** To give general supervision to an *activity*, as in 'to direct operations.' See **direction,** *n.* **2.** To guide a *bomb* as with an azon bomb, or an *airplane* by means of flight controls. **3.** To apply *force* or *gun fire* in a given direction or against a given sector.

direct air support. Air support given surface forces engaged in battle, considered to have immediate effects, as that of close air support. *Obsolescent.* See **air support,** sense 2.

direct bomb hit. A direct hit by an aerial bomb.

direct bombing. Bombing by aiming at the target, as distinguished from offset bombing.

direct channel. A channel for direct communication.

direct commission. A commission granted a civilian who assumes officer status without first attending an officer candidate school.

direct communication. Communication between one person, organization, or office, and another without going through an intervening person, organization, or office.

Permission for direct communication from one line of command to another is granted by higher headquarters, which designates the subjects or areas in which such direct communication is permitted.

direct control. Control exercised over a rotor, esp. over that of an autogiro, by tilting the shaft about which the rotor blades revolve.

direct current. (d.c.) An electric current which is constant in direction.

directed travel. Travel as directed by competent orders.

direct fire. Gun fire delivered on a target that is visible to the person who aims the gun.

direct hit. A hit directly upon the target.

directing agency. *Specif.* Any laboratory, bureau, section, or other government agency responsible for supervising a project. Cf. **cognizant agency.**

direction, *n.* (dir) *Specif.* **1.** The control, command, or policy guidance exercised by an official or officer over the activities or program of an organization, or the actions of a group. **2.** An aspect of space from which, given two positions, another position or moving point may be determined by angular or parallel reference in the same dimension, this relationship being visually conceived as a straight or curved line; hence, the line that indicates this relationship: **a.** Such a line on or near the earth's surface, straight in plan view but bent from a side view to follow the curvature of the earth, as in 'he followed a northerly direction.' **b.** Such a line tangent to the earth's surface or a line parallel to a line so tangent, as in 'the comet's direction was toward the sun.' Cf. **apparent precession. c.** Such a line tangent at the top of a circle described by a rotating object, as in 'the direction of propeller rotation is to the right.'

In sense 1, the Chief of Staff exercises command 'under the direction of the Secretary of the Air Force'; the Munitions Board performed its duties 'subject to the authority and direction of the Secretary of Defense.' 'Direction' does not imply supervision.

In sense 2, progression from one point to another is usually implied by direction. In subsense c, the line is in essence the same as that in subsense b.

directional, *a.* Of various devices or actions: Used in giving or keeping a direction, as in *directional coupler, directional guidance, directional signal, directional sonobuoy,* etc.

directional antenna. An antenna which radiates or receives radio waves more effectively in or from some directions than others.

directional beam. A stream of radio or radar impulses beamed in a given direction.

directional control. Control exercised over an aircraft so as to move it in a desired direction.

directional gyro. 1. A flight instrument employing a gyroscope which holds its position and indicates deviation from the desired heading. **2.** A gyroscope in an autopilot or bombsight mechanism that provides directional stability.

directional gyro compass. A directional gyro (sense 1).

directional stability. The stability (which see, sense 1a and note) of an aircraft, projectile, or the like against yawing.

directional stabilizer. Any gyro-operated instru-

ment or part for maintaining direction, as in an autopilot or bombsight.

direction center. A tactical air direction center.

direction finder. (DF) Short for 'radio direction-finder.'

direction-finding, *n.* (DF) Short for 'radio direction-finding.'

direction-finding system. A system for establishing the position or bearing of an aircraft by radio direction-finding. See **radio direction-finding,** note.

direction of attack. The direction from which an attack is made, as seen by those being attacked; the direction towards which an attack is made, as seen by those making the attack.

direction of flight. The heading of an aircraft, or the direction in which it is flying.

directive, *n.* Any oral or written communication that initiates, orders, or governs action, conduct or procedure or that provides a plan of action in case of certain contingencies.

Various kinds of orders and other publications, when directive in nature, are often called directives, as General Orders, Special Orders, Court-Martial Orders, Air Force Regulations, etc.

director, *n.* (dir) Capitalized in specific titles. **1.** One who directs or commands an action or an operation. **2.** One who heads a staff directorate, as in Headquarters USAF, one who coordinates an activity.

In sense 2, the director does not exercise the same degree of control or command exercised by a director in sense 1, and use of the term in sense 2 appears to be somewhat misleading since the director in this sense serves more in the nature of a staff officer who advises the commander than of one who directs in his own right. Directors in sense 1 function essentially as subordinate commanders or as deputy commanders, as is the case with the Director of the Research Studies Institute, for example, or with the Director of Special Investigations. Likewise, in the case of a three-directorate staff organization, each of the directors serves actually as a deputy commander. The same is true of a tactical air director (which see).

On the other hand, the director (sense 2) who heads a directorate in a staff organization is essentially a staff officer advising a deputy commander or deputy chief of staff. In line with this usage is the title 'Joint Staff Director' given to a person who is without directing functions, whose job is essentially that of coordinating the work of committees for the Joint Chiefs of Staff.

directorate, *n. Capitalized* in specific names. **1.** A staff element in certain staff organizations subordinate to a deputy commander, or, in the case of Headquarters USAF, to a Deputy Chief of Staff. **2.** One of the three major subdivisions of a three-directorate staff.

For example, in Headquarters USAF, the office of the Deputy Chief of Staff Operations has five directorates (sense 1): the Directorate of Intelligence, the Directorate of Plans, the Directorate of Operations, the Directorate of Communications, and the Directorate of Manpower and Organization.

director-sight system. A sighting system used on airborne flexible guns in which the gunner has direct control of the tracking line (line of aim) and indirect control of the gun or guns.

director-type computer. A gunsight computer used in the director-sight system (which see), which, in response to the gunner's action of tracking, computes the angle at which the gun or guns must be fired in order to hit a target.

director-type fire control. The control of fire by use of a director-type computer.

direct ray. A radio wave which travels a direct path from one point to another without being reflected from the ionosphere.

direct support. 1. Direct air support. **2.** Close support (sense 2).

direct-support bombing. Bombing done as a part of direct air support.

direct-support group. In certain wing organizations, the group responsible for the supply and maintenance of the primary mission groups.

In a combat wing, this group is sometimes called the 'maintenance and supply group.'

dirigible, *n. Specif.* A lighter-than-air aircraft having its own motive power, which may be steered in any desired direction by its crew. Attrib. with *hangar.*

dirigible, *a.* Of aircraft or airborne devices: That can be directed or steered.

dirigible balloon. A balloon, esp. a nonspherical balloon, that can be steered.

dirty weather. Bad weather. *Slang.*

dis (*auth abbr*). 'Distant' or 'distance.'

disability, *n.* (dsabl) A physical or mental injury or illness that impairs or destroys a person's capacity either for continued military service, or for normal life after separation from the service.

A disability may be temporary or permanent, partial or total. If service-connected, it may become a basis for compensation as determined by competent and authorized medical authority.

disability retirement pay. The pay of a person retired because of disability.

disabl (*abbr*). 'Disable' or 'disability.'

disap (*auth abbr*). 'Disapprove.'

disarm, *v. tr. Specif.* To remove the detonating device or fuze of a *bomb, mine,* or other piece of explosive ordnance, or otherwise to render it incapable of exploding in its usual manner.

disb (*auth abbr*). 'Disburse' or 'disbursement.'

disband, *v. tr.* To withdraw the designation of an AF *unit* and remove it from the inactive list of the Department of the Air Force. Hence, **disbandment,** *n.* See **activate,** *v.,* note.

disbursement, *n.* (disb) A payment in cash or by check, regardless of purpose.

disbursing, *n.* The accountable disbursement of funds, esp. public funds. Attrib., as in *disbursing station.*

disbursing officer. An officer responsible for the disbursing of funds.

disc, *n.* Also **disk.** Short for 'rotor disc' or 'propeller disc.'

disc (*auth abbr*). 'Discontinue.'

disc area. The area of the circle described by rotating rotor or propeller blades.

disch (*auth abbr*). 'Discharge.'

discharge, *n.* (disch) The separation of a person from the AF by means other than retirement or death; also short for 'discharge certificate.'

See **bad conduct discharge, dishonorable discharge, general discharge, honorable discharge, undesirable discharge.**

discharge, *v. tr.* To separate a *person* from the military service by issuance of a discharge certificate or record of separation. See **separation,** *n.*

'Discharge' and 'separate' are used of both enlisted persons and officers.

discharge certificate. An official form or certificate giving evidence of a discharge and showing the type of discharge.

discipline, *n.* (dspln) **1.** A faculty or quality of the mind or will that compels or enables a person to recognize and accept his responsibilities, to use his intelligence and knowledge in accordance with tested criteria and procedures for the solution of problems, and, under conditions of stress or hardship, as well as under normal conditions, to adhere to an accepted code of ethics or behavior, as in 'the discipline of his mind was such that he did not reveal any essential fact.' **2. a.** The control exercised over himself by the individual who has this faculty of mind, as in 'the constant discipline that he placed himself under to achieve his goal.' **b.** *transf.* Used in reference to a book, paper, work of art, or other product of a man's effort, as in 'this staff study lacks discipline,' i.e., its author failed to use his intelligence and knowledge in accordance with any system or criteria. **3. a.** The special training given officers and men to develop and strengthen this faculty of mind and will (sense 1), esp. to strengthen their immediate response to the call of duty and military order, as in 'under the discipline of military life, he became able to endure hardship.' **b.** A manifestation of this training, as in 'the military discipline in his bearing was very observable.' This derived sense also has strong connotations of senses 1 and 2. **4.** In special relationship to sense 3, the meting out of punishment in the process of training, with the object of correcting an attitude considered wrong, or with the object of emphasizing the importance of a rule or principle that has not been observed. **5. a.** Usually *plural.* The rules and procedures of conduct or action found necessary to be observed if success is to be achieved, as in 'the disciplines of war.' **b.** The systematic rules and procedures adopted for a specific operation or action, as in 'air discipline' or 'security discipline.' **6.** The order maintained or observed among members of a unit or other group of people, as in 'that outfit maintains a high degree of discipline.' **7.** Any field of learning, as mathematics, history, or literary criticism, in which criteria for testing the validity of facts and principles are well established.

disclaimer statement. A statement, either written or oral, that asserts that any opinions held or conclusions reached by the author or speaker are of his own responsibility and are not to be construed as carrying official sanction.

disc loading. Short for 'rotor-disc loading.'

discontinue, *v.* (disc) *tr.* **1.** To withdraw personnel from, and bring to an end the existence of, a *specialized unit* or a *detachment* or *flight* of a parent unit. See **activate,** *v.*, note. **2.** To make an *establishment* inoperative by inactivating or discontinuing its administrative unit, or by announcement of such action by the Department of the AF.

discontinued installation. A former AF installation no longer used for military purposes.

disem (*auth abbr*). 'Disseminate.'

disemb (*auth abbr*). 'Disembark.'

disengage, *v. tr. Specif.* To break off combat with the *enemy.*

disguised bomb. In intelligence usage, a sabotage bomb disguised or camouflaged to appear as something else; an infernal machine.

dish, *n.* Short for next. *Slang.*

dish antenna. A paraboloid antenna. *Slang.*

dishon (*abbr*). 'Dishonorable' or 'dishonorably.'

dishonorable discharge. (DD) A discharge, under dishonorable conditions, esp. of an airman by sentence of a general court-martial. See **discharge,** *n.*, note.

dism (*auth abbr*). 'Dismissal.'

dismissal, *n. Dismissal from the service,* the separation from the service of an officer as a result of trial by court-martial.

disp (*auth abbr*). 'Dispensary.'

dispatch, *n.* A message, usually an official communication, sent from one person to another.

In the British services, this word has a special use as applied to a formal report made by a commander to a higher commander on a completed operation or campaign, and is spelled 'despatch.'

dispatcher, *n.* **1.** One who dispatches something, as the dispatcher of aircraft at a base, or the dispatcher at a motor pool. **2.** The person who supervises the jumping of parachutists, or the manual

unloading of stores or equipment from an airborne aircraft.

dispatch section. A section in certain headquarters through which messages are cleared before transmission.

dispensary, *n.* (disp) A place on an AF installation where medical and dental examination and treatment are provided personnel, esp. for minor ailments, often at stations where hospital services are not available.

dispersal, *n.* **1.** The spreading out of equipment, supplies, or personnel, esp. for protection against enemy action; the practice of building or establishing industrial plants, government offices, or the like, in separated areas, to reduce vulnerability to enemy attack. **2.** *attrib.* **a.** Designating places where aircraft may be dispersed, as in *dispersal airfield, dispersal base, dispersal field,* etc. **b.** Designating facilities or objects used in connection with the dispersal of aircraft, as *dispersal path, dispersal runway,* etc.

Dispersal of intense fog (FIDO), a process of dispersing fog, usually by burning gasoline in a system of perforated pipes laid along a runway.

dispersal area. A parking area adjoining or near an airstrip or runway where aircraft are dispersed and parked, esp. as a precaution against enemy action.

dispersal pen. A revetment in a dispersal area. *British.*

disperse, *v. tr.* **1.** To spread out *equipment, supplies,* or *personnel* as a measure in passive defense. **2.** To scatter an enemy *force.*

dispersion, *n.* **1.** The scattering of bombs dropped under approximately the same conditions upon a target; the pattern of bomb impacts resulting from this. **2.** In antiaircraft fire, the scattering, in both range and deflection, of shots aimed at the same target. **3.** The scattering of shots fired on a target by the same gun or group of guns. **4.** Dispersal.

dispersion pattern. The pattern of scattered hits by shells, bombs, or other projectiles upon a target, without excluding gross errors.

dispersion volume. The volume or number of shell bursts in AA fire.

display, *n.* Short for 'radarscope display.'

disposable fuel tank. A fuel tank that may be dropped in flight after its supply of fuel has been used. See **drop tank.**

disposable property. Property considered useless to any federal agency and authorized to be disposed of in accordance with specified procedures.

disposal operations. The operations involved in the receipt, handling, and disposition of disposable property by a base disposal officer.

disposition, *n.* (dspo) *Specif.* In an air order of battle, the location of units.

disposition form. (DF) An AF form used for communications between persons or offices of the same organization.

disr (*auth abbr*). 'Disrated.'

disrate, *v. tr.* To reduce a *person* in grade.

disseminate, *v.* (disem) *tr.* To send out *materials,* esp. intelligence materials, to agencies requiring them. See next.

dissemination, *n.* (disem) The distribution of information or materials; *specif.,* in intelligence usage, the distribution of intelligence in such form and detail as is needed by the using persons or agencies.

dissociation, *n. Specif.* The decomposition of burned gases, esp. in the combustion chamber of a rocket, resulting in a loss of heat energy.

dist (*auth abbr*). 'District.'

distance, *n.* A measured space between two points or objects, considered as a factor in air tactics and strategy, or a factor in navigation.

In navigation, distance is reckoned from one geographic point to another. See **range,** *n.,* note.

distance-measuring equipment. (DME) Radar navigation equipment that determines the distance of an interrogator from a transponder by measuring the time of transmission to and from the transponder.

distant-reading compass. A remote-indicating compass, such as the gyro flux-gate compass.

Distinguished Flying Cross. (DFC) A military decoration awarded in the US for heroism or extraordinary achievement while participating in aerial flight. See **decoration,** *n.*

Distinguished Flying Medal. A British military decoration awarded noncommissioned officers and men for valor or devotion to duty whilst flying in active operations against the enemy. Abbreviated 'D.F.M.'

Distinguished Service Cross. (DSC) A military decoration awarded to a person for extraordinary heroism in operations against the enemy. See **decoration,** *n.*

Distinguished Service Medal. (DSM) A military decoration awarded persons for exceptionally meritorious service in a duty of great responsibility. See **decoration,** *n.*

Distinguished Service Order. A British decoration since 1866, awarded for distinguished service in war. Abbreviated 'D.S.O.'

Distinguished Unit Citation. The highest award given by the US to any military unit in the US or allied armed forces.

The Distinguished Unit Citation, first established by Executive Order in 1942, is given 'for extraordinary heroism in action against an armed enemy of the US.'

It takes precedence over all other US unit citations. In the AF, the award is made by the Department of the AF.

distr (*auth abbr*). 'Distribute.'

distress, *n.* The condition of a person or persons if threatened by serious danger requiring immediate succor.

distress phase. In an air-rescue situation, where the situation is worsening, a phase of grave and imminent danger for the aircraft or occupants being rescued.

distress radio frequency. A radio frequency reserved for distress signals.

distress signal. 1. A signal, radio or visual, indicating a situation of distress. **2.** The material for signaling, such as a flare.

distribution, *n.* In the field of testing, an array of scores made by individuals in a test, showing a range of high, low, and intermediate scores, with the number of individuals making each score.

distribution center. An agency of a headquarters for the routing of correspondence and other papers between different offices or staff sections.

distribution depot. A depot responsible for the storage and distribution of supplies for a given geographical area.

distribution formula. A list of agencies or units, usually shown by a coded symbol, to which distribution of a given publication is to be made.

distribution symbol. The symbol or code used in a distribution formula.

disturbed, *a.* Of a line of sight: Offset.

disturbed-reticle-type computer. A fixed gunsight computer for fighter aircraft that determines the lead necessary for firing at a target by reacting to the motion of an offset sighting device.

disturbed-sight system. A gunsighting system used esp. in fighter planes, in which the tracking image is offset from the controlled line.

ditch, *v.* **1.** *tr.* To set a *land-based aircraft* down, under emergency conditions, upon water and there to abandon it. **2.** *intr.* Of an aircraft or its occupant: To force-land in water with the intention of abandonment.

The action of ditching is often distinguished from crash landing on water in that 'ditching' often implies an action deliberately chosen instead of bailout. Likewise, the action of crash landing has no connotation of abandonment. Cf. **water landing.**

ditching, *n.* The action of the verb 'ditch.' Used attrib., as in *ditching drill, equipment,* etc.

ditching mockup. An aircraft or simulated aircraft set up in water for use in the practice of ditching and emergency rescue procedures.

ditching procedure. The procedure to be followed by crew members preliminary to ditching, during ditching, and during escape from the floating or sinking aircraft.

dit-dah, *n.* The sound representing the Morse Code dot and dash for the letter 'A.' See **Adcock radio range.**

div (*auth abbr*). 'Division.'

dive, *n.* A rapid descent by an aircraft, nose downward, with or without power or thrust. Also attrib., as in *dive attack.*

The longitudinal axis of the aircraft in a dive usually coincides with the flight path. Cf. **glide,** *n.*

dive, *v.* **1.** *intr.* Of an aircraft or person within the aircraft: To make a dive. Often used with adverbs or adverbial phrases, as 'to dive at an object.' **2.** *tr.* To make an *aircraft* go into a dive. **3.** To aim an aircraft in a dive at a *place. Slang.*

dive angle. The acute angle between the horizontal and the line of an object's dive.

dive-bomb, *v. tr.* and *intr.* To release one or more aerial bombs at a *target* when the bombing plane is in a dive, esp. a steep dive; to engage in this activity. Cf. **glide-bomb,** *v.,* **low-angle bombing, toss bombing.**

dive bomber. An airplane especially designed and equipped to carry out dive-bombing attacks. Attrib., as in *dive-bomber attack, group, pilot,* etc.

The dive bomber must be built so as to pull out of a steep dive, if necessary, with its bomb or bombs still attached, without breaking apart.

dive bombing. The action of bombing a target from a diving airplane, esp. an airplane diving steeply.

dive-bombing sight. A bombsight for use in dive-bombing attacks.

dive bombsight. A dive-bombing sight.

dive brake. A speed brake attached either to a wing or fuselage for use in a dive.

dive flap. 1. A dive brake. **2.** In loose usage, a dive-recovery flap.

dive-recovery brake. A dive-recovery flap.

dive-recovery flap. A special flap-like device on an airplane for use in bringing an airplane out of a dive.

The dive-recovery flap is usually built into the airplane's wing or fuselage.

dive-retard flap. A dive brake.

divergence, *n.* An atmospheric condition in which air flows outward from a given region.

diversion, *n.* The action of the verb 'divert.'

diversionary, *a.* **1.** Of an action: That is undertaken to divert enemy defense forces away from the primary objective. **2.** Of aircraft participating in such an action: That seek to lure enemy fighters and other defense forces away from the primary objective.

The word is used in various combinations, as *diversionary attack, mission, raid, strike, sweep, target,* and others.

diversion field. An alternate field used to divert traffic from a main field.

diversion order. An order directing a pilot to land at an alternate air base.

diversity antenna. One of the antennas used in diversity reception.

diversity reception. Radio reception that uses two or more sources of signal energy.

To minimize the effects of fading, a resultant signal is obtained by combining or selecting two or more sources of signal energy carrying the same modulation.

divert, *v. tr.* **1.** To draw off the enemy's *attention* from one's principal operation or effort; to draw off an enemy's *defenses* from one's primary target. **2.** To move *aircraft* away from an area or from a particular action to avoid congestion or danger, or to provide assistance elsewhere. **3.** To change the objective of one or more *aircraft* after they are airborne.

diving, *n.* The action of the verb 'dive.'

Used attrib., as in *diving attack, diving brake, diving flap, diving pass, diving speed, diving test,* etc.

diving, *a.* Of aircraft: Engaged in diving.

division, *n.* (div) **1.** An air division (which see). **2.** In MATS, one of the major units immediately below Headquarters MATS concerned with conducting transport operations, i.e., the Atlantic Division, the Continental Division, or the Pacific Division: See note. **3. a.** In the Army, a major tactical and administrative unit, with its own necessary arms and services, larger than a regiment and smaller than a corps. Attrib., as in *division aviation.* **b.** A similar unit in the Marine Corps. **4. a.** In naval aviation, a tactical unit consisting of two or more sections. **b.** A naval grouping of several similar-type vessels brought together for operational and administrative command. **c.** A grouping of ship's personnel for operational and administrative purposes. **5. a.** In Headquarters USAF, and certain other headquarters, a functional organization or office immediately below the directorate level. **b.** A common designation for certain other offices or functional groups throughout the AF, as in 'Historical Division,' 'Civilian Personnel Division.'

In sense 5, nomenclature patterns are not rigid. See **branch,** *n.*, note.

Sense 2 may be considered a species of sense 1.

Division of Military Aeronautics. An organization within the War Department, established in April 1918 as a part of the Signal Corps, and on 20 May 1918 separated from the Signal Corps and made a special bureau.

This division and the Bureau of Aircraft Production together constituted the Air Service between 1918 and 1920. Its mission was to procure and train flying personnel.

DK (*auth abbr*). 'Disbursing clerk.'

D layer. The lowest layer of the ionosphere.

This layer, occurring at between 25 and 50 miles above the earth's surface, absorbs some of the radio energy reflected by the E and F layers.

dlvr (*auth abbr*). 'Deliver' or 'delivery.'

dly (*abbr*). 'Delay.'

DME (*abbr*). 'Distance-measuring equipment.'

DME ground beacon. A ground beacon employed in distance-measuring equipment.

dml (*auth abbr*). 'Demolition.'

dmn (*auth abbr*). 'Dimension' or 'dimensional.'

DMPI (*abbr*). 'Desired mean point of impact.'

DMR (*abbr*). 'Defective materiel report.'

DMR status. A state in which a defective article is held pending action on a defective materiel report, or preliminary to its submission as an exhibit accompanying such a report.

dmst (*auth abbr*). 'Demonstrate' or 'demonstration.'

DmZ (*auth abbr*). 'Demilitarized zone.'

DN (*abbr*). 'Department of the Navy.'

DO (*auth abbr*). 'Defense Order.'

D/O (*auth abbr*). 'Disbursing officer.'

Do (*abbr*). 'Dornier.'

do (*auth abbr*). 'Ditto.'

DOB (*auth abbr*). 'Date of birth.'

Dobbins Air Force Base. An AF base at Marietta, Georgia, formerly known as Marietta Air Force Base, renamed for Captain Charles M. Dobbins, killed transporting paratroopers over Sicily in July 1943.

doc (*abbr*). 'Document.' See **docu** (*auth abbr*).

DOCA (*auth abbr*). 'Date of current appointment.'

DOCE (*auth abbr*). 'Date of current enlistment.'

DOCG (*abbr*). 'Date of rank in current grade.'

dock, *n. Specif.* **1.** A fixed or movable framework used as a scaffold in inspecting or repairing aircraft. **2.** A maintenance or inspection area, place, or building set up with the necessary equipment to permit production-line methods in effecting inspection, overhaul, or maintenance. **3.** A large shed used for housing an airship or airships.

Attrib. in senses 1 or 2, as in *dock chief, dock crew, dock maintenance.*

dock, *v. tr.* To haul an *airship* into its dock; to put an *airplane* in a dock for inspection or repair.

dock hangar. A hangar fitted out with equipment for production-line inspection or overhaul.

dock inspection. A periodic inspection and maintenance given an aircraft or engine at a dock. Hence, **dock-inspection method.**

doctor, *n. Capitalized.* **1.** A title of address for a medical officer having an M.D., D.D.S., or D.V.M. degree, used instead of the title of his rank, i.e., 'Doctor Hudson' instead of 'Colonel Hudson.' Cf. **chaplain,** *n.*, sense 2. **2.** A title of address for a person who has a Ph.D. or other doctorate degree.

doctrinal center. A place where special attention is directed toward the analysis of concepts and the evolvement of doctrine, esp. in regard to the nature and employment of air power.

The Air University is a doctrinal center.

doctrine, *n.* A rule, proposition, or teaching that has such official sanction or authority as to be used to guide and direct those who are bound by such sanction or authority, esp. a rule, proposition, or teaching that arises from a concept (which see in both senses); *collectively*, a body of such rules or teachings. *Specif.* **1.** A teaching on the nature of a thing and on what can be done with it, which teaching is cast in the form of a proposition or of propositions that are either true or false. See **basic air doctrine. 2.** A teaching on how to do something, or on what to do in a given situation, cast in the form of a practical rule, command, or exhortation that normally takes policy into consideration or the propositions derived from a concept of what a thing is or of how a thing works. See **operational doctrine.**

In sense 1, doctrine on the nature of air power or doctrine on the nature of war is true or false as the concept is true or false. In sense 2, doctrine is evolved to give guidance in particular situations, ranging from how to fight a war, or from what limitations to place upon a command, etc., to what relations should exist between the services. In evolvement of such doctrine, consideration is given both to currently accepted concepts of air power and war and to the particular plans entertained by the commander to adapt to these concepts. Doctrine in sense 1 changes only in response to a change in understanding of phenomena; doctrine in sense 2 may change with each new concept of how to do something.

It is not uncommon to regard concepts as doctrines, and in a manner of speaking they are, for the differentiation between the two is often one of aspect rather than substance, and the two, esp. in military contexts, are so much a part of each other that one cannot be considered without the other.

docu (*auth abbr*). 'Document.'

document, *n.* (docu) **1.** In a restricted sense, any written or otherwise marked paper or collection of papers that is relevant as evidence in support of some fact or proposition. **2.** In broader senses: **a.** Any record that can be used as evidence. **b.** Any written or descriptive paper that conveys information.

document, *v. tr.* (docu) To support a *statement* by citing a document or documents as evidence of its validity; to provide a *book* with document citations.

DOD (*auth abbr*). **1.** 'Died of disease.' **2.** 'Department of Defense.'

dodo, *n.* A pilot trainee who has not yet flown solo. *Slang.*

DOE (*auth abbr*). 'Date of enlistment.'

DofS (*auth abbr*). 'Day of supply.'

Dog (*code*). A word formerly authorized for the letter 'D.' See **Able** (*code*).

dogfight, *n.* An aerial battle, esp. between opposing fighters, involving considerable maneuvering and violent aerobatics by both sides.

dogfight, *v. intr.* To participate in a dogfight. Hence, **dogfighting,** *n.*

dogleg course. A course or line of flight with an angle in it.

dog tag. Usually *pl.* An identification tag. *Slang.*

DOL (*abbr*). 'Detached officers' list.'

dol (*auth abbr*). 'Dollar.'

dolly, *n.* A wheeled platform for moving something.

Dollies vary from simple platforms to those with elaborate superstructures for holding specialized equipment, as for an aircraft engine.

dom (*auth abbr*). 'Domestic.'

dome, *n.* Short for 'astrodome.'

dome refraction. Refraction of light by virtue of the light going through an astrodome.

domestic, *a.* (dom) *Specif.* Of or pertaining to American services, bases, actions, etc.: **a.** Within the confines of the continental US. **b.** Within the confines of the continental US, and of US territories and possessions.

The ambiguity of this word in AF usage is of a part with 'foreign' (which see). See also **continental,** *a.*

The word is used as a modifier in many combinations, as *domestic airline pilot, airport, base, carrier, route, command, flight, operations, wing,* etc.

domestic emergency. An emergency within the limits of the continental US, arising from a disaster or disturbance primarily civilian in nature but subject to alleviation by use of the military services.

dominance, *n. Dominance of the air,* the fact or status of being dominant in the air.

dominant, *a.* **1.** Of air power: **a.** Greatly superior to opposing air power. **b.** Given or having the most important role by comparison with land power or sea power, as in 'air power was dominant in the Battle of Midway.' **2.** Of a weapon: Overshadowing other weapons.

domination, *n.* The actual exercise of power or position to rule, control, or otherwise dominate. Used in the phrase, *domination of the air.*

dominion, *n. Dominion of the air,* control of the air (which see).

donable property. Property declared surplus to the government and which, according to regulations, can best be disposed of by donation.

Donaldson Air Force Base. An AF base at Greenville, South Carolina, formerly known as Greenville Air Force Base, renamed for Captain John O. Donaldson, a WW I ace, killed in 1930.

donisch (*auth abbr*). 'Donation on discharge.'

DOO (*abbr*). 'Division ordnance officer.'

doodlebug, *n.* The V-1, or German flying bomb. *Slang.*

Doolittle raid. An air raid by B-25's against Tokyo on 18 April 1942, led by Lieutenant Colonel (now Lieutenant General AFRes) James H. Doolittle (1896–).

door, *n.* **1.** *Specif.* A passage or entrance to an air-

craft or aircraft compartment. **2.** *Collective.* Persistent echoes from shell bursts.

In sense 1, a door is sometimes considered to be a side door, as distinguished from a hatch, but see **bomb-bay door.**

DOP (*auth abbr*). 'Detachment of patients.'

dope, *n. Specif.* **1.** A cellulose-nitrate liquid, normally colorless, applied esp. to the fabric surfaces of aircraft to render the fabric taut, waterproof, airtight, or gastight. **2.** Information, usually the latest, and frequently of an unofficial nature. *Slang.*

In sense 1, dope specially prepared for lighter-than-air aircraft does not render the fabric taut.

dope, *v. tr.* To apply dope to an *airplane* or to a *surface.*

dope sheet. A last-minute bulletin or information sheet giving details overlooked or not available earlier. *Slang.*

DOPF (*auth abbr*). 'Duty directed in order is being performed for.'

Doppler, *n.* [Christian *Doppler* (1803–53), A German mathematician.] Used attrib. or in combination: See note.

Doppler drift, the drift of an aircraft as determined through use of Doppler's principle by means of radar; *Doppler effect,* the apparent change in the frequency of vibrations, as of sound, light, or radar, when the observed and observer are in relative motion to one another; *Doppler's principle,* a principle of physics that, as the distance between a source of constant vibrations and an observer diminishes or increases, the frequencies appear to be greater or less; *Doppler shift,* a shift of a luminous body's lines in a spectrum toward the red indicating an increase in distance.

Dornier, *n.* (Do) [A German airplane-manufacturing concern of WW II.] Used in the names of aircraft.

Dornier airplanes of WW II included the *Do 17z,* a twin-engine bomber; the *Do 24,* a three-engine, high-wing flying boat, used chiefly for reconnaissance and air rescue; and the *Do 217,* a modification of the Do 17z, adapted for precision bombing, night fighting, dive-bombing, and torpedo-launching.

dorsal, *a.* Of or pertaining to the back (which see) of an airplane.

Dorsal fin, a fin or ridge protruding from the spine of an airplane or from the top of a tail boom, as in the C-119C; *dorsal observer,* one who observes from the top of an airplane; *dorsal turret,* a top gun-turret.

DOS (*auth abbr*). 'Date of separation.'

dosage, *n. Specif.* The total amount of nuclear radiation received by a person under a given set of circumstances.

dosage rate. The rate at which a person receives nuclear radiation per unit of time; a measure of radiation intensity.

dose, *n. Specif.* A dosage of nuclear radiation.

dosimeter, *n.* An instrument for measuring the total dosage of nuclear radiation, in roentgens or milliroentgens, received in a given period.

dossier, *n.* [Pronunciation with the 'r' recommended.] A file or collection of documents, memoranda, papers, or other relevant material, on a particular person or matter. See **target dossier.**

double, *n. fig. At* or *on the double,* with speed.

double, *a.* Of airplane components: Twin, as in *double-engine fighter, double rudder, double tail unit.*

double-base powder. A propellant containing nitrocellulose and nitroglycerin.

double-deputy staff. A type of staff organization in which there are two deputies to the commander.

A deputy commander for operations, responsible for those activities contributing to the operational mission, and the deputy commander for administration, responsible for those activities contributing to the support of the operations, are the deputies.

double drift. A method of determining wind direction and speed by taking a drift reading on three separate headings.

In the most common double drift, the pilot first changes his heading 45° to the right, and flies a right leg for two minutes. He then changes his heading 90° to the left, and flies a left leg for two minutes. Finally, he changes his heading 45° to the right, thus turning back onto his original heading. Drift readings are taken on all three headings by reference to a selected point or line on the surface.

double-entry centrifugal compressor. A single-stage, radial-flow compressor in which the impeller vanes are double, placed back-to-back but delivering air to the same diffuser.

The double-entry centrifugal compressor is distinguished from the multistage compressor.

double-pulsing station. A loran station that belongs to two pairs and emits pulses at two pulse rates.

double-row radial engine. A radial engine with two rows of cylinders, one row behind the other.

The corresponding front and rear cylinders may or may not be in line.

double time. A rate of marching at 180 steps per minute, each step being three feet in length; the command to march at this rate.

double tow. The towing of two gliders by one airplane or tug.

Douglas, *n.* [*Douglas* Aircraft Company.] Used in the names of military aircraft, as in *Douglas Havoc, Douglas Boston, Douglas Invader,* etc.

Douglas aircraft include the A-20, A-24, B-26, C-47, C-54, etc.

Douhet, *n.* [Giulio *Douhet* (1869–1930), an Italian general, and early exponent of air power.] Used attrib., as in *Douhet doctrine, Douhet theory.*

Dove, *n.* A heat-homing bomb, developed in WW II.

Dover Air Force Base. An AF base at Dover, Delaware, named for the city.

DOW (*auth abbr*). 'Died of wounds.'

Dow Air Force Base. An AF base at Bangor, Maine, named in honor of Lieutenant James F. Dow, killed in 1940.

down, *v. tr.* To shoot down an *aircraft* or other object. *Colloq.*

down-aileron, *n.* The aileron in the down position that creates lift, as distinguished from the up-aileron. See **aileron,** *n.*, note.

downdraft, *n. Specif.* A draft of atmospheric air that moves downward, the opposite of an updraft. Generally encountered in thunderstorms, downdrafts often attain great velocities.

downdraft carburetor. A carburetor in which the air is sucked in from above.

downgrade, *v. tr.* To assign a lower security classification to a *document, piece of equipment,* or the like than that previously assigned; to reduce a Civil Service position in grade.

down lock. A locking device, mechanical or hydraulic, which keeps the landing gear in place when it is lowered. Cf. **up lock.**

downstairs, *adv.* In the lower atmosphere, near the ground or water. *Slang.*

downsun, *adv.* In a direction away from the sun; with the sun at one's back. Also used as an *adj.*, as in 'a downsun attack.'

downward lift. Negative lift.

downwash, *n.* The downward deflection of air, relative to the direction of motion of an airfoil.

downwash angle. The angle at which an air stream is deflected downward by an airfoil or other lifting surface, relative to the direction of the motion of the airfoil.

With helicopters, the downwash angle is the angle between a plane parallel to the rotor disc and the plane in which an air stream is deflected.

downwind, *adv.* In the direction the wind is blowing to. Also used as an *adj.* and *n.*

downwind landing. A landing made with the plane heading downwind.

downwind leg. That leg of a landing pattern during which an airplane flies downwind.

downwind position. The position of a helicopter's rotor blade when its tip trails in the relative air stream flowing past the helicopter.

downwind turn. A turn that takes an airplane downwind.

doz (*abbr*). 'Dozen.'

DP (*abbr*). **1.** *auth.* 'By direction of the President.' **2.** *auth.* 'Displaced person.' **3.** 'Deep penetration.' **4.** *auth.* 'Distribution point.'

D/P (*auth abbr*). 'Detained pay.'

dp (*abbr*). 'Dump.'

DPG (*auth abbr*). 'Date of permanent grade.'

DPM (*auth abbr*). 'Designated for prompt mobilization.'

dpmtly (*abbr*). 'Departmentally.'

DPO (*abbr*). 'Development planning objective.'

dpst (*auth abbr*). 'Deposit.'

DPUO (*auth abbr*). 'Duty directed is being performed for unit issuing order.'

DR (*auth abbr*). **1.** 'Date of rank.' **2.** 'Dead reckoning.' **3.** 'Dental recruit.'

D/R (*abbr*). 'Dead reckoning.'

dr (*auth abbr*). 'Drawn' or 'drum.'

drachen, *n.* [German for 'kite.'] A kite balloon used in WW I.

draft, *n.* **1.** A stream of air, esp. a vertical air current of high velocity. **2.** The induction of persons into military service, esp. under the Selective Training and Service Act of 1940 and the Selective Service Act of 1948.

In sense 1, see **downdraft, *n.*, updraft, *n.***

drafted personnel. Military personnel inducted under selective service.

draftee, *n.* A person inducted by way of selective service.

drag, *n.* **1.** A resistant force exerted in a direction opposite to the direction of motion and parallel to the relative gas or air stream. **2.** The effect of this force.

This force exerted upon an aircraft in flight is a component of the total air forces (see **air force,** sense 5), and is set up by friction and turbulence of the air when it meets and passes over and about the aircraft or any of its parts.

In respect to an aircraft, total drag is the sum of induced drag, parasite drag, and profile drag. See under separate entries, and cf. **form drag, wing drag.**

For attrib. uses, see following entries.

drag, *v. tr.* To fly low to one side of, or over, an *area* in order to examine it closely, usually preparatory to landing. *Colloq.*

drag chute. A deceleration parachute.

drag coefficient. 1. A coefficient that gives the relative air resistance of a particular airfoil. **2.** A coefficient used in calculating the drag component of forces in an atomic blast wave.

drag direction. The direction of the relative air stream.

drag hinge. A hinge on a rotor blade allowing the blade to oscillate in the plane of rotation, in order to reduce stresses on the blade in that plane. Also called the 'alpha hinge' or 'lag hinge.'

drag parachute. A deceleration parachute.

drag rise. The rapid increase in parasite drag that an airplane not designed for high speeds encounters as it approaches the speed of sound. See **compressibility drag.**

drag rope. A long rope hung overboard from a balloon or airship to serve as a brake or a variable ballast.

drag strut. A strut or wing rib, so placed as to protect the wing structure from compression caused by drag. Cf. **compression rib.**

drag truss. A horizontal truss between the spars of a wing that resists the forces of drag acting on the wing while in flight. Also called the 'internal wing truss.'

drag wire. A cross-bracing wire or brace, usually

concealed within the wing, designed primarily to resist drag. Cf. **antidrag wire.**

Dramamine, *n.* A trademark name for a theophylline drug used as a preventive of air or other motion sickness.

Drem lighting. A kind of airfield lighting devised at the RAF station Drem in Scotland. Attrib., as in *Drem Lighting Board, Drem lighting system.*

dress uniform. A uniform made up of the coat and trousers of the service uniform, with white shirt and black bow tie, worn at formal social functions. Cf. **evening dress uniform.**

drftmn (*abbr*). 'Draftsman.' See **dftmn** (*auth abbr*).

drift, *n.* **1. a.** A lateral divergence of an aircraft or projectile from the projected line of its heading, arising from movement due to wind, or sometimes specifically due, in the case of a projectile, to reactions set up by the projectile's rotation. **b.** The lateral movement that results in this divergence. **c.** The angular measurement of this divergence; a drift angle. **d.** The velocity of the lateral movement, as in 'the drift was two knots.' **e.** A drift reading, as in 'to take a drift'; a method of taking a drift reading. See **Bellamy drift, double drift. 2.** A change in direction of the axis of a gyroscope, resulting either from precession, apparent precession, or both. Also called 'wander.' **3.** *Radar.* The change in frequency in an oscillator during warmup.

drift, *v.* **1.** *intr.* Of an aircraft or projectile: To move laterally from the direction in which it is headed. **2.** *tr.* To cause an *aircraft* to drift. Said of a wind.

drift angle. The angle between the projected line of an aircraft's heading and its track.

drift computer. A computer for ascertaining drift.

drift correction. A change in the heading of an aircraft to allow for drift. Hence, *drift correction angle,* the angle between the course and the heading of an aircraft.

drift float. An object that may be dropped into water and used as a reference point for determining an aircraft's drift. Also sometimes called 'drift signal.'

This object may be provided with a light, a smoke smudge, or the like.

drift indicator. A driftmeter.

driftmeter, *n.* An instrument for measuring or determining the drift of an aircraft by visual sighting of points or objects on the ground. Also called 'drift indicator.'

drift reading. The action of checking the amount of drift to which an aircraft has been subject.

drift sight. A driftmeter.

drift signal. A drift float.

drift wire. A drag wire.

drill, *n.* **1.** Short for 'close-order drill.' **2.** Repetitive exercises given or undertaken in learning a discipline or procedure.

drill, *v.* **1.** *tr.* To direct *troops* in close-order drill. **2.** To put a *person* or *persons* through a series of repetitious exercises for discipline or training. **3.** *intr.* To participate in close-order drill; to repeat or rehearse a procedure until it becomes habitual.

drill ammunition. Inert ammunition used for training.

drill bomb. Any uncharged aerial bomb used to train ground crews in assembling, fuzing, or other handling of bombs.

D-ring, *n.* A link or ring in the form of a capital D, such as is used for the pull or release on a parachute.

drink, *n.* The sea or water. *Slang.*

'He set the airplane down in the drink.'

driver, *n.* **1.** An early name for a pilot, used before 'pilot' had caught on. *Obs.* **2.** A person who steers and controls the movements of a ground vehicle.

drizzle, *n.* A light rain in which the drops are less than one-fiftieth of an inch in diameter, and tend to float downward.

drl (*abbr*). 'Drill.'

drogue, *n.* **1.** A fabric-covered piece of equipment shaped like the frustum of a cone, and normally used as a towed target, a wind sock, a sea anchor, or a kind of parachute to stabilize or slow down an aircraft in flight. **2.** A funnel-shaped piece of equipment at the end of a hose, trailed behind a tanker aircraft, used in a certain method of air refueling.

In sense 2, cf. **flying boom, probe-drogue system.**

drogue chute. A parachute in the form of a drogue, generally used as a deceleration parachute.

drome, *n.* Short for 'airdrome.'

drone, *n.* **1.** A pilotless airplane of conventional design, or of a modified conventional design, piloted by remote control, and once airborne, guided and directed by a mother aircraft. Attrib., as in *drone aircraft, drone plane.* **2.** The low, monotonous, humming sound of an aircraft engine, or of aircraft engines heard from a distance.

drone, *v. intr.* **1.** Of an engine: To make a low sound. **2.** *transf.* To fly off making a droning sound. *Colloq.*

droop snoot. 1. A P-38 modified for use as a horizontal bomber. **2.** The bombing technique employed in the use of modified P-38's as bombers.

drop, *n. Specif.* **1.** An airdrop. **2.** The falling action of an airplane when encountering an air pocket; the falling action of a parachutist, of a bomb,

etc. **3.** The action of dropping a bomb. **4.** The vertical drop (which see) of a projectile.

Attrib. in sense 1, as in *drop accuracy, drop altitude, drop area, drop location, drop message, drop mission, drop speed*, etc. See **freedrop,** *n.*

drop, *v.* **1.** *tr.* To release and let fall from an aircraft. Said of *bombs, gas tanks, parachutists, supplies*, etc. **2.** *intr.* Of an aircraft: To descend as if in a fall. **3.** *To drop wheels*, to lower the landing wheels of an aircraft. **4.** *To drop a wing*, to cause a wing to turn downward, as in the use of ailerons.

droppable, *a.* **1.** Of containers or equipment: That can be dropped by being pushed or tossed from an aircraft while in flight. **2.** Of a pod or fuselage: That can be detached while in flight and be landed either by parachute or nonpowered glide. **3.** Of lifeboats or similar equipment: That can be detached and dropped while the aircraft is in flight.

droppable tank. A drop tank.

drop panel. A strip of cloth, usually in combination with other panels, used to mark on the ground the area in which personnel or equipment are to be dropped from aircraft.

drop pattern. The pattern flown by aircraft preliminary to or while dropping troops or equipment.

dropping, *n.* The action of the verb 'drop.' Used attrib., as in *dropping area, dropping method, dropping speed, dropping zone.*

dropping angle. In bombing, the angle formed by the line of sight to the aiming point and a vertical line at the bomb release point.

drop-pod, *n.* On certain experimental or theoretical airplanes, a part of the fuselage, usually designed for some specific purpose on the ground, which can be detached in flight and dropped.

drop point. The point in the air at which personnel or supplies are dropped into a drop zone or area. Cf. **bomb-release point.**

drop ramp. A ramp carried inside an aircraft, which can be lowered to aid in loading or unloading persons or cargo.

dropsonde, *n.* A radiosonde dropped, or designed to be dropped, as by parachute from a high-flying aircraft to measure weather conditions and report them back to the aircraft.

Used over water or other areas in which no ground station can be maintained. Cf. **radiosonde,** *n.*

dropsounding, *n.* The action or process of taking weather readings of the atmosphere by devices dropped from aircraft.

drop tank. A tank, generally used to carry additional fuel, which can be detached while in flight and dropped.

Drop tanks are sometimes used in napalm bombing.

drop test. A test of equipment by dropping it from an airplane.

drop-test, *v. tr.* To test *parachutes* or *equipment* by using them in an airdrop.

drop zone. An area on the ground designated as the place where troops or supplies are to be dropped from aircraft.

DROS (*auth abbr*). 'Date returned from overseas.'

DR position. The position, esp. of an airplane, as established by dead reckoning. Hence, **DR positioning.**

drum, *n.* A cylindrical metal container for liquids.

Drums are of various sizes; the usual capacity of the gasoline drum is from 50 to 55 US liquid gallons. In the AF, the drum is standardized at 55 US liquid gallons.

dry adiabat. An exact term for 'adiabat.'

dry-bulb thermometer. The dry thermometer used in the psychrometer (which see).

dry fog. A fog-like haze of suspended particles with low moisture content, such as occurs near a forest fire or after a volcanic explosion. *Colloq.*

dry friction. Friction between solid surfaces without benefit of a lubricant. See **boundary friction.**

dry load. A sand load.

dry run. A practice exercise or rehearsal.

dry-sump lubricating system. A system of engine lubrication in which the oil is collected and stored outside the crankcase.

Practically all aircraft piston engines of more than 150 hp are of the dry-sump type.

dry weight of an engine. The weight of an engine exclusive of fuel, oil, and liquid coolant (if any).

DS (*abbr*). **1.** 'Detached service.' **2.** *auth.* 'Direct support.' **3.** 'Date of service.'

dsabl (*auth abbr*). 'Disable' or 'disability.'

dsasbl (*abbr*). 'Disassemble.'

dsbn (*abbr*). 'Disband.'

DSC (*auth abbr*). 'Distinguished Service Cross.'

DSCP (*abbr*). 'Division supply control point.'

dsg (*auth abbr*). 'Designate' or 'designation.'

DSM (*auth abbr*). 'Distinguished Service Medal.'

D.S.O. (*abbr*). 'Distinguished Service Order.'

dspch (*abbr*). 'Dispatch' or 'dispatcher.'

dspln (*auth abbr*). 'Disciplinary' or 'discipline.'

dspo (*auth abbr*). 'Dispose,' 'disposal,' or 'disposition.'

DSSN (*abbr*). 'Duty SSN.'

D system. The double-drift method of determining wind direction.

DT (*auth abbr*). 'Dental Technician.'

dt (*abbr*). 'Date.'

DTG (*auth abbr*). 'Date-time group.'

dtl (*auth abbr*). 'Detail' or 'detailed.'

dtn (*auth abbr*). 'Detain.'

DTO (*auth abbr*). 'District transportation officer.'

D-to-P-day concept. A concept for meeting re-

quirements by stockpiling sufficient materiel to bridge the gap between D-day and P-day.

DU (*auth abbr*). 'Diagnosis undetermined.'

dual, *a.* **1.** Absol. for 'flight with dual controls' or 'with dual controls,' as in 'to have several hours of dual' or 'to fly dual.' **2.** Of or pertaining to flight with dual controls. **3.** Of or pertaining to two like things.

dual control. 1. *pl.* A double set of cockpit controls to permit either the pilot or copilot, the instructor or student, to fly the aircraft. **2.** The kind of control that results from these two sets of cockpit controls.

dual flight control. Long for 'dual control.'

dual ignition. Ignition in which the cylinders of an engine are fired by two separate and complete ignition systems.

dual instruction. Instruction given with the aid of dual flight controls.

dual propeller. A counterrotating propeller.

dual rotors. Two rotors for a single helicopter.

Dual rotors may be side by side, tandem, coaxial, or overlapping (as in the synchropter).

dual-wheeled landing gear. A landing gear having two wheels attached to each strut.

Dubhe star. *Navigation.* The star which forms the lip of the great dipper.

DUCE (*auth abbr*). 'Distinguished Unit Citation Emblem.'

Duck, *n.* A popular name for the J2F-4, used in early air-sea rescue activities.

ducon (*auth abbr*). 'Duty connection' or 'duty connected.'

duct, *n.* A tube or passage for conveying air or gases.

In a jet engine, the chief duct is the passage conveying air from the air inlet to the compressor. A system or assembly of ducts is arranged around most aircraft engines for conveying cooling air to the engine. See **cabin-heater duct.**

ducted-fan jet engine. A kind of turbojet engine in which a propeller or fan forces low-pressure air through ducts directly into the hot turbine exhaust at the turbine exhaust pressure.

dud, *n.* A bomb, shell, or the like that has failed to function. Attrib., as in *dud hole.*

dudat (*auth abbr*). 'Due date.'

DUE (*auth abbr*). 'Distinguished Unit Emblem.'

due-in, *a.* Of supplies: Requisitioned but not yet received or delivered.

Hence, **due-in,** *n.*, the supplies that are due to be received; **due-in record,** a record of supplies that are due to be received.

due-out, *a.* Of supplies: Obligated for delivery out of stocks at hand or to be received. Hence, **due-out,** *n.*

duffel bag. A water-repellent canvas bag for holding clothing and other personal belongings.

DUKW (*code*). 'Amphibious truck, 2 ½-ton cargo.'

Duluth Municipal Airport. A municipal airport near Duluth, Minnesota, formerly called Williamson-Johnson Airport, at which certain accommodations are provided for USAF units.

Dumbo, *n.* [After a character in a Walt Disney animated cartoon.] A Catalina flying boat used for rescue work; any rescue plane. Attrib., as in *Dumbo mission.*

This term was originally a code word for 'Catalina,' used in orders of the day during the Guadalcanal operation in 1943.

dumdum, *n.* A bullet that flattens excessively on contact, or one specially designed to flatten excessively. In full, *dumdum bullet.*

The use of this type of bullet is forbidden under international law.

dummy, *n. Specif.* **1.** A nonexplosive bomb, shell, or the like. **2.** An object made to appear as an airplane, gun emplacement, or the like from the air. **3.** An object made to appear as a person, used in parachute drops for testing or diverting enemy defenses. **4.** A diversionary attack. **5.** A cryptographic letter that has no plain-text equivalent, used to misguide a cryptanalyst.

dump, *n.* (dp) A temporary storage area, usually in the open, for bombs, ammunition, equipment, or supplies.

See **ammunition dump, bomb disposal dump, bomb dump.**

dump, *v. tr.* To drop *bombs* or to throw out *supplies. Slang.*

dump valve. A device for permitting the pilot to jettison his fuel before making an emergency landing, or before dealing with some other emergency situation.

dupe (*auth abbr*). 'Duplicate' or 'duplication.'

Duralumin, *n.* [A trademark name.] An alloy of aluminum used extensively in aircraft construction, light but relatively hard and strong.

duration, *n.* The time during which an action or thing persists or continues; *specif.* in WW II, a popular term for 'the duration of the emergency,' as in the phrase 'for the duration plus six months.'

The duration (in specific sense) is declared ended by Presidential proclamation. This term is sometimes misunderstood to mean the duration of hostilities, rather than of the emergency.

dusk, *n.* **1.** That part of morning twilight from complete darkness to the beginning of civil twilight, and that part of the evening twilight from the ending of civil twilight to the beginning of complete darkness. **2.** In common usage, the darkening period of evening twilight.

dustbin, *n.* A gun turret on the under side of the fuselage. *Slang.*

dusting-off attack. An attack made on a target for the purpose of keeping it damaged.

dust strip. An airstrip built of dirt.

dutch roll. A combined yawing and rolling motion of an airplane caused by rough air. *Colloq.*

dutout (*auth abbr*). 'For duty outside the continental limits of the United States.'

duty, *n.* (dy) **1.** A moral obligation imposed upon, or felt by, a person by virtue of some circumstance or set of circumstances; also the sense of this obligation. **2.** That which a person is required to do in the performance of his assignment. **3.** Military service under assignment by competent authority; the work connected with this service. **4.** *On duty.* **a.** Actually at work as required. See **duty hour, off-duty,** *a.* **b.** In a status for work or service at regular periods or whenever otherwise required.

Examples of use: **1.** 'He had the duty to come forward with the truth.' 'Devoted to duty as he was, he could not go back.' **2.** 'One of his duties was to make out reports; another to attend meetings.' **3.** 'He was assigned duty in the AF.' 'He reported for duty on the first day out.' 'He died in the line of duty.' **4. a.** 'He was on duty during the night.' **b.** 'He remained on duty with us 60 days.'

duty AFS. The Air Force Speciality under which a person is actually assigned for regular duty.

The duty AFS is not necessarily the primary AFS.

duty assignment. The duty to which an individual is officially assigned.

duty hour. Any one of the hours during which a person is actually at work as required by assignment. Cf. **off-duty,** *a.*

duty MOS. The military occupational specialty in which a person actually performs duty. Now *hist.* in the AF. See **duty AFS.**

duty officer. 1. An officer on duty, or ready for duty, during periods when other personnel are normally off duty. **2.** An officer charged with being personally present and on the job to take care of certain matters requiring instant and continuous attention as they arise.

In sense 1, a duty officer in certain situations may simply be designated for duty if and when the occasion demands. In sense 2, a common kind of duty officer is one who looks after dispatches.

duty roster. A roster showing the time or times at which various persons are scheduled for particular duties.

duty station. The station or base at which a person is assigned for regular duty; also a place at which a person performs an assigned duty.

duty status. The status of an individual with respect to his duty.

Duty status is indicated by such phrases as 'present for duty,' 'absent without leave,' 'sick in the hospital.'

duty time. 1. Any time considered time spent on duty. **2.** In a restricted sense, the time actually spent at work, as opposed to off-duty time.

In sense 1, this time excludes leave time and absence without leave, but includes time spent at a regular duty station, time on TDY, time on administrative leave, authorized travel time, duty-to-hospital time, etc.

duty to hospital. The designation for a duty status report, indicating that the person or persons concerned have been transferred from a present for duty status to a sick in the hospital status.

duty to sick in quarters. The designation for a report in change of duty status, indicating that the person or persons concerned have been transferred from a present for duty status to a sick in quarters status.

dv (*auth abbr*). 'Device' or 'dive.'

DVFR (*abbr*). 'Defense visual flight rules.'

dvr (*auth abbr*). 'Driver.'

dwg (*auth abbr*). 'Drawing.'

dy (*auth abbr*). 'Duty.'

dye marker. A dye which when placed in water, as in the ocean, colors the water so that it can be seen from the air. See **flourescein,** *n.*

dynamic, *a.* Of or pertaining to dynamics esp. to aerodynamics.

Dynamic Air War Game. An air war game played on a machine having a number of electronic devices.

The opponents feed certain information into this machine, which on the basis of specified assumptions shows the effects of actions fed into it upon the relative power position of contending parties.

dynamic damper. A short pendulum-like counterweight attached to a crankshaft in order to damp out or reduce engine vibration.

dynamic lift. The lift given an airplane by the aerodynamic force produced from an adequately-designed airfoil.

Distinguished from the lift imparted to an aerostat by a lighter-than-air gas.

dynamic load. The load on an aircraft due to a dynamic force, esp. acceleration (which see).

dynamic pressure. The pressure exerted by a gas, liquid, or solid solely by virtue of its relative motion when it strikes an object.

For example in a pitot-static tube, dynamic pressure is that part of the impact pressure derived from the relative motion of the air, as distinguished from that derived from atmospheric pressure. It is distinguished from static pressure. See **impact pressure.**

dynamics, *n.* A branch of mechanics that treats of the motion of bodies and of the forces acting upon bodies in motion or in process of changing motion.

In early usage, 'dynamics' was used where 'aerodynamics' might be used today as a more restrictive term.

dynamic scale. A scale that shows dynamic similarity.

dynamic similarity. The similarity in the fluid flows about a scale model and a full-scale model.

This is expressed by a Reynolds number, which shows a ratio between the forces due to density and the forces due to viscosity.

dynamic stability. The property of an aircraft which, when its steady motion in flight is disturbed, causes it to damp any oscillation and

gradually return the aircraft to its original state of steady motion. See **stability, *n.*,** sense 1a and note.

dynamite bomb. A bundle of dynamite sticks used as a bomb.

dynamometer, *n. Specif.* An instrument or device for measuring the power, thrust, or torque of an aircraft engine or rocket. See **hub dynamometer, reaction balance.**

dynamotor, *n.* A combination motor and generator on a single shaft.

dyne, *n.* A unit of force that will accelerate a particle having a mass of one gram one centimeter per second per second.

dyne. A suffix form of *dyna* meaning 'power,' as in *amplidyne, gyrodyne, servodyne.*

'Dyne' is the first syllable of the Greek *dynamikos* powerful. See **aerodyne,** *n.*

dynetric balancer. A device used in balancing individual units of equipment revolving at varying speeds.

dysbarism, *n. Medicine.* A disturbance in the body, often occurring with changes in altitude, resulting from a pressure differential between the total ambient barometric pressure surrounding a body and the total pressures of dissolved and free gases within the body tissues, fluids, and cavities.

See **aeroembolism,** *n.*, **barodontalgia,** *n.*, **barosinusitus,** *n.*, and **barotitis media.**

DZ (*auth abbr*). 'Drop zone.'

DZA (*abbr*). 'Drop zone area.'

Dzus fastener. A patented lock type fastener commonly used on airplane cowlings, in which the stud locks on a spring permanently attached to the mounting.

E

E (*letter*). See **Echo** (*code*). Used in the names of certain objects, to indicate type, model, or series, as in *E-4*, a type of autopilot, *B-36E*, etc.

E (*abbr*). **1.** 'Enlisted,' as used in the designation of an airman's grade: *E-1*, basic airman; *E-2*, airman 3rd class; *E-3*, airman 2nd class; *E-4*, airman 1st class; *E-5*, staff sergeant; *E-6*, technical sergeant; *E-7*, master sergeant. **2.** 'East.' **3.** 'Estimated weight' of an aircraft, as distinguished from actual or calculated weight. **4.** 'Edo Aircraft Corporation,' in the designations of Naval aircraft. **5.** 'Special electronic version,' in Naval designations of aircraft so modified. **6.** 'Exempt' in USAF aircraft classification.

E (*code suffix*). 'Regular Air Force Male Warrant Officer' when used with a service number, as in '950284E.'

E-6B computer. A circular slide rule used for solving mathematical problems in navigation, bombing, etc.

E/A (*abbr*). 'Enemy aircraft.'

ea (*auth abbr*). 'Each.'

EABn (*auth abbr*). 'Engineer Aviation Battalion.'

EAC (*abbr*). 'Eastern Air Command.'

EAD (*auth abbr*). 'Extended active duty.'

EADF (*auth abbr*). 'Eastern Air Defense Force.'

eager beaver. An unusually busy or diligent person. Used opprobriously.

eagle, *n.* **1.** An insigne denoting rank, worn by a colonel in the AF, Army, and Marine Corps, or by a Naval captain. **2.** A type of radar designed especially for blind-bombing from high altitudes, also used as a navigational aid and an altimeter.

Eagle Squadron. Any of three RAF squadrons, composed of American volunteer pilots, existing during the early days of World War II.

The nucleus of the first Eagle Squadron consisted of former members of the French Squadron, modeled after the Lafayette Escadrille of World War I. Pilots in the Eagle Squadrons were transferred to the AAF in September 1942 and organized into the 4th Fighter Group of the VIII Fighter Command.

EAMECM (*auth abbr*). 'European-African-Middle-Eastern Campaign Medal.'

EAPD (*auth abbr*). 'Eastern Air Procurement District.'

early-warning aircraft. An aircraft specially equipped with early-warning radar.

early-warning radar. (EWR) In aircraft control and warning, a radar set or system set up or used near the periphery of a defended area to warn of aircraft approaching the area.

Early-warning radar is designed to detect aircraft at as great a distance as possible.

ear microphone. A microphone designed to fit into the ear, where it picks up the voice of the speaker wearing the microphone.

earphone, *n.* A small radio receiver designed to fit over the ear. See **headphone,** *n.*

ear plug. A device used esp. by aircrew members to prevent injury to the ear from sound.

earth-inductor compass. A formerly-used type of compass utilizing a power-driven coil revolving in the earth's magnetic field as a sensing element. Also called an 'induction compass.'

earthquake bomb. A large bomb which, when dropped, penetrates and explodes beneath the surface of the earth, giving an effect similar to an earthquake. *Colloq.*

earth shock. A violent tremor in the earth as that caused by a bomb explosion beneath the surface of the earth.

EAS (*abbr*). 'Equivalent airspeed.'

ease, *v. tr. To ease up*, to relax pressure on the controls, as 'to ease up on the stick.' *Colloq.*

easterly wave. A wave of air moving within, or along with, certain tropical easterly winds, distinguished from the ambient air chiefly by a difference in pressure, which sometimes gives rise to small but violent hurricanes.

easterly wind. A wind blowing from the east.

Eastern Air Command. A combined air command in India during WW II with operational control over AAF and RAF units in India and on the Burma front, organized under Major General George E. Stratemeyer in December 1943 and dissolved on 1 June 1945.

Eastern Air Defense Force. (EADF) A major component of the Air Defense Command, providing air defense for the eastern US.

The EADF covers nineteen eastern states and the District of Columbia.

eastern standard time. (EST) The standard mean time of the eastern standard time zone, i.e.,

between approximately 67.5 degrees and 82.5 degrees west longitude.

Easy (*code*). A word formerly authorized for the letter 'E.' See **Able** (*code*).

EAT (*abbr*). 'Earliest arriving time.'

EAUTC (*abbr*). 'Engineer Aviation Unit Training Center.'

EC (*auth abbr*). 'Extension course.'

ECA (*abbr*). 'Economic Cooperation Administration.'

ECC (*abbr*). 'European Coordinating Committee.'

eccentric, *a.* Of a rotor and its cylindrical casing: Not having the same center, as in a vane-type supercharger.

ECCM (*abbr*). 'Electronic counter-countermeasure(s).'

ech (*auth abbr*). 'Echelon.'

echelon, *n.* [French, as derived from *échelle* ladder.] (ech) **1.** An arrangement of anything in such manner as to suggest steps or a scale. Applied esp. to troops, ships, or aircraft. See sense 2. **2.** *Specif.* An arrangement of aircraft in flying formation by which each aircraft or each flight of aircraft flies at a level above or below another aircraft or flight in the formation, and usually at a distance to the right or left. **3.** One of the levels in such an arrangement; also the aircraft flying at one of the levels, as in 'the second echelon in the formation.' **4.** One of the levels of command in a chain of command, as in 'a squadron is at a lower echelon than a group.' **5.** The headquarters at any such level, as in 'we received instructions from a higher echelon.' **6.** One of the components of a force, either distinguishable by its relative position in the action being carried out, as in 'advanced echelon,' 'attack echelon,' 'rear echelon,' 'reserve echelon,' 'support echelon,' and 'water echelon,' or distinguishable by function, as in 'air echelon' (which see, sense 3), 'command echelon,' or 'ground echelon.' **7.** A level of maintenance service, as used attrib. in 'fourth echelon maintenance': See note. **8.** *To form or assemble in echelon,* to assume position in an echelon.

Usage in sense 7 was common in WW II, when first, second, third, and fourth echelon maintenance or repair were distinguished. These are now covered by organizational maintenance, field maintenance, and depot maintenance.

echelon, *v.* **1.** *tr.* To arrange or place *aircraft, troops,* or the like in echelon. **2.** *intr.* To take position in an echelon; to engage in this activity.

echelon repair. Either third or fourth-echelon repair. Now *hist.*

Echo (*code*). An authorized word for the letter 'E.' See **Alfa** (*code*).

echo, *n. Specif.* A radar echo.

echo area. That part of a radar target that effectively returns echoes to the transmitter. Also called 'radar cross section,' 'scattering cross section.'

The effectiveness of a radar target in sending back echoes depends upon its size and shape, esp. upon the contours of its surface.

echo box. A device connected to a radar transmitter to reradiate transmitted pulses for testing purposes and for timing the receiver to the transmitter.

echoing area. The echo area of a radar target.

ECI (*abbr*). 'Extension Course Institute.'

ECIUSAF (*abbr*). 'Extension Course Institute, USAF.'

ECL (*auth abbr*). 'Equipment component list.'

ecliptic, *n.* The apparent path of the sun among the stars, caused by the yearly movement of the earth around the sun.

The ecliptic is a great circle of the celestial sphere inclined about 23° 27′ to the equator of the earth.

ECM (*abbr*). **1.** *auth.* 'Electronic countermeasure(s).' **2.** 'Electronic-countermeasure mission.'

econ (*auth abbr*). 'Economy.'

economical, *a.* **1.** Of a target: That can be attacked without suffering losses considered too great for the ends to be accomplished. **2.** Of an administrative or operational action: Resulting in, or done with, economy.

economic instrument. *Specif.* An instrument for achieving certain national objectives that arises when a nation has so organized its industrial, technological, commercial, and financial resources as to allow their use together in purposeful action.

Cf. **military instrument.**

economic target. An area, region, or site, an attack upon which would tend to destroy or cripple an enemy's economic system.

economic warfare. An act or measure, or succession of acts and measures, taken by a nation either to improve or maintain its own economic capacity for making war, or to impair an enemy's or other nation's capacity for making war.

'Economic warfare' is used by some writers to apply to such measures as indicated, undertaken in peace as well as those taken in war.

economic war potential. That segment of the economic capacity of a nation which can be used for purposes of conducting war.

economizer, *n. Specif.* **1.** A regulator that supplies oxygen at high altitudes to the occupants of an airplane in fixed minimum quantities as determined by human needs. **2.** An economizer valve.

The mask of the user is attached to the economizer (sense 1) by means of a flexible hose.

economizer system. An oxygen-supply system that uses an economizer at high altitude.

economizer valve. A valve in a carburetor that

meters the fuel flow to economize on fuel at low speeds.

economy of force. 1. A principle of war embodying the thesis that the force committed to a mission or task should be commensurate with the purpose, sufficient to achieve the objective but reserving as much other force as possible for use at the decisive point. **2.** *Specif.* The principle that an air force should be employed in such manner as to conserve its main power for the decisive action. See **decisive,** *a.*, sense 2, also **indivisibility,** *n.*

economy of motion. A principle that the motions applied to a given task should be restricted to the minimum necessary for successful accomplishment.

ecosphere, *n.* From a medical standpoint, that part of the atmosphere in which normal breathing may be exercised, extending upward to about 13,000 feet above sea level. Also called the 'physiological atmosphere.'

ECP (*auth abbr*). 'Engineering change proposed.'

EC smokeless powder. A kind of gunpowder used chiefly in blank cartridges. Also called 'EC blank fire,' 'EC blank powder,' and 'EC powder.'

EC blank powder is used in some 0.22 caliber and shotgun ammunition, and was used at one time in fragmentation grenades.

ed (*auth abbr*). 'Editor' or 'edition.'

EDCMR (*abbr*). 'Effective date of change on morning report.' Now *hist.* See next.

EDCSA (*auth abbr*). 'Effective date of change of strength accountability.'

eddy, *n.* A current of air or other fluid that runs contrary to the main stream, esp. a small vortex of air that runs counter to the main airflow.

Eddies tend to form on the lee side of an object.

EDFR (*auth abbr*). 'Effective date of federal recognition.'

Edgewater adapter. A kind of recoil adapter fastened to the receiver of an aircraft machine gun and surrounding the barrel. See **recoil adapter.**

EDO (*auth abbr*). 'Engineering duties only.'

EDRT (*auth abbr*). 'Effective date of relief from training.'

EDS (*auth abbr*). 'Estimated date of separation.'

EDSA (*abbr*). 'Effective date of change in station assignment.'

EDT (*auth abbr*). 'Effective date of training.'

educ (*auth abbr*). 'Education.'

education, *n.* (educ) **1.** A process by which a person develops his understanding. See **professional education, training,** *n.*, note. **2.** *Capitalized.* A section in a housekeeping unit concerned with serving personnel seeking education through the United States Armed Forces Institute, the civilian institutions program, operation bootstrap, or other like programs.

educational adviser. A person professionally qualified who advises a commander on matters pertaining to educational methods and techniques.

Edwards Air Force Base. An AF base at Muroc, California, originally known as Muroc Air Force Base, renamed for Captain Glen W. Edwards, a test pilot killed in 1948.

EEI (*auth abbr*). 'Essential elements of information.'

EENT (*abbr*). **1.** *auth.* 'End, evening nautical twilight.' **2.** 'Eye, ear, nose, and throat.'

EET (*auth abbr*). 'Education Equivalency Test.'

EF (*abbr*). 'Elevation finder.'

eff (*auth abbr*). 'Effect' or 'effective.'

effcy (*auth abbr*). 'Efficiency.'

effect, *n.* That which may be produced either in the minds of men or in physical objects, as a result of military action, esp. the effects of denial, capture, destruction, persuasion, and neutralization.

effect, *v.* (eff) *tr.* **1.** To bring to pass, execute, or accomplish. **2.** To produce or make.

'Effect' is frequently confused with 'affect.'

effective aeronautical rating. 1. Any aeronautical rating considered effective by AF regulation at one time or another, whether currently utilized or not. **2.** Short for 'currently effective aeronautical rating.'

effective angle of attack. That part of a given angle of attack that lies between the chord of an airfoil and a line representing the resultant velocity of the disturbed airflow.

This angle is measured on a finite wing, but it has the same effective magnitude as that of an angle of attack for infinite aspect ratio measured on a theoretical airfoil between the chord and the direction of the undisturbed airflow. See **angle of attack for infinite aspect ratio,** note.

effective area. The area within which a projectile containing a high explosive charge must explode in order to do effective damage.

effective aspect ratio. In aerodynamic theory, the aspect ratio of an airfoil of elliptical plan form that, for the same lift coefficient, has the same induced-drag coefficient as the airfoil or combination of airfoils under consideration.

effective ceiling AA. The maximum vertical range within which an antiaircraft gun may engage for a period of 20 seconds an aircraft approaching directly at 300 miles per hour, firing the last round at a quadrant elevation of 70°.

effective combat ceiling. The maximum altitude at which aircraft are able to engage effectively in combat. See **combat ceiling.**

effective firing time. The period of time during

which an aircraft can deliver effective fire at a moving or a stationary target.

effective focal length. *Aerial photog.* The focal length of a camera at which a photograph has actually been taken; or, if the photograph has been enlarged or reduced, a focal length at which the modified photograph would have been taken to obtain the new dimensions.

effectiveness report. An official report on an AF officer in the grade of colonel or lower, covering such items as cooperation, judgment, and growth potential. Cf. **general officer efficiency report, performance report.**

effective pitch. The distance a propeller at a given blade angle moves forward in the air with one revolution. See **geometric pitch, slip,** *n.*, sense 2.

effective propeller thrust. The net thrust developed by a propeller mounted on an aircraft.

The effective propeller thrust is determined by subtracting from the entire propeller thrust any resistance on the airplane caused by the slipstream.

effective range. The range (which see, sense 5) up to which a weapon, airplane, or radio or radar transmitter operates effectively.

The effective range of an aircraft depends upon the conditions under which it is operated. For example, a bomber with a bombing range of 1,000 miles might have an effective range of several miles less if required to take a circuitous course to reach its target, or if dependent upon fighter escorts having limited ranges. Or, a fighter with a flying range of 800 miles might have an effective range of only 200 miles if required to engage in combat.

effective sortie. A sortie that carries out the mission for which it was intended. Cf. **abortive sortie, noneffective sortie.**

The sortie of a bomber is considered effective if it drops its bombs on target even though the bombs cause less than the hoped-for damage.

effective striking distance. Any distance within which an aircraft may strike effectively at a target. Cf. **effective range.**

effective wind. A calculated wind equal in speed and direction to the average of any given number of varying actual winds, used esp. in sound-ranging and weather observation. Cf. **ballistic wind.**

eff wd (*abbr*). 'Effective wind.'

EG (*auth abbr*). 'Expert gunner.'

eggbeater, *n.* A helicopter. *Slang.*

Eglin Air Force Base. An AF base at Valparaiso, Florida, named for Lieutenant Colonel Frederick J. Eglin, killed in 1937.

EGT (*abbr*). 'Exhaust-gas temperature.'

EHF (*auth abbr*). 'Extremely high frequency.'

Eielson Air Force Base. An AF base at Fairbanks, Alaska, named for Captain Carl Benjamin Eielson, who died in a plane accident in 1929.

eight, *n.* A flight maneuver in which the airplane flies a path, usually horizontal, suggestive of the figure 8; the flight path described in this maneuver. Cf. **cuban eight, four-bank eight, lazy eight, rolling eight.**

Eight across a road, an eight made over a road or highway, in which the two parts of the figure are separated by the road or highway; *eight around pylons*, an eight made with the airplane flying low around a pair of pylons or other upright posts; *eight on pylons*, a species of an eight around pylons in which the airplane flies so that one wingtip remains pointed at the pylon as it makes each circle in the figure.

Eisenhower jacket. A nickname for the officer's jacket of the Army service uniform in WW II.

The jacket was a favorite garment of General Dwight D. Eisenhower (1890–) in the European theater. Cf. **battle jacket.**

EIT (*auth abbr*). 'Electrical Information Test.'

ejection chute. Short for 'case ejection chute' or 'link ejection chute.'

ejection cockpit capsule. A detachable pressurized cockpit on certain airplanes which may be ejected as a unit and parachuted to the ground.

ejection seat. A seat designed to catapult a flyer from an airplane at sufficient velocity to clear the airplane completely.

ejection-seat trainer. A ground trainer for practicing the use of an ejection seat.

ejector, *n.* **1.** The open aft portion of a jet-engine shroud, which permits the escape of cooling air. **2.** A part in a firearm for throwing out shells or cartridges. Cf. **extractor,** *n.*

EKG (*auth abbr*). 'Electrocardiogram.'

EL (*auth abbr*). 'Education level.'

el (*auth abbr*). 'Elevation.'

E layer. A layer of the ionosphere that persists both day and night from above 55 miles to 85 miles, immediately below the F layer (which see). Sometimes called the 'Heaviside layer,' or the 'Kennelly-Heaviside layer.'

elct (*auth abbr*). 'Electronics.'

elec (*auth abbr*). 'Electric' or 'electrician.'

electrical degree. One of the 360 equal parts of an alternating current cycle.

electrical director. An electrical device for tracking a moving target and, by using information from radar or from a range finder, for computing firing data.

electrical message. A message, such as a teletype, automatically written down by electrical apparatus at the receiving station.

electrical storm. 1. A meteorological disturbance in which the air is highly charged with electricity, occurring in fine weather, without clouds or rain, and often accompanied by dry, dusty winds. **2.** A sudden change in pattern of electric earth currents, causing interference with certain electric, magnetic, and electromagnetic devices, as magnetic compasses, telephones, and radios. **3.** A term sometimes applied to a thunderstorm because of its accompanying electrical phenomena.

electric propeller. A propeller the pitch of which is regulated by electrical power.

electric suit. A flying suit heated by electricity.

electric tachometer. Any tachometer operating on a voltage produced by a generator driven by the crankshaft of an engine, and indicating the voltage output in terms of rpm.

The generated voltage is directly proportional to the rotational speed of the armature of the generator.

electrode, *n.* A terminal or surface at which electricity passes from one material or medium into another.

For example, the cathode, plate, or grid of a vacuum tube, or one of the plates in a battery is an electrode.

electrolyte, *n.* A chemical substance, either liquid or pastelike, used in a battery, cell, or capacitor to generate or store electric current.

electromagnetic spectrum. The total range of wave lengths or frequencies in electromagnetic waves. See **radio spectrum.**

electromagnetic wave. An energy wave consisting of electric and magnetic lines of force, as a radio wave.

electromotive force. The force which moves electricity in a current, measured in volts.

electron, *n.* A very light particle with a mass 1/1845 that of a proton, having a negative charge.

Electrons are constituents of the atom. See **beta particle, cathode ray,** and cf. **positron,** *n.*

electron beam. A stream of electrons moving at high velocity, as in a cathode-ray tube; a cathode ray.

electron bomb. A German WW II bomb having an incendiary charge and a combustible casing of magnesium. Named after a German trade-name *Elektron.*

electron-coupled oscillator. An oscillator which employs electron coupling between the oscillator and the output or load, using a vacuum tube as the medium of the coupling.

electron gun. A device used in a cathode-ray tube to form, accelerate, and focus an electron beam.

electronic, *a.* Of or pertaining to electronics.

electronic altimeter. A radio altimeter.

electronic countermeasure. (ECM) Usually *pl.* Any of various offensive or defensive tactics using electronic and reflecting devices to reduce the military effectiveness of enemy equipment or tactics employing or affected by electromagnetic radiations.

Following are various kinds of electronic countermeasures: Communications countermeasure, controlled-devices countermeasure, navigational countermeasure, radar countermeasure, and radio countermeasure (which see under separate entries). See also **confusion reflector, electronic deception, electronic jamming.**

electronic-countermeasure reconnaissance. Aerial reconnaissance flown by aircraft equipped with electronic devices capable of locating enemy radar stations, determining their area coverage and making radarscope photographs for combat mission folders. See **photoscope reconnaissance,** and cf. **radar reconnaissance.**

electronic deception. An electronic countermeasure wherein electromagnetic waves are radiated or reradiated in a manner intended to jam electronic equipment or to make it react to deceptive electronic devices, such as chaff, false guiding beams, etc. See **radar deception** and cf. **radio deception.**

electronic fuze. A fuze, such as the radio proximity fuze, set off by an electronic device incorporated in the fuze.

electronic intelligence. Intelligence regarding the location, volume, direction, and type of enemy electronic devices; intelligence obtained by intercepting enemy electronic emanations.

Electronic countermeasure reconnaissance, the interception of enemy radio messages, the interrogation of prisoners of war, photo interpretation, and other activities are sources of electronic intelligence.

electronic intercept reconnaissance. Electronic-countermeasure reconnaissance.

electronic jamming. An action involved in electronic countermeasures, being the radiation or reradiation of electromagnetic waves to impair the use of a specific segment of the radio spectrum. Usually shortened 'jamming.' See **barrage jamming, carpet,** *n.*, sense 1.

electronic pilotage. A method of pilotage in which landmark images appearing on a radarscope are used.

electronic reconnaissance. 1. Reconnaissance with the aid of electronic devices. See **radar reconnaissance. 2.** *Specif.* Electronic-countermeasure reconnaissance.

electronics, *n.* (elct) That branch of physics which treats of the emission, transmission, behavior, and effects of electrons.

Practical application of electronics has been made through such devices as vacuum tubes, cathode-ray tubes, photo-electric cells, and the like.

electronics warfare. (EW) Warfare in which electronic instruments are used, as in radio communications, guided missile control, target detection, etc.

electron tube. A kind of thermionic vacuum tube with a heated cathode, together with an anode and a third electrode, used for detecting radio waves, amplifying currents, etc. Also called 'radio tube' or 'vacuum tube.'

element, *n.* (elm) **1.** As distinguished from a component, any subdivision or part of a military organization or formation that may, when occasion requires, function apart from the whole, or be considered as a separate entity. **2.** A com-

ponent (which see) of an organization, as in 'command element' or 'service element.'

In a flying formation, the element consists of one, two, three, four, or any number of aircraft, as may be decided upon by the commander.

element leader. The pilot leading a group of aircraft flying as an element in a formation.

elevated pole. That celestial pole nearest the observer's zenith.

elevation, *n.* **1.** Height or altitude. **2.** The angle of elevation.

elevation angle. The angle of elevation.

elevation plane. The vertical plane in which the angle of elevation is measured.

The elevation plane is perpendicular to the azimuth plane.

elevator, *n.* A control surface, usually attached to the horizontal stabilizer, moved to make the tail of an aircraft go up or down.

elevator angle. The acute angle between the chord of an aircraft elevator moved from its neutral position, and its chord in neutral position.

The angle is positive when the trailing edge of the elevator is below the neutral position and negative when above.

elevator booster. A booster motor (which see) for an elevator or elevators.

elevator plane. An elevator. *British.*

elevon, *n.* An airplane control surface combining the functions of an elevator and an aileron.

elig (*auth abbr*). 'Eligible.'

elim (*auth abbr*). 'Eliminate' or 'elimination.'

eliminate, *v.* (elim) *tr.* To remove a *person* from a particular group, as from one pursuing a course in training, as in 'two were eliminated from pilot training during the first week.' Hence, **elimination,** *n.* Cf. **wash,** *v.*

elimination rate. The percentage or ratio of personnel eliminated for whatever cause from a specified group, such as a class in a training course.

Sample formula: The number eliminated divided by the net total of personnel taking the course.

Ellington Air Force Base. An AF base at Houston, Texas, named for Lieutenant Eric L. Ellington, killed while making a training flight in 1913.

Ellsworth Air Force Base. An AF base at Rapid City, South Dakota, named for Brigadier General Richard Elmer Ellsworth, killed in an airplane crash in Newfoundland, 1953.

Ellsworth method. A method of obtaining a corrected line of position in polar navigation, named after Lincoln Ellsworth (1880–1951), American polar explorer.

This method makes use of tables used in conjunction with the star azimuth line ascertained by celestial observation.

ELM (*auth abbr*). 'Eastern Atlantic and Mediterranean,' used in combination only.

elm (*auth abbr*). 'Element.'

Elmendorf Air Force Base. An AF base at Anchorage, Alaska, named for Captain Hugh M. Elmendorf, killed in an aircraft accident at Wright Field in 1933.

eloper, *n.* An applicant for enlistment who declines to enlist after having been transported, lodged, or fed by the government in anticipation of his enlistment.

EM (*auth abbr*). **1.** 'Enlisted man' or 'enlisted men.' **2.** 'Education Manual.'

emagram, *n.* A meteorological chart showing temperature on a linear and pressure on a logarithmic scale.

emb (*auth abbr*). **1.** 'Embark.' **2.** 'Embassy.'

embarkation, *n.* (emb) The loading of troops, equipment, or supplies on a ship or aircraft in preparation for a voyage or trip.

embarkation point. The point at which troops, equipment, or supplies are loaded on a ship or aircraft.

EMCCC (*auth abbr*). 'European Military Communications Coordinating Committee.'

emerg (*auth abbr*). 'Emergency.'

emergency, *n.* (emerg) Any circumstance in which irretrievable loss or disaster threatens, and immediate action is called for. See **national emergency.**

emergency landing. Either a forced landing or a precautionary landing.

emergency radio channel. Any radio frequency reserved for emergency use, particularly for distress signals.

The emergency frequencies for standard channels are 500 and 8,364 kilocycles, for VHF 121.5 megacycles, and for UHF 243 megacycles.

EMF (*abbr*). 'Electromotive force.'

Emily, *n.* An Allied name for the Japanese Kawanishi H8K2.

EML (*auth abbr*). 'Equipment modification list.'

empennage, *n.* [French derived from *empenner* to feather an arrow.] The assembly at the rear end of an aircraft comprised of the horizontal and vertical stabilizers and their associated control surfaces. Also called the 'tail assembly.'

In a barrage balloon, the empennage consists only of fixed, gas-filled fins or stabilizers, no control surfaces being present.

empl (*auth abbr*). **1.** 'Employ.' **2.** 'Emplacement.'

emplane, *v. intr.* and *tr.* To go on board an airplane; to put an *animal* or *person* on an airplane.

employment, *n.* (empl) **1.** The manner of using. **2.** Use; the action of using.

In the AF, the phrases 'air employment,' 'employment of the air arm,' 'employment of aircraft,' or 'employment of air power' are doctrinal phrases, usually connoting a manner of use consonant with political, strategic, and tactical concepts. A proper employment of aircraft implies their use in such a way as to take full advantage of their actual or real capabilities, both positive and passive in

whatever situation that might arise, either in peace or in war.

empty weight. The basic weight (which see) of an airplane.

EMR (*auth abbr*). 'Enlisted manning report.'

EMT (*auth abbr*). 'Emergency medical tag.'

en (*auth abbr*). **1.** 'Enemy.' **2.** 'Engineman.'

encipher, *v. tr.* To convert a *message, document,* or the like, from plain text to a cryptogram by means of a cipher.

encode, *n.* That section of a code book used in encoding a message.

encode, *v. tr.* To convert a *message, document,* or the like, from plain text to a cryptogram by means of a code.

encrypt, *v. tr.* **1.** To convert a plain-text *message* or a series of electronic *impulses* into a secret message by use of an electronic machine designed for the purpose. **2.** To encode or encipher.

end bow. A member giving a rounded outline to the tip of a wing, control surface, or the like.

end-fire array. A linear or cylindrical radar antenna array that emits its radiation from one end.

end item, *n.* A finished item complete within itself, whether a simple piece or made up of many pieces, and ready for its intended use. Often used as a cataloguing term in supply.

This term is relative. A bolt in an airplane is not an end item, but a bolt delivered by a bolt factory to a repair shop may be considered an end item by the manufacturer or by the purchaser. The bolt, however, loses its character as an end item when it becomes a part of an airplane or other assembly. See **end product.**

endlap, *n. Aerial photog.* That part at the end of an aerial reconnaissance strip that covers what a similar part of another strip covers.

endless-track landing gear. A caterpillar landing gear.

end play. The longitudinal back-and-forth play of a shaft.

end product. Any piece of equipment produced by the assembly of component parts.

An end product may be installed in another piece of equipment, as an engine in an airplane, but its functional entity is not eliminated by being so installed. An end product can go into an end item.

endurance, *n.* The ability or capability of persons or equipment to perform under the strains of certain operating conditions; the time used to measure this ability or capability.

'Endurance' is used attributively to designate (a) an action that tests for endurance, as in *endurance run, endurance flight,* or (b) that which is being tested for endurance, as in *endurance aircraft, endurance gun.*

endurance flight. A flight for testing or demonstrating the endurance of an aircraft or airborne equipment or personnel under given conditions.

enemy, *n.* (en) A military foe; a hostile nation, force, person, ship, aircraft, etc. See **he,** *pron.*

Attrib., as in *enemy bomber, defense, flight, headquarters, raid, territory,* etc.

enemy action. Any offensive or defensive operation undertaken by the enemy.

enemy capabilities. The capabilities of an enemy commander or force appraised in terms of what he can do in attack, defense, withdrawal, tactics, and techniques — all in the light of known factors affecting military operations: See note.

The factors affecting enemy capabilities are both remote and immediate, including the national economy that supports him, the political situation, the time of day for the action, the season, the weather, the terrain, also the facilities available (such as airstrips, roads, etc.), the kinds of equipment, the strength and disposition of forces.

Appraisal of enemy capabilities are normal to an estimate of the situation.

enemy intentions. The intentions of an enemy commander, esp. as they may relate to formulating an estimate of the situation.

Enemy intentions are ascertainable only in terms of probability, and are not measurable by such objective standards as those used in appraising enemy capabilities. They may, however, become an important factor in estimating the situation.

energizer, *n.* That component of a hydraulic system that produces pressure and circulates the liquid in the system.

eng (*auth abbr*). 'Engine.'

engage, *v. tr.* To enter into combat or battle with the *enemy;* to strike at an *aircraft* or other *target* with gunfire. Hence, **engagement,** *n.*

engine, *n.* (eng) Any of many machines that convert energy in one form, as that of heat, into a form suited to use, as that of torque applied to a crankshaft or of kinetic flow directed into a jet stream, esp. the main, or one of the main, propulsion units of an aircraft.

In AF usage, 'engine' usually denotes a large or complicated power unit, and is applied to an aircraft power unit, either reciprocating or jet, but not to an electrical motor.

The unqualified word 'engine' is often restricted to an internal-combustion, piston engine, esp. in such phrases as 'four-engine aircraft,' 'single-engine aircraft,' etc. This usage reserves such phrases as 'twin-jet aircraft,' 'four-jet aircraft,' or 'single-jet aircraft' to refer to aircraft powered by jet engines. See **jet, *n.*, jet engine, motor, *n.*, rocket engine.**

A choice appears to be given the user between 'engine' and 'engined' in such phrases as 'a two-engine bomber' or 'a two-engined bomber,' but it should be observed that such a choice is not given when the noun modified is a person, as in 'a two-engine pilot' but not 'a two-engined pilot.' This difference points up the connotations of the two words. 'Engine' is a noun used attributively, 'engined' is an adjective. See **engined,** *a.*, **twin-engine,** *a.*

engine accessory. A part or assembly connected to, or used with, an engine, but not essential to its operation, as a generator, hydraulic pump, tachometer generator, or the like. Cf. **engine component.**

engine analyzer. An engine instrument that detects and indicates any faults developing in the ignition of an aircraft engine.

engine buildup. The addition to an engine of

certain items, such as a generator, fuel pump, hydraulic and electrical lines, cowling, or the like.

engine component. A constituent part of an engine, esp. a complete assembly, as a fuel pump, compressor, carburetor, supercharger, or any other unit directly affecting engine operation.

An engine component is often distinguished from an engine accessory (which see).

engine conditioning. A standard AF method and procedure to ascertain and correct any malfunction in an engine, prior to the development of serious trouble.

engine controls. The controls by which the power and speed of an aircraft engine are regulated.

Engine controls include the throttle, governors, manifold pressure regulator, supercharger control, fuel pressure control, etc.

engine cowling. A cowling placed over or around an aircraft engine.

A cowling, or hood, in the shape of a curved panel may be placed over a liquid-cooled aircraft engine; a circular or ring-shaped cowling is usually placed around a radial air-cooled engine.

engine cradle. A framework for the support of an unmounted aircraft engine. Cf. **engine mount.**

engined, *a.* Powered by an engine or engines. Used in combination to designate an aircraft, as in 'two-engined fighter,' 'six-engined bomber.' Used attributively or predicatively.

Good practice is to reserve the use of this word to designate aircraft powered by reciprocating gasoline engines. See **engine,** *n.*, note, **jet,** *n.*, note. See also **twin-engine,** *a.*

engine detonation. Detonation (sense 2).

engine displacement. The total volume within the cylinders of an engine displaced by one stroke of each piston.

engineer, *n.* (engr) *Specif.* **1.** A person professionally competent to design, construct, or operate something, esp. as used in certain titles: See **aeronautical engineer, aviation engineer, flight engineer. 2.** Formerly, an aircraft maintenance man. *Obs.*

engineer aviation brigade. An Army brigade assigned to the AF for the construction or restoration of airfields.

An engineer aviation brigade is a part of an aviation engineer force (which see). An engineer aviation brigade contains engineer aviation battalions, groups, companies, etc.

engineer-gunner, *n.* A member of an aircrew serving as both flight engineer and gunner.

engineering inspector. A person authorized to inspect, accept, or reject materials for engineering or for research and development use.

engine instrument. Any instrument, as a manifold-pressure gauge, tachometer, or temperature gauge, indicating the power, speed or condition of an engine, or the temperature, pressure, or quantity of liquids and gases in the engine.

engine life. The length of time which an engine can operate effectively and safely without major overhaul.

engine mount. A framework of metal fastening an engine to an aircraft.

engine nacelle. A nacelle primarily for housing an engine and associated parts.

Some engine nacelles also house the landing wheels.

England Air Force Base. An AF base at Alexandria, Louisiana, named for Lieutenant Colonel John B. England, a fighter ace of WW II and a Korean combat veteran, who died in France, November 1954.

engr (*auth abbr*). 'Engineer.'

Eniac, *n.* [Coined: See first letters of words in definition.] The electronic numerical integrator and computer built for the Army Ordnance Department, now housed at the Ballistic Research Laboratories at the Aberdeen Proving Ground.

'This phenomenal machine is so complicated that no single person ... knows every part of its wiring or the function of each of its 18,000-odd tubes' (H. M. Davis in *Sci. Amer.* Apr 1949, p 33).

enl (*auth abbr*). 'Enlist.'

enlist, *v.* (enl) **1.** *intr.* To enroll in military service; *specif.*, to enroll voluntarily as an enlisted person. **2.** *tr.* To enroll a *person* in military service.

enlisted man. (EM) A male person in one of the armed services who does not hold his rank either by commission or warrant, esp. an airman of the male sex; also, in common gender, either a male or female airman.

enlisted personnel. 1. Personnel in the AF between and including the grades of basic airman and master sergeant. **2.** In some contexts, personnel who have enlisted in the AF, as distinguished from 'drafted personnel.' See **enlistee,** *n.*

enlisted woman. An enlisted member of the WAC or of the WAF.

In the AF, 'enlisted woman' is not commonly used; instead 'WAF airman' is used.

enlistee, *n.* A person who has voluntarily enlisted for service in the AF or other service.

enlistment, *n.* **1.** A voluntary entrance into military service under enlisted status, as distinguished from induction through Selective Service. **2.** A period of time, contractual or prescribed by law, which an enlisted person serves between enrollment and discharge. **3.** The act of enrolling in military service.

enlistment allowance. A monetary allowance paid an enlisted person for past service who reenlists under specified conditions after discharge, the amount being computed on the basis of full years of past continuous service. Sometimes called a 'reenlistment allowance.' Cf. **reenlistment bonus.**

enlmt (*abbr*). 'Enlistment.'

enr (*auth abbr*). 'Enroute.'

en route. Also **enroute** esp. when used attributively. (enr) On or along a route.

'Enroute' is used adjectivally to designate (1) an article used en route, as *enroute repair kit*, (2) a service or procedure performed en route, as *enroute maintenance*, and (3) an object or installation along a route, as *enroute navigational facility*.

The accepted pronunciation of this phrase approximates that of 'on root,' but it is sometimes pronounced 'en root,' as in the phrase 'delay en route.'

enroute base. An air base at which aircraft stop en route to their destination.

enroute hospital. A hospital along an air route for patients who are in the process of being moved by air between other hospitals. Formerly called a 'holding hospital.'

ens (*auth abbr*). 'Ensign.'

ensign, *n.* (ens) In the US Navy, the lowest commissioned rank, corresponding to second lieutenant in the other services; a person holding this rank; the title of this person.

ent (*auth abbr*). 'Enter' or 'entrance.'

Ent Air Force Base. An AF base at Colorado Springs, Colorado, named for Brigadier General Uzal G. Ent, who died in 1948.

entity, *n.* That which has identifiable being either in fact or for thought; in specific reference to the United States Air Force, that which has real and distinctive existence, complete unto itself and also undivided; a single instrument, as in 'air power is an entity.'

entl (*auth abbr*). 'Entitle.'

entrance cone. *Specif.* That segment of a wind tunnel through which the air flows into the test chamber.

entropy, *n.* The unavailable energy in a thermodynamic system; the measure of this.

envelope, *n.* The outer covering of a rigid airship; the bag containing the lifting gas of a balloon or of a semirigid or nonrigid airship.

envelopment, *n.* An offensive maneuver in which the main attack on a surface force is directed against its flank or rear, and towards an objective behind the front lines. Airborne troops may be used in this maneuver. See **vertical envelopment.**

enzian, *n.* [German code word.] A subsonic ground-to-air, winged, guided rocket directed by radio pulse signals, developed by the Germans in WW II.

EO (*auth abbr*). 'Executive order.'

EOA (*auth abbr*). 'Effective on or about.'

EOD (*auth abbr*). **1.** 'Explosive ordnance disposal.' **2.** 'Entry on duty.'

EODP (*auth abbr*). 'Engineering order delayed for parts.'

EOR (*auth abbr*). 'Explosive ordnance reconnaissance.'

EOS (*auth abbr*). 'Eligible for overseas service.'

EP (*auth abbr*). 'Entrucking point.'

EPD (*auth abbr*). 'Earliest practicable date.'

EPTE (*auth abbr*). 'Existed prior to entry.'

eqp (*auth abbr*). 'Equipment.'

equation of time. A mathematical formula by which apparent time may be found by adding or subtracting a certain number of time units to or from mean time in accordance with a prepared table.

The range in time units is from +16 minutes to −14 minutes.

equidistant azimuthal projection. A map so designed that all radial lines drawn from its center are true in distance and direction; the method used in making such a map.

The distortion in area increases rapidly from the center of the map (the point of tangency) toward the circumference.

Equidistant Chart. Any one of several aeronautical charts used for strategic planning purposes on which great circle routes and distances may be readily determined.

These charts are some 17 in number. Each one, except for two, covers the world, each compiled on an equidistant azimuthal projection centered on a point indicated by the name of the chart. The charts are of different scales, 8 being 1:87,400,000; 3 being 1:55,000,000; 2 being 1:47,423,730; 2 being 1:24,327,708; 1 being 1:18,328,012; and 1 being 1:8,288,111. See **USAF** (*auth abbr*), note.

equiphase zone. A region within which the difference in phase of two radio signals is indistinguishable.

equipment, *n.* (eqp) **1.** The more or less permanent machinery, tools, vehicles, furnishings, or the like used to carry out a task; those things with which a person or organization is outfitted to carry out a task, as a parachute, snowshoes, etc.; also, those items of supply identified for use as machinery, tools, etc. **2.** Any appurtenance fitted to, or used with, an aircraft to serve special needs, as a bomb rack, machine gun, oxygen mask, radio compass, etc. **3.** In general reference, anything used to make something or to do something, as in 'we had better equipment (meaning airplanes) than the enemy had.'

In sense 1, equipment does not include land or buildings, and is sometimes distinguished from materiel and supplies. See **materiel,** *n.*, **supply,** *n.*, sense 4b and note. The term is commonly used in connection with tables of organization, wherein specific lists designate the equipment authorized for personnel or units.

In all senses, equipment may be considered from two different standpoints: from that of supply and from that of operations. In the latter, equipment may be an element of combat, wherein the tactics and techniques employed depend upon the kind of equipment available; hence, the phrase 'tactics, techniques, and equipment' as used in plans and operations. See **tactics,** *n.*, note.

equipment component list. (ECL) A publication prescribing the kits and sets of tools or

equipment needed by an individual, activity, or organization to perform a specific duty or function.

An *ECL kit* is a kit of tools required by a person for performing his normal duties; an *ECL set* is a set of tools and equipment required by an activity or organization for performing a particular function.

equipment modification list. (EML) A list of changes by addition, deletion, or substitution in the equipment section of a table of organization and equipment. *Hist.*

equisignal beacon. A radio transmitter that creates an equisignal zone or zones.

equisignal sector. The equisignal zone.

equisignal station. The station where an equisignal beacon is located.

equisignal zone. An on-course zone lying within the overlapping zones of any two signal patterns transmitted by radio, as between the 'A' and 'N' patterns in an Adcock radio range. See **Adcock radio range.**

equiv (*auth abbr*). 'Equivalent.'

equivalent airspeed. Calibrated airspeed corrected for compressibility error.

Under conditions of compressibility, true airspeed is computed from equivalent airspeed rather than directly from calibrated airspeed. See **compressibility,** *n.*

equivalent altitude. An altitude that would supply the same amount of oxygen to the respiratory system as that provided in a pressurized cabin, through an oxygen mask, or the like, as in 'the equivalent altitude of this cabin is 5,000 feet.'

equivalent flat-plate area. A theoretical frontal area that would create the same parasite drag as that of a given nacelle, fuselage, complete airplane, or other air-resistant member. Also called 'equivalent frontal area.'

equivalent monoplane wing. *Aerodynamics.* A theoretical monoplane wing having properties of lift and drag equivalent to those of a given set or combination of wings, as on a biplane.

equivalent single-wheel load. The wheel load of an aircraft considered to be concentrated upon a single wheel. See **wheel load.**

This load is a factor in determining the required structural qualities and thickness of a runway pavement.

ER (*abbr*). **1.** *auth.* 'Emergency rescue.' **2.** 'Effectiveness report.'

e/r (*abbr*). 'En route.'

ERB (*auth abbr*). 'Equipment Review Board.'

ERC (*auth abbr*). 'Enlisted Reserve Corps.'

ERFA (*auth abbr*). 'European Radio-Frequency Agency.'

erk, *n.* An aircraft mechanic. *Slang.* Chiefly *British.*

Ernest Harmon Air Force Base. An AF base at Stephenville, Newfoundland, named for Captain Ernest E. Harmon (1893–1933), killed on a test flight from Washington, D.C., to Mitchel Field.

err (*auth abbr*). 'Error' or 'erroneous.'

error, *n.* (err) **1.** A mistake made in a calculation or in the execution of an act that leads to some unintended or undesired result, as in 'an error in aiming caused the bomb to fall short.' **2.** An undesired or unintended result of an act, caused either by a mistake or by factors outside the control of those performing the act, or by both; an instance when such a result occurs. Used esp. in reference to results in bombing, where the errors may be caused by mistakes in aiming, by ballistic characteristics of the missiles, by malfunctioning of equipment, or by misidentification of the target.

In sense 2, see **aiming error, bombing error, circular probable error, gross bombing error, normal aiming error, probable bombing error.**

erythema, *n.* A skin condition caused by ultraviolet radiation from an atomic blast, characterized by reddened skin and painful blisters.

ES (*auth abbr*). 'Eligible for separation.'

ESAWC (*abbr*). 'Evaluation Staff, Air War College.'

esc (*auth abbr*). 'Escort.'

E-scan, *n.* **1.** A scan for presentation on an E-scope. **2.** An E-scope. *Popular.*

escape, *n. Specif.* **1.** The action of getting out of an aircraft in an emergency. **2.** The action of a person in breaking out of confinement or restraint, esp. from a hostile country.

A prisoner of war may make an escape, as in the phrase 'escape and evasion'; also a citizen of a country may make an escape by crossing the border to another country. See **refugee,** *n.*

escape and evasion intelligence. Intelligence prepared for use by military personnel who may be captured by the enemy or be at large in enemy territory.

escapee, *n.* One who has been captured and has escaped, or is in the act of escaping, from the enemy. Cf. **evader,** *n.*, **refugee,** *n.*

The practice of forming new nouns by adding '-ee' to a verb form, as in *escapee* and *returnee*, is by analogy with words borrowed from the French, where the 'ée' is the feminine of 'é,' as with *employée* or *refugiée*. In the French, the 'ée' had somewhat the same quality as 'a' in *gay*. This sound has been retained in the British pronunciation of *employee* and also remains in the customary pronunciation of *evacuē*, but not in *refugee*. In words with this ending not borrowed from the French, i.e., those that are coined, as in *escapee*, the sound is pronounced as a rime of *me*.

escape hatch. An emergency opening in an aircraft used for escape.

escape kit. A kit containing a map, a compass, medicine, concentrated food, money, and other articles, issued to a combat aircrewman for use in evasion if brought down in enemy territory.

The word 'escape' in the term 'escape kit' is a holdover from a time when escape and evasion were considered a part of the same action.

escape velocity. In space flight, the speed at

which an object is able to overcome the gravitational pull of the earth.

E-scope, *n.* A radarscope which presents the range of a target by a horizontal displacement of the target signal on the face of the scope, and the elevation by a vertical displacement. See **E-scan,** *n.*

escort, *n.* (esc) *Specif.* An airplane or airplanes flying, or assigned to fly, as protection to other aircraft; the action of such flying, or the protection given by it. See **cover,** *n.*, sense 2.

escort, *v. tr. Specif.* To accompany other *aircraft* or *vessels* as protection.

escort aircraft carrier. A small aircraft carrier used for escort purposes. See **CV** (*abbr*).

escort fighter. A fighter flying, or intended to fly, as escort, esp. a fighter designed or equipped for long-range missions.

escort mission. *Specif.* **1.** A mission flown for the purpose of protecting other aircraft. **2.** An area-support mission.

EsctGd (*abbr*). 'Escort guard.'

ESM (*abbr*). 'Escort mission.'

esn (*auth abbr*). 'Essential.'

esp. (*abbr*). 'Especially.'

espg (*auth abbr*). 'Espionage.'

espionage, *n.* (espg) The action of spying on a country, i.e., of secretly, or under false pretenses, searching out information or making observations, with the intention of communicating such information or observations to a country hostile, or potentially hostile, to the country spied upon. See **sabotage,** *n.*, note.

esprit de corps. 1. a. A person's feeling of pride, devotion, or enthusiasm for the unit or group to which he belongs, considered to be measurable on a low to high scale, as in 'his esprit de corps was low.' **b.** A composite of the members' respective prides in their unit, as in 'the team's esprit de corps hit a new high.' **2.** A high degree of such pride, devotion, or enthusiasm, as in 'the battle was won because of each man's esprit de corps.'

Cf. **morale,** *n.*, note.

ESPWO (*auth abbr*). 'Exigencies of the service having been such as to preclude the issuance of competent written orders in advance.'

essential elements of information. (EEI) The particular information needed by an air commander to determine an offensive or defensive action.

The essential elements of information are determined by the air commander and therefore may vary according to the type of operation. They usually consist of information concerning the enemy, the weather, the terrain, etc.

EST (*abbr*). **1.** 'Eastern Standard Time.' **2.** *auth.* 'Enlistment Screening Test.'

est (*auth abbr*). 'Estimate.'

establish, *v.* (estb) *tr. Specif.* To set up a military *service*, an *installation*, *school*, or the like. See **activate,** *v.*, note.

established requirement. A requirement that has been officially recognized.

establishment, *n.* (estb) *Specif.* **1.** Any operating entity, including its assigned units, its personnel, organizational structure, installations, property, and equipment. **2.** *Restrictive.* The overall organization of such an establishment. Distinguished esp. in contexts of manpower and organization.

This term is applied to any one of the three military services (see **Air Force Establishment**), also to major air commands, air forces, air divisions, wings, and groups, as well as to air depots, air bases, and schools. The term is often used, esp. in manpower and organization, to distinguish the organizations connected with these establishments from the manning units to which personnel are assigned, for personnel are assigned not directly to establishments, but to units. See **unit,** *n.*, sense 2.

estb (*auth abbr*). 'Establish' or 'establishment.'

estimated time of arrival. (ETA) In air navigation, the assumed time of arrival at a destination, based on ground speed.

estimate of the situation. A systematic analysis of a particular set of circumstances relevant to a given military situation, made to determine a course of action.

The *commander's estimate of the situation* is made by the commander, and is based upon estimates prepared by the various staff divisions on both friendly and enemy capabilities. The *air intelligence estimate of the situation* includes possible enemy air action and the priority with which he may adopt one of several courses. This estimate is variously called the 'air intelligence estimate,' 'A-2 (or S-2) estimate,' etc. The *air logistics estimate of the situation* includes an estimate of possible enemy courses of action to disrupt logistics plans and procedures. The *air personnel estimate of the situation* determines whether or not personnel support for the mission is being, or can be, provided. See **enemy capabilities, enemy intentions.**

ETA (*auth abbr*). 'Estimated time of arrival.'

Etain Rouvres Air Base. An air base at Etain, France.

ETC (*auth abbr*). 'Estimated time of completion.'

ETD (*auth abbr*). 'Estimated time of departure.'

ETE (*auth abbr*). 'Estimated time en route.'

Ethan Allen Air Force Base. An AF base at Winooski, Vermont, originally named Fort Ethan Allen for Ethan Allen (1738–1789), the famed American patriot from Vermont.

Etimesgut Airfield. An airfield near Ankara, Turkey.

ETN (*auth abbr*). 'Equipment table nomenclature.'

ETO (*abbr*). 'European Theater of Operations.'

ETOUSA (*abbr*). 'European Theater of Operations, US Army.'

ETR (*auth abbr*). 'Estimated time of return.'

ETS (*auth abbr*). 'Expiration term of service.'

ETSP (*auth abbr*). 'Entitled to severance pay.'

EuM (*abbr*). 'European-Mediterranean.'

Eureka, *n.* A radar beacon used in a Rebecca-Eureka system (which see).

European-African-Middle-Eastern Campaign Medal. (EAMECM) A US military decoration awarded persons under certain specified conditions for service within the European-African-Middle-Eastern Theater of War between 7 December 1941 and 8 November 1945.

European Theater. A WW II theater of operations covering Europe, exclusive of Italy, Greece, and the Balkans, and included in the European-African-Middle-Eastern Theater of War. See **theater of war.**

evac (*auth abbr*). 'Evacuate' or 'evacuation.'

'Evac' is pronounced as a word and is also used attributively, as in *evac ship.*

evacuation, *n.* (evac) The withdrawal or removal, or the act of withdrawing or removing, personnel or equipment from an area or place, esp. in an emergency; air evacuation. Also attrib., as in *evacuation aircraft, mission, order, plan,* etc.

evacuation hospital. A mobile hospital or hospital unit used near the front for providing major medical and surgical care and for preparing and sorting casualties for further evacuation.

evacuation lag. The time lag between the time an evacuation of casualties from a combat zone is begun and the time of arrival of the casualties at their ultimate destination.

Evacuation lag may be caused by delays due to enemy action, treatment en route, movement of troops and supplies, or other causes.

evacuation policy. *Specif.* A command policy determining the length in days that medical patients may be held within a command for treatment before being evacuated or returned to duty.

evacuation team. An air evacuation team.

evacué, *n.* [French.] One who has been evacuated.

evacuee, *n.* [A modification of *evacué.*] One who is being, or has been, evacuated from a place.

Pronunciation of the last syllable of this word as a rime of *me,* although common, obscures the connotation of the evacuee being acted upon, not acting for himself. The traditional pronunciation is as a rime of *gay.* See **escapee,** *n.,* note.

evader, *n.* A person at large in enemy territory who has never been captured, distinguished esp. from an escapee.

eval (*auth abbr*). 'Evaluate' or 'evaluation.'

evaluate, *v.* (eval) *tr.* To give a value or appraisal to collected *information* or *data* in terms of discovering the strength, weakness, or intentions of an enemy or potential enemy; in a more general sense, to appraise *anything.*

By evaluating information, intelligence data is developed.

evaluation, *n.* (eval) In intelligence usage, the examination and weighing of data to assess its inherent meaning, probable accuracy, and pertinence in relationship to the entire situation.

Evans Skyloader. [After Col Edward S. *Evans,* designer.] A framework built into the fuselage of a transport airplane for anchoring cargo.

evasion, *n. Specif.* The act of eluding the enemy to prevent capture while at large in enemy territory, distinguished esp. from escape.

evasion and escape. An aspect of unconventional warfare in which mechanisms and channels are secretly established in a hostile country to provide for the return of evading personnel to friendly territory.

evasive action. Any abrupt or erratic change or series of changes in the altitude or direction of an airplane, made to avoid searchlights, antiaircraft fire, or the attack of a hostile airplane.

evening dress uniform. A special uniform worn by officers for prescribed state and diplomatic functions.

The AF evening dress uniform for men is a conventional civilian type tail coat and trousers of black or blue-black color; however, the coat has AF buttons and AF spearhead design of gold braid on sleeves to denote rank. The headgear is a visored cap matching the suit in color with chin strap of gold. For a general officer and a colonel the lightning cloud and darts on the visor are gold.

Aviation badges are not worn on an evening dress uniform, but miniature decorations and medals are worn.

EVM (*abbr*). 'Evacuation mission.'

evolution, *n.* The process by which a military force changes from one formation to another.

EW (*abbr*). **1.** *auth.* 'Enlisted woman' or 'enlisted women.' **2.** 'Early warning.' **3.** *auth.* 'Electronics warfare.'

EWR (*auth abbr*). 'Early-warning radar.'

EX (*abbr*). 'Experimental station.'

ex (*auth abbr*). 'Exercise' or 'excess.'

exacct (*auth abbr*). 'Expenditure account.'

exam (*auth abbr*). 'Examine' or 'examination.'

exc (*auth abbr*). 'Excellent.'

excepted appointment. A Civil Service appointment made as an exception to competitive requirements as provided by a Civil Service regulation, an act of Congress, or an executive order.

Exceptional Civilian Service Award. An award for exceptional civilian service conferred upon a civilian employee of the USAF for exceptionally outstanding service.

This award is the highest AF honorary civilian award. The citation certificate carries the signature of the Secretary of the Air Force. Cf. **Presidential Award.**

Exceptional Service Award. An award given a civilian not employed by the AF, but distinguished by exceptional services rendered to the Department of the Air Force.

excess property. Property physically held by the AF or by any of its organizations in excess of need as determined by proper authority.

Excess property is determined and classified in the following manner: 'Local excess' by the using AF organization; 'area or zonal excess' by the appropriate air materiel area or zonal depot; 'command excess' by the appropriate command; 'USAF excess' by Headquarters Air Materiel Command; 'Department of Defense excess' by Department of Defense screening and redistribution; 'overseas theater excess' by the AF and Department of Defense.

exch (*auth abbr*). 'Exchange.'

exciter, *n.* **1.** The oscillator that generates the carrier frequency of a transmitter. **2.** A part of a transmitting antenna array directly connected to the source of power and including a reflector or director.

excl (*auth abbr*). 'Exclude' or 'exclusive.'

exec (*auth abbr*). 'Executive.' Pronounced as a word.

execute, *v. tr.* To carry out a *plan, program, mission,* or *operation.* See **implement,** *v.*

executive, *n.* (exec) One who is responsible for seeing that the policies or commands of superior authority are carried out. Cf. **administrator,** *n.*, **supervisor,** *n.*

Attrib., as in *executive control, detail,* etc.

executive action. An action carried out by an executive under powers inherent in his position, and done to forward or modify policy, to expedite accomplishment of a task or mission, or to commence or modify a program. Cf. **administrative action.**

executive agency. An agency of the executive branch of the government, or of one of its executive departments.

In loose usage this term is applied to the executive departments, but strictly applies only to such agencies as the Bureau of the Budget, Office of Defense Mobilization, Central Intelligence Agency, etc.

executive department. One of the departments of the executive branch of the government headed by a cabinet member.

Between 1947 and 1949, the Department of the AF was called an executive department although not headed by a cabinet member. Now called a military department.

executive officer. An assistant to a commanding officer responsible for seeing that the policies of the command as applied to the details of day-to-day operations are carried out.

The executive officer in the lower echelons is equivalent to the chief of staff in the higher echelons.

executive order. (EO) A rule or regulation having the force of law, issued by the President with congressional authorization.

exempt report. A report not requiring a reports-control symbol.

exercise, *n.* Any practice operation for the purpose of increasing the proficiency of personnel in the performance of their tasks.

In an exercise, simulated enemy action is used as a training device for the friendly force, and may be wholly or partly imaginary. Unlike a maneuver (which see, sense 3), an exercise is not intended to test proficiency, but is used to develop it.

exfiltrate, *v. intr.* Of a person or persons: To get out of an unfriendly or hostile country by covert action. Hence, **exfiltration,** *n.* Cf. **infiltrate,** *v.*

exhaust-collector ring. A circular manifold used with a radial engine to collect the exhaust gases from each cylinder and dispense them through one opening.

exhaust cone. An assembly behind the turbine wheel of a turbojet engine, consisting of an inner cone surrounded by an outer cone or casing, the open end of which forms the exhaust nozzle.

The function of the exhaust cone is to collect and direct discharge gases from the turbine wheel.

exhaust-gas analyzer. An instrument that analyzes exhaust gas to determine and indicate the fuel-air ratio.

exhaust manifold. A duct connected to the cylinders of an engine for carrying away the exhaust gases.

exhaust nozzle. On a jet engine, that part of an exhaust cone that opens into the tailpipe; also applied to the nozzle-shaped end of a tailpipe.

See **fixed-area exhaust nozzle, variable-area exhaust nozzle.**

exhaust port. A valve opening in the top of an engine cylinder for the discharge of exhaust gases.

exhaust stack. A pipe projecting outward from an aircraft engine, which serves as an outlet for exhaust gases.

exit cone. *Specif.* That part of a wind tunnel through which the air leaves the test chamber.

ExO (*abbr*). 'Executive officer.'

exosphere, *n.* The outermost fringe or layer of the atmosphere, where collisions between molecular particles of the atmosphere are so rare that only the force of gravity will return escaping molecules to the upper atmosphere.

exp (*auth abbr*). 'Expend,' 'expense,' or 'express.'

expanded scope. *Electronics.* A magnified portion of a presentation on a radarscope.

expansion wave. *Aerodynamics.* A pressure wave or kind of shock wave that has the effect of decreasing the density of air as the air passes through it.

Expansion waves are often distinguished from shock waves. Cf. **compression wave.**

expected approach time. The time at which an aircraft is expected to be cleared for its landing approach.

exped (*auth abbr*). 'Expedite' or 'expedition.'

expeditionary force. An armed force for combat service abroad. Cf. **A.E.F.** (*abbr*).

Expeditor, *n.* A British name for the C-45.

expendable, *a.* Of a supply item or piece of property: That is consumed, or loses its identity, when

used; expected to be consumed or to lose its identity.

The accountability of an expendable item is terminated when the item is used.

Inasmuch as certain items are recoverable, the following distinctions are made: *Expendable-limited-recoverable* (LR) *items*, those expendable items which may be recovered by field or organizational maintenance; *expendable-nonrecoverable* (NR) *items*, those expendable items that are not restorable to their previous condition or state after use; and *expendable-recoverable* (R) *items*, those expendable items that can be economically recovered for further use.

expenditure, *n.* **1.** A disbursement. **2.** In a commercial sense, the monetary liability incurred for goods or services received or assets acquired, whether or not payment has been made.

expense, *n.* (exp) In fiscal practice, an expenditure not resulting in the acquisition of a physical asset; the value of labor, materiel, or services actually consumed.

exper (*auth abbr*). 'Experiment' or 'experimental.'

experimental aircraft. An aircraft built to try out an idea, or to try for certain capabilities or characteristics; an aircraft that embodies a new principle or a new application of an old principle. Often designated by the symbol 'X.'

The experimental aircraft is to be distinguished from the service-test aircraft.

experimental mean pitch. The zero-thrust pitch.

experimental status. The status of an item that has not been developed to the point necessary for service tests to be made with it.

experiment chamber. *Specif.* A test chamber.

explo (*auth abbr*). 'Explosive' or 'explosion.'

exploded view. A drawing or picture of any article or piece of equipment in which the component parts are separated but so arranged as to show their relationship to the whole.

explosion, *n.* (explo) A sudden outburst of particles or gases from a substance that has undergone detonation.

Detonation precedes explosion, although the two events are so closely related as to be identified as the same event in loose or elliptical usage. Cf. **blast,** *n.*

explosive, *n.* (explo) A solid, liquid, or gas that when detonated will produce an explosion.

In military usage, 'explosive' frequently denotes a bomb, grenade, or the like. The term 'explosive' is not ordinarily used to identify a fissionable material.

explosive bomb. Any bomb having an explosive as its main charge, as distinguished from a chemical bomb, incendiary bomb, or the like.

explosive bullet. A bullet which contains an explosive, detonated on contact with its target.

explosive catapult seat. An ejection seat catapulted by an explosive.

explosive D. A high explosive made of ammonium picrate.

Explosive D is used in armor-piercing projectiles because of its comparative insensitivity to shock and friction.

explosive decompression. A sudden loss of pressure in a pressurized cabin, cockpit, or the like, so rapid as to be explosive, as when punctured by gunfire. See **rapid decompression.**

explosive train. A train of explosives, arranged in the order of decreasing sensitivity, inside a shell, fuze, bomb, or the like.

An explosive train may consist, for example, of a primer, detonator, booster, and bursting charge.

exposure station. The point in atmospheric space at which an aerial photograph is taken.

exposure suit. An antiexposure suit.

expr (*auth abbr*). 'Expire' or 'expiration.'

ext (*auth abbr*). 'Extend' or 'extension.'

extended active duty. (EAD) Any period of active duty in excess of a designated number of days, currently in excess of ninety days.

Extension Course Institute, USAF. (ECIUSAF) An Air Force institute under the direction and supervision of the Commander, Air University, which administers an AF-wide extension course program so as to supplement resident courses in meeting Air Force training or educational requirements. Often shortened to 'Extension Course Institute,' and abbreviated 'ECI.'

extensometer, *n.* An instrument used to measure extensions, expansions, or deformations in a material.

exterior ballistics. The science concerned with the motion and behavior of projectiles in flight, esp. distinguished from interior ballistics. Also called 'external ballistics.'

external aileron. An aileron offset from the wing, i.e., not forming a part of the wing.

external-combustion engine. A fuel-consuming engine in which fuel combustion takes place outside the cylinders or outside the reaction chamber.

The steam-engine is an external-combustion engine. Cf. **internal-combustion engine, reaction engine.**

external efficiency. The efficiency with which an engine converts the total kinetic energy developed into forward propulsion, expressed by the ratio between the energy employed in propulsion and the total energy developed.

Often called 'ballistic efficiency' when applied to the engine or motor of a rocket or other jet-propelled missile, and called 'mechanical efficiency' when applied to an internal-combustion reciprocating engine.

external store. Any fuel tank, bomb, rocket, or the like, attached to the wings or fuselage of an aircraft and normally jettisonable. Usually *pl.*

external supercharger. A supercharger mounted separately from, and outside of, the engine, and which compresses the air for delivery to the carburetor. Cf. **internal supercharger.**

Extra (*code*). A formerly authorized word for the letter 'X.' See **Alfa** (*code*).

extraction, *n.* The act or process of delegating to another supply echelon the responsibility for

further action on any item requisitioned or on shipping order.

Extraction is performed when the original supply activity does not have the required item available and cannot obtain it from other supply activities within its jurisdiction.

extractor, *n.* A part in a gun for removing shells or cartridges from the chamber.

In some weapons, as a machine gun or bolt-action rifle, the ejector (which see, sense 2) and the extractor are two separate parts; in other weapons, as a revolver, one part combines both functions of extracting and ejecting, and is called either an 'extractor' or 'ejector.'

extransit depot. A kind of WW II transportation-control depot that operated in certain theaters to receive, sort, and deliver supplies for receiving air depots. Now *hist.*

extrapolate, *v. intr.* To make inferences about something that is not known or understood, by reference to something that is known and understood, and is assumed to correspond in some way with that which is known and understood.

extremely high frequency. (EHF) *Electronics.* Any frequency between 30,000 and 300,000 megacycles. See **radio frequency.**

eye, *n. Meteorology.* The center of a cyclonic-type storm.

The eye averages 14 miles in diameter, with no precipitation, very light winds, and sometimes a clear sky and a complete calm.

eye base. An imaginary line between the pupils of the eyes, its length equalling the distance between the centers of the pupils when the eyes are focused at infinity with zero convergence; the length of such a line.

eyebrow, *n.* A slat on the leading edge of a wing. See **slat,** *n.*

eyelid, *n.* Either of two movable parts at the rear of a jet engine which, by an eyelid-like action, regulates the size of the opening in the exhaust nozzle.

Eyetie, *n.* An Italian. Originally *British slang.*

F

F (*letter*). See **Foxtrot** (*code*). A symbol used by the Navy to signify 'Grumman Aircraft Engineering Corporation.'

F (*abbr*). **1.** 'Fahrenheit.' **2.** *auth.* 'Fighter,' in airplane designations. See **P** (*abbr*), sense 4, note, **VF** (*code*). **3.** 'Flying,' in designating equipment, as *F-2*, a type of flying suit. **4.** 'Photo,' as formerly used in the designations of photo planes. See **R** (*abbr*), sense 1. **5.** 'Fairchild Aircraft, Limited,' in designations of US Navy aircraft. **6.** 'Father.'

F2A. A single-engine Navy fighter developed by Brewster and used prior to, and during, WW II.

The F2A was popularly called the 'Buffalo.' Several hundred near-duplicates of the craft were purchased by the British Empire and the Netherlands East Indies.

F2H. A twin-jet, single-seat Navy fighter plane, developed by McDonnell and popularly called the 'Banshee.'

F-3. A WW II photo-reconnaissance version of the A-20. See **F** (*abbr*), sense 4.

F-4. A WW II photo-reconnaissance version of the P-38. See **F** (*abbr*), sense 4.

A later modification of the P-38 for photo-reconnaissance was called the *F-5*.

F4F. A single-engine Navy fighter developed by Grumman and used in WW II.

The F4F was popularly known as the 'Wildcat' in the American service and as the 'Martlet' in the British.

F4U. A single-engine Navy fighter developed by Vought-Sikorsky and Chance Vought, and used in various models both during and since WW II. It is popularly called the 'Corsair.'

F6F. A WW II single-engine Navy fighter developed by Grumman and popularly known as the 'Hellcat.'

F7F. A twin-engine Navy fighter developed by Grumman in WW II. Popularly known as the 'Tigercat.'

F7U. A single-seat, twin-jet, tailless Navy fighter, developed by Chance Vought. Popularly called the 'Cutlass.'

F8F. A single-engine Navy fighter developed by Grumman, popularly known as the 'Bearcat.'

F9F. A single-jet Navy fighter developed by Grumman and popularly called the 'Panther.'

F11F. A modified F9F, popularly called the 'Tiger.'

F-51. A low-wing, monoplane fighter powered by a single liquid-cooled engine, developed by North American and widely used in WW II.

The F-51 is popularly called the 'Mustang' and was formerly designated the 'P-51.'

F-59. A twin-jet fighter developed by Bell, and popularly known as the 'Airacomet.'

The P-59 or XP-59A (original designation) was the first jet-propelled fighter developed for the AAF. It was flown at Muroc, California, on 1 Oct 1942. Its Whittle-type engine was produced by General Electric. Cf. **Whittle engine.**

F-61. A WW II twin-engine night fighter developed by Northrop, popularly called the 'Black Widow.'

F-80. A single-jet fighter developed by Lockheed.

The F-80 is popularly called the 'Shooting Star,' and its original designation was 'P-80.'

F-82. A twin-engine, twin fuselage, two-place fighter developed by North American and popularly known as the 'Twin Mustang.' The plane formerly was designated the 'P-82.'

Essentially, an **F-82** consists of two F-51's joined together.

F-84. A single-jet or turboprop fighter developed by Republic. Formerly designated the 'P-84,' it is popularly known as the 'Thunderjet.'

The XF-84H is a turboprop fighter plane developed to test the feasibility of supersonic propellers. It is also designed for afterburner augmentation.

F-86. A single-jet fighter developed by North American and popularly called the 'Sabre' or 'Sabrejet.'

F-89. A twin-jet, two-seat, all-weather fighter developed by Northrop and popularly called the 'Scorpion.'

F-94. A two-seat, all-weather jet fighter modified from the F-80 or T-33.

F-100. A jet fighter or fighter-bomber with a swept-wing, developed by North American. Called the 'Super Sabre.'

The F-100A became operational in TAC in Sep 1954. It flies in level flight at speeds in excess to the speeds of sound. The F-100C may be air refueled.

F-101. A long-range turbojet aircraft used as a strategic fighter.

F-102. A delta-wing, all-weather jet interceptor, powered by a J-57 engine, developed by Convair.

F-104. A lightweight, single-engine supersonic fighter developed by Lockheed.

F-105. A single-engine, sweptback, supersonic fighter bomber developed by Republic.

FA (*abbr*). **1.** *auth.* 'Field Artillery.' **2.** 'Friendly aircraft.' **3.** *auth.* 'Family allowance.'

FA (*code*). A code or symbol meaning 'aeronautical station.'

F/A (*auth abbr*). 'Field activities.'

FAAA (*abbr*). 'First Allied Airborne Army,' as used in Europe during WW II.

FAB (*code*). A code or symbol meaning 'aeronautical broadcast station.'

fab (*auth abbr*). 'Fabric.'

fabric, *n.* (fab) *Specif.* Any of several cloth-like materials, rubberized or otherwise treated, used for the outer covering of the wings, fuselage, and empennage of certain airplanes, or for the envelopes or cells of certain balloons or airships. See **balloon fabric, gas-cell fabric.**

FAC (*auth abbr*). 'Forward air controller.'

fac (*auth abbr*). 'Facility.'

face-hardened armor. An alloy-steel heat-treated to produce an especially hard surface on one side. Cf. **homogeneous armor.**

face pitch. The angle at which a propeller blade face is set. See **blade face.**

facility, *n.* (fac) **1.** A physical plant or installation, as a base, arsenal, or building, used to make easier the performance of a function. **2.** *pl.* The buildings, shelters, roads, utilities, shops, or the like used to facilitate the performance of a function. Attrib., as in *facilities expansion project.*

Facilities are distinguished from services or supplies, and include such items as restaurants, access roads, piers, etc. Although not always easy to differentiate in borderline cases, a facility is distinguished from a *necessary* installation by the measure of its usefulness, but not its indispensability. Cf. **equipment, *n.*, installation, *n.*,** sense 1 and note.

facsimile, *n.* **1.** A graphic reproduction of a document, chart, or the like, esp. one transmitted by radio or wire. **2.** Short for 'facsimile communication.'

facsimile communication. A means of telecommunication in which images are transmitted for record reception.

factor of safety. *Specif.* A margin of safety built into an aircraft to provide for an abnormal load being placed upon it. See **safety factor.**

This factor may be expressed in terms of a ratio between the probable maximum applied load and the ultimate load. See **ultimate load.**

faculty solution. A fixed or official solution to a given problem adopted in AF schools or staffs for the purpose of standardizing instruction and grading, or planning. Also called 'school solution.'

fade, *v. intr.* Of radio reception: To fluctuate in intensity. Hence, **fading,** *n.*

Radio reception may fade *in* or fade *out.*

FAdm (*auth abbr*). 'Fleet admiral.'

Fagot, *n.* A code name for the Mig-15.

FAI (*abbr*). 'Fédération Aéronautique Internationale.'

FAir (*auth abbr*). 'Fleet air.' *Navy.*

fair, *v.* **1.** *tr.* To streamline a *part* of an aircraft, esp. for reducing wind resistance or drag. **2.** *intr.* Of an external part: To fit into another part so as to present a streamlined surface.

Fairchild, *n.* [The *Fairchild* Engine and Airplane Corporation.] Used in the names of aircraft, as in *Fairchild C-119, Fairchild Forwarder, Fairchild Cornell,* and in turbojet engines, as in *Fairchild J44.*

Fairchild Air Force Base. An AF base at Spokane, Washington, named for General Muir S. Fairchild, a WW I bomber pilot and first commander of the Air University, who died in 1950 when serving as Vice Chief of Staff, USAF.

fairing, *n. Specif.* An auxiliary member or structure on an airplane that functions to reduce drag; an external surface that has been faired. Cf. **fillet,** *n.*

faker track. The track of a known strike aircraft engaged in a training exercise. See **track,** *n.,* sense 7.

Fakir (*code*). A word used in WW II to designate a German antijamming radar system.

Falcon, *n.* **1.** *Gunnery.* A radar-ranging device, developed by Bell Telephone Laboratories. **2.** A popular name for a single-engine, observation biplane developed by Curtiss between WW I and WW II, and used in a number of different series of designations. **3.** A popular name for the Italian G.50. **4.** A supersonic air-to-air missile guided to its target by built-in electronic devices. **5.** A former code name for the Russian Mig-15.

fall, *v.* **1.** *To fall in,* to assume a proper position in a rank on command. Often used imperatively. **2.** *To fall out,* to break rank upon command. Also used imperatively.

fallback, *n.* That part of the material carried into the air by a surface or subsurface atomic explosion that ultimately drops back to the earth or water at the site of the explosion. Cf. **fallout,** *n.*

falling leaf. A controlled aerobatic stunt or feat in which the pilot causes an airplane to simulate the movements of a falling leaf.

This feat consists of a series of checked spins or stalls, in which the airplane is allowed to fall off first to the right and then to the left (or vice versa) without loss of control by the pilot.

fallout, *n.* That part of the material carried into the air by a surface or subsurface atomic explosion that descends to the earth or water beyond the site of the explosion. Cf. **fallback,** *n.*

Detectable amounts of fallout may appear over distances of hundreds or thousands of miles for months after an explosion.

false cirrus. **1.** A light, delicate ice cloud that forms out of the top of a cumulonimbus. **2.** Tonitro-cirrus or a scarf cloud. Considered *loose* usage.

false coordinate. An artificial coordinate established to insure that all points in a grid zone will have positive coordinate numbers.

false ogive. A rounded or pointed hollow cup added to the nose of a shell to improve streamlining. Also called a 'windshield.'

false rib. A short, light, fill-in rib inserted between the main ribs of an aircraft wing, stabilizer, or the like, to give shape to the airfoil.

false wind. An assumed wind used as a factor in computing the setting of a bombsight.

fam (*auth abbr*). 'Family.'

familiarization, *n.* The process by which a person becomes familiar with a piece of equipment, operation, or the like. Attrib., as in *familiarization course, familiarization training*, etc.

family quarters. Residence space provided on military installations for certain married officers or airmen and their families.

fan, *n.* A propeller. *Slang.*

fan, *v. tr. To fan the rudder*, to overcontrol with the rudder and thus be compelled to correct by applying opposite rudder. *Slang.*

fan beam. A fan-shaped radar beam, broad in the vertical plane and narrow in the horizontal plane.

fanfold, *n.* Either of two forms (DD forms 278 or 278a), both used for record location or for suspense purposes for all incoming correspondence requiring action.

The forms are so named because of their multiple sheets.

Fang, *n.* A code name for the Russian La-11.

fan marker. Short for next.

fan marker beacon. A radio marker beacon (which see) transmitting a fan-shaped radiation pattern and located along an airway and at or near an airport.

A fan marker beacon used in an instrument landing system is called a 'boundary marker beacon,' a 'middle marker beacon,' or an 'outer marker beacon.' See separate entries.

Fanny, *n.* A radio device attached to an airborne search receiver for homing on a jamming or radar signal. *Slang.*

Fantail, *n.* A code name for a Lavochkin-designed, single-jet fighter with sweptback wing and tail.

FAP (*auth abbr*). 'Frequency Allocation Panel.'

farad, *n.* A unit measure of electrical capacity.

A farad is the capacity of a condenser to hold one coulomb of electricity under a pressure of one volt.

Far East Air Forces. A major air command of the USAF located in the Far East and responsible for certain tactical and logistic operations.

Fargo, *n.* A code name for the Russian Mig-9.

farm, *n. To buy a farm*, to crash. *Slang.*

This expression is in allusion to the notion that the owner of a farm takes advantage of a crash on his land to obtain heavy damages. Cf. **mortgage,** *n.*

Farnborough RAF Station. An RAF station at Farnborough, Hampshire, England, noted as an aeronautical research and development center. Also called 'RAF Station, Farnborough.'

FASRon (*abbr*). 'Fleet aircraft service squadron.'

fast ice. Ice attached to a seashore.

Any ice remaining in summer after much of the fast ice has broken away is called 'ice foot.'

fast neutron. A neutron having energy of the order of 3 MEV (million electron-volts).

fatal injury. An injury resulting in death.

In some types of AF reporting, any injury from which the injured dies within 30 days is considered fatal.

fatigue, *n.* **1.** The physical or mental tiredness or disorder resulting from the stress of combat or other employment. **2.** The weakening of metal or other material due to microscopic changes in molecular structures caused by vibration or exposure. **3.** *pl.* Fatigue clothing.

fatigue clothing. The work clothing of military personnel esp. prescribed for wear in the performance of manual labor.

fatigue detail. A work assignment for a military person, usually involving manual labor and distinguished from the individual's normal employment.

fatigue pass. A pass authorizing a military person residing outside a military installation to wear fatigue dress in commuting to and from the base.

fat target. A target considered easy to attack and destroy. *Slang.*

fav (*auth abbr*). 'Favorable.'

FAX (*code*). A code or symbol meaning 'aeronautical fixed station.'

FB (*abbr*). 'Fumigation and bath.'

FBhdL (*auth abbr*). 'Force beachhead line.'

FBI (*abbr*). 'Federal Bureau of Investigation.'

FC (*auth abbr*). 'Finance Corps.'

F/C (*auth abbr*). 'Flight certificate.'

Fc (*abbr*). 'Fractocumulus.'

FCC (*abbr*). **1.** *auth.* 'Federal Communications Commission.' **2.** 'Fighter control center.'

FCS (*abbr*). **1.** 'Federal Catalog System.' **2.** 'Fighter command school.' *Hist.* in the AF.

fcst (*auth abbr*). 'Forecast' or 'forecaster.'

FCT (*auth abbr*). 'Fraction thereof.'

fcty (*auth abbr*). 'Factory.'

FD (*auth abbr*). 'Finance Department.'

FDAS (*abbr*). 'Field depot aviation squadron.'

FDATC (*auth abbr*). 'Flying Division, Air Training Command.'

FDC (*abbr*). **1.** *auth.* 'Fire direction center.' **2.** 'Forward direction center.'

FDP (*abbr*). **1.** 'Forward director post' or 'forward fighter director post.' **2.** 'Fighter director post.' **3.** *auth.* 'Foreign duty pay.'

FE (*auth abbr*). 'Fighter escort.'

F/E (*abbr*). **1.** *auth.* 'Fraudulent enlistment.' **2.** 'Flight engineer.'

F.E.2. [From '*F*arman *E*xperimental.'] A British-built, single-engine, pusher-type fighter and bomber used in WW I.

FEAF (*auth abbr*). 'Far East Air Forces.'

FEALogFor (*auth abbr*). 'Far East Air Logistics Force.'

FEAMCom (*abbr*). 'Far East Air Materiel Command.

FEAMCom Air Base. An AF base at Tachikawa, Japan.

feasible, *a.* Of a proposed action or solution: For which resources are available and adequate, cost or suitability not being a consideration. Hence, **feasibility,** *n.* See **acceptable,** *a.*

Feather, *n.* A code name for the Russian Yak-17.

feather, *v.* **1.** *tr.* To change the blade angle of a controllable-pitch *propeller* so that the propeller blade chords are parallel or almost parallel to the line of flight. **2.** *tr.* To cause feathering in a *rotor* or *rotor blade:* See **feathering,** *n.,* sense 2. **3.** *intr.* Of a propeller or rotor blade: To change its blade angle or incidence.

feathering, *n.* **1.** The action of feathering a propeller. **2.** The automatic and periodic change in the incidence of a rotor blade through cyclic pitch control, so that in each revolution the rotor blade changes from low to high pitch and back again. This feathering is used in horizontal movement.

Attrib., as in *feathering button,* a button control for feathering a propeller; *feathering hopper,* a tank for supplying oil to the feathering mechanism; *feathering motion,* the characteristic motion of a revolving rotor blade when it is constantly changing its incidence; *feathering motor,* a motor that actuates a feathering mechanism.

feature, *n.* Any form, shape, substance, or part that distinguishes a piece of equipment.

An airplane's features are such things as its streamlining, height of its tail, size of its fuel tank, power of its engines, and type of its landing gear. Some of these features contribute to give characteristics to the airplane, such as sturdiness, balance, or stability; others contribute to the capabilities of the airplane, such as maneuverability, fast speed, long range, etc. See **characteristic, *n.,*** and **capability, *n.***

FEB (*auth abbr*). 'Flying evaluation board.'

Feb (*auth abbr*). 'February.'

FEC (*auth abbr*). 'Far East Command.'

Fed (*auth abbr*). 'Federal.'

federal agency. Any agency of the federal government; *specif.* any executive agency, or any establishment under the legislative or judicial branch of the government.

In strict usage, this term does not include the executive departments, either house of Congress, or the Architect of the Capitol. Cf. **agency, *n.*, executive agency.**

Federal Airways System. The system of civil airways established by the Air Commerce Act of 1926.

Control over this system was subsequently vested in the Civil Aeronautics Authority, then in the Civil Aeronautics Board.

Federal Aviation Commission. A special aviation commission: See note. *Hist.*

The Federal Aviation Commission (also known as the 'Howell Commission') was appointed in 1934 to make an appropriate survey and to recommend 'a broad policy covering all phases of aviation and the relation of the United States thereto' (*Air Mail Act,* 12 June 1934).

federal catalog system. A cataloging system established by the now superseded Munitions Board Cataloging Agency.

This system provides stock numbers for all items of supply in the Armed Forces. It is designed to standardize the description of supply items, eliminate duplication in procurement, and thereby reduce costs for supply purchase and storage.

Federal Register. A publication of the National Archives, used chiefly for the publication of regulations issued by various administrative agencies of the Government.

This register is issued daily except Saturdays, Sundays, and holidays.

federal service stripe. A diagonal stripe worn by enlisted persons on the left sleeve of the uniform, each stripe representing three years of active duty in the US armed forces. Usually called a 'service stripe.'

Federal shield. The shield of the United States distinguished by thirteen vertical stripes at the base below the chief. Commonly used in AF insignia, as on a pilot's aviation badge.

Fédération Aéronautique Internationale. An international organization founded in October 1905 in Paris for the purpose of authenticating aeronautical flights, both civilian and military, and promoting good will and understanding among world aviation interests.

feed, *n.* **1.** *Electronics.* That part of a radar antenna that consists of the end of the energy transmission line together with the immediately adjacent parts, which radiates or 'feeds' radio-frequency energy to a reflector. **2.** Short for 'feed chute.'

feedback, *n.* **1.** *Aerodynamics.* The relay through the controls of aerodynamic forces exerted on control surfaces, and felt by the pilot. Cf. **feel,** *n.* **2.** *Electricity.* A transfer of energy from the output to the input of the same electrical system.

feed chute. A chute or passage through which ammunition is guided into the breech mechanism of a machine gun.

The *fixed feed chute* is a rigid confining track leading

to the gun; the *flexible feed chute* is a confining track made up of articulated segments.

feeder, *n.* A device that supplies ammunition to a weapon, usually actuated by an automatic or semiautomatic mechanism.

feeder line. A secondary air route or line leading into, and connecting with, a main route.

Hence, *feeder operations*, operations along a feeder line.

feel, *n. Specif.* The feeling that a pilot develops for the operation of his aircraft, stimulated by feedback of responses by surface controls to aerodynamic forces.

feint, *n.* Short for 'feint attack.'

feint, *v. intr.* To make a feint attack.

feint attack. A mock or fake attack designed to distract, divert, or deceive the enemy.

Felix (*code*). A name for a type of target-seeking bomb.

The essential element in the bomb is a nose unit that homes on heat-generating machines.

female officer. *Specif.* Any officer in the Women's Medical Specialist Corps or the Women in the Air Force; likewise any woman in the Air Force Nurse Corps.

female personnel. *Specif.* The personnel of the Women in the Air Force, of the Air Force Nurse Corps (except for a few men), and of the Women's Medical Specialist Corps.

fence, *n.* **1.** A radar warning network, considered as a barrier against surprise attack. Usually called 'radar fence.' **2.** A stall fence.

F/Eng (*abbr*). 'Flight engineer.'

ferret, *n.* An aircraft equipped to detect, locate, record, and analyze electromagnetic radiation.

ferret, *v. tr.* To search out a *target* by means of airborne electronic equipment. Usually with *out*.

ferry, *v. tr.* **1.** To deliver an *airplane* under its own power from the point of acceptance to the point of use, or from one base to another. **2.** To transport *personnel* or *materiel* by air.

Ferrying Command. An AAF command created in 1941 for the specific purpose of ferrying aircraft and supplies, esp. overseas. *Hist.*

The Ferrying Command was redesignated the Air Transport Command in June 1942.

ferry pilot. Any pilot who ferries airplanes; esp. during WW II, a service pilot commissioned for the specific purpose of ferrying airplanes.

Festung Europa. [German 'fortress Europe.'] Europe, exclusive of Russia, considered by the Nazis as impregnable.

FF (*auth abbr*). 'French Fourragère.'

FFAR (*abbr*). 'Forward-firing aerial rocket.'

ffgt (*auth abbr*). 'Firefighter' or 'firefighting.'

fgn (*auth abbr*). 'Foreign.'

FH-1. A twin-jet, Navy fighter developed by McDonnell, and popularly called the 'Phantom.'

fhp (*abbr*). 'Friction horsepower.'

fi (*abbr*). 'Finance.' See **fin** (*auth abbr*).

Fi 156. A three-place, high-wing, light German monoplane of WW II, developed by Fieseler and used for staff transport, reconnaissance, or other general purposes. Popularly called the 'Storch.'

FICA (*auth abbr*). 'Federal Insurance Contributions Act.'

fiddle point. Any point of reference on the earth with recognizable terrain features, used by radar controllers during WW II as a fixed point toward which aircraft, esp. fighters, could be vectored.

fidelity, *n. Electricity and electronics.* The degree to which an electrical or electronic device, as an amplifier or radio-receiving set, accurately reproduces in its output the signal or wave form received in its input.

FIDO (*abbr*). 'Dispersal of intense fog.'

'FIDO' is pronounced as a word, and is popularly known as 'Fog Investigation and Dispersal Operation.' See **dispersal,** *n.*

fiducial mark. Any marker built into an aerial camera and registering its image on an aerial photograph as a fixed reference mark; the image cast on a photograph by such a marker. Also called a 'collimating mark.'

A fiducial mark may appear in each corner of a photograph, in the center of each margin of a photograph, or indicate the principal point of a photograph.

field, *n.* (fld) **1.** An open place on land for the takeoff or landing of aircraft. **a.** Sometimes applied to an installation as a whole, with hangars, runways, parking areas, etc., esp. in reference to such places used in private aviation, or in the names of installations used by the Air National Guard or in certain names of foreign air bases. E.g., see **Peterson Field. b.** Sometimes applied restrictively to the takeoff, landing, taxiing, and parking area of such an installation or to an unattached area. See **airfield,** *n.*, sense 2. **2.** A maneuver or combat area, as distinguished from a base or garrison. **3.** The general ground area of combat, including the forward and rear areas, as in 'they took to the field and routed the enemy.' **4. a.** An area under the control of a commander, but lying outside his headquarters area. **b.** The activities, units, or commands that lie in this area, as in 'this information should be disseminated to the field.' **5.** A space or region crossed by lines of force, such as a space crossed by electricity or magnetic force. **6.** In radar, the background illumination of the scope against which the returns are visible. **7.** In job analysis, a specialization, as in 'his field was radar.'

In sense 1, a field is not necessarily a part of an air base or airport. In sense 1a, 'field' appears in the designations of certain AF bases overseas, and was formerly in the official designations of air bases in the US. These latter are now normally designated 'Air Force bases.' The word per-

sists in popular usage, as in 'Maxwell Field.' See **airfield, *n.*, flying field.**

Attrib. uses are often ambiguous out of context, as indicated by several of the following: In sense 1, as in *field attendant, field beacon;* in senses 2 or 3, as in *field artillery;* in senses 3 or 4, as in *field conditions* (often connoting substandard or difficult conditions), *field duty, field ration, field commander,* or *field printing plant.*

field airdrome. An airfield consisting of runways, often unpaved, and having few, if any, servicing facilities in contrast to the elaborate installations of an air base.

field conditions. The conditions under which an advanced or outlying installation is operated, as distinguished from the conditions at an air base with its shops and servicing facilities.

In training, this term is sometimes used in the sense of 'combat conditions.'

field data. The data gained from exercises and tests conducted under simulated or actual combat conditions; data collected in the field.

field duty. 1. Service or duty performed in operations against an actual or potential enemy, or performed in maneuvers, war games, field exercises, or similar operations, as distinguished from training duty, rear-area duty, or the like. **2.** In a restricted sense, duty performed in combat operations against an enemy.

field elevation. The elevation of an airfield above sea level, measured in feet.

field elevation pressure. The atmospheric pressure at a given airfield at any given time.

field exercise. A training exercise conducted under simulated war conditions in the field, and in which the troops and equipment of one side are present wholly or in part while the opposing side is either imaginary or represented by only a few troops and pieces of equipment. See **command post exercise.**

field force. 1. A ground force operating in the field (which see, sense 3). **2.** *Specif.* in plural: The units, general headquarters, installations, and equipment that comprise, or are intended to comprise, the forces in a theater of operation.

field grade. An officer's grade covering major, lieutenant colonel, and colonel. Hence, *field-grade officer.* Cf. **company-grade officer, general officer.**

field intensity. *Electricity.* The intensity, measured in terms of strength or pressure, exerted by the lines of force in a magnetic, electrostatic, or radio field.

field jacket. An outer garment or coat issued to AF personnel for field wear.

The field jacket is not included in the initial issue of clothing to airmen.

field maintenance. The maintenance given aircraft or other equipment by the maintenance group at wing level. Equivalent to what was formerly called 'third echelon maintenance.'

This maintenance requires certain fixed shops and unit assemblies not available for organizational maintenance. See **depot maintenance.**

field maneuver. A maneuver in the field in which two opposing forces conduct operations under simulated combat conditions in order to test and evaluate combat or operational readiness. Cf. **field exercise, maneuver,** *n.*

field officer. Short for 'field-grade officer.'

Field Officer Course. A senior academic course of the superseded Air Command and Staff School of the Air University, attendance at which was generally restricted to field-grade officers. See **Air Command and Staff College.**

field of fire. (FofF) The area or space that may be filled with effective fire from one or more guns in a given emplacement or mounting.

field of search. *Electronics.* The space that a radar set or installation can cover effectively.

field of vision. The expanse within the sight of a person in a fixed position, as that within view of a pilot or aerial gunner from within an airplane.

field order. (FO) An operation order.

field personnel records. Certain current records and papers maintained on an individual in the field by the organization to which he is assigned or attached.

Field personnel records may include medical and dental records, flight records, etc.

field printing. Printing authorized or controlled by a major air command or by any other command subordinate to one of the military departments. See **departmental printing.**

field ration. A standardized food ration, the menus being centrally prepared.

field-strip, *v. tr.* To disassemble the major components of a *machine gun, cannon,* or other firearm for cleaning, inspection, or the like. Cf. **detail-strip,** *v.*

field-support equipment. (FSE) Usually *capitalized.* The organizational equipment required, under field or combat conditions, to supplement unit essential equipment or base-support equipment.

field telephone. A portable telephone designed for field or combat use. Also attrib., as in *field-telephone switchboard, system,* etc.

field test. A service test of something by putting it into actual use in the field. See **service test.**

field wire. An insulated, flexible wire or cable, used in field-type telephone and telegraph systems.

Fifinella, *n.* **1.** A female gremlin. *Popular.* **2.** A trainee in the Women's Airforce Service Pilots. Now *hist.*

fifty, *n.* A 0.50 caliber machine gun. Used in plural in reference to guns mounted in multiple mounts, as in 'a short burst from his twin fifties.'

fifty-hour inspection. An inspection given an aircraft engine or other piece of equipment at the end of fifty hours of operation.

fifty-mission cap. The service cap when worn without the front spring stiffener and grommet. *Jocular.*

The wearing of the service cap without spring and grommet arose chiefly among flying officers wearing headphones.

fig (*auth abbr*). 'Figure.'

fight, *n. Specif.* An aerial battle between or among opposing aircraft, esp. an aerial battle involving fighters. See **dogfight,** *n.*

fighter, *n.* (ftr) *Specif.* A fighter airplane. See **F** (*abbr*), sense 2.

'Fighter,' although officially displacing 'pursuit,' is not adapted to use in the collective sense of 'fighter aviation,' or 'fighter airplanes.' See **pursuit,** *n.*, sense 2. Where we once said, for example, 'we were intercepted by enemy pursuit,' we do not now say 'we were intercepted by enemy fighter.' Cf. **scout,** *n.*, sense 2.

Attrib., as in *fighter assault, fighter attack, fighter aviation, fighter base, fighter crew, fighter group, fighter pilot, fighter squadron,* etc. 'Fighter' also appears as the second element in combinations, as in *all-weather fighter, day fighter, night fighter,* etc.

fighter airplane. A combat airplane designed primarily for intercepting and destroying other aircraft in the air.

Usually designed as a single-place airplane, fast, and maneuverable, the fighter airplane is also often used for escort and tactical operations. Also called a 'pursuit airplane,' a fighter was formerly officially designated 'pursuit' (P).

fighter aviation. 1. The art or practice of operating fighter airplanes, esp. in air combat; the activity connected with this. **2.** Fighter airplanes. **3.** The people who operate fighter aircraft, as in 'it is the responsibility of fighter aviation to protect the bombers.'

See **aviation,** *n.*

fighter belt. A string of fighter bases for use in defending a target area.

fighter-bomber, *n.* An airplane used both to fight and drop bombs; a fighter equipped to carry and release bombs.

fighter command. 1. In WW II, a designation among most numbered air forces for a command charged with operations involving the use of fighter airplanes, as in 'V Fighter Command.' **2.** A major subdivision of the RAF charged with air defense.

In the USAF, the designation 'fighter command' has fallen into disuse; in overseas theaters during WW II its application was varied and often temporary.

fighter control. The control of a fighter or fighters, either by a tactical air controller or by an air defense controller.

fighter control center. A control center specially organized and equipped to control fighters, either on the ground or in the air within or over a designated area.

fighter controller. A generic term applied to a controller of fighter aircraft, as a tactical air controller or an air defense controller.

fighter cover. Cover provided by fighter airplanes.

fighter direction aircraft. An airborne aircraft using visual observation and radio communication to assist a striking force of fighters to its target.

The crew on such an aircraft has limited authority in directing fighter airplanes to targets other than those designated by prior planning.

fighter director. An officer at a control and reporting center responsible for the direction of the fighter airplanes and the warning facilities assigned to him for the defense of his area.

fighter director post. A forward director post. *Hist.*, used in WW II.

fighter escort. (FE) An escort (which see) composed of fighters.

Attrib., as in *fighter escort mission, operation, plan,* etc.

fighter group. A combat group having squadrons equipped with fighters. See **combat group.**

fighter gunnery. The art or practice of using fixed guns in a fighter aircraft.

Attrib., as in *fighter gunnery meet, training,* etc.

fighter-interceptor, *n.* An interceptor, esp. considered from its use as a fighter.

fighter opposition. Air opposition (which see) offered by fighters.

fighter screen. A defensive formation or screen of airborne fighters.

fighter station. An air base designed or used primarily for fighters. Chiefly *British.*

fighter strip. An airstrip (which see) used esp. by fighter planes.

fighter support. The support given by fighters to other aircraft, esp. to bombers.

fighter sweep. A sweep (which see, sense 1) made by fighters esp. in counterair operations.

fighter umbrella. An air umbrella consisting of fighters. See **air umbrella.**

fighter watch. A special vigilance or state of readiness in a defense system wherein fighter airplanes are kept ready to deal with any imminent attack.

The fighter planes necessary to a fighter watch may or may not be airborne.

fighter wing. An AF combat wing in which the primary mission group is equipped with fighters.

figure eight. An eight (which see).

fil (*auth abbr*). 'Filter.'

FilCen (*abbr*). 'Filter center.'

file, *n.* **1.** A line of men or things one behind another. **2.** *To be reduced in files,* to be given a

lower place in a promotion list; hence, *to be raised in files.*

file 13. A waste basket. *Slang.*

filing time. The date and time (hour and minute) at which a communication agency receives a message for transmission.

fill, *n.* The ammunition charge of a shell, bomb, mine, or the like. See **charge,** *n.*

filler, *n.* (flr) **1.** An individual assigned to fill a position vacancy not previously occupied, in order to bring or help bring an organization to authorized strength. Distinguished esp. from a replacement (in sense 3). **2.** A pipeline person assigned to certain organizations such as a replacement depot awaiting further assignment. **3.** An ammunition charge. See **charge,** *n.*, sense 2.

fillet, *n.* A faired surface or piece that smooths the flow of air at an internal angle, as at a wing root.

filling, *n.* An ammunition charge. See **charge,** *n.*, sense 2.

film magazine. That part of an aerial camera that holds the film ready for use.

A film magazine is normally detachable from the camera.

filter, *n.* (fil) **1.** Any device or substance through which something is passed in order to cleanse, purify, or separate it. **2.** *Electricity.* An electrical device utilizing resistance, capacitance, inductance, or any combination thereof to reduce current and power at certain frequencies while allowing the comparatively free flow of other currents.

filter, *v. tr.* To receive divergent *reports* and to reconcile their differences before sending forward corrected information.

Said esp. of ground observer reports in air defense operations, or of radar plots of flying aircraft, the purpose being to determine correct position, direction of flight, and altitude before the information is passed forward.

filter center. An activity in an air defense system for receiving ground observer reports concerning flying aircraft, for evaluating, consolidating, and reconciling divergent reports, and for disseminating the resulting information to an air defense direction center.

A necessary feature of a filter center is a plotting board or table on which filter-center plotters keep track of the movements of aircraft. See **air defense control center.**

Fin, *n.* A code name for the Russian La-7, an improved version of the earlier La-5.

fin, *n.* **1.** A fixed or adjustable vane or airfoil affixed longitudinally to an aerodynamically or ballistically designed body for stabilizing purposes. **2.** In specific senses: **a.** A vertical stabilizer. **b.** A carbon fin. **c.** A cooling fin.

fin (*auth abbr*). 'Finance.'

final, *n.* Short for 'final approach.'

final approach. The last leg of a landing pattern, or the last heading flown by an aircraft before touchdown, during which the aircraft is lined up with the runway and is held to a fairly constant speed and rate of descent.

final controller. An aircraft controller in a ground-controlled approach system.

finalize, *v. tr.* To bring an *action* to a close; to finish a *report, plan,* or the like. *Cant.*

finance officer. (FO) An officer responsible for making payments authorized by properly certified vouchers.

financial management system. Any system of financial management, devised esp. for a large and complicated organization in which, without some such system, both economy and effective operations would be sacrificed.

In the AF, the financial management system is based upon recognition of the fact that AF operations are ultimately financed by appropriated funds. It is devised to provide each manager on the operating level with financial and other pertinent data to assist him in the utilization and management of appropriated funds, personnel, supplies, equipment, and facilities. These are based upon (1) a commercial-type accrual accounting system integrated with an appropriation accounting system; (2) standards and procedures for the analysis of significant financial data; (3) budget estimates and work measurements related to operational requirements; (4) forecasts in terms of resources consumed, inventory changes, etc.; (5) correlation of programming with approved financing procedures; and (7) the employment of various machine and other techniques designed to provide ready and accurate data at all levels of command.

fineness ratio. The ratio of the length of a streamlined body, as that of a fuselage, airship hull, bomb, or the like, to its maximum diameter.

fine pitch. The pitch of a propeller at a very slight blade angle.

fin flash. A national flag or a national insigne when painted on a vertical stabilizer. *British.*

finger formation. Short for 'fingertip formation.'

fingertip formation. A four-plane fighter formation in the shape of an unsymmetrical V.

In a fingertip formation, the aircraft occupy positions suggested by the four fingertips of either hand, the fingers being held together in a horizontal plane.

fin-stabilized projectile. Any projectile, as a rocket or bomb, steadied in flight by fins. Cf. **spin-stabilized projectile.**

FirAv (*abbr*). 'First available.'

fire, *n.* Projectiles fired; the act of firing.

'Fire' ordinarily refers to projectiles other than bombs, that is, to bullets, shells, or rockets; however, in at least one attributive use, *fire support,* the word appears to refer to bombs as well as to other projectiles: See **fire support,** sense 2.

fire, *v.* **1.** *tr.* To discharge a *gun;* to shoot a *projectile* from, or discharge a *cartridge* in, a gun; to ignite and launch a *rocket.* **2.** *intr.* To cause a gun or rocket to discharge.

firearm, *n.* **1.** *Specif.* A small arm, as a pistol or rifle, designed to be carried and used by an individual. **2.** Also used in a general sense, a gun (sense 1).

fire attack. An air attack with incendiary bombs.

fireball, *n.* A ball of fire (which see).

fire balloon. A balloon using hot air from a fire as the lifting agent. Sometimes called a 'montgolfier' (which see) or 'hot-air balloon.'

Firebee, *n.* A high-speed drone developed by Ryan Aeronautical Company, used esp. as a target.

fire bomb. An incendiary bomb or napalm bomb.
Attrib., as in *fire-bomb mission, raid,* etc.

firebreak, *n.* A cleared area, esp. between buildings, intended to check the spreading of a fire.

fire control. Control over the direction, volume, and time of fire of guns or rockets by the use of certain electrical, electronic, optical, or mechanical systems, devices, or aids; a fire-control system.
Fire control is exercised both over aircraft guns or rockets, esp. over turret-mounted guns, and over cannon or rockets used on the ground. See **central fire control.**
Attrib., as in *fire-control analysis, component, device, equipment, officer, system,* etc.

fire-control radar. Radar equipment used in a fire-control system.

fire direction center. That section of a command post, consisting of gunnery and communications personnel and equipment, from or through which the ground commander exercises control over ground fire and submits requests for close air support.

fire division. A partition or wall designed to restrict the progress of a fire; a space, as within a building, within which a fire may be expected to be contained.

Firefly, *n.* A British single-engine, two-place fighter developed by Fairey for the British Navy and used during WW II and after.

fireguard, *n.* A person who checks aircraft for fire hazards and stands ready to combat fire, esp. when an aircraft is starting its engines.

fire-hazard group. Any one of a number of categories into which ammunition or explosives are divided according to their sensitivity to flame and the degree of resulting danger.

fire interrupter. A device, usually an electrical switch operated by a contour follower, that interrupts the fire of an aircraft's moving guns so as to avoid hitting any part of the aircraft.

fire marshal. An officer responsible for fire prevention and fire protection at an AF base or in a designated area.
The fire marshal at an AF base is normally the air installations officer.

fire point. The temperature, as determined by testing, of a lubricating oil when it gives off a vapor that will continue to burn steadily. Cf. **flash point.**

firepower, *n.* **1.** The capability to deliver fire. **2.** The fire itself, or the quantity or effectiveness of fire delivered; any explosive or missile that wreaks damage upon the target against which directed. Said of guns or rockets, or of aircraft, units, etc., armed with guns or rockets.

fire raid. An air raid with incendiary or napalm bombs.

fire roe. A powder which, added to gasoline, jellies or thickens the gasoline. See **napalm,** *n.,* sense 1.

fire storm. A wind storm induced by a large fire causing warm air to rise above the burning area in such volume that cooler air is rapidly drawn in toward the burning area from all directions.

fire support. 1. The mutual support or protection given by one bomber to another when each bomber is protected, or is in a position to be protected, by the guns of another. **2.** In Army usage, the support or protection given ground forces in direct contact with the enemy by ground or naval guns or by aircraft engaging in close air support.

fire support coordination center. (FSCC) A facility, operated by an artillery commander, in which the coordinating representatives of the supporting arms work together to plan and coordinate fire support.
The most common employment is in the normal coordination of artillery fire and aircraft fire. In amphibious operations, coordination of naval gunfire is also undertaken.

fire unit of ammunition. A basic load of ammunition. *Obsolescent.*

fire valve. A valve controlling a fire-extinguishing system in an aircraft.

fire wall. A fireproof or fire-resistant bulkhead behind an aircraft engine, designed to retard the spread of any fire originating at or near the engine.

firing button. A button or switch for firing guns or rockets. Cf. **control-stick switch, gun button.**

firing chamber. *Specif.* A combustion chamber, esp. in a rocket motor or rocket engine.

firing line. A line at which men are stationed for firing; the men stationed at such a line.
In target practice, the firing line marks the distance from the target; in battle, it is the front line from which fire is directed at the enemy.

firing mechanism. 1. A mechanism for firing a gun, comprising the trigger or lanyard, firing pin or hammer, sear, and other devices. **2.** A fuze.

firing order. The sequence in which the power strokes take place in the cylinders of an engine.

firing pass. A pass made with an aircraft at a target with the intent of firing.

firing pin. A rod or plunger in a gun, mine, bomb, shell, or the like that strikes and detonates

a sensitive explosive to fire the main explosive or propelling charge.

firing platform. A launching platform.

firing range. 1. An area or site designated for firing practice. **2.** The range or distance from a target at which a gun can be fired with effective results, as in 'he was within firing range'; this range considered as a capability of the gun.

firing system tester. An electrical device for testing the continuity or other electrical characteristics of a rocket-firing system.

firing time. The period of time during which a weapon is fired. See **effective firing time.**

firm, *v. tr.* To give firmness to a *plan, policy,* or the like by eliminating indecisiveness or by giving it the backing of competent authority. Often with *up.*

first, *a.* Of a higher rank; foremost; primary. Used in various locutions, as in 'first lieutenant,' 'airman first class,' etc. See following entries.

first aid. The emergency treatment administered to a person, or by a person to himself, before regular medical or surgical care can be given.

first article. *Specif.* The first production item of supply or equipment, except aircraft, produced for the AF under a contract requiring submission of one or more items for approval before production of the remaining items called for in the contract.

A first article is esp. distinguished from a sample article.

first-echelon maintenance. Formerly, maintenance performed by the user or users of a piece of equipment. Now a part of organizational maintenance.

first lieutenant. A commissioned rank or person in the AF, Army, or Marine Corps, immediately above second lieutenant; (*capitalized*) the title of this person.

first light. In nautical usage, the beginning of nautical twilight in the morning, occurring when the sun reaches a position 12° below the horizon.

first-line, *a.* **1.** Of aircraft: Operational and modern; capable of being used to perform critical and essential AF missions. Cf. **second-line,** *a.* **2.** Of pilots or aircrews: Proficient in the performance of their duties, esp. combat duties.

first-line life. The period of time during which an aircraft remains first-line.

first pilot. 1. The pilot who actually flies, or has primary responsibility for flying, an airplane, as distinguished from the copilot or the aircraft commander. **2.** A pilot with a rating designating him to serve as such a pilot of a specified aircraft.

Attrib., as in *first-pilot time,* the flying time logged by a person as first pilot.

first point of Aries. The vernal equinox (sense 1).

first sergeant. In the AF, the chief administrative position for a noncommissioned officer in a squadron; a title for this position.

The grade of first sergeant has been discontinued in the AF, but the title and position remain. A staff, technical, or master sergeant may hold the position.

first three grades. The noncommissioned officer grades of master, technical, and staff sergeant.

Individuals in these grades are sometimes referred to as 'first-three-graders.'

fisc (*abbr*). 'Fiscal.'

fiscal officer. An officer having the responsibility of maintaining records reflecting the use and status of appropriations and funds.

fiscal year. (FY) In the AF, the period of time beginning 1 July and ending 30 June, used for fiscal purposes.

FY 1956 began 1 Jul 1955, it ended 30 Jun 1956.

fish, *n.* Short for 'tin fish.' *Slang.*

fishing fleet. A radar-equipped fleet of boats offshore. *Slang.*

fishtail, *n.* A transition piece of a turbojet engine.

fishtail, *v. tr.* and *intr.* To swing the tail of an *airplane* from side to side, esp. in order to lose speed before touchdown; to engage in this action.

fission, *n. Specif.* Nuclear fission.

Attrib., as in *fission energy, product,* etc.

fission, *v. intr.* Of radioactive material: To split apart within the atomic nucleus, as in 'cobalt would neither fission nor fuse.'

fissionable, *a.* Of a material such as uranium: Subject to nuclear fission.

fission bomb. An atomic bomb, that is, a bomb depending upon nuclear fission for release of energy. Cf. **fusion bomb.**

FIT (*abbr*). 'Forward inspection team.'

fit-and-function part. A part designed for a specific assembly.

fitter, *n.* A mechanic specializing primarily in aircraft engines. *British.*

fitting, *n.* Anything fitted, as a part, assembly, or fixture in an aircraft.

FIU (*auth abbr*). 'Forward interpretation unit.'

five, *n.* See **VIP code.**

five-by-five, *a.* Of radio signals or reception: Loud and clear. *Colloq.*

The expression 'five-by-five' is derived from a scale set up for showing numerically the strength and clarity of radio reception.

five-square, *a.* Also **five-squared,** *a.* Of a radio signal: Clear and loud.

five-star general. Either a general of the Air Force or a general of the Army.

fix, *n.* **1.** The known location of something, as of a radio-transmitting station. See **radio fix. 2.** In air navigation, a place or position the location of which is known. **3.** The position of an aircraft as determined by any one of a number of means at any point along its line of flight, and often

expressed in geographical coordinates; also, the action of determining position. **4.** An adjustment made to a piece of equipment, necessary for its proper operation after installation.

fixed ammunition. Firearm ammunition each round of which is a self-contained unit, the various components of the round, as the powder, primer, and projectile, being contained or held in a shell case ready for insertion into a chamber.

Fixed ammunition is the usual form of firearm ammunition. Cf. **loose ammunition.**

fixed-area exhaust nozzle. An exhaust nozzle on a jet engine the opening of which is of a fixed size, no provision being made for varying the size of the opening. Cf. **variable-area exhaust nozzle.**

fixed balloon. A captive balloon.

fixed-base operation. In commercial aviation, nonscheduled flying from a single airport for profit.

fixed bias. A constant bias voltage obtained from a given source, as from a battery or generator.

fixed communications. *pl.* Any relatively permanent system of communication, as a telephone, teletype, or radio system, as distinguished esp. from a system using panels, smoke, or other visual means of communication.

fixed coordinate system. A system for establishing position or speed that uses coordinates fixed in relation to the earth. Cf. **moving coordinate system.**

For example, in aerial gunnery a fixed coordinate system is employed if the origin of each projectile fired is considered to be the point above the earth fixed at the moment of fire. Cf. **remaining velocity.**

fixed-frequency transmitter. A radio transmitter designed to operate in a single frequency.

fixed fuel tank. A built-in or permanently-attached fuel tank, as distinguished from a droppable or detachable tank.

fixed gun. *Specif.* An aircraft machine gun mounted rigidly to the aircraft, and aimed by moving the aircraft, as distinguished from a flexible gun.

fixed gunnery. *Specif.* Fighter gunnery.

fixed landing gear. A nonretractable landing gear.

fixed loop radio compass. A radio compass having a loop antenna fixed in position.

The plane of the fixed loop antenna is perpendicular to the longitudinal axis of the aircraft in which it is situated. The compass has a left-right indicator, the needle of which is centered when the aircraft is headed directly toward or away from the transmitting station to which the receiver is tuned.

fixed-pitch propeller. A propeller in which the pitch or blade angle is nonadjustable and nonvariable.

Fixed-pitch propellers are normally of wood.

fixed power-plant weight. The weight of a power plant and its accessories and associated parts or equipment.

The fixed power-plant weight includes the weight of the propeller, exhaust manifolds, radiator and coolant, connecting and controlling rods and wires, tanks (less contents), pipes, regulators, oil in the crankcase, and starting mechanism. The weight of engine instruments is not included.

fixed-price contract. A contract whereby a contractor is paid a stated price for fulfilling the terms of the contract.

fixed reticle. A reticle rigidly fixed and stationary in the field of view.

fixed sight. A nonadjustable gunsight.

fixed slot. A slot that is not dependent upon a moving part. See **slot,** *n.*, senses 2, 3 and note; also **movable slot.**

fixed surface. An airfoil, fin, or stabilizer that is more or less rigidly fixed to the body of an aircraft.

While fixed surfaces are often adjustable, they are so-called to distinguish them from the movable ailerons, elevator, rudder, etc., or from a rotary-wing system.

fixed target. A target incapable of being moved or readily moved, or incapable of moving, like a city, factory, or surrounded troops.

fixed transmitter. A radio transmitter sending from a permanent or fixed site.

fixed-type landing gear. A fixed landing gear.

fixed undercarriage. A fixed landing gear.

fixed-wing airplane. An airplane, esp. a powered airplane, having its wings attached to the fuselage so that they are either rigidly fixed in place or adjustable, as distinguished from an airplane with rotating wings, like a helicopter.

fixing aid. Any air-navigation aid used in finding the position of an aircraft. *British.*

fix-to-fix flying. A method of flying or navigating by taking fixes at stated intervals and employing dead reckoning between them.

fixture, *n. Specif. pl.* The knobs, handles, light-covers, switch-boxes, and the like, that make up the appointments of an aircraft. Cf. **furnishing,** *n.*, **accessory,** *n.*

fizz pot. A booster rocket on an airplane. *Slang.*

FJ. A single-jet fighter developed by North American for the Navy after WW II, and popularly called the 'Fury.'

FK (*abbr*). 'Faker track.'

FL (*auth abbr*). 'Focal length.'

F/L (*abbr*). 'Flight Lieutenant.' *British.*

flag, *n. Specif.* **1.** A cloth of specific size, often bearing symbols, and indicating nationality, organization, or the like. **2.** A signal flag.

See **ceremonial flag, chaplain's flag, color,** *n.*, **organizational flag.**

flag alarm. A semaphore-type indicator in certain

air-navigation instruments that warns when instrument readings are unreliable.

flag rank. A Naval rank of commodore or higher. Cf. **star rank.**

flag target. A long, narrow target resembling a flag and towed by an aircraft, used either in air-to-air or antiaircraft artillery target practice.

flak, *n.* [German *Fl*ieger *A*bwehr *K*anone (antiaircraft cannon).] **1.** Explosive or exploding missiles fired from antiaircraft cannon. **2.** Antiaircraft cannon, esp. in some attributive uses, as in *flak battery, flak installation.* **3.** In intelligence usage: See note.

In sense 3, 'flak,' as an attributive, includes not only those meanings in senses 1 and 2, but has been broadened to include also many forms of ground defense against aircraft: See **flak intelligence, flak map.**

Attrib. (in sense 1), as in *flak barrage, burst, damage, umbrella,* etc.

flak analysis. The examination and study of flak intelligence to determine the nature, effectiveness, or probable effectiveness of enemy antiaircraft defenses.

flak area. An area over which flak is, or may be, encountered.

flak battery. A battery of flak guns.

flak clock. A circular chart representing a target area, showing the most desirable courses for aircraft to follow in and out of the area's airspace in order best to avoid antiaircraft defenses.

flak curtain. A heavy curtain, often containing steel plates, hung within the cabin of an aircraft as a protection against light fragments of exploding antiaircraft shells.

flak gun. An antiaircraft cannon.

flak-happy, *a.* Suffering from combat fatigue caused esp. by flak. *Slang.*

flak helmet. A helmet for protection esp. against flak.

flak installation. An installation or emplacement of one or more antiaircraft cannon.

flak intelligence. Intelligence on enemy ground defenses against aircraft.

'Flak intelligence' is a broad term, and includes intelligence on all active air defenses except aircraft and air-launched missiles, as well as intelligence on passive air defenses that directly affect attacking aircraft, as the use of camouflage and dummy antiaircraft guns.

flak jacket. A jacket or vest of heavy fabric containing metal plates, designed esp. for protection against flak.

The usual type of flak jacket covers the chest, abdomen, back, and genitals, leaving the arms and legs free. Also called a 'flak vest.' See **flak suit.**

flak map. In intelligence usage, a map of a defended area showing the position and number of antiaircraft guns, surface-to-air launching sites, searchlights, radar installations, and other defense installations.

flak officer. An intelligence officer concerned with enemy antiaircraft defenses.

flak ship. A ship or boat on which antiaircraft cannon are mounted, used esp. for air defense.

flak suit. A garment consisting of two or more pieces of armored clothing, as a flak jacket with thigh protectors attached.

flak tower. A tower-like structure in which one or more antiaircraft automatic weapons are mounted.

flak vest. A flak jacket.

flame, *n. Specif.* The body of burning gases in a jet engine or rocket motor.

flame, *v. To flame out,* to cease to burn. Said of a jet engine.

flame bomb. A fire bomb.

flame damper. A device affixed to aircraft exhaust pipes to conceal the exhaust flame. Also called a 'flame dampener.'

flame holder. An inner liner.

flameout, *n.* The extinguishment of the flame in a reaction engine, esp. in a jet engine. See **brennschluss,** *n.*, **burnout,** *n.*, sense 2.

flame propagation. In a jet engine, the process by which the flame is made to continue burning in a combustion chamber after the initial ignition.

flame thrower. An infantry weapon that projects ignited incendiary fuel in a steady stream, used against either troops or materiel.

flame tube. An inner liner of a jet engine.

flaming coffin. A slang term for the DH-4.

flaming onion. A general term applied either to a tracer bullet flaming in air or to a certain kind of bursting antiaircraft shell. *Slang.*

flammable, *a.* Combustible; easily ignited.

In AF usage, 'flammable' is preferred to 'inflammable.' In the latter, the 'in-' prefix may be mistaken for the meaning 'not.' See **nonflammable,** *a.*

flank, *n.* The side of a formation of aircraft, troops, or the like.

flank attack. An attack against the flank.

flap, *n.* **1.** Any control surface, such as a speed brake, dive brake, dive-recovery brake, or the like, used primarily to increase the lift or drag on an airplane, or to aid in recovery from a dive. **2.** Any rudder attached to a rocket, and acting either in the air or within the jet stream. See **carbon fin. 3.** Short for 'cowl flap' or 'hydroflap.' **4.** An occasion of excitement, hurry, or confusion. *Slang.*

In sense 1, see **dive brake, dive-recovery brake, Fowler flap, landing flap, plain flap, slotted flap, split flap.**

flaperon, *n.* A kind of control surface used both as a flap and as an aileron.

flapping, *n.* The up-and-down motion of a rotor blade.

flapping angle. An angle that measures the extent of flapping in a rotor blade.

flapping hinge. In a rotor system, a hinge on a rotor blade allowing it a flapping movement, in order to reduce stresses on the blade. Also called a 'delta hinge.'

flapping plane. A plane in which flapping occurs, i.e., a plane perpendicular to the plane of the rotor disc.

flare, *n.* **1.** A pyrotechnic device that emits a bright light, used for illumination, signaling, or identification. See note. **2.** A burning flare; a fire or torch; loosely, any light, electric or otherwise, used for illumination. See **flare path.** **3.** *Electronics.* An overly-bright return on a radarscope, which loses definite shape because of its excessive brightness. **4.** *Rocketry.* The flared inside curve of some types of rocket nozzles.

In sense 1, a flare may be dropped from, or towed by, an aircraft, shot from a flare pistol or mortar, or placed on the ground.

flare, *v. To flare out,* to bring an airplane down in a smooth curve preparatory to touching down.

flareback, *n.* A rearward escapement of flame or gas from a gun. See **backfire,** *n.,* sense 1.

flare chute. A parachute attached to a flare for letting the flare down slowly.

flareout, *n.* An act or instance of flaring out. See **flare,** *v.*

flare path. A path, esp. a runway or landing path, illuminated or marked by flares, electric lights, or the like.

flare pistol. A pistol for shooting flares; a Very pistol or signal pistol.

See **signal pistol, Very pistol.**

flare pot. A pot or container holding a flare compound.

flash, *n.* A sudden burst of light that tends to vanish like vapor; *specif.,* a muzzle flash.

flashback, *n. Specif.* The sudden and spontaneous flashing of fire from one place to another, esp. in a fuel-soaked area.

flash bomb. A photoflash bomb.

flash burn. A burn received from the intense heat of a flash, esp. an atomic-bomb flash or explosion.

flash depressor. A substance used to reduce the flash from a solid-fuel rocket.

flasher, *n.* A mechanism that cuts the circuit intermittently of an electric light. Used in the operation of certain navigation lights.

flash hider. A device attached to the muzzle of a gun to conceal the muzzle flash.

flashing light. A light that comes and goes.

This term is somewhat ambiguous, and context often does not bring its meaning out: **a.** A light that intermittently turns off and on in such rapid succession as to scintillate. **b.** An intermittent light with sudden breaks and intervals of darkness and light. **c.** A light that alternates between showing one color then another. **d.** A light that shines bright and dim intermittently. **e.** A revolving light.

flash message. A report or message, as a contact report, considered of such significance as to have priority in transmission over all other messages.

flash point. The temperature, as determined by testing, of a fuel or oil when it gives off a vapor that will flash or ignite momentarily. Cf. **fire point.**

flash power. The war-emergency power of an aircraft engine. *Colloq.*

flash report. In intelligence usage, a mission report giving the first available details pertaining to a given mission, principally the number of personnel or aircraft lost on the mission. See **mission report.**

flat base. A square base of a bullet or shell.

flat diameter. The diameter of an imaginary circle just inclosing a parachute spread flat.

flat dive. A dive at a relatively slight angle from the horizontal.

flat glide. A glide at a very slight angle from the horizontal.

flat-hat, *v. intr.* To fly needlessly and dangerously low; to fly in a foolhardy, grandstanding manner. Hence, **flat-hatter,** *n.,* **flat-hatting,** *n. Slang.*

flat-out, *a.* and *adv.* At full speed; at full capacity.

flat pitch. Low pitch.

flat spin. A spin in which the airplane remains nose down at a slight angle below the horizontal.

The NACA defines a flat spin as one in which the longitudinal axis of the plane remains at less than 45° below the horizontal.

flatten, *v. To flatten out,* to level off after a dive or climb.

flat-top, *n.* An aircraft carrier. *Colloq.*

flat trajectory. A trajectory with little curvature.

F layer. A layer of the ionosphere which exists at altitudes varying between 85 to 220 miles.

In the daytime the F layer exists as two separate ionospheric layers, called respectively the F_1 and F_2 layers.

fld (*auth abbr*). 'Field.'

FldO (*abbr*). 'Field officer.'

FldTns (*abbr*). 'Field trains.'

flechette, *n.* [French 'a small arrow.'] An aerial dart.

fledgling, *n.* A pilot who has recently learned to to fly. *Colloq.*

fleet, *n.* **1.** A group of aircraft, ships, or ships and aircraft that move together under one commander. **2.** The entire lot of aircraft belonging to a single company, as in 'United operated the largest fleet in commercial aviation.'

fleet admiral. (fadm) The highest commissioned rank in the US Navy, corresponding to general of the AF; a person holding this rank.

fleet air arm. 1. *Capitalized.* The air arm of the British navy. **2.** Generically, any naval air arm.
In sense 1, see **Royal Naval Air Service.**

fleet service. 1. In the Military Air Transport Service, a sanitation service concerned with aircraft used in medical air evacuation. **2.** *Capitalized.* An activity or organization providing such service.

fleet utilization. The extent to which the aircraft in a fleet are utilized; *specif.*, the average number of hours flown per aircraft per day for all aircraft assigned to transport.

Flensburg (*code*). A name for a kind of German airborne electronic equipment of WW II, capable of homing on radar transmissions.

flettner, *n.* Often *capitalized.* A name sometimes given to a trim tab or servo tab in reference to Anton Flettner (1885–), a German engineer who contributed to the development of the tab.
Hence, *flettner boost, flettner control, flettner tab.*

flex (*auth abbr*). 'Flexible.'

flexibility, *n. Specif.* A capability of an aircraft or air force that permits it to be adapted quickly and easily to a variety of different tasks either in a single locality or in a number of localities.

flexibility factor. A factor used to adjust a computation of stress on a rotor blade, compensating for the reduction of stress caused by the flexibility of the blade.

flexible gun. A gun, esp. a machine gun, mounted in an aircraft turret or on a post, tripod, or other fixed mount in such a manner that the gun may be swung in both a vertical and horizontal plane. Distinguished esp. from a fixed gun.

flexible gunner. One who operates a flexible gun or guns.

flexible gunnery. The art or practice of using flexible guns, esp. aboard an aircraft.
Attrib., as in *flexible gunnery school, system,* etc.

flexure, *n.* Bending stress.

flg (*auth abbr*). 'Flying.'

FLI (*abbr*). 'Flight leader identification.'

flicker fusion frequency test. A test to demonstrate or determine the effects of hypoxia on the central nervous system.
This test is based on a subject's ability to discriminate between a flickering light and a steady light.

flicon (*abbr*). 'Flight control.'

flier, *n.* Variant of 'flyer.'

flight, *n.* (flt) **A. 1.** The phenomenon of flying in aircraft, as in 'flight came when an engine suited in power to the weight of the aircraft was invented.' **2.** The action of flying; the act, status, or condition of something flying, as in 'the flight of the missile was erratic.' **3.** Movement by air, esp. in powered aircraft, as in 'the flight of this group from Utah to Korea took three days.' **4. a.** A trip or mission by air, as in 'he was sent on a flight to New York.' **b.** An air run between one place and another, as in 'two flights to Paris were scheduled every week'; the one-way air journey of a round trip, esp. as used in the Military Air Transport Service. See note. **B. 5.** An aircraft making a flight, as in 'the first flight developed engine trouble.' **6.** A formation of aircraft, usually four or more, as in 'two flights of four airplanes each were seen, one above the other.' **C. 7.** An AF organizational entity which exists or functions as a subdivision or detachment of a squadron, or as a unit with its own authorization. **8.** *Specif.* A functional subdivision of a combat squadron. **9.** A parade formation of two or more squads together with a flight commander and one or more assistants.
attrib. In sense 2, as in *flight altitude, flight attitude, flight characteristic, flight discipline, flight hazard;* in sense 4, as in *flight information, flight record, flight schedule;* in senses 6, 7, or 8, as in *flight commander.*
In sense 4b, the flight covers the entire distance even if intervening landings are made. A MATS regular flight is assigned a number; the return flight has a number that pairs it with the outgoing flight.
In sense 6, a flight may be an element of a larger formation (which may also be called a flight), or itself be divided into elements (which if large enough may also be called flights).
In sense 7, the flight, when a unit, is on a level of command below a squadron.
In sense 9, a typical flight contains four squads of nine men each; it may, however, contain any convenient or appropriate number of persons. See **honor flight.**

flight advisory. An advisory (which see).

flight attendant. An aircrew member on a transport aircraft responsible for the comfort of passengers and the security of cargo.

flight board. A board on which flights or missions are planned, or a board on which flight schedules are shown.

flight boot. A flying boot.

flight brake. A speed brake.

flight cap. A brimless and visorless fabric cap, optional with the service cap for the service uniform. Often called an 'overseas cap.'

Flight Chart. An aeronautical chart, scale 1:1,000,000, designed specially for use in radio navigation and pilotage over active air routes and permitting the use of one instead of several charts between main points.
In general, a Flight Chart presents the same aeronautical data and representation of topographical detail as a World Aeronautical Chart. A Flight Chart may also be used in dead reckoning and in celestial navigation. Cf. **Navigational Flight Chart.** See **USAF** (*auth abbr*).

flight check. 1. A proficiency check in actual flight of a pilot or other aircrew member or members. **2.** A check made in an airborne aircraft to determine the efficiency and extent of coverage of some piece of equipment, as that of a radio or radar air-navigation aid.

flight chief. A noncommissioned officer who supervises the crew chiefs and ground crewmen in an AF flight organization. See **flight,** *n.*, sense 7.

A flight chief assists the line chief," supervises ground maintenance crews, and inspects the airplanes belonging to his flight.

flight clearance. Any authorization for a flight of one or more aircraft to depart from an airfield or to fly a given route under designated conditions; any form granting such authorization. Commonly shortened to 'clearance.'

flight control. (flicon) **1. a.** The control of aircraft in flight, esp. control from the ground exercised by means of radio communication and electronic devices. See **air traffic control. b.** Usually *capitalized.* An agency or activity providing such control. **2.** Usually *capitalized.* In the Strategic Air Command, an organization, usually at wing or division level, controlling aircraft on the ground and in the air and furnishing the commander with information as to the location and condition of all aircraft under his control. **3.** *pl.* The complete system of levers, cables, control surfaces, etc. used for control over the attitude and movement of an aircraft. See **control,** *n.*, sense 7a.

flight control surface. A control surface.

flight crew. An aircrew.

flight deck. 1. In certain airplanes, as the C-124, an elevated compartment used by the pilot, copilot, and flight engineer for operating the airplane in flight. **2.** The upper deck of an aircraft carrier that serves as a runway.

flight delivery. The delivery of an aircraft by flying it to its destination, as distinguished from delivery by other means.

flight echelon. That part of an air echelon (sense 1) that consists esp. of rated personnel, moved in a unit's own aircraft.

flight engineer. An aircrew member responsible for the mechanical performance of an aircraft in flight.

The duties of a flight engineer may vary with the airplane, but they normally include checking engine instruments, adjusting power settings, performing in-flight maintenance, and certain other duties as required. See **aircraft observer.**

flight fatigue. Flying fatigue.

flight-follow, *v. tr.* To follow the flight of an *aircraft* by radar or plot.

flight forecast. A weather forecast of the conditions expected to prevail during, or along the course of, a given flight.

flight formation. 1. The formation of a flight of aircraft. See **flight,** *n.*, sense 6. **2.** *General.* Any formation of flying aircraft.

flight gyro. A directional gyro. Considered *loose* usage.

flight hour. A flying hour.

flight indicator. A gyroscopic flight instrument that indicates the pitch and bank attitude of an aircraft in relation to an artificial horizon on the face of the instrument. Also called an 'artificial horizon' (which see) or 'gyro horizon.'

flight instrument. Any aircraft instrument that indicates the altitude, attitude, airspeed, drift, or direction of an aircraft. See note.

Examples of flight instruments are the flight indicator, bank-and-turn indicator, cross-pointer indicator, rate-of-climb indicator, absolute or pressure altimeter, airspeed indicator, driftmeter, directional gyro, and compass. Many of these instruments, as the directional gyro, absolute altimeter, and driftmeter, are also called 'navigational instruments,' but instruments such as the flight indicator, bank-and-turn indicator, rate-of-climb indicator, and airspeed indicator are usually referred to only as 'flight instruments.' Cf. **engine instrument, navigational instrument.**

flight jacket. A leather or fabric jacket issued to flyers.

flight leader. 1. A pilot in command of a flight of aircraft. **2.** A person who leads a flight on the ground. See **flight,** *n.*, sense 9.

flight lieutenant. A commissioned rank in the RAF and RCAF, corresponding to that of captain in the USAF; a person holding this rank.

flight line. 1. On an airfield, a general area including the hangars and the ramps and other grounds between and surrounding the hangars where aircraft are parked, serviced, etc., but not including runways or taxiways. **2.** The line of flight of an aircraft.

flight-line maintenance. A part of organizational maintenance performed at the flight line of an airfield, usually including servicing, preflighting, preventive maintenance, and minor repair.

The services performed in flight-line maintenance often vary between different air bases or commands.

flight log. A log kept on certain aircraft in which details concerning a given flight are recorded, as total miles flown, various altitudes of flight, temperature, true airspeed, wind direction and velocity, etc.

flight maneuver. 1. Any change in the movement of an aircraft in flight. **2.** Any performance of an aircraft in the air, as a loop, a roll, a cuban eight, or the like.

flight map. A map used as a guide in taking aerial photographs.

flight meal. An amount of food sufficient to furnish one man one meal during a flight; also a meal served on an airborne aircraft.

flight monitoring. The monitoring from the ground of an aircraft in flight, esp. the transmitting of flight information to the aircraft and insuring that safe flight is maintained.

flight nurse. (FN) An AF nurse who cares for patients aboard a medical air-evacuation aircraft.

flight officer. 1. A rank created in WW II for certain rated personnel in the AAF; a person holding this rank. *Hist.* **2.** Incorrectly used for 'flying officer.'

In sense 1, the rank, pay, and privileges of a flight officer corresponded to those of warrant officer, junior grade.

flight orders. A publication authorizing a flight of one or more aircraft and announcing or confirming the assignment of aircrew members to the flight.

flight path. 1. The path (which see) described or followed by an aircraft, projectile, guided missile, or the like in the air. **2.** A path in the air marked by an electronic beam, as in a radio range. *Rare.*

flight-path angle. The acute angle between the horizontal and the flight path of an aircraft, projectile, or the like either ascending or descending.

flight-path deviation. The deviation of an aircraft's actual flight path from its planned flight path, expressed either in angular or linear measurement. Cf. **course-line deviation.**

flight pattern. A formation pattern.

flight pay. Flying pay.

flight performance. The performance of persons or aeronautical equipment, including aircraft or equipment used on an aircraft, in flight.

flight personnel. Flying personnel.

flight plan. A statement, usually written, of the plan and procedures to be followed on a given flight, submitted by the pilot of an aircraft to Air Traffic Control prior to takeoff.

A flight plan is usually a part of an aircraft clearance. The plan may contain such information as the type aircraft, pilot's name, points of departure and destination, route of flight, cruising altitude, true airspeed, etc. A flight plan is not accomplished for local flights under visual conditions.

flight plan gas load. The amount or load of fuel required to accomplish a given flight in a specified aircraft at a predetermined gross weight.

Fuel consumed during a runup of an aircraft is not considered a part of the FPGL.

flight plan interphone system. A ground communication system for the transmission of flight plans to air route traffic control centers and other pertinent agencies.

flight position. The position of an aircraft component when readied for flight, as that of the unfolded blades of a helicopter.

flight profile. A graphic portrayal of an aircraft's line of flight seen from the side, indicating the various altitudes of flight along the route.

flight rating. An aeronautical rating.

flight ration. A food ration to be eaten in flight. See **flight meal.**

flight refueling. Air refueling.

flight safety. Flying safety.

flight sergeant. An enlisted rank or person in the RAF and RCAF, corresponding to master sergeant in the USAF.

Flight Service. An activity or organization within the Military Air Transport Service established to promote the safe and efficient extended flight operation of military aircraft within the US.

The duties of Flight Service include surveying of airfields for emergency use, coordinating the evacuation of aircraft from storm areas, monitoring flight plans, clearing aircraft for flight at airfields where there is no other military clearing authority, reporting alleged violations of flying regulations, etc.

flight simulator. A device that simulates any or all of the conditions of actual flight, used esp. for training purposes; *specif.*, any ground trainer.

In a broad sense, the term 'flight simulator' could be applied to a centrifuge or to a low-pressure chamber. See **simulation plate.**

flight status. Flying status.

flight strip. 1. A runway or strip of cleared ground set up for the use of aircraft, esp. for emergency use; an airstrip. **2.** *Aerial photog.* A reconnaissance strip.

flight surgeon. Often *capitalized.* A medical officer qualified by training and experience as a specialist in aviation medicine, who has been designated for duty in this specialty by competent authority; the designation given such a person.

A flight surgeon does not have an aeronautical rating, but wears a distinctive aviation badge and may draw flying pay if his duties require flying assignments.

flight test. A performance test of aeronautical equipment, including aircraft or any equipment used on aircraft, or of a person in flight. Attrib., as in *flight-test instrument, program,* etc.

The flight test is a regular part of a periodic inspection of aircraft, but is also a normal procedure in testing new equipment, esp. on test flights.

flight-test, *v. tr.* To test out an *aircraft, aeronautical equipment,* or any other *equipment* used aboard an aircraft by, or in, actual flight. Hence, **flight-testing,** *n.*

flight time. 1. Flying time. **2.** The time at which a flight begins.

flight track. The track (which see, sense 1) made by a flying aircraft.

flight trainer. Any training device that simulates certain conditions of actual flight, as a Link trainer. See **flight simulator.**

flight training. Flying training.

flimsy, *n. Colloq.* **1.** A thin sheet of paper containing orders, instructions, a radio message, or the like. **2.** A thin, flexible sheet of metal.

flip, *n.* An aerobatic stunt or feat in which an airplane is made to turn suddenly on its back by means of a one-half snap roll.

flip-over, *n.* A kind of visual aid used by lecturers, consisting of several large sheets that may be flipped over as the lecture progresses. Also called a 'flip chart.'

flipper, *n.* An aircraft's elevator. *Slang.*

flipper turn. A sharp, steeply-banked turn in an airplane. *Slang.*

float, *n. Specif.* A buoyant structure or component fitted to an aircraft to enable it to be supported in water, or to stabilize it in the water.

One or more floats may be fitted to the landing gear of an airplane in place of wheels or in addition to them. They are also attached to the wings of flying boats or certain other seaplanes as outriggers. 'Float' is preferred to 'pontoon.'

float, *v. intr.* Of an airplane: To glide, esp. to keep gliding when the pilot is attempting to touch down.

float displacement. The amount of water, by volume or by weight, displaced by a float.

floating aileron linkage arrangement. An arrangement of ailerons coupled to the control system so that they ride or float freely in the air stream, without force or pressure being exerted upon them through the control system except when displaced by the movement of the cockpit controls.

floating reticle. A reticle the image of which is movable within the field of view.

float plane. An airplane equipped with one or more floats in place of wheels, distinguished esp. from a flying boat. Cf. **seaplane,** *n.*

A float plane using only one float to support the fuselage is also equipped with smaller floats attached to the wings as outriggers.

float seaplane. A float plane.

Flora, *n.* A code name for the Russian Yak-23.

flotation, *n.* The act, process, or condition of floating. Attrib., as in *flotation bag, flotation cell.*

flotation gear. 1. A landing gear incorporating floats rather than wheels. **2.** Any buoyant gear or aggregate of devices that serves to keep an airplane or persons afloat in water.

flow, *n. Specif.* **1.** The movement of documents, personnel, supplies, or equipment through a system set up for them; the movement of any kind of traffic. **2.** An airflow.

flow chart. A diagram or chart showing the actual, anticipated, or desired movement or flow of documents, personnel, supplies, or equipment.

flowmeter, *n.* An instrument that measures and displays the rate of flow of a liquid or gas, as of the flow of fuel in an aircraft fuel system. See **fuel flowmeter.**

flr (*abbr*). **1.** *auth.* 'Filler.' **2.** 'Flyer.'

FlRng (*abbr*). 'Flash ranging.'

flt (*auth abbr*). 'Flight.'

fltg (*auth abbr*). 'Floating.'

FltO (*abbr*). 'Flight officer.'

fluid, *n.* Anything that easily moves or flows, and conforms inversely to the shape of a container; *specif.*, a liquid or a gas.

fluid friction. The type of friction that exists when two bearing surfaces are well covered with a lubricating fluid. Cf. **boundary friction.**

Flume (*code*). A German electronic device of WW II for locating radar transmitting sets.

fluorescein, *n.* Also **fluorescine.** A fluorescent dye in powder form, used esp. by airmen downed at sea to spread on the water as a yellow-green, daylight marker.

fluorescence, *n.* The property of emitting light only during, and as the immediate result of, radiation or electronic bombardment from another source. Said of a liquid, gas, or compound. Hence, **fluorescent,** *a.*

fluorescent penetrant. A fluorescent liquid used for detecting flaws or discontinuities in certain equipment parts.

The fluorescent penetrant seeps into cracks, etc., and, when used in conjunction with a special powder and placed under infrared light, glows and thus shows up the flaws or discontinuities.

fluorescent screen. The screen on the face of a cathode-ray tube, so-called because of the coating of fluorescent compound on the inside of the screen, which glows at the point struck by the cathode ray within the tube. See **long-persistence screen.**

flutter, *n.* A vibrating and oscillating movement of a wing, control surface, or the like, caused by aerodynamic forces acting upon an airfoil or surface having elastic and inertial qualities.

flux, *n. Electricity.* The electric or magnetic lines of force within a given field.

flux gate. 1. A direction-sensing element activated by the earth's magnetic field and used in a gyro flux-gate compass or in a gyrosyn compass. Sometimes called a 'flux valve.' **2.** Short for 'gyro flux-gate compass.'

flux-gate compass. A gyro flux-gate compass.

The term 'flux-gate compass' was originally a trade name used by the Eclipse Pioneer Division of the Bendix Aviation Corporation for the gyro flux-gate compass.

flux valve. A flux gate.

fly, *v.* **A.** *tr.* **1.** To control or pilot an *aircraft* so as to move through, or hover in, the air, or the region above the earth. **2.** To pilot an aircraft on a *mission, sortie, airlift,* or the like. **3.** To direct an aircraft along a *course, heading,* or *pattern.* **4.** To cover or pass over in an aircraft, as 'to fly a *distance.*' **5.** To carry or transport *cargo, mail,* or *passengers* in an aircraft.

B. *intr.* **1.** Of a person: To move through air or the region above the earth, or to remain above the earth in an aircraft, either as a pilot or other aircrew member, or as a passenger. **2.** *Specif.* To ride airborne in a heavier-than-air, powered airplane. **3.** Of a unit equipped with aircraft: To move or cruise about in flight. **4.** Of an aircraft: To move or be directed through the air or the region above the earth.

C. In special uses: See note.

To fly a desk, to perform clerical or administrative duties (said esp. of rated persons); *to fly blind*, to fly without visual reference to the earth or sky; *to fly by the seat of one's pants*, see **seat,** *n.*, sense 2; *to fly hands off*, to fly along without hands or feet on the cockpit controls; *to fly instruments, to fly on instruments*, to fly under conditions of no visibility, using flight instruments for orientation and direction; *to fly the beam*, to follow a radio beam; *to fly escort, to fly cover, to fly reconnaissance*, etc., to fly on escort, cover, or reconnaissance missions.

fly (*abbr*). 'Flying' or 'flyable.'

flyability, *n.* The capability of an aircraft to fly.

flyable, *a.* **1.** Of aircraft: Capable of being flown. **2.** Of weather: Suitable for flying in.

flyaway, *a.* Of or pertaining to the supplies and equipment of a unit that are specially designed or packaged to be transported in the unit's own aircraft, as a *flyaway bin, flyaway engine*, etc. See next.

flyaway kit. An assembly of specified airplane spare parts, technical supplies, and tools, to be equitably distributed and carried by two or more airplanes, to enable an air unit, esp. a squadron, to maintain its own airplanes when cut off from outside supply and maintenance for a period of 30 days, more or less.

One complete kit for a bombardment squadron, for example, is carried in different bomb-bay bins, each airplane carrying parts and supplies, which if lost will not entail the loss of all items of any one type.

fly back. *Electronics.* The return of the tracing beam in a plan-position-indicator tube to its starting point after having reached the end of its trace; the time required for this return.

fly boy. A pilot. *Slang.*

fly-by, *n.* An act or instance of passing by a given point on the surface by an aircraft in flight, usually at low altitude. Cf. **flyover,** *n.*

Attrib., as in *fly-by check*, a check or examination of an aircraft or its performance during a fly-by.

flyer, *n.* Also **flier. 1.** An aircrew member, esp. a pilot. **2.** A flying machine. See **Wright flyer.**

flyer's armor. Armored clothing for flyers.

flying, *n.* (flg) **1.** The movement of an aircraft or of a person in an aircraft through air or in the region above the earth; the act of such movement. **2.** The piloting of aircraft; the art or skill of piloting aircraft. **3.** In a broad sense, the operating or manning of aircraft, esp. military aircraft, in any capacity, as in that of a pilot, navigator, bombardier, aerial gunner, flight engineer, etc.; the art or skill of such activity. See **flying training.**

Attributive uses: In sense 1, as in *flying accident, ambulance, area, characteristic, clothing, discipline, equipment, force, operation, range*, etc.; in sense 2, as in *flying ability, achievement, career, discipline, instructor, proficiency, school, technique*, etc.

flying angle. The acute angle between the longitudinal axis of an aircraft and the horizontal in normal level flight, or the angle of attack of a wing in normal level flight.

flying boat. A kind of seaplane having a boat-like hull or fuselage, allowing the craft to float, take off, and land on water.

flying bomb. Popularly, any explosive robot plane, guided missile, rocket bomb, or the like; *specif.*, the German V-1 explosive robot plane of WW II.

flying boom. A hollow boom or hose through which fuel flows and which is guided from a tanker aircraft to another aircraft in the process of air refueling.

The flying boom is guided through the air by means of movable aerodynamic controls mounted on the boom near its tip.

flying boot. A boot used by flyers, esp. a boot specially designed for warmth.

flying boxcar. 1. Any large cargo-carrying aircraft. *Slang.* **2.** Often *capitalized.* A popular name for the C-82 or C-119.

flying cadet. An aviation cadet.

flying circus. 1. A squadron or force of fighter planes, as the Richthofen flying circus of WW I. *Hist.* **2.** A performance of aerobatics given by several planes; the company that gives such a performance.

Flying Classroom. A popular name for the T-29.

flying coffin. Any airplane of a type notorious for a high rate of accidents; a dilapidated airplane or a plane that is particularly vulnerable to enemy fire. *Slang.*

flying control. Flight control (sense 1 or 2).

flying corps. An air corps (sense 3).

Flying Crane. A popular name for the H-17.

flying crew. An aircrew.

flying duty. 1. Military duty involving participation in flight. **2.** Any duty performed by a pilot or other aircrew member in flight.

flying evaluation board. (FEB) A board of investigating officers that examines and evaluates the professional qualifications and proficiency of rated flying personnel, and makes recommendations regarding the future utilization of persons who appear before the board.

flying fatigue. 1. A nervous disorder or tiredness resulting from the strains and demands of prolonged flying. **2.** Combat fatigue. *Loose* usage.

flying field. A place from which flying is done, i.e., an air base, airfield, airdrome, or airport.

'Flying field' sometimes connotes an airfield used esp. by privately-owned airplanes.

Flying Fortress. The B-17.

Sometimes the term 'flying fortress' has been used to describe any large, heavily-armed airplane.

flying helmet. Any kind of headgear designed specially for flyers, usually with accommodation for earphones and an oxygen mask.

flying hour. An hour spent in flight (which includes takeoff and landing) by a person, aircraft, or piece of equipment.

In estimating fuel consumption, a flying hour is sometimes considered to include time of engine testing, warmup, etc. See **flying time,** esp. note.

See **combat flying hour, noncombat flying hour, nonoperational flying hour, operational flying hour, total flying hours.**

flying jacket. A flight jacket.

flying jeep. Any light airplane, esp. a light, cub-type liaison airplane. *Slang.*

flying line. The flight line (sense 1).

flying machine. A powered aircraft, esp. a powered airplane.

This term was used esp. in the early days of aviation.

flying missile. A self-propelled or robot missile, as a guided missile or ballistic missile. *Popular.*

flying mission. A mission involving the flight of an aircraft.

flying officer. 1. A commissioned rank or person in the RAF and RCAF, corresponding to first lieutenant in the USAF. **2.** In a general sense, an officer who flies, or who holds an aeronautical rating. Distinguished from a nonflying officer.

flying pay. Incentive or additional pay for persons on flying status.

The amount of flying pay is fixed by Congress, and varies according to rank. Cf. **incentive pay.**

Flying Pencil. A popular name for certain German Dornier airplanes of the Do 17 series.

flying personnel. Personnel on flying status.

flying range. The capability of an aircraft or guided missile that indicates how far it can fly under given operating conditions. See **range,** *n.*, sense 1.

flying safety. 1. The safety, or the coordinated effort to assure safety, of aircraft in flight or in operations directly connected with flight. **2.** Sometimes *capitalized.* An agency or activity concerned with the safe operation of aircraft.

Under certain conditions, the moving or movement of aircraft on the ground is a concern of flying safety; under certain other conditions such activity is the concern of ground safety. Flying safety and ground safety officials determine their spheres of jurisdiction by reference to regulations and by agreements between themselves.

flying saucer. A popular name given any of several strange-looking aircraft reported as having been seen but with little or no supporting evidence.

flying speed. The speed at which an aircraft flies; *specif.*, the speed necessary for a fixed-wing airplane to attain or to maintain, in order to become, or remain, airborne.

flying squadron. A squadron that operates or mans aircraft as its primary duty, as distinguished from a service squadron or the like.

flying status. The status of a person in the AF who is currently authorized to participate in regular and frequent aerial flights.

Either rated or nonrated persons may be placed on flying status and draw flying pay.

flying stress. A stress imposed upon a person in flight as a result of airsickness or any fatigue or emotional disorder brought on by noise, glare, cold, etc. See **flying fatigue.**

flying tab. A kind of servocontrol surface attached to a rudder, elevator, or the like which, when displaced, causes an aerodynamic reaction that results in the moving of the main control surface to which it is attached.

In a system using the flying tab, the control force is applied directly to the tab, rather than to the main control surface.

flying tail. A horizontal stabilizer, the angle of attack of which is adjustable from the cockpit for longitudinal trim.

flying test. A flight test.

Flying Tigers. A popular name for the American Volunteer Group.

flying time. *Specif.* The elapsed time spent in flight or in associated actions by aircraft, including guided and ballistic missiles, or by persons.

Flying time may elapse between various designated instances, depending on the purpose for which the flying time is being reckoned, the kind of aircraft involved, etc. Persons logging or calculating flying time depend upon pertinent directives for instructions.

flying training. The training and instruction given aviation cadets and other students in the art or skill of manning or operating aircraft in any capacity, as in that of pilot, navigator, flexible gunner, bombardier, etc.; *specif.*, pilot training.

Flying training normally includes orientation courses, military training, etc., in addition to aviation training and the like. Cf. **tactical training.**

Flying Training Command. (FTC) An AAF command responsible in the zone of interior for all flying training. *Hist.*

This command was established 23 Jan 1942, but consolidated in July 1943 with the Technical Training Command to form the AAF Training Command.

flying unit. An AF unit having the primary mission of flying.

flying weather. Weather suitable for flying.

flying wing. An airplane in which an arrowhead-like wing constitutes the entire or major part of the airframe.

In a true flying wing the fuselage is more or less indistinguishable from the rest of the craft, and does not project

beyond the leading edge. There is no empennage, all control surfaces being built into the wing. A flying wing is sometimes referred to as a 'tailless airplane' (which see).

flying wire. A lift wire.

flyobrpt (*abbr*). 'Flying object report.' Sometimes used as a word.

flyover, *n.* An act or instance of passing over a given point either on or above the surface by one or more aircraft in flight. Attrib., as in *flyover test.*

fly-past, *n.* An act or instance of flying past a designated point on the surface, as a reviewing stand. Chiefly *British.* See **fly-by,** *n.*

FlyTAF (*abbr*). 'Flying Training Air Force.'

FM (*auth abbr*). **1.** 'Field manual.' **2.** 'Frequency modulation.' Also **f-m** (*abbr*).

FM-FM, a method of radio transmitting wherein the signal is frequency-modulated on a subcarrier wave, which is in turn frequency-modulated on a carrier wave.

F/M (*abbr*). 'Foreign Mission.'

FMACC (*auth abbr*). 'Foreign Military Assistance Coordinating Committee.'

F.M.A.E. (*abbr*). 'Flight mechanic, aero-engine.' *British.*

fman (*abbr*). 'Foreman.'

FMASC (*auth abbr*). 'Foreign Military Assistance Steering Committee.'

FMF (*auth abbr*). 'Fleet Marine Force.'

FMFLant (*abbr*). 'Fleet Marine Force, Atlantic.'

FMFPac (*abbr*). 'Fleet Marine Force, Pacific.'

FMG (*abbr*). 'Flakmessgerat,' a kind of German antiaircraft gun-laying radar of WW II.

FM radar. A kind of radar set or system using a frequency-modulated transmission signal.

FM radar is widely used in absolute altimeters.

FM radio altimeter. An absolute altimeter that measures the time lapse between transmission and return of a frequency-modulated radio wave by use of a change in the frequency of the radio transmitter.

FMS (*abbr*). 'Financial Management System.' Also written 'F.M.S.'

FN (*auth abbr*). 'Flight nurse.'

FNA (*auth abbr*). 'Following named airmen.'

FNH (*abbr*). 'Flashless, nonhygroscopic.'

FNH powder, a kind of gunpowder which, when used in certain weapons, will not produce a flash.

FNO (*auth abbr*). 'Following named officers.'

FNOA (*auth abbr*). 'Following named officers and airmen.'

FO (*auth abbr*). 'Field order,' 'finance officer,' or 'forward observer.'

F/O (*abbr*). **1.** 'Flight officer.' **2.** 'Flying officer.' *British.*

FOA (*auth abbr*). 'Foreign Operations Agency.'

foam, *n.* A foaming chemical agent used for extinguishing fires.

foam can. A fire extinguisher using foam. *Slang.*

FOB (*auth abbr*). 'Free on board.'

FObsr (*abbr*). 'Forward observer.'

focal length. (FL) *Aerial photog.* **1.** In an aerial camera, the length or distance separating the camera lens from the film or plate; more technically, the length or distance between the rear nodal point (the point of emergence) of a camera lens and the focal plane. **2.** With regard to an aerial photograph: The effective focal length (which see).

focal plane. *Aerial photog.* The plane inside an aerial camera where the object image is brought into sharp focus, i.e., a plane at right angles to the optical axis and containing the surface of the film or plate.

Focke-Wulf, *n.* (Fw or FW) **1.** A popular designation for certain German aircraft developed or built by the Focke-Wulf airplane-manufacturing company of WW II and before. **2.** Used in the names of airplanes.

Some of the more well-known Focke-Wulf airplanes were the *Fw 154,* a day or night-fighter plane, built extensively of wood, and developed as a counterpart to the British Mosquito; the *Fw 189,* a twin-engine, twin-boom, short-range airplane developed primarily for reconnaissance and ground attack, but also used for evacuation, radio training, and communication; the *Fw 190,* a famous and widely-used single-engine fighter; the *Fw 200B,* a four-engine, low-wing, military or commercial transport, popularly called the 'Condor' or 'Kondor'; and the *Fw 200C* or *Fw 200K,* a reconnaissance patrol bomber, popularly called the 'Kurier.'

focus, *n.* In photography, a point at which an adjustment of distance between the lens and the film will make for the sharpest and most clearly defined image on the film.

focus cat. A photographic reconnaissance airplane. *Slang.*

foehn, *n.* A foehn wind.

foehn cloud. A stationary cloud on the windward slope or peak of a mountain or mountain chain, formed by the condensation of rising air. Also called a 'foehn wall.'

foehn wall. A foehn cloud.

foehn wind. A warm, dry wind blowing down the leeward slope of a mountain and across a valley floor or plain. Also called a 'foehn.'

A foehn wind is warmed adiabatically as it descends. In different areas of the world, foehn winds have different names: See **chinook,** *n.*

FofF (*auth abbr*). 'Field of fire.'

fog, *n.* **1.** A visible concentration of water particles or ice crystals touching the surface of the earth or suspended near the surface, and interfering with visibility at the surface. Distinguished esp. from cloud (which see). Cf. **haze,** *n.* **2.** A like concentration of fine particles other than those of water or ice, often mixed with those of water or ice. *Colloq.*

AFM 105-5 distinguishes between a suspended fog and a cloud by establishing an arbitrary maximum height

for a fog base as fifty feet. A cloud just touching the top of a mountain is usually called 'stratus,' while if the cloud mist extends for a distance down the sides of the mountain, it is often called 'fog.'

Fogs are variously classified, as by the way they are formed, by their contents, or by the places where they occur. One classification puts them into two broad categories, the air-mass fogs and the frontal fogs. In the former category is the advection fog, the radiation fog, and the upslope fog. In the latter are the fogs associated with fronts. See **advection fog, air-mass fog, black fog, city fog, dry fog, frontal fog, ice fog, land fog, radiation fog, sea fog, steam fog, upslope fog, wet fog.**

fog, *v.* **1.** *To fog up*, to become foggy. Said of the weather. **2.** *To be fogged in*, to be enveloped by fog.

fog count. A count made in a given piece of writing or oral speech intended to measure the difficulty with which the piece will be understood by the reader or listener.

The fog count, once in great vogue, is made by counting such things as long words, long sentences, strange words, etc. Applied mechanically, it makes no distinction between good writing and bad, however many be the long words, long sentences, or the like.

fog dispersion. The act or process of dispersing fog. See **dispersal,** *n.*, note.

fogy, fogey, fogie, *n. Slang.* **1.** An airman or soldier with long service. **2.** An additional amount of money paid for a specified period of service, i.e., longevity pay. Also called 'fogy pay.' **3.** Credit for a specified period of service, as in 'he has 3 fogies.'

fogy stripe. A federal service stripe, or 'hash mark.' *Slang.*

Föhn, *n.* German for 'foehn.'

Fokker, *n.* Any of the airplanes designed or developed by A. H. G. Fokker (1890–1939), or by companies established by Fokker.

Planes by Fokker were manufactured in Germany in WW I, and later in the US and the Netherlands. Well-known WW I German Fokkers were the *Fokker Eindecker*, an early monoplane, the first plane to use a synchronized machine gun; the *Fokker D-7*, a famous fighter biplane; and the *Fokker DR-1*, a triplane fighter.

fol (*auth abbr*). 'Follow.'

folding fin. A fin on an explosive rocket missile or the like hinged to remain flat until the missile is in flight.

folding wing. A wing so hinged that it may be turned backward or upward, used esp. on carrier planes to conserve space. Cf. **blade folding.**

follow-me vehicle. A ground vehicle, such as a jeep, that meets a landing airplane to lead it to its parking place.

The words 'follow me' usually appear on the rear of such vehicles.

followup, *n.* An act or instance of strengthening, checking upon, pursuing, or otherwise improving upon an initial action.

Attrib., as in *followup action, attack, form, mission, procedure*, etc.

followup force. A force that carries on an action or operation after the initial attack by another force; *specif.*, in an amphibious operation, a force that arrives in the objective area after the initial assault and prior to the buildup.

folnoaval (*auth abbr*). 'Following items not available.'

food service. An AF service or activity providing food for consumption within the AF.

Attrib., as in *food service activity, operation, personnel*, etc. Also used in various titles, as *food service attendant, superintendent*, etc.

food service supervisor. 1. A noncommissioned officer who supervises the preparation of food in a mess, troop train kitchen, or the like. **2.** The specialty of this officer; a career field covering this specialty.

food sv (*abbr*). 'Food service.'

fool trick. An early (*c*1911) name for an aerial stunt.

foot bar. A rudder bar.

foothold, *n. Specif.* **1.** A niche for the foot in the fuselage of an airplane for climbing into the cockpit. **2.** An area taken and held during an attack or assault, as in 'the invaders gained a *foothold* on the island.'

footlocker, *n.* A small trunk issued or sold to military personnel for clothing and personal effects and often placed at the foot of a bed or bunk.

footprint pressure. The pressure of an aircraft's wheels (with tires inflated) upon the unyielding contact surface of a runway, expressed in terms of pounds per square inch, as determined by a ratio of static gross takeoff weight to the contact area. Cf. **unit load.**

footward acceleration. Acceleration of the body in the direction of the feet.

It is suggested that this term be used in place of 'negative acceleration.' Cf. **headward acceleration.**

foray, *n. Specif.* A sudden or irregular incursion by aircraft making an air attack or air raid.

Forbes Air Force Base. An AF base at Topeka, Kansas, originally known as Topeka Army Air Field, renamed for Major Daniel H. Forbes, killed in 1948.

force, *n.* **1.** A body of people and equipment organized to carry out a military operation, combat or otherwise; a military force. See **in-being,** *a.* **2.** The strength or power that inheres in a military organization. **3.** Power or energy exerted against a material body in a given direction, as in 'the force that gave the aircraft forward movement was in reaction to the jet stream.' See **aerodynamic force, air force,** sense 5.

In sense 1, a given force, if confined to a single service, is normally under a single commander. But if the force is a joint force involving air units, the problem of achieving unified action may be resolved by applying the principles of cooperation and joint agreement by which the air units may remain under the tactical control of the air

commander. See **joint agreement, landing force, theater commander.**

force, *v. To be forced down,* to land or crash in an aircraft anywhere other than at a scheduled landing place as a result of combat damage, engine failure, bad weather, etc.

force-account employee. A temporary employee employed to assist on new construction, repair, or alterations beyond the capacity or purpose of the normal maintenance personnel of an installation.

forced landing. 1. A landing, either on land or water, made when it is impossible for the aircraft to remain airborne as a result of mechanical failure, combat damage, etc. **2.** In loose usage, a precautionary landing.

A forced landing may or may not result in a crash. See **crash landing.**

force-land, *v. intr.* To make a forced landing.

force structure. In program analyses, the composition of the Air Force in terms of the numbers of major combat and support units and of their relationships to one another.

force tab. 'With reference to war plans, the statement of time-phased deployments of major combat units by major commands and geographical areas' (JCS Dictionary 1955); a listing of the forces in an order of battle.

fore, *adv.* At, near, or toward the front of an aircraft or section of an aircraft. Also **fore,** *n.,* and **fore,** *a.*

fore-and-aft axis. The longitudinal axis.

forecast, *n.* (fcst) *Specif.* A weather forecast.

forecast, *v. tr.* (fcst) *Specif.* **1.** To predict the *weather,* or weather *conditions,* expected to prevail over a given area or place for a specified period. **2.** To make an estimate of future *expenditures,* future *requirements,* or the like.

forecaster, *n.* (fcst) *Specif.* A weather forecaster.

foreign, *a.* (fgn) **1.** Of or pertaining to American services, bases, actions, etc.: **a.** Outside the continental limits of the US. **b.** Outside the limits of the continental US, its territories, and certain or all of its possessions. **2.** Of or pertaining to a foreign nation.

The ambiguity of this term in sense 1 usually requires special explanation in context to give the term precise meaning. See following entries, and cf. **continental,** *a.,* **domestic,** *a.,* **overseas,** *a.*

foreign base. 1. An AF base outside the continental limits of the United States. **2.** A base belonging to a foreign nation.

foreign clearing base. An air base within the continental limits of the US at which AF aircraft are required to receive clearance to depart for a foreign country or to re-enter the US. Sometimes called a 'foreign clearing station.'

Under certain conditions, AF aircraft returning from US territories and possessions, other than the Canal Zone, clear at specified air bases other than foreign clearing bases.

foreign duty. *Specif.* Duty outside the continental limits of the US, except that duty performed in a territory or possession of the US by a resident of such territory or possession is not considered foreign duty.

foreign duty pay. (FDP) A special remuneration paid to airmen for foreign duty.

Foreign duty pay varies with rank.

foreign excess property. Any excess property located outside the continental limits of the US and not located within Hawaii, Alaska, Puerto Rico, or the Virgin Islands.

The restrictions placed upon this property as defined are by AFM 67–1, the relevant page being dated 15 Oct 1952.

foreign handling. The special handling of a document or the like to prevent disclosure of its contents to foreign nationals.

foreign liaison. Liaison between the US Government or one of the US armed forces and a foreign government or armed force.

Often used attributively, as in *foreign-liaison branch, foreign-liaison officer,* etc.

foreign nation. A national state other than the United States.

This term includes the British dominions.

foreign national. A national or native of a foreign nation, territory, or possession. Also applied to an agent of a foreign government, firm, corporation, or individual.

foreign service. 1. For a resident of the US, service outside the continental US. **2.** For a resident of a US territory or possession, service in an area other than the continental US and other than the area of his residence.

Service was, for a period after WW II, in part considered foreign because of the difficulties involved in establishing a family household in the area of the service. Hence, parts of Canada were not considered foreign under this interpretation. Cf. **foreign duty.**

foreign service credit. (FSC) The credit given an AF member for foreign service, calculated in days, months, or years from the date of departure for foreign service.

foreign service pay. (FSP) Foreign duty pay.

foreign service tour. A tour of duty in foreign service.

foreign traffic. In the Military Air Transport Service, military air traffic moving from points within the continental limits of the US to points outside, from points outside the continental limits of the US to points within, or moving between points entirely outside the continental limits of the US.

forf (*auth abbr*). 'Forfeit' or 'forfeiture.'

forging, *n.* A part or piece of metal wrought into the desired shape by a hammer or die.

fork lift. An automotive machine equipped with a powered, vertically-moving fork or lift for loading, unloading, and moving heavy articles.

form, *n. Specif.* A printed or typed page, card, set of papers, or the like, with blanks provided for the insertion of particulars.

Used in combination with a designating appositive number, as in 'Form 1,' 'Form 20,' 'Form 66,' etc. When written in full, the department or command issuing the form is also prefixed, as in 'AF Form 241.' See **AF form.**

form, *v. intr.* Of aircraft: To arrange in formation, as in 'they formed over the field.' Often with *up*.

formalize, *v. tr. Specif.* To give formal approval or standing to a *proposal*, *plan*, or the like.

formal training. Training authorized and approved by competent authority and meeting certain fixed standards as to type of instruction, length of instruction periods, qualifications of instructor, etc. Attrib., as in *formal-training course*, *mission*, etc.

formate, *v. intr.* Of aircraft: To form up or join a formation, as in 'Val came up to formate on our right.'

Linguistically, 'formate' is a back formation from 'formation.'

formation, *n.* **1.** The arrangement of the elements of an organization, command, or force in any given manner; the resultant of this arrangement. **2.** *Specif.* A grouping or arrangement of two or more airborne aircraft in a pattern arranged for a specific purpose or purposes, as for attack, security, or review. **3.** *Specif.* A grouping of military personnel assembled for parade, roll call, march, etc. **4.** A regular occasion for people coming together, as in 'one formation he seldom attended was sick call.' **5.** Used adverbially, as in 'they flew formation coming back.'

Attrib. in sense 2, as in *formation flight*, *formation flying*, *formation leader*, *formation training*, etc. 'Formation' is often preceded by an attributive designating the kind of aircraft comprising the formation, as in *bomber formation*, *fighter formation*, etc.

formation attack. An attack made by aircraft while in a formation, esp. by bombers.

formation bombing. Bombing by aircraft in formation; pattern bombing.

formation flight signal. Any visual signal by means of which the leader of a formation of aircraft communicates with other aircraft in the formation.

A formation flight signal is usually a gesture on the part of the formation leader or some significant movement of his aircraft.

formation pattern. The pattern or arrangement of a formation of aircraft.

formation position. *Specif.* The position of an individual aircraft in a formation.

formation roll. An aerial stunt or feat in which a formation of aircraft rotates about its line of flight.

form drag. 1. The drag from all causes resulting from the particular shape of a body relative to its direction of motion, as of a fuselage, wing, or nacelle. **2.** *Restrictive.* At supersonic speed, the drag caused by losses due to shock waves. This drag is exclusive of losses due to skin friction.

former, *n.* A structural piece, as a bulkhead or false rib, used in a fuselage, wing, or the like at right angles to its longitudinal axis to give it form or contour. Distinguished from a spar, stringer, or other such members.

former rib. A rib that bears no structural stress in an airfoil, but gives shape to the airfoil. Sometimes called a 'false rib.'

form line. A line on a map or chart, usually made in dashes, indicating the general or approximate shape of terrain features.

forms control. The control or management of AF forms to assure that all forms are properly designed for their purposes, that forms are produced and distributed properly and economically, and that they are integrated with related procedures and directives, etc.

In combinations, as in *forms-control officer*, *program*, etc.

formulate, *v. tr.* To devise a *plan*, *policy*, *program*, or *procedure*.

Fort, *n.* Short for 'Fortress.'

fortification, *n.* (ftn) **1.** A structure or earthworks, usually heavily armed, constructed as a defense; a fortified place or position. **2.** The act or art of fortifying.

fortify, *v. tr. Specif.* To emplace gun batteries or throw up walls or other defensive works around a *place* or *position*.

Fortress, *n.* A Flying Fortress.

Fort Rucker. The location of the Army Aviation School, near Ozark, Alabama.

forward, *a.* (fwd) *Specif.* **1.** Located at or near the battle front; close or relatively close to the enemy. See **advance,** *a.*, **advanced,** *a.* **2.** Of aircraft components, equipment, or sections: Located toward the front of the aircraft.

In combinations: In sense 1, as in *forward airfield*, *forward base*, *forward headquarters*, etc.; in sense 2, as in *forward cockpit*, *forward gun*, *forward turret*, etc.

forward air controller. (FAC) **1.** *Specif.* An officer with pilot rating in charge of an air control team, responsible for directing aircraft to targets by radio in a close-air-support operation. **2.** In general, any person who performs this kind of function in a system of close air support.

forward area. An area near or at the front, i.e., in or near a combat area, or near the enemy.

forward bombline. A line in advance of the bombline, beyond which air units specifically engaged in close air support do not operate unless ordered by the air commander.

forward controller. Short for 'forward air controller.'

forward control team. A tactical air control party.

forward director post. In WW II, a mobile installation in a forward area that provided aircraft control and warning in a tactical air control system. Sometimes called a 'fighter director post' or 'forward fighter director post.'

The FDP is no longer a part of a tactical air control system; either a control and reporting center or a target director post now has its functions.

forward echelon. That echelon of a headquarters or of a unit that is located in, or sent ahead to, a forward area. Distinguished esp. from a rear echelon. See **advanced (air) echelon.**

forward interrogation. The interrogation of prisoners of war, esp. air prisoners of war, by AF intelligence personnel in a forward area. Also called 'tactical interrogation.'

The intelligence information secured by forward interrogation usually concerns enemy air units and is distributed in the field without delay.

forward operating base. 1. A base of operations in a forward area. **2.** In the Strategic Air Command, a base outside the continental US for sustained operations against an enemy.

forward slip. A slip of an airplane occurring in a forward direction, i.e., with the airplane in a yawing attitude and still following its original direction of flight.

A forward slip is sometimes deliberately made to reduce speed.

forward tactical control center. A former name for a control and reporting center.

Foster Air Force Base. An AF base at Victoria, Texas, named for Lieutenant Arthur L. Foster, killed in an air crash, 1925.

foul line. In aerial gunnery practice, a line on the ground in front of the targets, beyond which guns are not to be fired. Cf. **range line.**

four, *n.* See **VIP code.**

FourATAF (*auth abbr*). 'Fourth Allied Tactical Air Force, Central Europe.'

four-bank eight. A flight maneuver or performance in which an airplane describes a flight path suggestive of a figure eight with a flattened top and bottom, with the airplane banking four times during the performance, at all other times being in straight and level flight; the flight path described in this maneuver.

The four-bank eight is centered on a crossroads, with the X part of the eight bisecting the angles between the intersecting roads.

four-course radio range. A radio range that beams on-course signals in four different directions.

The Adcock radio range is an example of an LF/MF four-course radio range. Cf. **omnidirectional radio range.**

four-cycle engine. A four-stroke-cycle engine.

four-engine, *a.* Also **four-engined.** Having four engines. See **engine,** *n.*, note.

fourragère, *n.* A unit decoration given by France or Belgium.

The emblem of the fourragère consists of braided cords worn on a service uniform around the right shoulder. It differs from an aiguillette in color, in the insignia it bears on its metal tips, and in the place worn. The aiguillette is worn around the left shoulder.

four-star general. A general (sense 2).

four-stroke-cycle engine. An internal-combustion, piston engine requiring four strokes of each piston to complete a cycle. Also called an 'Otto-cycle engine.' Cf. **two-stroke-cycle engine.**

This type of engine is often called a 'four-cycle engine'; consequently a misunderstanding of the word 'cycle' has arisen, some users of the term confusing 'cycle' with 'stroke.' The four piston strokes necessary to complete a cycle in the four-stroke-cycle engine are the intake stroke, compression stroke, power stroke, and exhaust stroke.

fourth-echelon maintenance. The former term for depot maintenance.

FOUSA (*auth abbr*). 'Finance Office(r), United States Army.'

Fowler flap. A kind of flap set into a wing in a manner similar to a split flap, but which moves backward and swings downward, used to increase the lift with a minimum amount of drag.

Fox (*code*). **1.** 'Accord honors,' as formerly used on a flight plan for a very important person or persons. See **VIP code. 2.** A kind of radar set or system used for following or tracking down aircraft. **3.** A word formerly authorized for the letter 'F.' See **Able** (*code*).

fox broadcast. A radio broadcast for which receiving stations make no acknowledgment.

foxhole, *n.* A small hole in the ground used for protection against shell fragments, gunfire, etc.

Foxtrot (*code*). An authorized word for the letter 'F.' See **Alfa** (*code*).

FP (*auth abbr*). **1.** 'Flight pay.' **2.** 'Pipefitter.'

FPGL (*abbr*). 'Flight plan gas load.'

FPL (*auth abbr*). 'Final protective line.'

FPO (*auth abbr*). 'Fleet post office.'

FPOU (*auth abbr*). 'Finance officer making payment on this order will furnish a copy of paid voucher to.'

FPR (*auth abbr*). 'Field personnel record.'

fps (*abbr*). 'Feet per second.'

FPT (*auth abbr*). 'Full power trial.'

FPur (*auth abbr*). 'For the purpose of.'

fr (*abbr*). 'From.'

fractocumulus, *n.* (Fc) A small, ragged cloud or grouping of clouds.

fractonimbus, *n.* A low, ragged, detached fragment of cloud which either rises out of a warm surface after rainfall or is dragged out of a crest

cloud by a passing wind. Sometimes called 'scud' or 'steam cloud' (which see).

fractostratus, *n.* (Fs) A layer of cloud broken up into segments by wind or mountain tops.

frag (*abbr*). **1.** *auth.* 'Fragment' or 'fragmentary.' **2.** 'Fragmentation.' **3.** 'Fragmentation bomb.'
Usually pronounced as a word.

frag bomb. Short for 'fragmentation bomb.'

frag cluster. A fragmentation bomb cluster.

fragment, *n.* (frag) *Specif.* A piece of an exploding or exploded bomb, shell, or the like.

fragmentary administrative order. An order issued announcing a change in an administrative order.
A fragmentary administrative order is a rewrite of that part of the complete order that is changed. Initial distribution is only to those units affected.

fragmentary bomb. A fragmentation bomb.

fragmentary operation order. 1. A section of an operation order issued to units that require the instructions contained but not requiring the complete operation order. **2.** An operation order issued in sections.

fragmentary order. A fragmentary administrative order or a fragmentary operation order.

fragmentation, *n. Specif.* The shattering into fragments of a bomb, shell, warhead, or the like by its bursting charge.
Attrib., as in *fragmentation damage, effect,* etc.

fragmentation bomb. A bomb specially designed to break into many small, heavy fragments upon exploding. Hence, **fragmentation bombing.**
Fragmentation bombs are used chiefly against small ground targets and personnel. They are made in many sizes, the smaller ones being frequently dropped in clusters. See **butterfly bomb, parachute fragmentation bomb.**

fragmentation bomb cluster. A number of fragmentation bombs held together by a cluster adapter for dropping. Usually called a 'frag cluster' or 'fragmentation cluster.'

fragmentation grenade. A grenade having a heavy metal case designed to break into fragments on exploding, distinguished esp. from an offensive grenade.

frame, *n.* **1.** An airframe. **2.** *Specif.* Any structural piece, other than a bulkhead, designed chiefly to support the longitudinal members or skin of a fuselage, float, or hull. **3.** *Aerial photog.* One section or exposure on a roll or strip of film. **4.** *Firearms.* A receiver (sense 4).
In sense 3, 'frame' is often used as a unit of measurement, as in '1,000 frames per second.'

frame of reference. Something that may be referred to so as to give guidance or purpose in working out an analysis or in solving a problem; a set of standards or criteria. Often used as jargon.

Francis E. Warren Air Force Base. An AF base at Cheyenne, Wyoming, formerly known as Fort Francis E. Warren, named for a US Senator and former governor of Wyoming, who died in 1929.

frangible bullet. A brittle plastic or other nonmetallic bullet for firing practice which, upon striking a target, breaks into powder or small fragments without penetrating.
Frangible bullets are usually designed to leave a mark at the point of impact.

frangible grenade. A kind of chemical grenade consisting chiefly of a glass container filled with an incendiary mixture, which breaks and ignites upon striking an object.

Frank, *n.* **1.** A code name for the Russian Yak-9, a post-WW II, low-wing, single-engine fighter, reconnaissance, and ground attack airplane. **2.** An Allied name given the Nakajima Ki84.

franked envelope. *Specif.* A postage-free envelope authenticated by the signature of its user. Used in WW II as a privilege to members of the Armed Services.

Frank M. Hawks Memorial Award. An annual award 'for outstanding contributions to the development of aviation,' established in 1939 by the Air Service Post 501, American Legion, in honor of Frank M. Hawks, former Vice Commander of the Post.

fraud (*auth abbr*). 'Fraudulent' or 'fraudulently.'

fraudulent enlistment. (F/E) Enlistment in any of the Armed Forces of the US by concealing information or making false statements about matters which would otherwise disqualify one for enlistment.

frd (*auth abbr*). 'Friend' or 'friendly.'

FRE (*auth abbr*). 'Field representative, Europe.'

Freccia, *n.* A popular name for the C.R.42.

Fred, *n.* A code name for the P-63, Kingcobra, supplied to Russians under Lend-Lease, developed from and similar to the P-39.

free air. 1. That portion of the atmosphere undisturbed by objects on the surface of the earth, as by mountains or buildings. **2.** *Meteorology.* That portion of the free air (sense 1) above the range of recording instruments on the surface. **3.** *Aerodynamics.* Nonturbulent air; air undisturbed by a moving body, as by an airfoil. **4.** In contexts regarding atomic explosions, air sufficiently remote from surfaces or objects that an explosive effect, as blast, is not modified by reflected shock or scattering objects.
Attrib. (in senses 1 and 2), as in *free-air temperature, thermometer,* etc.

free airdrop. A freedrop.

free balloon. A nondirigible balloon, usually spherical, designed or allowed to float freely and without moorings in the air. See **balloon,** *n.*
The ascent and descent of a free balloon may be con-

trolled by the use of ballast or by a gas valve in the bag, but its direction of flight is determined by the wind.

freedom of action. **1.** Freedom to move or strike in any direction without effective enemy resistance. **2.** The freedom given to a person to act on his own initiative.

freedom of the air. Air freedom.

freedom of the airspaces. A concept suggested by the concept of the freedom of the seas, under which an airplane would be cleared by an authorized international agency to fly over any nation from one neutral airfield to another.

freedrop, *n.* An act or instance of freedropping.

freedrop, *v. tr.* To airdrop *supplies* or *equipment* without parachute. Hence, **freedropping,** *n.*

free electron. An electron in a substance, not bound to any particular atom and free to move about in the substance and react to an applied electrical force.

free fall. **1.** The fall or drop of a body toward the earth without being guided or without being retarded by parachute. See **freedrop,** *n.* **2.** In a parachute jump or drop, the fall before the parachute is opened: See note.

In sense 2, 'free fall' is normally applied only when the parachute used is opened by rip cord, and esp. when the opening of the parachute is delayed for an appreciable time after the jump or drop.

free-fall, *v. intr.* To make a free fall (in sense 1 or 2). Hence, **free-falling,** *n.*

free-fall parachute. A parachute that is opened by use of a rip cord rather than by static line.

free flight. **1.** The flight of a free balloon. **2.** The flight of a glider after release of its towrope. **3.** The flight of a guided missile or the like after the fuel is exhausted or shut off.

free-flight angle. *Specif.* The acute angle between the horizontal and the longitudinal axis of a guided missile or the like at the beginning of its free flight.

free gunnery. Flexible gunnery.

free gyro. A gyro mounted without any external means provided to control or affect its normal precession.

free-lance, *v. intr.* Of fighters: To fly over a designated area or along a designated route without restriction as to flight path, altitude, or choice of target within the area.

free-lance escort. An escort of fighters free to seek out and destroy enemy aircraft, esp. airborne enemy aircraft, along the route or in the general vicinity of the escorted aircraft. Distinguished from close escort.

free-lance patrol. A patrol of fighter aircraft assigned to a designated airspace but unrestricted as to route, altitude, etc.

free net. A radio network in which any station may communicate with any other station in the network without permission from the net control station.

free oscillation. *Electricity.* An oscillatory current continuing to flow in a tuned circuit after cessation of the impressed voltage.

free parachute. A free-fall parachute.

free rocket. A rocket having fixed fins but no control surfaces.

free stream. The relative flow of air or other fluid undisturbed by the presence of a moving body; *specif.*, the relative flow of air ahead of a shock wave.

free time. The off-duty time allowed military personnel for rest and relaxation.

freewheel clutch. A clutch for engaging or disengaging the rotor system of a helicopter with or from the engine.

freewheeling, *n.* The autorotation of a helicopter's rotor blades when disengaged from the engine.

freeze, *n.* An administrative action that stops further change, development, or movement, esp. in reference to promotions, hiring of people, moving a person from one position to another, sending certain supplies, etc. Attrib., as in *freeze order, freeze status.*

freeze, *v. Specif.* **1.** *intr.* To become stiff or immobile; *specif.*, of weapons or other equipment, to stick in operation because of heat, cold, malfunction, etc. Sometimes with *up.* **2.** *tr.* To hold up or stop *promotions*, new *employment*, *supplies*, etc. by administrative action.

freezedown, *n.* An act, instance, or condition occurring when a ski or skis freeze to a surface.

freezing level. *Meteorology.* The lowest level in the atmosphere at which a freezing temperature prevails. Cf. **icing level.**

freight, *n.* (frt) *Specif.* Air freight. Attrib., as in *freight compartment, freight glider, freight hatch, freight run,* etc.

freighter, *n. Specif.* An air freighter.

French landing. A landing possible with certain airplanes in which the airplane rolls along the ground on its two main wheels, holding the tail in the air as long as possible before coming to a stop. *Slang.*

French Squadron. A fighter squadron made up of American volunteers serving in the spring of 1940 in WW II under French command.

freq (*auth abbr*). 'Frequent' or 'frequency.'

frequency, *n.* (freq) **1.** The number of cycles occurring in a given unit of time. **2.** *Electricity* and *electronics.* The number of cycles, kilocycles, or megacycles per second occurring in an alter-

nating current, radio wave, or the like. See **radio frequency.**

frequency meter. A device that measures and indicates frequency, as of an alternating current or radio wave.

frequency modulation. (FM) A method or system of radio transmission in which the frequency of the carrier wave is varied or modulated.

frequency range. In communications usage, any part of the electromagnetic spectrum contained within given frequency limits; the range of a piece of communication equipment for transmitting or receiving within a given segment of the electromagnetic spectrum.

frequency tolerance. The maximum number of frequencies from the assigned frequency that a carrier wave is permitted to depart, or from which a transmitter is permitted to depart in transmitting a carrier wave.

frequency tripler. An amplifier having an output frequency three times that of the input.

Fresco, *n.* A code name for an improved version of the Russian Mig-15.

Freya (*code*). A kind of German coastal early-warning radar of WW II.

FRFE (*auth abbr*). 'Field representative, Far East.'

Fri (*auth abbr*). 'Friday.'

friction, *n.* The rubbing together of two substances or bodies in contact with each other, of a body in contact with a gas or fluid, etc.; the resistance to relative motion caused by this contact.

See **boundary friction, dry friction, fluid friction, skin friction.**

friction horsepower. The difference between indicated horsepower and brake horsepower, i.e., the horsepower used by an engine in overcoming the friction of moving parts, drawing in fuel, expelling exhaust, driving oil and fuel pumps, and the like.

friction layer. 1. *Meteorology.* The lower layer of the troposphere, in which the friction of the air against the earth's surface affects the movement of the air. **2.** The boundary layer in an airflow.

The friction layer (sense 1) is considered to be anywhere from 1,500 to 3,000 feet thick.

friend, *n.* A member of one's own or allied force. Hence, **friendly,** *a.*, as in 'the IFF identifies friendly aircraft.'

A neutral is not considered a friend. Cf. **hostile,** *a.*

friendly, *a.* Of troops, aircraft, areas, etc.: Belonging to, or held by, one's own forces or the forces of an allied nation.

friendly bombing. The bombing of friendly troops, installations, etc. through mistaken identification or other error.

Frise aileron. A type of aileron having its leading edge projecting well ahead of the hinge axis.

When the trailing edge of the Frise aileron is raised, its leading edge protrudes below the wing's lower surface, thereby producing drag and tending to prevent any yawing motion of the airplane.

Fritz, *n.* A code name for the Russian La-9.

Fritz X. A code used to designate a kind of German air-to-surface, armor-piercing guided bomb of WW II, similar to the US razon bomb.

front, *n.* **A. 1.** A direction toward which a nation or military force must face in order to meet an attack; a direction opposite to this toward which an attacking force directs its attack, as in 'a new front was opened up when aircraft struck from the north,' or in the phrases 'air front' or 'second front' (which see). **2.** A line or zone of demarcation between two hostile land forces that face each other, as in 'both armies were quiet at the front today.' **3.** A forward area, as in 'he was sent to the front.' **B. 4.** The fore part of a vehicle, as that of an airplane. **C.** *Meteorology.* **5.** A line on the earth's surface at the intersection of a frontal surface with the earth; a line on a map representing this intersection. **6.** In an occlusion, a line on top of a cold air mass at the intersection of the warm air mass with the less cold air mass. Usually called 'upper front.' **7.** A frontal surface, as in 'he flew into the front at 10,000 feet.' **8.** The weather connected with a frontal surface, as in 'the front was wet and cold.' **9.** The airspace in which such weather prevails, as in 'he took 20 minutes to go through the front.' **10.** In popular usage, an air mass that is displacing another air mass, as in 'the cold front from the north moved across Illinois and enveloped the whole state.'

In senses 1, 2, and 3, the front is largely, but not exclusively, a ground concept.

In technical meteorological use, the term is used only in senses 5 and 6. See **cold front, occluded front, polar front, stationary front, warm front.**

Attrib. in sense 4, as in *front attack, front gun, front hatch, front turret,* etc.

frontal, *a.* **1.** Of or pertaining to a meteorological front. **2.** Of or pertaining to the surface at the front of a vehicle. **3.** Of or pertaining to that part of a person or body that faces forward, as in 'a frontal attack.'

For usage in sense 2, see **equivalent flat-plate area.**

frontal fog. Any fog associated with a front, in which lowering temperatures and evaporation from falling rain meet at dew points where condensation results, as in a fog occurring in a cold air mass beneath a frontal surface.

frontal surface. *Meteorology.* A slanting or sloping surface or layer of discontinuity existing between

two air masses having different characteristics. Also called a 'front' (which see, sense 7).

frontal thunderstorm. A thunderstorm occurring at, or associated with, a frontal surface.

In the AF, three types of frontal thunderstorms are recognized: See **cold-front thunderstorm, squall-line thunderstorm, warm-front thunderstorm.**

front gunner. A nose gunner. *British.*

front line. **1.** The line formed by the foremost units in a given combat situation. **2.** Often *pl.* In a more general sense, the line or area of contact with the enemy; the front.

In combinations, as *front-line area, front-line defense, front-line fighter, front-line service,* etc.

front-line airplane. An airplane used, or capable of being used, at the front line, or in combat. Cf. **first-line,** *a.*

frontogenesis, *n. Meteorology.* The origination or creation of a front by the motion and meeting of different air masses; the process by which this takes place.

frontolysis, *n.* The dissolution or breaking up of a frontal surface.

frost, *n.* **1.** A feathery deposit of minute ice crystals or grains upon a surface or object, formed directly from vapor in the air. **2.** The process by which such ice crystals are formed. **3.** Any temperature at which frost forms.

Frost often forms when the close-lying air is above 32° F., esp. in calm, clear weather when radiation or evaporation reduces a surface temperature to a point of freezing or below.

frostbite, *n.* Any lesion of tissue caused by partial freezing or by a particular hardening of tissue when subjected to certain conditions involving subfreezing temperatures; a symptom of such lesion, as a change in skin color.

frost fog. Ice fog; *specif.*, a thin or light ice fog.

frost smoke. Steam fog.

frt (*auth abbr*). 'Freight.'

fruit, *n. Electronics.* An unsynchronized reply from a radar beacon appearing on the scope of an interrogator-responser.

fruit salad. *fig.* An array of ribbons worn on a uniform.

frustrated, *a.* Of cargo, freight, supplies, etc.: Delayed or interrupted in shipment because of lack of space, change in requirements, unknown disposition, or other reasons.

FS (*abbr*). **1.** *auth.* 'Film strip.' **2.** 'Field Services.' **3.** 'Fighter, single.' **4.** 'Flight sergeant.' *British.* **5.** *auth.* 'Flying status.'

F/S (*abbr*). **1.** *auth.* 'Feet per second.' **2.** 'Final statement.'

Fs (*abbr*). 'Fractostratus.'

FSA (*auth abbr*). 'Federal Security Agency.'

FSC (*auth abbr*). 'Foreign service credits.'

F-scan, *n.* **1.** A scan for presentation on an F-scope. **2.** An F-scope. *Popular.*

FSCC (*auth abbr*). 'Fire Support Coordination Center.'

F-scope, *n.* A radarscope which presents the azimuth error angle of a target by a horizontal displacement of the target spot on the face of the scope and the elevation of the target by a vertical displacement.

FSD (*auth abbr*). 'Fuel supply depot.'

FSE (*auth abbr*). 'Field support equipment.'

FSO (*auth abbr*). 'Fuel supply office.'

FSP (*auth abbr*). 'Foreign service pay.'

FSS (*abbr*). 'Field service section.'

FSSD (*auth abbr*). 'Foreign service selection date.'

FT (*abbr*). 'Firing table.'

ft (*auth abbr*). **1.** 'Foot' or 'feet.' **2.** 'Fort.'

FTAF (*auth abbr*). 'Flying Training Air Force.'

FTC (*abbr*). 'Flying Training Command.'

ftn (*auth abbr*). 'Fortification.'

ftr (*auth abbr*). 'Fighter.'

ft/sec (*abbr*). 'Foot second,' i.e., feet per second.

fubar, *a.* [Coined from *f*ouled (euphemism) *u*p *b*eyond *a*ll *r*ecognition.] Confused; messed up. *Slang.*

fuel, *n.* **1.** Any substance used to produce heat by burning, esp. any such substance used to power an aircraft engine, rocket engine, or the like. **2.** In a restricted sense, gasoline or any other liquid fuel.

'Fuel,' in regard to rocket engines, sometimes means the oxidizing agent as well as the combustible matter.

fuel accumulator. A device that serves to augment the flow of fuel when the fuel pressure reaches a predetermined level during the starting cycle of an engine.

fuel-air mixture. The mixture of fuel and air in the combustion chamber of an engine at any given fuel-air ratio.

fuel-air ratio. The ratio of fuel to air as supplied to the combustion chamber of an engine.

fuel analyzer. An exhaust-gas analyzer.

fuel booster pump. A booster pump in a fuel system.

fuel cell. **1.** A compartment within a fuel tank. **2.** One of a series of like fuel tanks.

fuel consumption rate. The rate at which an engine uses fuel, calculated in gallons per flying hour, gallons per mile, etc.

fuel dope. Any antiknock substance added to a fuel. Also called a 'detonation suppressant.'

fuel flowmeter. An instrument that measures and indicates the rate of fuel flow to an aircraft's engine or engines, usually graduated in pounds per hour.

fuel gauge. An instrument for measuring and

indicating the amount of fuel in a tank or similar container.

fuel induction. The introduction of fuel and air into the intake passages or cylinders of an internal-combustion, piston engine by means of suction.

As a piston moves through its intake or induction stroke, it creates a space of low pressure above it, thereby 'inducing' the fuel and air to enter. Cf. next.

fuel injection. The forced spraying or introduction of fuel or fuel and air under pressure into the intake passages of an aircraft engine or into a combustion chamber. Distinguished esp. from 'fuel induction.'

fuel-injection pump. A pump for injecting fuel under pressure into an aircraft engine. See prec.

fuel metering. The regulating of fuel to an engine to obtain a proper fuel-air ratio.

In combinations, as *fuel-metering jet, fuel-metering system*, etc.

fuel pump. 1. A pump for delivering fuel from a tank to the carburetor. **2.** A fuel-injection pump.

fuel-structure ratio. *Rocketry.* The fuel-weight ratio.

fuel system. Any complete system of lines, gauges, injectors, pumps, tanks, etc. for holding, conveying, and mixing fuel and air or any other oxidizer.

fuel tank. A reservoir or tank for liquid fuel, esp. one in the fuel system of an airplane, guided missile, or the like.

fuel-tank vent. A vent or tube for overflow in a fuel tank and for equalizing the atmospheric pressure inside the tank with that outside.

fuel thickener. A substance, such as napalm, for jellifying gasoline.

fuel totalizer gauge. A gauge showing the total quantity of fuel in all the fuel tanks on an aircraft.

fuel-transfer pump. A pump for transferring fuel from one tank to another.

fuel vapor. A vapor formed from liquid fuel, esp. in the lines or tanks of a fuel system.

Fuel vapor occurs under conditions of lowered pressure, high fuel temperature, or excessive turbulence. Booster pumps are sometimes used to keep it to a minimum.

fuel-weight ratio. *Rocketry.* The ratio of the weight of a rocket's fuel to the weight of the unfueled rocket. Also called the 'fuel-structure ratio.'

Fug (*abbr*). 'Funkgerat,' a general German term for communication equipment or electronic equipment.

'Fug,' followed by a code, designated a specific item of communication equipment, as *Fug 10 KK*, a kind of air-to-air radiotelephone, *Fug 103*, a type of radio altimeter, etc.

fugitive sortie. An airplane flight away from a place so as to escape probable attack. Said of enemy flights when their airdromes are threatened by attack.

full-automatic, *a.* Of a gun: Which utilizes part of the force of an exploding cartridge to extract the empty case and chamber the next round, and which fires continuously when the trigger is held back or otherwise held in firing position. See **automatic,** *n.*, and cf. **semiautomatic,** *a.*

full boost. The highest manifold pressure. See **boost,** *n.*

full bore. Top speed. Also used adverbially, as in 'he climbed full bore.' *British slang.*

full colonel. A colonel. Sometimes used as a distinguishing term in contexts where the word 'colonel' may be considered to refer to either a colonel or lieutenant colonel. See **colonel,** *n.*

full-feathering propeller. A variable-pitch propeller that can be turned about its longitudinal axis to its feathering position and be set at any blade angle within its turning radius. See **variable-pitch propeller.**

full-fine, *a.* Of a propeller: Having its blades at the extremest fine pitch.

full flap. An airplane's flap extended or let down to its maximum position.

full-flap, *a.* Of a takeoff or landing: Made with full flaps.

full load. A capacity payload in an aircraft, or a capacity load of fuel or oil in its tanks.

full operational base. A base from which air operations are practicable, in terms of safety and efficiency, under both favorable and adverse operating conditions.

full rich. A setting of a mixture-control mechanism so that the maximum possible amount of fuel in relation to air can be supplied to an engine and still maintain combustion.

full-scale, *a.* Of an attack or other operation: All-out; maximum.

full throttle. Full power. *Colloq.* Also used adverbially in elliptical contexts, as in 'he turned full throttle toward his enemy.'

full-wave rectifier. A circuit, vacuum tube, or other electrical device that utilizes both positive and negative alternations in an alternating current to produce direct current. Cf. **half-wave rectifier.**

fulminate, *n. Specif.* Mercury fulminate.

function, *n.* **1.** The role in which a person, activity, organization, supply item, or piece of equipment serves or performs—the role being calculated to contribute to the smooth operation of an action, to provide for the accomplishment of a necessary step in a sequence directed toward an end, or to perform an action essential, or potentially essential, to the performance of an

overall action. **2.** *Specif.* The role of an organization or unit in an overall action, as in 'the function of a bomber squadron is to bomb, leaving transport to some other unit,' or 'the function of the institute is research, which, in turn, results in more effective action.' **3.** Also *specif.* Any of the individual roles or duties performed *within* an organization or unit, esp. as identified by a code number under practices adopted for the management of AF resources, manpower, equipment, funds, and supplies, as in 'the squadron had several functions, including those of command (01000), maintenance (44000), flying safety (28000), and operations (27000).' **4.** Any one of these functions (sense 3) considered to have magnitude, described in terms of manpower figures or monetary cost, as in 'the function of command in the group is equal to the sum of all the effort given to command both at group headquarters and in each of the squadrons.' **5.** An activity or organization identified by the function that it performs, as in 'your function will get out the report.' *Loose* usage.

The functions of sense 3 are identified to meet the needs for integrated and correlated data, prerequisite to effective planning, programming, management, and budgeting. The assignment of code numbers to each of the functions (with provision within the five or more digits for further identification) makes it possible to use machine cards in classification, and thus provide a ready means for evolving data for cost accounting, for detection of misuse of personnel, for establishing requirements for a given operation, for setting forth the capabilities of a unit in a unit manning document, etc. See **unit manning document.**

In sense 4, each function is always considered for the unit as a whole, whatever the unit may be. For example, the function of supply (42000) within a particular group includes the segments of this function performed in each of the squadrons as well as the segment performed at group level itself. Similarly, this function for a wing includes the segments performed within the groups as well as the segment performed at wing level.

functional, *a.* Having a purpose or end in terms of overall objectives. Said of organizations, missions, or operations.

functional area. 1. A location where a functional activity is carried out, as in 'the ordnance functional area of an air depot.' **2.** An organizational grouping of units according to related functions, esp. as shown on a chart. **3.** An area of activity into which an organization or person must go in order to carry out a function.

For example, in sense 3, a graduate study group, with the function of developing air doctrine, would be concerned with the steps to be taken in forwarding this function. The scope and range of activity connected with this would be called a functional area.

functional bombing. The bombing of a specially-selected class of key targets, such as dams or marshaling yards, that function within an industrial complex or transportation system, as opposed to the bombing of the entire system.

functional chart. A chart showing the breakdown of an organization in terms of its functional duties.

A functional chart may coincide with an administrative chart if administration is conducted through functional departments. But if not so conducted, the two charts would be different. For example, a small office with only four or five people might have, administratively, no subdivisions. This would be represented by a single block on an administrative chart. But the office might have many functions which, on a functional chart, would be set out in a series of blocks, each representing a different function.

functional code. Any numeral or other code that identifies a function; *specif.*, a numerical code used by the Air Force to identify any of the functions within a given command. See **function,** *n.*, sense 3.

functional group. 1. A group of people regarded as having a specific single function. **2.** A group of functional code numbers identified by the initial numbers.

This is a general term in both senses.

functional photo-interpretation analysis. The analysis and interpretation of one or more aerial photographs of a target, as a factory, refinery, marshaling yard, or the like, to discover how it functions.

This activity embraces identification of the constituent parts of the target, estimating flow of materials, rates of production, etc.

functional test. A test of a piece of equipment, as of a machine gun, to prove or determine the functional or operational characteristics of its various components and assemblies. Hence, **functional testing.**

fund, *n. Specif.* A sum of money or other resource authorized by law to be set aside and to be used or expended only for specified purposes. See **obligation authority.**

The AF conducts its various activities through the use of funds identified by numbers, such as the 434 funds appropriated for use in printing and reproduction, or the 443 funds appropriated for use in schools and training. There are several score of these funds identified by number.

fundamental, *n.* **1.** A basic and essential principle or element. **2.** *Physics.* A fundamental frequency.

fundamental frequency. *Physics.* The lowest frequency of a complex tone, wave, motion, electrical signal, or the like. Sometimes called the 'first harmonic.'

In helicopter theory and analysis, terms such as 'fundamental' and 'harmonic' have been applied to the flapping and oscillating motions of a rotor.

funded requirement. A need for something that has already been recognized and provided for by allocation of funds.

funding, *n.* The action or process of setting aside certain available or anticipated funds for a particular purpose. Attrib., as in *funding action, procedure, responsibility,* etc. See **fund,** *n.*

FUPOSAT (*auth abbr*). 'Follow-up on supply action taken.'

furept (*auth abbr*). 'And further report to.'

furlough, *n.* A leave given an enlisted man.

The word 'leave' instead of 'furlough' now has official sanction in the AF.

furn (*auth abbr*). 'Furnish' or 'furniture.'

furnish, *v.* (furn) *tr.* **1.** To assign, attach, or otherwise provide *personnel;* to provide *supplies* or *equipment* for a unit, installation, etc. **2.** To provide a *unit, installation,* etc. with personnel, supplies, or equipment.

furnishing, *n. Specif. pl.* The seats, fire extinguishers, cupboards, and the like, placed in or built into an aircraft for ready use or convenience. Cf. **fixture,** *n.*

Fürstenfeldbruck Air Base. An air base at Fürstenfeldbruck, Germany.

Fury, *n.* **1.** A popular name for the FJ. **2. a.** The name given a British Hawker low-wing, single-engine fighter in any of its several modifications, as *Fury 1, Fury F.B. mk. 60, Fury Trainer,* etc. **b.** An obsolete British fighter biplane, developed by Hawker.

fus (*auth abbr*). 'Fuselage.'

FUSA (*abbr*). 'First United States Army.'

FUSAG (*abbr*). 'First United States Army Group.'

Fuse (*abbr*). 'Funksenderempfänger,' German for 'radio transmitter-receiver,' i.e., radar.

fuse, *n.* Variant of 'fuze.'

fuse, *v. intr.* Of thermonuclear material: To combine by the process of fusion. See **nuclear fusion.**

fusee, *n.* [Pronounced 'fu-zee.'] *Rocketry.* An igniter squib for a rocket motor.

fuselage, *n.* (fus) [French, based on *fuseler* 'to shape like a spindle, to streamline.'] The main structure or central section of an airplane, which houses or contains the crew, passengers, cargo, etc.; the body or hull of an airplane: See note.

In a twin-boom airplane, such as the P-38, 'fuselage' may refer to the nacelle housing the pilot or crew, or to either tail boom, but the terms 'nacelle,' 'boom,' or 'tail boom' are more often employed. See **monocoque,** *n.,* **semimonocoque,** *a.,* **truss fuselage.**

fuselage reference line. A line established in or along the fuselage of an airplane, usually within the plane of symmetry, used as a reference line when installing rocket launchers, harmonizing machine guns, etc.

fuselage tank. A fuel tank carried in, or built into, the fuselage.

fusetron, *n.* A kind of electrical fuse that will bear an overload for a short period of time before melting.

fusion, *n. Specif.* Nuclear fusion.

Attrib., as in *fusion energy, process,* etc.

fusion bomb. A bomb that depends upon nuclear fusion for release of energy.

future position. The calculated position that a moving object will occupy at any given instant in the future, based upon its course and speed.

Used esp. in reference to moving targets.

fuze, *n.* Also **fuse. 1.** A mechanical or electronic device designed to detonate automatically the charge or primer in a bomb, rocket, mine, or the like, or to set forces in action to detonate one or the other under desired conditions. **2.** A flexible tube or cord filled or impregnated with combustible matter which, after ignition, carries fire to a flame-sensitive element, as to a detonator. Sometimes called a 'safety fuze.' **3.** A piece of metal inserted in an electric circuit, which melts when the current increases beyond a given limit, thus breaking the circuit.

In sense 1, a fuze is often distinguished by an attributive designating the projectile or other device for which it is intended, as in *bomb fuze, rocket fuze, mine fuze,* etc. It is also characterized by how it functions or by where it is located, as in *antidisturbance fuze, barometric fuze, base fuze, boresafe fuze, combination fuze, concussion fuze, electronic fuze, hydrostatic fuze, impact fuze, longitudinal fuze, nose fuze, point fuze, proximity fuze, radio proximity fuze, self-destroying fuze, tail fuze, time fuze, transverse fuze,* etc. See separate entries.

In sense 2, some writers prefer 'fuse' to 'fuze.'

fuze, *v. tr.* To equip a *bomb, shell,* or the like with a fuze or fuzes.

fuze cavity. A socket or hole in a bomb, shell, or the like for receiving a fuze.

fuzed, *a.* Of a bomb, shell, etc.: Equipped with one or more fuzes.

fuze range. The range of a shell or other projectile before its fuze detonates the charge.

fuzing, *n.* The action of attaching a fuze or fuzes to a bomb, shell, or the like; the fuze or fuzes so attached.

Fw (*abbr*). 'Focke-Wulf.' Also **FW** (*abbr*).

fwd (*auth abbr*). 'Forward.'

FwdBL (*abbr*). 'Forward bomb line.'

FWT (*auth abbr*). 'Fair wear and tear.'

fxd (*abbr*). 'Fixed.'

FY (*auth abbr*). 'Fiscal year.'

FYI (*auth abbr*). 'For your information.'

FYIG (*auth abbr*). 'For your information and guidance.'

FZG-76, *n.* [Abbr. of German *Funkzielgerät* radio-aiming device.] The German name for the V-1.

G

G (*letter*). See **Golf** (*code*). **1.** A symbol given Naval aircraft modified for search and rescue. **2.** A Naval designation for 'Army' when applied to a guided missile.

G, *n.* Also **g.** [From **G** (*abbr*).] **1.** The gravitational force or pull of the earth. **2.** A G-force equal to one G (sense 3). See **stapp,** *n.* **3.** The measure or value of the gravitational pull of the earth or of a force required to accelerate or decelerate any freely movable body at the rate of approximately 32.16 feet per second per second. **4.** *To pull three G's, four G's,* etc., to be subjected to a G-force of three G's, four G's, etc.

In referring to G-forces exerted upon the human body, the direction of the force is relevant to problems of black-out or redout. The force is referred to as so many G's of footward acceleration or headward acceleration, of chest-to-back acceleration or back-to-chest acceleration, etc. Cf. **negative G, positive G.**

G (*abbr*). **1.** 'Gravity.' See **G,** *n.* **2.** *auth.* 'Assistant Chief of Staff' as used in the Army, as in *G-1* for personnel, *G-2* for intelligence, *G-3* for training and operations, *G-4* for supply, and sometimes *G-5* for plans: See note. **3.** 'Glider,' in designations of USAF and Naval aircraft. See **VG** (*abbr*). **4.** 'Goodyear Aircraft Corporation' and 'Globe Corporation' in designations of Naval aircraft. **5.** 'General' when applied to a chemical agent.

In sense 2, the abbreviation originally stood for 'general staff.' When used in combination with *air,* as in *G-2 Air* and *G-3 Air,* it designates an assistant to the assistant chief of staff concerned with coordinating air action with that of the ground. For example, a G-2 Air is concerned with the capabilities and limitations of tactical air reconnaissance and photographic reconnaissance.

G.50. A single-seat, low-wing monoplane fighter developed by Fiat and used by Italy during WW II. Popularly called the 'Falco' (Falcon).

GA (*abbr*). **1.** 'General of the Air Force.' **2.** 'General of the Army.'

g/a (*abbr*). 'Glide angle.'

Gadsden Air Force Station. An AF depot located near Gadsden, Alabama.

GAF (*abbr*). 'German Air Force.'

gage, *n.* Variant of 'gauge.'

gaggle, *n.* A number of aircraft in formation, esp. in a loosely held formation. *Slang.*

gain, *n.* **1.** *Radio.* In an amplifying system, the increase of output power, voltage, or current over the input power, voltage, or current, expressed in terms of a ratio. **2.** *Radar.* The difference, expressed as a ratio, between the power radiated by a directional antenna and the power radiated by an isotropic antenna when both have an equal power output.

gaining unit. In transferring personnel by reassignment, the unit that receives the personnel. Distinguished from a losing unit.

gal (*auth abbr*). 'Gallon.'

gale, *n.* A wind that blows between 39 and 75 miles an hour.

On Beaufort's scale, a gale (including the whole gale) is between a strong breeze and a hurricane, with a force of 8 through 11.

gallantry, *n.* Heroic bravery involving risk of life.

The word is used in citations of awards.

Gallaudet D-4. A single-engine, light bomber, biplane seaplane, designed by Edson Gallaudet for the US Navy, and built in 1918 in prototype only.

This seaplane was a pusher type with a four-bladed propeller located on a ring within, and flush with, the fuselage immediately aft of the wings and forward of the empennage.

gallon, *n.* (gal) A unit of measure for liquids.

The standard US gallon has a volume of 231 cubic inches. The English *imperial gallon,* which is both a liquid and dry measure, has a volume of 277.42 cubic inches (1.20094 times larger than the US gallon). See **barrel,** *n.,* sense 2.

GAM (*abbr*). 'Guided aircraft missile.'

gamma radiation. The combined process of emission, transmission, and absorption of gamma rays, as from the explosion of an atomic bomb.

gamma rays. A ray related to light rays and X rays, but of shorter wave length, emitted by certain radioactive substances.

gang cycle. A repeated series of operations performed by a gang or team. See **cycle,** *n.,* sense 3.

gantry, *n.* A large crane-type structure with platforms on different levels, mounted on wheels, which may be used for erecting and servicing large, vertically-launched missiles.

The gantry can be placed directly over the launching site, and then be rolled away just before the missile is fired.

GAO (*auth abbr*). 'General Accounting Office.'

gap, *n. Specif.* The space between adjacent wings of a biplane, triplane, or the like. Cf. **interval,** *n.*

Gapa (*abbr*). 'Ground-to-air pilotless aircraft.' Pronounced as a word.

The Gapa is normally capable of supersonic velocity.

gap filler. A gap-filler radar.

gap-filler radar. An auxiliary radar antenna used to cover gaps in the main radar antenna pattern.

GAR (*abbr*). 'Guided aircraft rocket,' as in *GAR-1*.

gar (*auth abbr*). 'Garrison.'

garage doors. Dive brakes. *Slang*.

garble, *n.* An instance of garbling.

garble, *v. tr.* To mix up or alter the *transmission, reception, encryption,* or *decryption* of a message, or part of it, so as to render the message, or a part of it, unintelligible or difficult to understand; to render a *message* unintelligible by faulty transmission or the like. Hence, **garbling,** *n.* Cf. **scramble,** *v.*, sense 3.

garble table. A table, chart, or other aid used to correct garbles.

A permutation table is a form of a garble table.

gardening, *n.* The aerial mining of enemy water. Code used by the British in WW II.

Gargoyle, *n.* A popular name for the KUD-1.

garrison, *n.* (gar) A permanent installation or post at which troops are stationed; the body of troops at such a post.

garrison prisoner. A prisoner awaiting trial or sentenced to confinement but not to dismissal or discharge.

This term is no longer applied to an AF prisoner.

garrison ration. A kind of food allowance used esp. in hospitals during peacetime that permits the messing unit to plan its own menus and to purchase food for persons in the messing unit.

Money is normally issued to a messing unit for purchase of the required amount of food. Cf. **field ration.**

Gary Air Force Base. An AF base at San Marcos, Texas, formerly called San Marcos Air Force Base, renamed for Lieutenant Arthur Edward Gary, killed in the Philippines, 1941.

gas, *n.* **1.** Any substance, like air, carbon dioxide, or chlorine, that has no shape or volume independent of a container that might hold it, and tending to expand indefinitely. Distinguished from a liquid or a solid. See **fluid,** *n.* **2.** A gaseous or atomized chemical substance designed to produce toxic or irritant effects in field concentrations. **3.** A gaseous substance, such as helium, used to give buoyancy to lighter-than-air aircraft. **4.** Short for 'gasoline.'

In sense 2, the term includes irritant smoke.

gas, *v. tr.* **1.** To fill the tanks of an *airplane* with gasoline. Often with *up*. Also *absol.* or *intr.*, as in 'we gassed up.' **2.** To supply an *airship* or *balloon* with gas. **3.** To expose to a toxic gas. Used passively.

gas (*auth abbr*). 'Gasoline.'

gas alarm. An alarm or warning that a gas attack is under way.

gas alert. A state of preparedness against a gas attack.

gas attack. An attack by the use of poisonous or irritant gas.

gas bag. 1. The envelope or bag for containing the lighter-than-air gas of a balloon or other aerostat; a gas cell. **2.** *transf.* A balloon or other aerostat.

gas bomb. A bomb containing gas as the destructive agent.

gas cell. One of the compartments in a rigid airship for the lifting gas. Also called a 'bag' or 'cell.'

gas-cell fabric. The fabric used in making a gas cell for a rigid airship.

gas chamber. *Specif.* A room in which gas may be released, and used for training or in the fitting of gas masks. Attrib., as in *gas-chamber exercise.*

gas mask. A mask worn over the face to protect the eyes and to remove gases from the air as it is inhaled.

gas mixture. The mixture of gasoline and air supplied an engine cylinder.

gasoline, *n.* (gas) A hydrocarbon fuel used esp. in internal-combustion reciprocating engines. Called 'petrol' by the British. See **kerosene,** *n.*

Attrib., as in *gasoline bomb* (a napalm bomb), *gasoline consumption, gasoline drum, gasoline dump, gasoline jelly, gasoline refueling unit, gasoline reserve, gasoline storage area, gasoline tank,* etc.

gasoline capacity. The capacity of a vehicle for carrying gasoline in its fuel tanks.

gasoline trailer. A tank trailer used for filling the gasoline tanks of airplanes.

gas-operated, *a.* Of an automatic or semiautomatic weapon: That utilizes part of the gas from the explosion in the barrel to unlock the bolt and actuate the loading mechanism.

gas turbine. 1. A mechanical unit that spins or rotates in reaction to a current of gas passing through or over it. **2.** A gas-turbine engine.

In sense 1, the gas turbine is distinguished esp. from the steam turbine, the flow of gas being direct from the combustion or explosion of fuel.

gas-turbine engine. A power plant or engine that utilizes a gas turbine to generate mechanical power, esp. to turn the compressor in a jet engine or to turn certain accessories or generators used in a jet aircraft.

GAT (*abbr*). 'Greenwich apparent time.'

gate, *n. Electronics.* A square voltage wave that switches a circuit off and on electronically, used esp. in radar to switch the circuit on for brief instants to receive returning echoes.

gate, *v. tr.* **1.** To cut a *circuit* off or on by use of square voltage waves. **2.** To synchronize a *receiver* with returning echoes.

Hence, **gating,** *n.*, in both senses.

gauge, *n.* **1.** A measuring instrument, as for gasoline. **2.** *Railroads.* The distance between the rails,

In sense 2, standard gauge is 4 feet 8½ inches. In some western states this gauge is called 'broad gauge' or 'wide gauge,' as distinguished from narrow gauge. Foreign countries have a great variety of gauges.

GB (*abbr*). 'Glide bomb.'

GB's used in WW II were designated by numbers, as in *GB-1* (used on 25 May 1944 against Cologne, Germany), *GB-8*, a conventional aerial bomb adapted to serve as a glide bomb.

GB-4. A glide bomb with a mounted television camera and transmitter, controlled in azimuth and range by radio, and guided from a mother aircraft by means of the television. Often called 'GB-4 missile.'

The GB-4 was used in WW II, first in July 1944 against the U-boat pens of Le Havre.

GBC (*auth abbr*). 'Greenland Base Command.'

GBL (*auth abbr*). 'Government bill of lading.'

GBR (*abbr*). 'Gun, bomb, and rocket.' Used attrib. with *sight*.

GC (*auth abbr*). 'Government contribution.'

G/C (*abbr*). 'Group captain,' as used in the RAF and RCAF.

GCA (*auth abbr*). 'Ground-controlled approach.'

Used attrib., as in *GCA controller*, *GCA equipment*, *GCA landing*, *GCA weather*, etc.

GCC (*abbr*). 'Ground Control Center.'

GCI (*auth abbr*). 'Ground-controlled interception.'

GCI controller. The controller who directs friendly aircraft to the point of interception.

GCIS (*auth abbr*). 'Ground Control Intercept Squadron.'

GCM (*auth abbr*). **1.** 'General court-martial.' **2.** 'Good Conduct Medal.'

GCMC (*auth abbr*). 'Good Conduct Medal Clasp.'

GCMO (*auth abbr*). 'General court-martial order.'

GCR (*auth abbr*). 'Ground-controlled radar.'

GCT (*abbr*). **1.** 'Greenwich Civil Time.' **2.** *auth.* 'General classification test.' *Hist.* in the AF.

GD (*auth abbr*). 'General discharge.'

gd (*abbr*). 'Guard.' See **grd** (*auth abbr*).

GDA (*abbr*). 'Gun-defended area.'

gdhse (*abbr*). 'Guardhouse.'

gdnce (*auth abbr*). 'Guidance.'

gear, *n.* **1.** Short for 'landing gear.' **2.** A cogwheel or set of cogwheels, worm wheels, rods, etc., serving to transmit motion or to change its rate or direction. **3.** Personal equipment, special flying equipment, or the equipment of a unit. Chiefly *Naval*.

gear-driven, *a.* Driven by means of a gear train, generally at a speed other than crankshaft speed.

geared propeller. A gear-driven propeller.

GEDT (*auth abbr*). 'General Educational Development Test.'

GED test. = prec.

Gee, *n.* A medium-distance radionavigation system or aid.

The aircraft's position is determined by measuring the difference in the time of arrival of synchronized pulses broadcast by a master and two slave stations. Developed by the British before WW II.

Gee-H, *n.* A combination of the Gee and H electronic navigation systems, used esp. in WW II, in which the Gee equipment was modified so that distances could be determined from transmitting stations on the ground with the aid of an airborne interrogator.

Geiger counter. [From Hans *Geiger* (1882–), German physicist.] An instrument for detecting and measuring radioactivity.

This instrument consists essentially of a thin-walled metallic tube, in which an electrode detects the passage of ionizing particles.

Geiger Field. An airfield near Spokane, Washington, formerly called Sunset Field, renamed in honor of Major Harold Geiger, WW I dirigible expert killed May 1927, at which certain accommodations are provided for USAF units.

Geiger-Mueller counter. A counting tube similar to the Geiger counter.

gel, *n. Specif.* Gelatinized gasoline. Attrib. and in comb., as in *gel-filled bomb*, *gel incendiary*.

gelatinized gasoline. Gasoline treated with a thickening and used in napalm bombs, flame throwers, etc.

gen, *n.* Gossip or rumor. *British slang.*

gen (*auth abbr*). 'General.'

general, *n.* (gen) **1.** A term applied to any general officer. **2.** *Specif.* A commissioned rank or person in the AF, Army, or Marine Corps, immediately above lieutenant general. Sometimes called a 'four-star general.' **3.** *Capitalized.* A title used with the proper name of a general officer.

general air superiority. Air superiority over the entire range of operations, as distinguished from local air superiority.

general air support. Air operations that assist surface forces in gaining their objectives without, however, the close coordination required in close air support.

In general air support, the gaining and maintenance of air superiority is an essential action, as well as the interdiction and strikes in the immediate or projected battle area.

general court-martial. (GCM) The highest type of court-martial, convened or given for the most serious offenses, and authorized to impose death sentences, sentences of dishonorable discharge, or other sentences not barred by law.

general court-martial order. (GCMO) An order issued by an Air Force organization authorized to convene a general court-martial, in which is announced the results of trial by a general court-martial, and the mitigation, remission, suspension, or vacation of a sentence of a general court-martial.

See **court-martial order.**

general depot. 1. An unofficial term sometimes used to denote a depot with broad responsibilities, as distinguished from a specialized depot. **2.** In WW II, one of the major air depots, as distinguished from a subdepot.

general discharge. (GD) A discharge of an airman by administrative action given for honorable service, but for which all the conditions of an honorable discharge have not been met.

general duty. 1. The duty status of a person who is physically qualified to serve in any given military duty. Distinguished from limited duty. **2.** A term sometimes applied to an aircraft or other piece of equipment, signifying that it has been designed or designated for use in any of numerous duties, as in fighting, bombing, or reconnaissance.

In sense 1, a person on general duty may perform duty involving flying, combat, etc.

In sense 2, an aircraft designated for general duty is distinguished from a special-purpose aircraft, such as a tanker aircraft or long-range bomber.

General Electric. [Air Gas Turbine Division, *General Electric* Company.] Used in the names of jet engines, as in *General Electric J47-GE-17*, etc. See **F-59.**

General Headquarters. *Army.* A commander's headquarters, esp. for all field forces.

General Headquarters Air Force. An air force constituted and activated in 1935, operating directly under the War Department as a combat striking force. *Hist.*

The GHQ Air Force was superseded in 1941 by the Air Force Combat Command.

general hospital. A name formerly given to a hospital that afforded facilities for general and special needs. Now *hist.* in the AF.

general mess. A consolidated mess.

general mobilization. A mobilization of the entire military forces of a nation, either to engage in hostilities already begun, or in preparation for an all-out war.

Cf. **limited mobilization, partial mobilization, total mobilization.**

general officer. Any officer of the AF, Army, or Marine Corps above the rank of colonel, i.e., a brigadier general, major general, lieutenant general, general, general of the Air Force, or general of the Army.

general officer efficiency report. An official report on AF generals in the grade of brigadier or major general. It is somewhat similar to the effectiveness report used for officers in lower grades.

general of the Air Force. The highest general officer rank in the AF; a person holding this rank; (*capitalized*) the title of this person.

The equivalent rank in the Army is general of the Army. General H. H. Arnold was made General of the Air Force by act of Congress, 7 May 1949.

General of the Armies. A special grade and title provided for General John J. Pershing (1860–1948) in 1919.

This grade and title were provided by Public Law 45, in which General Pershing was retired 13 Sep 1924.

general order. (GO for both *sing.* and *pl.*) Often *capitalized.* **1.** *pl.* A collection or series of numbered and dated publications issued upon the order of competent authority, each containing an announcement or announcements of official acts, such as citations of units, awards, important appointments, or other matters directive or informative in nature, general in application, and permanent in character. **2.** Usually *pl.* A particular issue of these publications.

GO of the DAF are issued by order of the Secretary of the Air Force; those of commands by order or command of the respective commanders. Certain GO have the force of regulations. See **order,** *n.*, sense 2 and note.

general prisoner. A prisoner sentenced to confinement and dismissal or discharge, or a prisoner sentenced to confinement for more than six months, or a prisoner sentenced to be executed.

This term is no longer applied to an AF prisoner.

general-purpose bomb. A demolition bomb (which see) used against materiel, installations, or personnel.

General Schedule. As used in Civil Service, the schedule that establishes certain positions in Civil Service, usually known as GS positions. See **GS** (*abbr*), sense 3.

General Services Administration. (GSA) A federal agency established by act of Congress in 1949 to consolidate the functions of several other agencies, and to provide economical, efficient, and serviceable administration in the procurement, supply, utilization, disposal, and records management of certain real and personal property and services.

general staff. 1. A staff consisting of three staff groupings, i.e., personal, coordinating, and specialist, in which the coordinating staff consists of four or more divisions, normally personnel, intelligence, operations, and logistics. **2.** Any coordinating staff, including that of a general staff (sense 1). **3.** A group of military leaders, acting over and above the interests of any one service, who determine military strategy and policy for a national state, such as the German General Staff.

General Staff Corps. (GSC) In the AAF, an officers' corps made up of certain major staff members assigned to different general staffs. *Hist.* except in the Army.

general war. A war in which several nations are involved.

This term is subject to modification by designating

the area of such a war. Thus, a 'general European war' suggests a war among several nations of Europe.

generator, *n.* (genr) A machine for converting mechanical energy into electrical energy.

Geneva Convention. An international agreement dealing with the humane treatment of combatants and noncombatants in time of war.

The original convention, signed at Geneva in 1864, concerned wounded soldiers and prisoners of war. Later amendments and revisions extended the provisions to victims of maritime actions and to civilian populations. In 1949 existing provisions were reformulated into four conventions for the protection of war victims. The US has been a signatory of the successive conventions, and since 1864 the Convention has been the charter of the International Red Cross.

genr (*auth abbr*). 'Generate,' 'generation,' or 'generator.'

Gentile Air Force Station. An AF depot located near Dayton, Ohio, formerly called the 862nd AF Depot, renamed in honor of Major Don S. Gentile, WW II ace, killed near Andrews AFB on 28 January 1951.

geod (*auth abbr*). 'Geodetic.'

geodesic line. The shortest line on the curved surface of the earth between two points.

geodetic construction. A kind of airplane construction in which the fuselage shell consists of curves that carry a part of the distributed stresses.

This construction is about half-way between the braced frame and the semimonocoque. The Wellington bomber of WW II was of geodetic construction.

geodetic unit. A unit charged with establishing or locating points, lines, or stations on the earth's surface. Cf. **Coast and Geodetic Survey.**

A geodetic unit does the necessary aerial and ground surveying to establish grids and control points used in trimetrogon photography; or to establish locations for navigational aids, as for those used in shoran; or to provide surveying data for use in maps, etc.

geographical, *a.* **1.** Of or pertaining to a place or locality on the earth's surface. **2.** Of or pertaining to geography.

AF usage of this term is usually in sense 1, as in *geographical area*, an area identified by reference to a place or region; *geographical designation*, a designation given with reference to a place or locality; *geographical pole*, either of the two points on the earth's surface at which the meridians converge.

geographical coordinate. Either of two intersecting lines of latitude and longitude determining a position on the surface of the earth.

geographic position. *Specif.* The position of a given celestial body in relation to the earth.

The geographic position of a body is defined as its substellar, subsolar, or sublunar point.

geol (*auth abbr*). 'Geological.'

geometrical pitch. Geometric pitch.

geometric pitch. The distance that a propeller at a given blade angle would move forward in one revolution if it were revolved in a semisolid. Often called 'pitch.'

The geometric pitch is the theoretical distance a propeller would move forward in air if it were not for distance loss caused by slipping. 'Geometric pitch' may also be defined as the distance a blade element would move forward in one revolution if it moved along a helix having a slope or angle equal to the blade angle of the element.

geopolitics, *n.* A term variously applied, and often without precise meaning, to certain notions, studies, or doctrines respecting the nature, power, or destiny of the national state: See note.

Definitions that may be noted are: **1.** The dogma, based on a theory advocated by Karl Haushofer (1869–1946) and his associates, that the state is a geographic organism with certain attributes and goals, and that every field of science may be purposefully used to justify the theory and to promote the ambitions and aggrandizement of the state. **2.** The study or analysis of the sum total of geographic, political, economic, social, and military factors which determine the power potential of a country or its relative power position. **3.** Sometimes loosely used for 'political geography.'

Georef (*auth abbr*). 'World Geographic Reference System.' Pronounced as a word. See next.

Georef grid. The grid used on USAF aeronautical charts for identifying the location of any point or area in the world; the system involved in the use of this grid. Formerly **World Geographic Grid.**

By this system the world chart is divided into 24 parallel north-south strips 15° wide numbered from A through Z (I and O omitted), beginning at the 180th meridian, and into 12 parallel east-west strips 15° wide numbered from A through M (I omitted), beginning at the South Pole.

Each quadrangle is subdivided into 15 lettered units eastward and 15 lettered units northward. These are lettered from A through Q (I and O omitted).

Each one degree quadrangle is subdivided into 60 numbered minute units. Minute units may be subdivided further into decimal parts.

This system was developed at the Air University (see *Air University Quarterly Review*, Summer 1951).

George, *n.* **1.** An automatic pilot. *British slang.* **2.** An Allied name for the Japanese Kawanishi N1K2-J.

George (*code*). A word formerly authorized for the letter 'G.' See **Able** (*code*).

George Air Force Base. An AF base at Victorville, California, originally known as Victorville Air Force Base, renamed for Brigadier General Harold H. George, a WW I ace, Commander of US Air Forces in Australia in WW II, killed in Australia, 1942.

geostrophic wind. A wind blowing parallel to the isobars that results from a balance between the gradient force and coriolis force.

In the lower latitudes (20° N to 20° S), geostrophic winds are not calculable because of the negligible effects of coriolis force.

GERA (*auth abbr*). 'Guard's expense in returning absentee.'

Geronimo, *interj.* A battle cry of the paratrooper, used esp. in WW II as the paratrooper jumped from the airplane. Used in allusion to Geronimo (1829–1909), Apache Indian chieftain.

get, *v. intr. To get cracking*, to hasten into action; to hurry up. Originally *British slang.*

GetLo (*auth abbr*). 'Obtained by local purchase.'

GetMa (*auth abbr*). 'Obtained by local manufacture.'

GF (*auth abbr*). 'Aviation guided missileman.'

GFAE (*auth abbr*). 'Government furnished aircraft equipment.'

GFE (*abbr*). 'Government-furnished equipment.'

G file. The technical order file in an aircraft.

GFM (*auth abbr*). 'Government furnished material.'

G-force. A force exerted upon an object by gravity or by reaction to acceleration or deceleration, as in a change of direction.

This force is measured in G's. See **G,** *n.*, sense 2.

GFP (*auth abbr*). 'Government furnished property.'

GGR (*auth abbr*). 'Ground gunnery range.'

GH (*abbr*). **1.** *auth.* 'General hospital,' when used with the name of a hospital. **2.** Variant of 'Gee-H.'

GHA (*abbr*). 'Greenwich hour angle.'

ghost, *n. Specif.* Short for 'ghost signal.'

ghost signal. An unwanted echo on the screen of a radar indicator.

GHQ (*auth abbr*). 'General Headquarters.'

GI (*abbr*). 'Government issue,' esp. used in transferred senses: See note. *Popular* or *slang.*

1. A popular name for an American soldier, esp. an enlisted man. **2.** An ex-serviceman or ex-service woman. **3.** *To have the GI's,* to have diarrhea. **4.** Used as an adj., as in *GI clothing, GI haircut, GI housing* (sense 1), *GI situation,* a snafued situation.

Gibson girl. [Named from the hour-glass contour of the transmitter.] **1.** A portable, hand-operated radio transmitter carried on an airplane by which distress signals may be cranked out. **2.** *transf.* A portable radio-transmitting set for use in emergency.

gig, *n.* A demerit or penalty.

gig, *v. tr.* To give a *person* or *unit* a gig.

gimbal, *n.* Usually *pl.* in *sing.* sense. A contrivance containing two mutually perpendicular and intersecting axes of rotation.

A body mounted on gimbals is free to incline in any direction.

giro, *n.* Short for 'autogiro.' *Popular.*

GL (*abbr*). 'Gun laying.' Applied to radar equipment, as in *GL 3, GL Mark I equipment.*

glaze, *n. Specif.* Clear ice.

gli (*auth abbr*). 'Glider.'

glibad (*auth abbr*). 'Glider badge.'

glide, *n.* **1.** The descent or drop of an aircraft or winged missile at a normal or nearly normal angle of attack, with little or no thrust. **2.** In a less exact sense, a shallow dive.

In sense 1, the nose of the aircraft may be slightly below the horizontal, but it is always above the glide path. This distinguishes the glide from the dive. Cf. **dive,** *n.*

glide, *v.* **1.** *intr.* Of airplanes or persons in them: To descend in a glide. **2.** *tr.* To bring an *airplane* down in a glide. **3.** *intr.* To engage in the sport of soaring in a glider; to soar. See **gliding,** *n.*

glide angle. The acute angle between the glide path and the horizontal.

glide bomb. A bomb fitted with airfoils to provide lift, carried and released in the direction of a target by an airplane.

A glide bomb may or may not be remotely-controlled. Certain glide bombs, as the Henschel 293, are initially propelled by a rocket engine; other glide bombs depend for thrust entirely upon the force of gravity. Also called 'glider bomb.' See **GB-4.**

glide-bomb, *v. tr.* and *intr.* **1.** To bomb a *target* by releasing one or more bombs at it when the bombing plane is gliding; to engage in this activity. **2.** In a less exact sense, to dive-bomb at a shallow angle. Cf. **toss bombing.**

glide bombing. 1. The action of bombing a target from a gliding airplane. See **glide-bomb,** *v.* **2.** The action of using glide bombs for bombing a target. Not frequently used in this sense.

glide path. 1. The flight path of an aircraft or winged missile as it glides downward, the line of which forms an angle with the longitudinal axis of the aircraft or missile. **2.** *Specif.* The line to be followed by an aircraft as it descends from horizontal flight to land upon the surface. Also called 'glide slope.'

In sense 2, the glide path is predetermined under ILS procedures by a glide-path radio beam to enable the pilot to land at a given point. Also used attrib., as in *glide-path indicator, glide-path needle action, glide-path ratio.*

glider, *n.* (gli) A fixed-wing airplane having no power plant, and constructed so as to glide and soar. Cf. **powered glider.**

Military gliders, used to carry troops, supplies, etc., are normally carried aloft by being towed by a powered airplane. Released from the tow, they have limited range, but are given lift by their airfoils, and thrust by the force of gravity combined with momentum and the reaction of aerodynamic forces upon the lifting surfaces.

The term is used attrib., as in *glider aircraft, glider force, glider infantry, glider landing zone, glider pilot, glider tow, glider tug,* etc.

glide ratio. The ratio of forward distance traversed to vertical distance descended in a glide, esp. used in gliding down for landing.

glider bomb. A glide bomb.

gliderborne, *a.* Of troops, supplies, or equipment: Brought in by glider; carried by a glider or gliders.

glider pilot. 1. A pilot who flies a glider. **2.** An aeronautical rating no longer currently effective in the AF, formerly granted a person qualified to fly a glider.

glider serial. One of a series of formations made up of gliders being towed by aircraft, considered as an element in a glider airlift.

glide slope. A glide path (sense 2).

gliding, *n.* **1.** The art, science, and activity of moving through the air in a glider. **2.** The action of the verb 'glide.'

Attrib. in sense 1, as in *gliding club;* in sense 2, as in

gliding approach, gliding attack, gliding circuit, gliding distance, gliding turn, etc.

gliding, *a.* Of bombs or airplanes: That glide, or are made to glide.

gliding angle. A glide angle, esp. one at which an aircraft will steadily glide in still air without thrust.

gliding speed. The speed at which an aircraft glides in still air without thrust.

glint, *n.* A gleam or flash of light reflected from the metal surface of an aircraft.

The glint is often used by experienced pilots to sight aircraft at high altitudes.

GLO (*auth abbr*). 'Ground liaison officer.'

global, *a.* Of or pertaining to world-wide activities or concepts.

Used esp. in matters related to world-wide air operations, as in *global air power, global air force, global bombardment, global chart, global flight, global freighter, global strategy, global war*, etc.

global bomber. A bomber built to fly from base to any place in the world and back to base without landing.

Refueling, if required, is done in the air.

Globemaster, *n.* A popular name for certain airplanes, as *Globemaster I*, the C-74, *Globemaster II*, the C-124.

Glomb, *n.* [*Glide bomb.*] A glider (LNT-2) adapted by the Navy for use as a glide bomb, loaded with destructive charges, and towed to the target area, where upon release, it is guided to its target by radio from a mother airplane.

GLSM (*auth abbr*). 'Gold Life Saving Medal.'

glycol, *n.* A thick alcohol, $C_2H_4(OH)_2$, used as a coolant in liquid-cooled engines.

GM (*auth abbr*). 'Guided missile.'

G-M counter. A Geiger-Mueller counter.

GMST (*auth abbr*). 'General Military Subjects Test.'

GMT (*auth abbr*). 'Greenwich mean time.'

gnd (*auth abbr*). 'Ground.'

gnomonic projection. A map projection in which the image is presumed to be projected from the center of the earth to a plane tangent to any selected point on the earth's surface.

Straight lines on a gnomonic projection represent great circle paths. Distortion increases progressively away from the point of tangency.

Gnomonic Tracking Chart. Any of several aeronautical charts of gnomonic projection, used primarily for determining great circle courses, and for tracking aircraft by electronic devices.

The scales of this chart are usually 1:4,000,000, but also 1:1,000,000, 1:5,000,000, 1:5,300,000, 1:7,000,000, 1:10,500,000, 1:22,000,000, 1:47,000,000, and 1:94,000,000.

G-NP (*abbr*). 'Gas (chemical agent) nonpersistent.'

gnr (*auth abbr*). 'Gunner' or 'gunnery.'

GO (*auth abbr*). 'General orders' or 'general order.'

go, *v. intr.* **1.** *To go around*, to continue on in the traffic pattern without, or instead of, landing. **2.** *To go down*, to crash. Said of persons and airplanes. **3.** *To go to town*, to do a specially good job. *Slang.* **4.** *To go ape, to go haywire, to go off one's rocker*, to react irrationally. *Slang.*

go-around, *n.* An instance of going around a traffic pattern. Attrib., as in *go-around procedure.*

GOC (*abbr*). **1.** 'Ground Observer Corps.' **2.** 'General Officer Commanding.'

Godman Air Force Base. An AF base at Louisville, Kentucky, originally known as Fort Knox Army Air Field, renamed for Lieutenant Kirkwood Godman, killed in 1918.

go-getter, *n.* A control mechanism for automatic guidance of a rocket to its target.

go juice. Jet fuel. *Slang.*

gold bars. A second lieutenant's insignia.

gold-brick, *v. intr.* To malinger; to loaf. *Slang.*

gold leaves. The gold-colored insignia of a major or of a lieutenant commander in the Navy.

gold wings. The gold-colored wings worn by a Naval officer with an aeronautical rating.

Golf (*code*). An authorized word for the letter 'G.' See **Alfa** (*code*).

golf ball. A tracer bullet flaming in the air. *Slang.*

gondola, *n.* **1.** A car or cabin suspended from an airship. **2.** Loosely applied to a bulging part on the underside of certain airplanes, as the gunner's compartment on a Heinkel 111.

goniometer, *n.* A device for shifting the directional characteristics of an antenna of a radio range system without moving the antenna.

go-no-go gauge. A key-like piece of metal used for measuring clearances between parts.

Headspace gauges or feeler gauges are often referred to as go-no-go gauges.

Good Conduct Medal. (GCM) A service award granted to enlisted men in recognition of exemplary behavior; the medal worn in recognition of this award.

Goodfellow Air Force Base. An AF base at San Angelo, Texas, named for Lieutenant John J. Goodfellow, Jr., killed in fighter combat, France, 1918.

good landing. Any landing the pilot can walk away from. *Jocular.*

good show. Any performance or operation considered to have been well done. *Colloq.*

goof-off, *n.* A person who manages to avoid work or unpleasant duty. Hence, **goof-off,** *v.*

Gook, *n.* A Korean, esp. of North Korea. *Slang.*

This term was used in the Korean War opprobriously. Cf. **ROK** (*auth abbr*).

Gooney Bird. A popular name for the C-47.

goop bomb. A special kind of incendiary bomb. *Slang.*

Goose Air Base. An air base at Goose Bay, Labrador, named for the area.

gore, *n. Specif.* A triangular piece of cloth used in the making of a parachute.

go-round, *n.* A go-around.

gosport, *n.* A flexible tube used for oral communication between two people in an airplane, esp. the one-way speaking tube between an instructor and student.

Gotha, *n.* A WW I twin-engined, biplane bomber developed by the Germans.

gov (*auth abbr*). 'Governor.'

government, *n.* (govt) *Specif.* Often *capitalized.* The government of the United States.

Used attrib., as in *government contract, government expense, government service,* etc. In certain combinations, as in *government conveyance, government mess,* and *government quarters,* the term carries the meaning 'furnished by the government, or by courtesy of the government, with no compensation, refund, or allowance due the user.'

government-furnished equipment. Equipment furnished a contractor by the government.

governor, *n.* A device on a propeller, motor, or the like for controlling the speed of rotation; a regulating device.

govt (*auth abbr*). 'Government.'

GP (*abbr*). **1.** *auth.* 'General purpose.' **2.** 'Geographic position.'

'GP' in sense 1 is often used for 'general-purpose bomb.'

G-P (*abbr*). 'Gas (chemical agent) persistent.'

gp (*auth abbr*). 'Group.'

GP bomb. A general-purpose bomb.

GPF (*abbr*). 'Gasproof.'

GPH (*auth abbr*). 'Gallons per hour.'

GPI (*abbr*). 'Ground position indicator.'

GPLD (*auth abbr*). 'Government property lost or damaged.'

GPM (*auth abbr*). 'Gallons per minute.'

GPO (*auth abbr*). 'Government Printing Office.'

GPS (*auth abbr*). 'Gallons per second.'

GR (*abbr*). **1.** *auth.* 'Gunnery range.' **2.** 'Graves registration.' See **GrReg** (*auth abbr*). **3.** *auth.* 'General Reserve.'

G.R. (*abbr*). 'General reconnaissance.' *British.*

gr (*auth abbr*). 'Grade.'

GraBAdHarv (*auth abbr*). 'The Graduate School of Business Administration, Harvard University, Boston, Massachusetts.'

grad (*auth abbr*). 'Graduate.'

grade, *n.* (gr) Any of the several categories in which persons are placed according to degrees of formal authority or responsibility, as the grades of E-5 (staff sergeant), O-3 (captain), O-6 (colonel), GS-11, etc. See **pay grade.**

A person has a rank; he is in a grade. See **rank,** *n.*

graded position. A Civil Service position analyzed and given a specific grade.

grade spread. The spread between the lowest and the highest grade in an organization.

gradient force. *Meteorology.* The force of gravity exerted down a slope of a constant pressure surface, or the force on a constant altitude surface resulting from differences in atmospheric pressure.

gradient wind. A wind that blows parallel to curved isobars in a field of unchanging pressure.

This wind does not blow at the earth's surface, because of friction. It is realized at 1,500 feet, and occurs when the centrifugal, Coriolis, and pressure-gradient forces are in balance.

graduate, *v.* (grad) **1.** *intr.* Of a person: To complete a training or school course. **2.** *tr.* To credit a *trainee, cadet,* or the like with the completion of a course.

Graf Zeppelin. 1. A rigid airship built by the Germans, commissioned in 1928. Also known as the L.Z. 127. **2.** A sister ship of the Hindenburg, commissioned in 1938, but abandoned almost immediately when helium was not obtainable for use in it. Also known as the 'L.Z. 130.'

The earlier Graf Zeppelin displaced 3,708,600 cubic feet. It had 9 years of service, carried more than 17,500 passengers, crossed the Atlantic 139 times, and went around the world in 20 days 4 hours elapsed time, with only 3 intermediate stops at Tokyo, Los Angeles, and Lakehurst.

grain, *n. Rocketry.* A single piece of powder charge regardless of size or shape used in a rocket.

A grain is often very long (40 or 50 inches) and shaped to fit the requirements of the rocket. Hence, the terms *tubular grain, cruciform grain, triform grain,* etc.

Grandview Air Force Base. An AF base near Grandview, Missouri (16 miles south of Kansas City), formerly called Grandview Airport.

grant aid. Aid furnished a country under provisions of the Mutual Security Program.

granular ice. Ice formed when droplets freeze without completely breaking into a film of water.

grass, *n.* Random interference on a radarscope due primarily to circuit noises, such as thermal agitation.

grass cutter. An early single-place airplane provided with a throttle control that kept it from rising off the ground, used by a student to familiarize himself with the controls. Applied esp. to a Curtiss-built biplane used in 1911.

In the early flying schools, when students learned to fly single-place airplanes without space for an instructor to ride with them, it was an accepted procedure for the students to familiarize themselves with the controls by operating an airplane only on the ground. See **taxi,** *n.,* note.

grass cutting. Flying just above the ground and following the contours of the earth. Sometimes called 'hedge hopping.' *Slang.*

grasshopper, *n.* **1.** Any small, light, cabin monoplane used for observation, liaison, or training, esp. any cub-type airplane. *Slang.* See **cub,** *n.* **2.** *Capitalized.* A popular name for the L-2, L-3, or L-4.

graves registration. (GrReg) An AF activity or

organization that supervises and carries out all matters pertaining to the evacuation, identification, and burial of those deceased persons connected with the military who cannot be returned to a final place of interment in accordance with the wishes of the next of kin, and to the collection and processing of their effects.

The Army has a similar activity.

gravity, *n.* **1.** The force that makes a body, if free to move, accelerate toward the center of the earth. **2.** A G-force due to acceleration or deceleration.

In sense 1, gravity is one of the forces acting upon an aircraft in flight. See **G,** *n.*, and **air force,** sense 5.

gravity acceleration. Acceleration due to gravity, measured at 32.16 feet per second per second.

gravity deflection. The deflection of a bullet or other missile that results from the force of gravity.

gravity drop. Vertical drop due to gravity. See **vertical drop.**

gray, *v. To gray out,* to suffer a grayout.

Gray Air Force Base. An AF base at Killeen, Texas, named for Captain Robert M. Gray, pilot on first Tokyo bombing mission of WW II, killed in India, 1942.

grayout, *n.* Also **gray-out.** A temporary or transient condition of dim or hazy vision due to a deficiency in oxygen.

This phenomenon may occur when the body is subjected to headward acceleration. See **blackout,** *n.*

gray propaganda. Propaganda, the source of which is not identified.

grd (*auth abbr*). 'Guard.'

grdhse (*auth abbr*). 'Guardhouse.'

grease, *v. To grease it in,* to make an exceptionally smooth landing in an airplane. *Slang.*

grease monkey. A mechanic or other member of a ground crew. *Slang.*

great circle. A circle on the surface of a sphere, the plane of which passes through the center of the sphere and divides it into two equal parts; *specif.*, such a circle on the surface of the earth.

great circle course. A course plotted along a great circle.

A great circle course, unlike a rhumb-line course, is the shortest course between two points on the surface of the earth. Cf. **geodesic line.**

great circle distance. A distance measured on a great circle.

great circle route. A route following a great circle.

Greater Pittsburg Airport. A municipal airport near Pittsburg, Pennsylvania, at which certain accommodations are provided for USAF units.

green card. Short for 'green instrument card.' *Popular.*

greenhouse, *n.* A glassed-in inclosure, as a bombardier's compartment. *Slang.*

green instrument card. A green instrument certificate. *Popular.*

green instrument certificate. An instrument certificate (AF Form 8A) issued on a green card, certifying that its holder has had at least five years' service as a rated heavier-than-air aircraft pilot in the military service, has a minimum of 2,000 hours of pilot time, and has met certain requirements in regard to instrument flight procedures, ground-controlled approaches, etc., and is qualified to clear himself for takeoff under VFR and IFR conditions.

This certificate is higher than the white instrument certificate. Its holder must have had 100 hours of instrument time, flown as first pilot, instructor pilot, or scheduled airline first pilot, of which 50 hours must have been flown under weather instrument conditions. Of the 100 hours, 15 must have been flown in the preceding six months, and 10 under weather instrument conditions.

green instrument rating card. 1. An instrument card below the master green instrument rating card issued by the RAF. **2.** The highest instrument rating card of the RCAF.

green light. *Specif.* **1.** A green navigation light. **2.** A green-colored light used in a control tower to give permission to a pilot to land. Used esp. when the pilot's radio is not receiving. **3.** Hence, *to get a green light,* to obtain approval.

In sense 1, see **navigation light,** note.

Greenville Air Force Base. An AF base at Greenville, Mississippi, named for the city.

Greenwich apparent time. Apparent time measured with reference to the Greenwich meridian.

Greenwich civil time. Greenwich mean time. *Obs.* See **Greenwich mean time.**

Greenwich hour angle. The angle of a celestial body from the Greenwich meridian projected on the celestial sphere, measured westward from the projected Greenwich meridian to the hour circle passing through the body, from 0 through 360 degrees.

Greenwich mean time. (GMT, or Z in communications) The mean solar time at the Greenwich meridian.

Prior to 1 Jan 1925, the astronomical day beginning at Greenwich mean noon was used in navigational almanacs, and mean solar time reckoned from this origin was called 'Greenwich mean time.' Since 1925 time has been reckoned from midnight instead of noon, in order to bring navigational and civil practice into conformity with each other. The US adopted 'Greenwich civil time' (GCT) for this new reckoning while the United Kingdom retained the old name (GMT) with the new meaning. With the joint publication of the Air Almanac by the US and the United Kingdom, it became necessary to standardize the terminology. Effective 1 Jan 1953, GMT is the accepted term in the US and the UK. See **Zebra time.**

Greenwich meridian. The meridian on which the Royal Observatory at Greenwich, England, is

located; the zero meridian from which longitude is measured. See **prime meridian.**

Greenwich sidereal time. Sidereal time measured with reference to the Greenwich meridian.

Gremlin, *n.* An imaginary elf blamed for all kinds of aircraft troubles, particularly for troubles on single-pilot airplanes. *Popular.*

grenade, *n.* **1.** A small bomb containing an explosive or a chemical agent, thrown by hand or projected by a rifle, carbine, or special launcher. **2.** Something having the appearance of a grenade, as a training grenade.

Grenades are variously specified, e.g., the chemical grenades, fragmentation grenades, hand grenades, offensive grenades, practice grenades, and rifle grenades.

Grenier Air Force Base. An AF base at Manchester, New Hampshire, named for Lieutenant Jean D. Grenier, killed in 1934.

Greve Trophy Race. An air race once held annually (1934 to 1939) as a part of the National Air Races for a trophy donated by Louis W. Greve.

grid, *n.* **1. a.** The pattern of intersecting lines set up in accordance with a grid system, and superimposed upon charts, aerial photographs, or the like, to permit ready location of points on the ground. **b.** A grid line. **2.** Any systematic network, as of power lines, telephone lines, etc. **3.** A part in the rear section of a rocket motor, which supports the powder grain but allows enough clearance for the propellent gases to escape to the nozzle. **4.** *Electronics.* An electrode in a vacuum tube for controlling the flow of electrons; *specif.*, a control grid (which see).

See also **screen grid, suppressor grid.**

grid bearing. A bearing in which the reference line is grid north.

grid bias. The direct-current voltage applied between the control grid and the cathode of a vacuum tube. Often called 'bias.'

grid coordinate. A grid line used as a coordinate.

grid course. A course in which the direction of the reference line is grid north.

grid declination. The difference between true north and grid north, usually shown graphically on maps in marginal information.

Grid declination is measured by an angle from true north, and designated 'east' or 'west' as the case may be.

grid heading. A heading by reference to grid north.

grid line. Any one of the intersecting lines shown as coordinates on a grid.

Grid lines may be coincident with given geographical coordinates, as they were on the Air Defense Grid of WW II, but they are sometimes drawn with the east-west grid lines at right angles with north-south grid lines, so that the vertical grid lines are not coincident with meridians except at the line of origin. See **grid declination.**

grid map. A map with a superimposed grid.

grid navigation. Navigation carried on with the aid of special grid charts which are practically constant in scale.

Grid navigation is used primarily in the arctic.

grid north. The direction indicated by the arbitrary vertical line of a grid, usually found on military maps or charts. See **magnetic north, true north.**

grid quadrangle. The quadrangle, usually shaped like a rectangle or trapezoid, formed by the intersection of four grid lines.

grid system. 1. A system employed in establishing grid lines on a map, chart, aerial photograph, or the like. See also **military grid system. 2.** A system or network of telephone lines, power lines, or the like. Sometimes called a 'grid.'

A grid system (sense 1) establishes the rules for drawing or using a grid, i.e., determining the point of origin for the grid lines, the manner for drawing the grid lines, the interval between the grid lines, the shape of the grid quadrangle, the lettering and the numbering.

Griffiss Air Force Base. An AF base at Rome, New York, formerly known as Rome Army Air Field, renamed for Lieutenant Colonel Townsend E. Griffiss, killed on a flight from Russia to England, 1942.

grivation, *n.* [From *grid variation.*] The variation between grid north and magnetic north, usually expressed as an angle.

grommet, *n. Specif.* A ring-like device of rubber, roll cloth, or metal used inside the top of the service cap to keep it tightly stretched.

groove, *n. Specif.* One of the grooves in a rifled gun barrel. See **rifling,** *n.*

gross bombing error. Also **gross error. 1.** A bombing error that results from factors other than those of bomb-aiming or of normal ballistic differences in the bombs, such as malfunctioning equipment or misidentification of a target. **2.** In the Strategic Air Command, a bombing error beyond an arbitrarily determined distance from the desired point of impact.

See **boundary for gross error, normal aiming error.**

gross load. The load on an airplane, measured by the weight of the airplane itself together with the weight of that which it carries.

gross thrust. A factor of thrust used in calculating the net thrust of a jet engine, and equal to the entire thrust output of the engine.

Quantities required to evaluate gross thrust are the total pressure of the gas, the stagnation temperature of the gas, the static pressure of the gas, and the area of the exhaust nozzle.

gross weight. 1. The total weight of an airplane if fully loaded. **2.** The actual weight of an airplane whether loaded or not, consisting of its own weight, plus that of its crew, fuel, cargo, passengers, etc.

grosswetterlage, *n.* [German.] The extended

range weather situation as opposed to a short-range forecast.

Used extensively since WW II in connection with long-range forecasts, varying from ten days to a season or even longer.

ground, *n.* (gnd) **1.** The earth's surface, often restricted to the land surfaces: See note. **2.** The soil and rocks that constitute the land and underlie the sea and other water areas. **3. a.** The earth, or a substance serving for it, used to complete an electrical circuit. **b.** A metallic connection used to ground a circuit. **4.** Attrib. in sense 1: See note.

In sense 1, 'ground' is extremely flexible, esp. as an attributive. At least four subsenses are readily isolated: **a.** The surface of the land itself, or the surface of something in contact with the land, such as a wooden platform or a surfaced runway, as in 'you can taxi this airplane on the ground or on water.' **b.** The earth's physical surface, either land or water, or the airspace immediately touching it, having attributes of visibility, temperature, distance, etc., as in *ground coordinate, ground isotherm, ground speed, ground visibility, ground zero,* etc., or as in *ground-to-air* or *ground-to-ground.* **c.** The domain where the nonflying operations of an air force are carried out, as in *ground collision, ground discipline, ground functional test, ground installation, ground maintenance, ground personnel, ground radar, ground run-up, ground training,* etc. **d.** The earth's land areas providing a domain for army operations and a place of military targets and objectives, as in *ground campaign, ground force, ground strafing, ground troops,* etc.

ground, *v.* (gnd) *tr.* **1.** To order that an *airplane* or other *equipment* not be flown; to restrict an *aircrewman* to the ground. **2.** To connect a *current, wire,* or a piece of electrical *equipment* with the ground.

ground abort. An instance in which an airplane, assigned and scheduled for an aerial mission or sortie, fails to take off esp. because of mechanical failure; an airplane that so fails to take off. Cf. **air abort.**

ground-abort, *v. intr.* To abort before being airborne.

ground-air, *a.* **1.** Of missiles, signals, etc.: From ground to the air. **2.** Of a military force: Made up of army, or marine, and air force units. **3.** Of actions: Conducted by both ground and air units.

ground alert. 1. A state of readiness marked by airplanes and aircrews being ready on the ground for takeoff upon a mission order. **2.** The aircraft engaged in this alert.

Used in combination, as in *ground alert aircraft, ground alert status.* Cf. **air alert.**

ground angle. The angle between the wing chord of an airplane and the horizontal when the airplane is at rest on the ground. Cf. **landing angle.**

ground attack. 1. An attack by ground forces upon a ground target. **2.** An air attack upon a ground target.

Attrib. in sense 2, as in *ground-attack aircraft, ground-attack weapon.*

ground-based, *a.* **1.** Of aircraft: Land-based (which see). **2.** Of missile-guiding equipment, radar sets, etc.: Located upon land.

ground-check, *v. tr.* To check or inspect an *airplane* or piece of *equipment* on the ground before it becomes airborne. Also **ground-check,** *n.*

ground clutter. Ground return.

ground contact. Visual contact with the ground. Cf. **contact,** *n.,* sense 4.

ground control. 1. The guidance given an aircraft or missile in flight by a person on the ground. **2.** The electronic equipment or network used in exercising this control. **3.** In aerial mapping, the establishment of points on the ground for a controlled mosaic. See **controlled mosaic.**

Attrib. in sense 1, as in *ground-control equipment, ground-control officer;* in sense 2, as in *ground-control fuze.*

ground-control, *v. tr.* To guide or direct an *aircraft* or *missile* by control exercised from the ground.

ground-control approach. (GCA) Variant of 'ground-controlled approach.'

ground-control interception. (GCI) Variant of 'ground-controlled interception.'

ground-control intercept station. A radar-radio facility used in air defense for control of antiaircraft fire and interceptors. See **air defense direction center.**

ground-controlled approach. (GCA) **1.** An instrument approach for landing in response to radio directions from a controller observing the aircraft through a radar set. **2.** The equipment used to control an aircraft in this approach.

See **airport surveillance radar** and cf. **instrument landing system, instrument low-approach system.**

ground-controlled interception. (GCI) Interception in which the fighter pilot is directed to his target from a ground-control intercept station. Attrib. with *mission.*

ground controller. An aircraft controller stationed on the ground.

This term is a generic term, applied to the controller in GCA, GCI, etc.

ground-control station. Short for 'ground-control intercept station.'

ground crew. 1. A detail or team of engine mechanics and other technicians who maintain, service, or handle aircraft on the ground. **2.** A landing crew.

ground cushion. A cushion of air associated with ground effect.

ground distance. 1. The distance between two points on the earth's surface measured on a great circle connecting the two points projected to mean sea level. **2.** The shortest distance between two points on the ground, measured on the surface.

ground echelon. That part of a flying organiza-

tion or unit having primary duty on the ground. See **air echelon,** sense 2, and cf. **surface echelon,** sense 1.

grounded, *a.* Of aircraft, equipment, or persons: Ordered not to be flown or not to fly.

ground effect. The cushion or pushing effect of air compressed against the ground by a helicopter or airplane in hovering or flying close to the ground.

ground fire. Fire, such as antiaircraft fire, that emanates from the ground.

ground flutter. Ground return.

ground fog. A shallow fog that clings to the ground; *specif.*, a fog not exceeding the height of a man.

ground force. 1. A force made up of army units as distinguished from a force made up of air or naval units. **2.** A force belonging to the ground echelon of an air organization.

ground-guided missile. A missile guided by radio control from the ground.

ground handling. The handling of an airplane, atomic bomb, or any other object, while moving it on the ground; *specif.*, the action of moving an aircraft around on the ground, either by taxiing, or by use of manual labor, tugs, or tractors.

Attrib., as in *ground-handling characteristic, ground-handling equipment,* etc.

ground influence mine. An aerial mine designed to rest on the ground under water, and detonated by magnetic or other influence.

ground interrogator. An interrogator (which see) located upon the ground.

ground lock. A lock for the controls of an aircraft when it is parked.

ground loop. A violent turn of an airplane while taxiing, or during a landing or takeoff run.

A ground loop may result from loss of control, or it may result from an intention to avoid an obstacle.

ground-loop, *v.* **1.** *tr.* To handle an *airplane* in such a manner that a ground loop results. **2.** *intr.* Of an airplane or persons in it: To do a ground loop.

ground man. *Specif.* A member of the ground echelon.

ground observer. A person on the ground who observes the movements of aircraft in the air. See **aircraft spotter.**

Ground Observer Corps. A volunteer civilian organization which reports the movement of airborne aircraft to designated AF agencies as an aid in the detection and identification of aircraft within the air defense system. See **filter center.**

ground officer. In the AF, an officer whose regular duties are performed on the ground, esp. an officer without an aeronautical rating.

ground personnel. Nonflying AF personnel.

ground photograph. A photograph taken at or near ground level.

groundplot, *n.* In air navigation, the procedure of establishing a position by measuring the distance along an aircraft's track from a previous known position. Cf. **air plot,** sense 1.

In groundplot, the distance is found by multiplying the groundspeed by time on course.

ground position. The position of an airborne aircraft vertically below it on the ground.

ground position indicator. A special computer continuously indicating the actual position of the aircraft with reference to some fixed point on the ground.

Radar measurements, compass, airspeed indicator, and altimeter are used in making the computations.

ground return. A return on a radar receiver caused by radar pulses reflected from the ground. Also called 'ground clutter,' 'ground flutter,' or 'land return.'

ground roll. 1. A landing roll. **2.** Sometimes loosely used for 'ground run.' **3.** A minor tremor of the surface of the earth due to pressure on the ground directly under the air burst of an atomic bomb.

ground run. A takeoff run or a taxi run.

ground safety. 1. An AF safety program designed to prevent all accidental injury to personnel and damage to materiel incident to AF ground operations. **2.** Sometimes *capitalized.* An agency or activity concerned with this program.

Also used in combinations, as in *ground safety director, ground safety engineer, ground safety program.* See **flying safety.**

ground school. *Specif.* A school in which a student undergoing instruction for an aeronautical rating receives training in the theoretical aspects of flying and in related subjects dealing with his occupation.

Also used in combinations, as *ground-school instructor.*

groundspeed, *n.* Also **ground speed.** The speed of an aircraft, esp. an airborne aircraft, measured by the distance it travels over the ground either by reference to check points on the ground, or by taking wind velocity into account. Hence, *groundspeed indicator.*

Groundspeed differs from airspeed in proportion to favorable or unfavorable winds. In a headwind, for example, groundspeed is less than airspeed, as in a headwind of 15 knots, an airplane with a true airspeed of 200 knots would have a groundspeed of 185 knots.

ground-strafe, *v. tr.* To strafe *troops* or other *targets* on the ground. Hence, **ground-strafing,** *n.*

ground support. 1. Either close air support or general air support. **2.** The maintenance and care of flying equipment by the ground echelon.

ground-support equipment. The equipment required to maintain and care for aircraft while on the ground.

Ground-support equipment includes the vehicles and

equipment used to refuel, service and tow; to provide auxiliary electric power; and to repair, overhaul, assemble, disassemble, test, inspect, handle, or otherwise maintain an airplane.

groundswinging, *n.* The action of swinging an airplane to different compass directions while taxiing the airplane on the ground, esp. to carry out compass swinging.

ground time. The length of time a transport aircraft remains on the ground awaiting takeoff.

This time covers periods taken in unloading, loading, refueling, taxiing, resting the crew, and obtaining unscheduled maintenance.

ground trainer. Any of several specially designed or modified apparatuses or items of equipment in which a person on the ground may receive training in flying, gunnery, bombing, or other activities carried out in the air, under simulated conditions of flight. See **bombing trainer, ejection-seat trainer, Link trainer.**

ground troops. Troops employed in ground warfare, such as infantry, artillery, etc., as distinguished from personnel of the air or naval forces.

ground vector. In air navigation, a vector representing the track and groundspeed of an aircraft, and forming a part of the wind triangle (which see).

ground visibility. Visibility on the ground as reported by an accredited weather observer. See **visibility,** *n.*, sense 2.

ground wave. A radio wave that travels along, or near, the ground. Distinguished from a sky wave.

A ground wave is made up of two component waves: a space wave and a surface wave. See separate entries.

ground zero. (GZ) That point on the earth's surface (land or sea) vertically below or above the point of detonation of an atomic bomb.

group, *n.* (gp) **1. a.** An AF unit immediately subordinate to a wing: See note. **b.** *Specif.* as in the expression '70-group air force,' a primary-mission or combat group. **c.** In WW II, a combat, transport, or service unit subordinate, in most instances, to a command. **2.** An RAF unit, the first echelon below a command, roughly equivalent to a numbered air force. **3.** An Army or Marine Corps unit composed of two or more battalions. **4.** A formation of aircraft, usually 18 or more, esp. as used in WW II in the Eighth Air Force. **5.** *Cryptography.* A unit consisting of several letters or other symbols. **6.** Short for 'bullet group.' **7.** Generically, any two or more individuals that make up a unit or entity.

In sense 1, 'group' has successively been applied to different concepts, and may be expected to change in meaning as new concepts develop. In **a,** the group constitutes any one of the usual four major subdivisions of a standard wing, often identified by a designating term, as *air base group, combat group, maintenance group, medical group, primary-mission group,* or *supporting group.* In **b,** the term was reasonably specific before the adoption of the wing-base organization, but since that adoption, the term is essentially a misnomer for 'wing.' In **c,** the WW II group often served without reference to a wing organization, since the wing-base concept is a post-AAF development: See **air depot group, air service group, combat group.**

Attrib. in sense 1, as in *group adjutant, group commander, group headquarters, group supply,* etc.

group award. An award given to more than one person, often to an entire unit.

group captain. A commissioned rank, title, or person in the RAF, equivalent to that of colonel in the USAF.

group slice. A planning factor representing the average group strength of a given number of groups.

For example, the group slice of fifteen groups would be the total number of men in all groups divided by fifteen.

GrReg (*auth abbr*). 'Graves registration.'

GRS (*abbr*). 'Graves registration service.'

Grumman, *n.* [The *Grumman* Aircraft Engineering Corporation.] Used in the names of aircraft, as in *Grumman Wildcat, Grumman TBF, Grumman Cougar, Grumman Albatross,* etc.

Gruppe, *n.* [German.] A large formation of aircraft: See **Schwarm,** *n.*

GS (*abbr*). **1.** *auth.* 'General support.' **2.** *auth.* 'General Staff Officer.' **3.** 'General Schedule,' as used by Civil Service, as in *GS-3, GS-11,* etc.

GSA (*auth abbr*). 'General Services Administration.'

GSAP camera. A gunsight aiming point camera.

GSC (*auth abbr*). 'General Staff Corps.'

G-scan, *n.* **1.** A scan for presentation on a G-scope. **2.** A G-scope. *Popular.*

G-scope, *n.* A modification of the F-scope, in which the bright spot of the signal shows 'wings' as the distance to the target diminishes.

GSD (*auth abbr*). 'General supply depot.'

GSS (*auth abbr*). 'General service school.'

GST (*abbr*). **1.** 'Greenwich sidereal time.' **2.** A Russian abbreviation (meaning unknown in the West) for a Russian version of the PBY Catalina.

G-suit, *n.* A garment for covering parts of the body below the chest, so designed as to exert pressure to prevent or retard the pooling of the blood below the heart during exposure to abnormal G-forces. Also called 'antiblackout suit' and 'anti-G suit.' Cf. **pressure suit.**

This suit contains a number of bladders which inflate automatically when a force twice that of gravity is present.

GSUSA (*abbr*). 'General Staff, US Army.'

G-system, *n.* [From 'grid system.'] A special system for drawing grid lines on aeronautical charts used in polar air navigation, in which the lower branch of the Greenwich meridian is arbitrarily chosen in establishing grid north.

GTA (*auth abbr*). 'Graphic training aid.'

G tolerance. The tolerance which a person has for G-forces.

guard, *n.* (grd) **1.** A person charged with the constant watch and protection of a person, building, gate, piece of equipment, or the like. **2.** A person charged with restraining another person or persons. **3.** *Collective.* A group of guards. **4.** The action or duty of serving as a guard, as in *guard roster, to stand guard,* etc.

guard, *v. tr. Electronics.* To monitor constantly a specific *frequency* or *channel.*

guard ammunition. Ammunition specifically designed for use by guards.

Guard ammunition is usually ball ammunition with a reduced propelling charge.

guardhouse, *n.* (grdhse) A building that accommodates the members of a military guard and provides space for the detention or confinement of military prisoners.

guard of honor. An honor guard.

guerrilla, *n.* Also **guerilla. 1.** A member of a band which conducts hostile activities against an enemy outside the framework of a regularly established military force. **2.** *attrib.* **a.** Conducted by guerrillas, as in *guerrilla operations.* **b.** Patterned after guerrilla warfare, as in *guerrilla air tactics.*

guerrilla warfare. 1. Warfare or hostile activity in which the tactics of guerrillas are employed. **2.** Warfare conducted by guerrillas.

This warfare is characterized by short, sharp engagements, depredations, and surprise attacks, often behind the lines.

guest lecturer. An outside lecturer who has been invited to speak.

Guggenheim Medal. A medal awarded annually for notable achievement in the advancement of aeronautics. In full, 'Daniel Guggenheim Medal.'

The medal was provided for in 1928 by a gift from the Daniel Guggenheim Fund for the Promotion of Aeronautics. The first recipient was Orville Wright in 1930.

guidance, *n.* (gdnce) **1.** The action of pointing out a course to be followed; the action of providing information and advice required by another to do a certain job or to carry out an operation. **2.** The action of guiding a moving object along a course. See **guide,** *v.*, senses 2 and 3.

guidance system. Any system of whatever sort for the guidance (sense 2) of rockets, bombs, or other missiles.

guide, *v. tr.* **1.** To point out a way to a *person* or *group.* See **guidance,** *n.*, sense 1. **2.** To steer a *moving object* by direct mechanical control, as in 'a pilot guides his airplane.' Also *intr.*, as in 'he guided on the lead plane.' **3.** To predetermine or to determine the path of a *moving object* by built-in remote-control, preset, or self-reacting devices: See note.

In sense 3, to guide an object is to direct it through the air by exercise of indirect control, i.e., by preset mechanisms or radio control (as done with certain pilotless aircraft and missiles), or by the use of homing or other self-reacting devices built into the object. The latter devices effect changes in direction in response to environmental conditions, as that of atmospheric pressure or of a radiating surface.

guided, *a.* Of missiles, aircraft, tanks, etc.: Controlled or controllable as to direction by preset mechanisms, radio commands, or built-in self-reacting devices.

Some writers, to avoid the suggestion that a piloted aircraft is not guided, use the term 'self-guided' in the sense above. Others use 'guided' to refer to the control exercised by preset mechanisms or by radio commands, and use 'self-guided' to refer to control exercised by homing or other self-reacting devices. Most writers, however, use the term in broad application as defined. Cf. **self-guided,** *a.*, **unguided,** *a.*

guided aircraft missile. A guided missile launched, or designed for launching, from an aircraft.

guided aircraft rocket. A rocket-powered guided missile designed to be launched from an aircraft in flight.

guided bomb. An aerial bomb guided during its drop either in range or azimuth, or in both.

guided missile. (GM) **1.** A missile (which see) that is directed to its target while in flight or motion, either by a preset or self-reacting device within the missile or by radio command outside the missile. **2.** *Restrictive.* Such a missile without wings to support it. See **ballistic missile, guide,** *v.*, note. **3.** Used in combination, as in *guided-missile control system, guided-missile group, guided-missile launcher,* etc.

Guided missiles may be air-to-air, air-to-surface, air-to-underwater, surface-to-air, surface-to-surface, surface-to-underwater, underwater-to-air, underwater-to-surface, underwater-to-underwater.

This term in sense 1 is sometimes considered synonymous with 'pilotless aircraft' esp. when the missile is supported by wings. The two terms, however, suggest two different points of view, although applied to the same object. To identify the terms is to identify functions, and this cannot logically be done. The same object may be called a 'pilotless aircraft' in contexts where it is clearly being considered as a vehicle, but in another context, where it is being considered as a missile, it should be called a 'guided missile.' Cf. **pilotless aircraft.**

guided-missile control. The guidance or direction exercised over a guided missile during its flight to a target.

See **atmospheric control, command guidance, inertial guidance, nonatmospheric control.**

guided rocket. 1. A guided missile having rocket propulsion. **2.** Short for 'guided aircraft rocket.'

gull wing. An airplane wing with a positive dihedral section near the root, and an outer section either horizontal or with a slightly positive dihedral. Cf. **inverted gull wing.**

gun, *n.* **1.** *General.* A mechanism consisting essentially of a barrel, receiver, and breech mechanism, using controlled explosives to shoot projec-

tiles or signal flares. **2.** *Specif.* A cannon, as distinguished from a small arm. See note and cf. **firearm,** *n.* **3.** *To give it the gun,* to advance the throttle.

In Army usage, 'gun' sometimes implies a cannon of more than twenty-five calibers length, or one with a relatively long barrel and low angle of elevation, and is thus distinguished from a howitzer.

A mortar is usually not considered to be a gun.

gun, *v. tr.* **1.** *To gun an engine,* to advance the throttle; hence to apply full power. *Colloq.* **2.** *intr.* To move fast and in a straight line, as in 'he gunned across the runway.' *Colloq.*

gun (*auth abbr*). 'Gunner' or 'gunnery.' See **gnr** (*auth abbr*), which is preferred.

gun blister. A blisterlike protuberance on an airplane from which a gunner fires his guns.

gun-bomb-rocket sight. A computing sight used in a fighter aircraft in which different data may be set for use in aiming gunfire, bombs, or rockets.

gunbore line. The extended bore axis of a gun.

gun button. A button that is depressed to fire a gun. Usually located on a control stick or some other place readily touched.

gun camera. 1. A camera used in gunnery training that records the image of the target at which it is aimed on a strip of motion-picture film. **2.** A camera synchronized to a gun to record the results of firing.

The film in a gun camera reveals if the camera was correctly sighted on the target. Gun cameras used in flexible gunnery training may have the outward appearance of a machine gun. See **gunsight aiming point camera.**

gun charger. A mechanism on a gun that operates to retract the breech mechanism or bolt to the rear and to insert a charge into the chamber. Often shortened 'charger.'

On a machine gun, the charger retracts the breech mechanism to the rear of the receiver, lining up a round with the barrel and allowing the breech mechanism to move forward to chamber the round.

A gun charger may be operated manually or by other means. See **automatic gun charger, charging cable, pneumatic gun charger.**

gun cluster. A bullet group.

gun-defended area. A restricted area defended by antiaircraft artillery, over which friendly aircraft are permitted to fly only in accordance with certain established procedures.

gun-directing radar. Radar used to direct antiaircraft artillery or similar fire.

gun flash. Muzzle flash.

gung-ho, *interj.* 'Everything is right,' 'we're all set.' *Slang.*

gunk, *n.* A solvent for grease.

gun launcher. A gun adapted to launching guided missiles.

gun laying. The action of aiming a gun.

gun-laying radar. Any radar equipment specifically designed for determining range, azimuth, and elevation of a target for purposes of fire direction.

gun mount. *Specif.* A device for attaching a gun or cannon to an aircraft.

gunner, *n.* (gnr) *Specif.* in the AF: A flexible gunner, a member of certain aircrews.

gunnery, *n.* (gnr) The art or practice of using machine guns or cannon either on the ground or in the air; air gunnery.

Attrib., as in *gunnery instructor, gunnery mission, gunnery officer, gunnery team, gunnery training,* etc.

gunsight, *n.* Also **gun sight.** A device for aiming a gun.

gunsight aiming point camera. A small aerial gun camera using 16 mm motion-picture film used for training in both fixed and flexible gunnery or in fighter combat. Usually called 'GSAP camera.'

gunsight computer. That component of a computing gunsight that calculates for variables in gunnery and computes a prediction angle.

See **director-type computer, disturbed-reticle-type computer.**

Gunter Air Force Base. An AF base at Montgomery, Alabama, named for William A. Gunter, former mayor of Montgomery and ardent exponent of air power, who died in 1940.

gun turret. A turret built into the surface structure of an airplane, esp. a bomber, in which one or more guns are mounted.

gust, *n.* A sudden, brief movement of air at a velocity in excess of the steady movement velocity; sometimes *restrictive,* such a movement in a vertical direction.

gust load. The load, usually expressed in G's, imposed upon an airplane flying straight and level by rising or descending air currents.

gyro, *n.* **1.** Short for 'gyroscope.' Used in numerous combinations, as in *gyrocompass, gyro gunsight, gyro horizon,* and *gyro instrument.* **2.** Also short for 'gyrocompass,' 'gyro horizon,' etc.

gyrocompass, *n.* A directional gyro or a gyrosyn compass.

gyrodyne, *n.* A rotorcraft which gains its support from one or more partially power-driven rotors and its propulsion from a conventional propeller which is independent of the rotor system and provides torque compensation. Cf. **autogiro,** *n.*

gyro flux-gate compass. A compass in which a triangular flux gate, horizontally stabilized by a gyroscope, senses the horizontal component of the earth's magnetic field, and, being fixed with respect to the aircraft, reacts to each change in heading by a change in current, the current being converted through an amplifier into mechanical motion on the dial of a master indicator. Sometimes called 'flux-gate compass.' Cf. **gyrosyn,** *n.*

Because the gyro flux-gate compass is gyro-stabilized, it gives continuous and accurate readings of headings during banks, turns, climbs, dives, and yawing flight. It is, however, subject to nearly the same limitations as those of a magnetic compass when near the magnetic poles.

gyro horizon. **1.** An artificial horizon (sense 1). **2.** A flight indicator.

gyro instrument. Any instrument actuated or controlled by a gyroscope.

gyropilot, *n.* An automatic pilot.

gyroplane, *n.* A rotor plane.

gyroscope, *n.* **1.** A device consisting of a wheel so mounted that its spinning axis is free to rotate about either of two other axes perpendicular to itself and to each other; also the wheel of this device. **2.** By extension, any instrument that acts like a gyroscope. See **vibratory gyroscope.**

The characteristic of a gyroscope to maintain equilibrium makes it a useful component for many aircraft instruments. See **axis of precession.**

gyroscopic, *a.* Of or pertaining to a gyroscope or the action of a gyroscope.

gyroscopic body. A body that by virtue of spinning on an axis tends to keep its spinning axis pointing in the same direction.

gyro sight. A sight which employs a gyroscope.

gyrosyn, *n.* In full, **gyrosyn compass.** A trade name for a compass that consists of a directional gyro synchronized with the horizontal component of the earth's magnetic field by means of a flux gate.

The flux gate detects the direction of the lines of force and transmits the information electrically to a precession device. Repeaters are a part of the gyrosyn or gyrosyn system.

GZ (*auth abbr*). 'Ground zero.'

H

H (*letter*). See **Hotel** (*code*). **1.** A code or symbol designating a kind of electronic navigational and blind-bombing system in which an airborne interrogator is used to measure distances from transmitting beacons at known locations on the surface. Used esp. in certain specific designations, as *Gee-H* or *Micro-H*. **2.** Used in combinations to designate certain radar equipment used in WW II for navigation and blind-bombing, as in H_2S or H_2X. **3.** Used as a symbol meaning 'McDonnell Aircraft Corporation' in the designations of Naval aircraft, as in F_2H. **4.** A code or symbol for 'altitude.'

H (*abbr*). **1.** *auth.* 'Heavy' in combinations only. **2.** *auth.* 'Helicopter' in aircraft designations. See **hel** (*auth abbr*). **3.** 'Hospital version,' in the designations of Naval aircraft so modified. **4.** Not *capitalized*. 'Henry,' a unit used in the measurement of electrical inductance. **5.** 'Hydrogen,' as in H_2O or *H-bomb*. **6.** 'Honors,' as used in the VIP code (which see).

H (*code suffix*). 'Regular Air Force Female Warrant Officer' when used with a service number.

H-5A. A two-seat, Sikorsky helicopter adopted by both the AF and Navy and used for air rescue.
The Navy designation is HO_2S-1.

H-5F. A four-seat, general-utility, Sikorsky helicopter used by both the AF and Navy.
The Navy designation is HO_3S-1.

H-17. A large helicopter powered by jet engines and designed to lift heavy loads, popularly called the 'Flying Crane.'
The H-17 was developed by the Kellett Aircraft Corporation under subcontract to the Hughes Aircraft Co.

H-19. A twelve-place helicopter developed by Sikorsky and used for air rescue and general utility.
The H-19 carries ten passengers or eight litter patients in addition to a crew of two.

H-21. An all-metal helicopter with tandem rotors, developed by Piasecki, used esp. for air rescue.

H-23A. An ambulance helicopter developed by Hiller (UH-12B), providing space for two litters and one pilot.
This helicopter is built so as to be transportable in the C-119, and is provided with amphibious landing gear. See **H-23B** and **HTE-2.**

H-23B. The US Army version of the H-23A, modified with a skid landing gear.

HA (*abbr*). **1.** *auth.* 'High altitude.' **2.** 'Hour angle.' **3.** *auth.* 'Home address.'

HAA (*abbr*). 'Heavy antiaircraft artillery.'

HAB (*abbr*). 'High-altitude bombing.'

hachure, *n.* Any of a number of short lines used esp. on a map or chart for shading and indicating relief on the ground. Hence, **hachuring,** *n.*, the action of drawing hachures, or the hachures drawn.

hack, *v. tr.* To tolerate or put up with *something*. *Slang.*

hack watch. A special kind of wrist watch, used esp. by navigators, so constructed that the works stop when the winding knob is disengaged, allowing accurate setting. *Popular.*
The hack watch can be 'hacked,' or stopped, and set to within a second, i.e., the second hand can be synchronized with the minute hand.

Hadrian, *n.* A popular name for the CG-4.

HAFMed (*auth abbr*). 'Headquarters Allied Forces, Mediterranean.'

Hahn Air Base. An air base at Hahn, Germany, named for the city.

hail, *n.* Pellets or lumps of frozen rain or snow sometimes precipitated during a thunderstorm.

hair hygrograph. An instrument for measuring and recording humidity, using specially-treated hair, esp. human hair, as the sensing and activating element.
The length of the hair varies with humidity.

hair hygrometer. A hygrometer that measures humidity by means of the variations in a specially-treated strand of hair. See prec.

Halberstadt, *n.* A two-place, German biplane of WW I, used as a fighter and observation plane.

halflife, *n.* The length of time required for a radioactive isotope to decay to half its initial radioactive value, i.e., to lose half of the radioactive particles present through disintegration, its atoms being converted into stable atoms.
The halflife of different radioisotopes varies. For example, C^{11} has a halflife of 21 minutes, C^{14} has a halflife of 5,400 years. A substance that has had three halflife periods has one-eighth of its radioactivity remaining.

half-loop, *n.* A flight maneuver in which an airplane makes one half of a complete loop.
The term 'half-loop' is usually applied to one half of an inside loop, begun when the plane is in a normal upright flying position. Such a half-loop results in inverted flight at the finish. Cf. **Immelmann turn.**

half-roll, *n.* A flight performance or maneuver in which the airplane makes one half of a complete roll, i.e., rotates 180° about its longitudinal axis.

A half-roll is begun from any position, but esp. from an upright or inverted position.

half-track, *n.* Also **halftrack.** (htrac) *Specif.* A military automotive vehicle, usually lightly armored, having endless treads on sprockets and bogies in place of the rear wheels.

half-wave rectifier. A circuit, vacuum tube, or other electrical device that uses one alternation of an alternating current to produce a pulsating direct current. Cf. **full-wave rectifier.**

Halifax, *n.* A four-engine British heavy bomber of WW II, developed by Handley Page.

HAM (*auth abbr*). 'Heavy automotive maintenance.'

Hamilcar, *n.* A heavy-transport, British glider of WW II, built by General Aircraft, Ltd.

A powered version of the Hamilcar mounted two engines.

Hamilton Air Force Base. An AF base at San Rafael, California, named for Lieutenant Lloyd A. Hamilton, recipient of the Distinguished Service Cross, killed in fighter combat in France in 1918.

hammerhead stall. A term applied to an airplane maneuver or performance involving a steep climb or zoom almost to the stalling point, then causing the nose to drop sharply with wing over so that the airplane reverses its initial direction of flight. Cf. **renversement,** *n.*, **wingover,** *n.*

ham operator. A licensed amateur radio enthusiast who operates a station as a hobby. Usually called a 'ham.' *Slang.*

Hamp, *n.* An Allied code name for the Japanese Mitsubishi Navy Zero Mark II, a clipped-wing fighter of WW II.

Formerly called 'Hap' and later 'Zeke 32.'

Hampden, *n.* A twin-engine British torpedo bomber of WW II, developed by Handley Page.

ham station. The radio station of a ham operator.

hand, *n. To fly hands off:* See **fly,** *v.*, note.

handbook, *n.* In a general sense, any small book containing specialized information or instructions.

hand brake. A hand-operated lever for applying the wheel brakes on an aircraft.

hand-carry, *v. tr.* To deliver or carry a *letter, document, package,* or the like to the addressee personally or by a special messenger, rather than sending it by a regular delivery service.

hand flag. A signal flag held in the hand.

hand grenade. 1. A grenade designed to be thrown by hand. **2.** *Specif.* A fragmentation grenade for throwing by hand.

handie-talkie, *n.* A miniature two-way radio for short-distance communication, as within an infantry company.

The handie-talkie, such as the SCR-536, is small enough to be held in the hand. Cf. **walkie-talkie,** *n.*

Handley Page. (H.P.) [*Handley Page,* Ltd., a British aircraft manufacturing firm.] Used in the names of airplanes, as in *Handley Page Halifax, Handley Page Hampden,* or *Handley Page Hastings.*

Handley Page 0/400. A large, twin-engine British bomber of WW I, developed by Handley Page.

handling line. A line or cable used to aid in moving an aircraft about.

A handling line is sometimes used with a seaplane for towing it out of the water; with a dirigible for towing and handling it from the ground.

hand pump. Any manually-operated fuel pump, esp. a wobble pump, used either for priming an aircraft engine or as an emergency fuel pump.

H&R (*abbr*). 'Holding and reconsignment.'

hand ratchet. Any hand-operated tool, as a drill or wrench, using a ratchet, which permits its operation either in complete rotations of the tool, or in oscillating or back-and-forth movements.

hand receipt. In supply usage, a form signed by a person acknowledging the receipt of one or more items of supply.

hand reel unit. In communications usage, a reel of wire mounted on a steel bar, carried by two men when laying communication wire in the field.

H&S (*abbr*). 'Headquarters and service.'

hand salute. A salute (which see, sense 2) accomplished in a certain prescribed manner by raising the hand, normally the right hand, to touch the hat or forehead. Usually shortened to 'salute.'

The hand salute is given by an airman to an officer and by a lower-ranking officer to a higher-ranking officer. In each case, the salute is returned. Salutes are also given by all ranks to the flag, the national anthem, a high official, and the like.

handset, *n. Specif.* The ordinary type of telephone set, in which the transmitter and receiver are connected by a piece used as the handle, the whole forming a single unit.

hand weapon. A weapon, such as a pistol, knife, or sword, used by one hand.

Distinguished esp. from a shoulder weapon, in regard to firearms.

hang, *v. To hang on the propeller,* to reach a near-stall position in a steep nose-up attitude in an airplane.

hangar, *n.* **1.** A building, tent, cave, compartment, or other shelter or place where aircraft are housed, worked on, or tested, and often containing associated offices, shops, etc., esp. a typically constructed building with space inside open to the roof, equipped with overhead tracks, hoists, and pulleys. **2.** Such a typical building used as a

laboratory, such as the one at Eglin Air Force Base. See **climatic hangar.**

'Hangar' is a French word, the ultimate origin of which is uncertain. The *O.E.D.* shows its use as early as 1852, but in reference to a place in France that provided shelter for a carriage. Used in reference to a shed for an aircraft, it appears to have been borrowed into English direct from the French about 1902. Wilbur Wright used it in a letter of 18 Oct 1903.

hangar chief. A noncommissioned officer who supervises the activities in a particular hangar, i.e., scheduling and supervising inspection and maintenance of aircraft, and looking after the equipment belonging to the hangar.

hangar deck. A deck in an aircraft carrier, designed as a hangar.

hangar flying. The art or practice of conversing about, criticizing, or rehashing flying experiences. *Slang.*

hangar line. The line formed by a row of hangars along with the areas immediately surrounding. See **flight line.**

hangar pilot. An untruthfully boastful pilot. *Slang.*

hangar queen. A damaged or disabled airplane kept for cannibalization. *Slang.*

hanger, *n. Specif.* Incorrect for 'hangar.'

hangfire, *n.* A brief delay of a round of ammunition in firing after being struck or subjected to other igniting action. Cf. **misfire,** *n.*, sense 1.

hanging start. An act or instance of an aircraft engine or starter sticking or hanging during an attempted start.

happy valley. [Prob. from 'flak happy.'] A region of intense flak concentration; *specif.*, during WW II, the Ruhr valley in Germany. *Slang.*

HAR (*abbr*). 'Honorary Air Reserve.'

har (*auth abbr*). 'Harbor.'

harass, *v. tr.* To annoy and discomfit the *enemy* with repeated small-scale attacks; to raid sporadically enemy *supply lines, sea lanes, installations;* or the like.

harassing gas. In chemical warfare, any gas that forces the enemy to mask and thus harass and retard him in his military operations.

harcft (*auth abbr*). 'Harbor craft.'

hard, *n.* A part of a beach with a specially-prepared hardened surface extending into the water, used for loading and unloading directly into or out of landing vessels.

hard hat. A crash helmet. *Colloq.*

hardstand, *n.* Any paved, compacted, or otherwise specially-prepared surface or area set up either for parking an airplane or ground vehicle, or for storing supplies and equipment; *specif.*, such a place set up for an airplane, normally adjacent to a runway or taxiway.

A hardstand in the specific sense usually accommodates only one airplane, but it may accommodate more.

hardstanding, *n.* The facility provided by hardstands, as in 'the base has hardstanding.'

hard start. An act or instance of starting an airplane's jet engine using an electrical voltage from an external source.

hardware, *n.* **1.** A category sometimes used to designate certain equipment or supplies made entirely or largely of metal and manufactured for hard use in the field. **2.** A point-of-view term for the physical aspect of a thing used, as distinguished from its capability or function.

In sense 1, this term, as used by certain writers, covers not only items bought in a hardware store, such as bolts, nuts, hinges, tools, fittings, and machinery, but also aircraft, trucks, tanks, and engines. The category excludes such items as paper clips, pins, or other office supply items made of metal.

hard X ray. An X ray of high penetrating power.

Hare, *n.* A code name for a general-purpose, single-rotor helicopter designed by Mikhail L. Mil and exhibited in 1951 at the Tushino military airport near Moscow.

Harlingen Air Force Base. An AF base at Harlingen, Texas, named for the city.

harmonic, *n.* A harmonic frequency.

harmonic frequency. *Physics.* A frequency which is an integral multiple of a fundamental frequency. See **fundamental frequency.**

harmonic motion. In helicopter theory and analysis, the periodic motion of rotor blades, occurring at either a single frequency or several harmonic frequencies.

harmonize, *v. tr.* To align the *sights* of a *gun* so that the curving path of the projectile will meet the straight line of sight at the target; to adjust or align the *gunsight, guns, rocket launchers,* or *gun camera* of a fighter so that an accurate aim is obtained at a given range, or so that the guns will produce a desired pattern of fire. Hence, **harmonization,** *n.*

Cf. **boresight,** *v.*, and see **pattern harmonization, point harmonization.**

Harmon Trophy. Any one of several personal trophies given annually for achievement in flying, made from a grant established by Colonel Clifford B. Harmon (1866–1945), pioneer American balloonist and aviator.

Separate trophies are awarded to a man and woman, and separate trophies are awarded for international and national achievement, the several national trophies being given to nationals of different countries. The trophies were first given in 1926, but awards were suspended during WW II, except that after the war, retroactive awards were made. Since 1945, two separate international awards are given, that designated by the Ligue Internationale des Aviateurs, which is presented by the President of the US, and that designated by the Harmon trustees. One of the awards commemorates the Lafayette Escadrille; another award is given to a pilot of a spherical balloon.

harness, *n.* Short for such locutions as 'ignition harness,' 'parachute harness,' or 'safety harness.'

Harvard, *n.* A name given by the British to the AT-6.

Referred to in its various modifications as 'Harvard I,' 'Harvard II,' etc.

HASC (*abbr*). 'Headquarters Air Service Command.' *Hist.*

hash, *n.* A type of clutter appearing in the form of unsynchronized signals on a radar screen. *Popular.*

hash mark. A federal service stripe. *Slang.*

hassle, *n.* An argument, brawl, or fracas. *Slang.*

Hastings, *n.* A post-WW II, four-engine, British military transport and cargo airplane, developed by Handley Page.

hatch, *n.* A ship term sometimes applied to an opening or door in an aircraft, esp. one in the deck of an aircraft or in the top or bottom of the fuselage.

In combination, as in *camera hatch, cargo hatch, escape hatch, forward hatch,* etc.

hat-in-the-ring squadron. A popular name for the famous 94th Pursuit Squadron of WW I, so-called because of its distinctive insignia.

The hat-in-the-ring squadron was the first American pursuit squadron to reach the front. Rickenbacker, Lufbery, and other famous aces of WW I were members of this squadron.

Havoc, *n.* A popular name for the A-20.

Hawk, *n.* A generic name for certain fighter airplanes, now all obsolete for the US services, produced by the Curtiss-Wright Corporation; also used specifically for one or other of these airplanes, esp. for the US Navy's BF_2C-1, a fighter biplane, or the Air Corp's P-6.

Certain other planes in the 'Hawk' series were usually known by such popular names as 'Seahawk,' 'Tomahawk,' 'Kittyhawk,' and 'Mohawk.'

Hawker, *n.* [*Hawker* Aircraft, Ltd., a British aircraft manufacturing firm.] Used in the names of certain British airplanes, as in *Hawker Fury, Hawker Hurricane, Hawker Tempest,* etc.

Hawks Memorial Award. An award established in 1939 in honor of Frank M. Hawks (1897–1938), noted American aviator, and presented annually for outstanding contributions to the development of aviation. In full 'Frank M. Hawks Memorial Award.'

This award is presented annually by the Air Service Post 501, American Legion, New York, of which Hawks was a Past Post Vice Commander.

hazardous duty pay. A species of incentive pay given for any duty considered hazardous, as duty involving parachute jumping or demolition of explosives.

hazard pay. Hazardous duty pay.

haze, *n.* **1.** A concentration of water vapor, lighter than fog or clouds, but thick enough to reduce visibility. **2.** A smoke concentration laid down around or over a friendly force or area sufficiently heavy as to hinder enemy observation from the ground but not so heavy as to impede friendly operations.

HB (*abbr*). 'Heavy bombardment.'

H-bomb, *n.* The hydrogen bomb.

HC (*abbr*). 'High capacity bomb.'

Hc (*code*). In air navigation, a code or symbol for 'computed altitude.'

hcptr (*abbr*). 'Helicopter.'

H.C.U. (*abbr*). 'Heavy conversion unit.' *British.*

HD (*abbr*). **1.** *auth.* 'Honorable discharge.' **2.** *auth.* 'Harbor defense.' **3.** 'Historical Division' in reference to a division of the Research Studies Institute responsible for the USAF historical program, Air Force wide.

HD (*code*). 'Density altitude.' Also **Hd** (*code*).

HDC (*abbr*). 'Harbor defense command.'

hdlg (*auth abbr*). 'Handling.'

hdsp (*auth abbr*). 'Hardship.'

HE (*auth abbr*). 'High explosive.'

Used attrib., as in *HE bomb, HE shell, HE filler,* etc.

He (*abbr*). **1.** 'Heinkel.' **2.** 'Helium.'

he, *pron.* The pronoun usually applied to the enemy, as in 'the enemy struck but his fire was ineffective.'

head, *n.* **1.** The leading end of a formation or column. **2.** That part of a bomb or other missile that carries the explosive or other payload. See **rocket head, warhead,** *n.* **3.** A latrine on a naval vessel.

heading, *n.* **1.** In air navigation, the horizontal direction in which an aircraft is pointed, i.e., the direction of its longitudinal axis, usually expressed as an angle measured clockwise from some reference line, such as true north, to the longitudinal axis; *specif.,* true heading. **2.** In a broader sense, direction.

In sense 1, an aircraft's heading usually does not coincide with its track because of drift or yaw. 'Heading,' in this sense, is often qualified with a word designating the reference line from which it is measured, as in 'compass heading,' 'magnetic heading,' or 'true heading.' See separate entries. The unqualified word 'heading' is somewhat ambiguous, but usually means true heading.

head-on, *a.* Frontal. Also used adverbially, as in 'they met head-on.'

head-on wind. A head wind blowing directly against the front or head of a given aircraft, opposed to its direction of flight.

headphone, *n.* An apparatus consisting of one or two earphones attached to a band or harness for holding them over the ears. Cf. **headset,** *n.*

headquarters, *n.* (hq) Construed either as a *sing.* or *pl.* **1.** The command echelon of a unit or other organization, consisting of a commander and his staff. **2.** When used in such designations as 'Headquarters Air University,' or 'Headquarters Tenth Air Force,' a unit made up of the commander and

his staff, together with the administrative and service personnel, both officer and enlisted, who provide essential services for the commander and his staff in the operation of the command. The commander of this unit is also the commander of the overall command, as the commander of Headquarters Air Defense Command is also the commander of the Air Defense Command. **3.** The geographical center of authority of any organization, i.e., the building, base, or other place where the commander and his staff are located.

As used in sense 2, the word is joined with the designating second element without a comma intervening. In this sense, the headquarters is a manning unit. See **unit,** *n.*, sense 2.

As used in the phrase 'Headquarters and Headquarters Squadron' (now historical), the first 'Headquarters' referred to the commander and his staff, the second 'Headquarters' designated the unit to which headquarters and certain other personnel were assigned for administrative purposes. See **headquarters squadron section.**

headquarters commandant. In the headquarters of certain air commands, a staff officer with such assigned duties as the internal administration of the headquarters, the maintenance and security of the buildings and grounds of the headquarters, or other special headquarters duties as required.

Headquarters Command, USAF. A major air command in the USAF, established primarily to serve the area of Washington, D.C., and provide services for Headquarters USAF.

The functions of Headquarters Command, USAF, are to provide aircraft for, and supervise the proficiency and administrative flying of, AF personnel in the Washington area, to provide administrative and logistic support for Headquarters USAF and certain other organizations within the Washington area, to participate in domestic emergencies, and to perform certain other duties designated by the Chief of Staff, USAF.

headquarters squadron. A term of convenience always used in conjunction with the word 'section,' identifying the headquarters unit as defined under **headquarters,** *n.*, sense 2.

headquarters squadron section. In certain large commands, an administrative staff section, with the characteristics of a unit, made up of certain headquarters personnel and certain other personnel with duty assignments in activities outside the environs of headquarters, and functioning as an administrative unit in maintaining personnel records, preparing morning reports, conducting courts-martial, etc. The officer in charge of this section is a personal staff officer of the commander.

This section is called a 'section' because it is considered a part of the headquarters unit (see **headquarters,** *n.*, sense 2), identified for convenience as a 'headquarters squadron.' Its purpose is to relieve the commander of certain court-martial and other administrative duties.

Headquarters United States Air Force. 1. The command echelon of the USAF, which, under the direction of the Secretary of the Air Force, formulates policies for the AF, plans and initiates AF actions, and supervises the implementation of such policies and actions throughout the operational commands. Usually called 'Headquarters USAF.' **2.** The military unit made up of the personnel of this command echelon.

Hq USAF is a component of the Department of the Air Force at the seat of the government, and is headed by the Chief of Staff. It consists of those offices and boards together with their personnel, both military and civilian, which constitute the staff organization that advises the Chief of Staff and assists him in monitoring or supervising the AF. When this staff organization, or a part thereof, serves in the capacity of adviser to the Secretary of the AF, or to other authorized officials, it is sometimes called the 'Air Staff'; when serving with the Chief of Staff as head of the AF, it is called 'Headquarters USAF.' See **air staff,** sense 1a, **Chief of Staff, United States Air Force.**

head resistance. The resistance of the air against the front of an object, such as an airplane, moving forward through the air.

headset, *n.* An apparatus or helmet holding a pair of earphones fitting over the ears.

headspace, *n. Firearms.* The distance between the face of the locked bolt or breechblock of a gun and some specified point in the chamber.

With guns designed for rimless, bottlenecked cartridges, headspace is the space between the bolt face and a specified point on the shoulder of the chamber; with guns using rimmed cartridges, the space between the bolt face and the ridge or abutment in the chamber against which the rim rests; and with guns using rimless straight-case cartridges, the space between the bolt face and the ridge or point in the chamber where the mouth of the cartridge case rests.

headward acceleration. Acceleration of the body in the direction of the head.

It is suggested that this term be used in place of 'positive acceleration.' Headward acceleration tends to cause the blood to rush from the head.

headwind, *n.* Also **head wind.** A wind blowing from such direction that its principal effect is to retard the groundspeed of a given aircraft. See **head-on wind.**

Roughly, any wind coming in toward the nose from a direction within 45° either side of the longitudinal axis may be considered a headwind. Cf. **tailwind,** *n.*

HEAP (*abbr*). 'High explosive armor-piercing.'

heartland, *n.* **1.** The area of a country vital to its war-making ability; the interior of a country, as distinguished from its periphery. **2.** *Geopolitics.* A theoretical area on the Eurasian continent, conceived by the geographer, H. J. Mackinder (1861–1947), and others to be an area which, if controlled by a single power, would give that power strategic advantage for dominating the world. Sometimes called the 'Pivot area.'

In sense 2 the area cannot be explicitly defined, for with different writers, and even with the same writer, it means different areas. The area has sometimes been limited roughly to Russia west of the Lena, sometimes extended to include Scandinavia, sometimes extended to include Turkey.

HEAT (*abbr*). 'High-explosive antitank.'

heated clothing. Clothing made with incorporated electrical elements or plates used to give heat to the wearer.

heat engine. Any engine or motor that converts heat energy into mechanical energy or motion, as an internal-combustion piston engine, jet engine, steam engine, or rocket engine.

heat exchanger. 1. In a turbojet engine, a device or system whereby heat is transferred from the turbine exhaust to another part of the engine and used to heat the air entering the combustion chamber. **2.** In a more general sense, any device such as a water radiator, oil cooler, or the like used to cool a liquid or gas by transferring heat to another liquid or gas.

heat seeker. A guided missile or the like incorporating a heat-sensitive device for homing on heat-radiating machines or installations, such as an aircraft engine or blast furnace. *Colloq.*

heavier-than-air aircraft. Any aircraft weighing more than the air it displaces; an aerodyne.

heavier-than-air flight. Flight in, or with, a heavier-than-air aircraft.

Heaviside layer. The E layer.

heavy, *n. pl.* Heavy bombers, as in 'we saw a formation of heavies.'

'Heavies' was used esp. in WW II to designate B-17 or B-24 bombers. The term is relative.

heavy, *a.* (hv) **1.** Of aircraft: **a.** Having great weight, as in 'a heavy bomber.' **b.** Capable of carrying a load weighing much, as in a 'heavy transport.' **2.** Of a gun: **a.** Having a large caliber. **b.** Having great weight.

In sense 1, see **medium bomber,** note, **transport aircraft,** note.

heavy antiaircraft artillery. Artillery designed primarily to counter medium altitude attack.

heavy artillery. *Specif.* Artillery, other than antiaircraft artillery, consisting of all howitzers and longer-barreled cannon of a caliber larger than those included in the classification of medium artillery. Cf. **heavy weapon, medium artillery.**

heavy bombardment. 1. Short for 'heavy bombardment aviation.' **2.** A bombardment of great intensity, esp. one with large aerial bombs or other missiles.

heavy bombardment aircraft. A heavy bomber.

Construed either as a singular or plural.

heavy bombardment aviation. That branch of bombardment aviation that uses heavy bombers.

heavy bomber. Any large bomber considered to be relatively heavy, such as, in 1955, a bomber having a gross weight, including bomb load, of 250,000 pounds or more, as in the case of the B-36 and the B-52.

During WW II, bombers such as the B-17 and B-24 were considered heavy bombers. The B-29 was also classed as a heavy bomber, although at first considered a very heavy bomber. See note under **medium bomber.**

In combinations, as in *heavy bomber force, heavy bomber offensive, heavy bomber squadron,* etc.

heavy caliber. Large caliber.

heavy cargo aircraft. A heavy transport aircraft.

Construed either as a singular or plural.

heavy drop. An airdrop in which heavy articles, like trucks or artillery pieces, are dropped by parachute.

heavy duty. Constant duty, or duty under demanding or adverse conditions. Said esp. of equipment.

In combinations, as in *heavy-duty aircraft, heavy-duty battery, heavy-duty operation,* etc.

heavy hydrogen. Deuterium or tritium.

heavy machine gun. 1. Any aircraft machine gun above 0.30 caliber. **2.** In Army usage, any machine gun of relatively heavy weight, including 0.30 caliber water-cooled machine guns and 0.50 caliber machine guns. **3.** In specific nonofficial context, any machine gun designed to be mounted on a tripod, on an aircraft, or otherwise, and weighing approximately twenty-five pounds or more without the mount.

As an antiaircraft weapon, a heavy machine gun (sense 2) is in the category of light weapons. See **light weapon.**

heavy transport aircraft. A transport aircraft considered capable of carrying a relatively heavy payload; *specif.*, as defined in special context, one capable of lifting a payload of approximately twenty-five tons.

An example of a current type of heavy transport aircraft is the C-124. See **transport aircraft,** note.

heavy water. Any kind of water heavier in weight than ordinary water; *specif.*, deuterium oxide (D_2O).

Heavy water, in its specific sense, has a specific gravity 1/10 greater than that of ordinary water; it freezes at about 4° C.

heavy weapon. *Specif.* Any antiaircraft weapon having a caliber of 120 mm or greater. Cf. **heavy artillery.**

In the Army, 'heavy weapons' is an infantry term applied to mortars, howitzers, long-barrelled cannon, heavy machine guns, recoilless rifles, and other crew-served ordnance.

Hecht (*code*). A German air-to-surface guided missile of WW II.

heckle, *v. tr.* To harass enemy *troops, installations,* etc. Hence, **heckling mission.**

HECP (*abbr*). 'Harbor entrance control post.'

HedCom (*abbr*). 'Headquarters Command.'

hedgehog, *n.* **1. a.** A portable obstacle, made of crossed poles laced with barbed wire, in the general shape of an hour glass. **b.** A beach obstacle, usually made of steel bars, channel iron, or the like, imbedded in concrete and used to interfere with beach landings. **2.** A concentration of troops securely entrenched or fortified, with arms and

defenses facing all directions. **3.** *Navy.* A small, mortarlike, antisubmarine projectile.

hedgehop, *v. Slang. intr.* **1.** To fly close to the ground, rising up over hedges, trees, houses, or other obstacles as they present themselves. **2.** In a less exact sense, to fly at a very low level.
Hence, **hedgehopping,** *n.*

hedgehopper, *n. Slang.* **1.** A small, light airplane, esp. one of the cub type. **2.** One who hedgehops. **3.** A hedgehopping flight.

hedgehopping bombing. Bombing from a very low altitude. *Popular.*

heel, *v. intr.* Of aircraft: To tilt sideways, as in a bank. Usually with *over.*

heeling error. An error in the indication of an aircraft's magnetic compass, caused by a tilting of the indicator when the aircraft is flying on an easterly or westerly heading and is not in a normal flight attitude.
See **compass error,** sense 1 and note.

HEI (*auth abbr*). 'High explosive incendiary.'

height, *n.* **1.** The vertical dimension of an object, i.e., the distance between its topmost surface and its base. **2.** Altitude, esp. in reference to an object in the air above the surface. See **altitude,** *n.,* esp. sense 1.

height finder. *Radar.* Any radar set that measures and determines the height of an airborne object.

height overlay. An overlay showing the heights of all buildings within a given area.

height-range indicator. Any radarscope that gives the height and range of a target.

Heinkel, *n.* (He) The name of a German airplane-manufacturing company producing planes prior to, and during, WW II, as used in the designations of aircraft.
Heinkel airplanes of WW II included the *Heinkel 111,* a twin-engine airplane designed as a heavy bomber but used also as a torpedo-bomber, transport, and glider tug; the *Heinkel 113,* a single-engine, low-wing fighter; the *Heinkel 115,* a twin-engine, low-wing float plane used for reconnaissance, torpedo-bombing, or mine-laying; the *Heinkel 162,* a turbojet fighter in operational use at the end of the war; and the *Heinkel 177,* designed as a high-altitude bomber, but used also for reconnaissance, mine-laying, and other duties.

Heinkel 178. A German-built, high-wing, jet-propelled monoplane, powered by a turbojet unit, test-flown 27 August 1939.
The He 178 was the first jet-powered aircraft to fly. Its engine, the S 3, developed a thrust of about 1,000 pounds. Cf. **Whittle engine.**

hel (*auth abbr*). 'Helicopter.'

Helen, *n.* A name given by the Allies to the twin-engined Nakajima Ki 49.

helical scan. A kind of radar scan in which a given point on a radar beam traces a helical path in space. Hence, **helical scanning.**
In helical scanning, the transmitting antenna revolves about its vertical axis while changing its angle of elevation.

helicopter, *n.* (hel) A kind of airplane that derives lift from revolving wings or blades engine-driven about an approximately vertical axis.
A helicopter does not have conventional fixed wings, nor in any but some earlier models is it provided with a conventional propeller, forward thrust as well as lift being furnished by the rotor. The powered rotor blades also enable the machine to hover, and to land and take off vertically. Cf. **autogiro,** *n.,* and see **H** (*abbr*), sense 2.
Attrib., as in *helicopter maintenance, pilot, rotor,* etc.

hélicoptère, *n.* [French.] The unanglicized word for 'helicopter,' sometimes found in early English-language contexts on aviation.

helicopter tower. A ground-based structure on which helicopter rotors are mounted for testing.

heliport, *n.* An airport set up specially for helicopters.
A heliport is of much smaller dimensions than a conventional airport, and can easily be located in a restricted place, as on the roof of a building.

helium, *n.* A lighter-than-air, nonflammable gaseous element, inert and colorless, having an atomic number of 2, and an atomic weight of 4.003. *He* (symbol).
Helium is often used as the lifting gas in balloons and airships, and is transmuted from heavy hydrogen in the explosion of a hydrogen bomb.

hell bomb. An emotional term for 'hydrogen bomb.'

Hellcat, *n.* A popular name for the F6F.

Helldiver, *n.* A popular name for the A-25, the SB2C, and the SBF.

helm cloud. A helmet cloud.

helmet, *n.* Any special piece of headgear designed to protect the wearer from shell fragments, crash injury, cold, etc., usually made of steel or leather and lined or padded.
See **crash helmet, flying helmet.**

helmet cloud. A crest cloud. A local name in certain parts of England. Also called 'helm cloud.'

helper, *n. Specif.* The initial and unskilled position in a given AF Specialty; a person filling such a position.

helping wind. A wind blowing from such direction as to advance the groundspeed of a given aircraft.

HelRec (*auth abbr*). 'Health record.'

hemohyperoxia, *n. Medicine.* Hyperoxia of the blood.

hemohypoxia, *n. Medicine.* Hypoxia of the blood.

hemopleonexia, *n. Medicine.* A condition arising when the hemoglobin gives off less oxygen to the tissues than normally.

Hendon RAF Station. An RAF air field some 8 miles northwest of London, formerly noted for its annual air show. Also called 'RAF Station, Hendon.'

H engine. An internal-combustion, piston engine having two rows of vertically-opposed cylinders on each side of the engine, driving two separate

crankshafts geared to a common central shaft.
The Rolls-Royce Eagle engine is an H engine.

Henschel, *n.* (Hs) The name of a German company producing airplanes, aerial weapons, and antiaircraft weapons during WW II.

Some well-known Henschel airplanes used in WW II included the *Henschel 123*, a biplane dive bomber; the *Henschel 126*, a high-wing monoplane developed primarily for reconnaissance, artillery spotting, etc.; and the *Henschel 129*, a twin-engine, low-wing monoplane for ground attack.

Henschel weapons included the *Henschel 293, 294, 295*, etc., air-to-air and air-to-surface radio-controlled rocket bombs.

herdet (*auth abbr*). 'Hereby detached from duty assigned and from such other duty as may have been assigned.'

Herman Nelson heater. A portable hot-air heater using gasoline, used esp. for warming aircraft engines.

Hermes, *n.* A post-WW II Handley-Page civil transport airplane, developed from the Hastings.

Heron, *n.* [It. *Airône.*] A popular name for the Italian Cant Z.506B.

hershey bar. [After Maj Gen Lewis B. Hershey (1893–).] An overseas bar. *Slang.*

hessian, *n.* A coarse, burlap-type cloth of hemp or hemp and jute. See **prefabricated bituminous surface.**

heterodyne frequency. *Electronics.* A separate frequency produced by the combining of two different frequencies, equal either to the difference between, or the sum of, the original two frequencies. Cf. **beat frequency.**

HF (*abbr*). **1.** *auth.* 'High frequency.' **2.** 'Height finding.' Also **H/F** (*abbr*).

H.F. (*abbr*). 'High-altitude fighter.' *British.*

HF/DF (*abbr*). 'High frequency direction finding.'

HFORL (*abbr*). 'Human Factors Operation Research Laboratory.'

The HFORL at Bolling AFB succeeded the HRRL. See **human resources research.**

Hg (*symbol*). A symbol for mercury.

HH (*code*). The US Naval designation for rotary-wing air-sea-rescue aircraft.

hhg (*auth abbr*). 'Household goods.'

hhld (*abbr*). 'Household.'

H-hour, *n.* A term customarily used to refer to the hour at which some specified operation will begin, as an attack, amphibious assault, or movement.

Hickam Air Force Base. An AF base at Honolulu, Oahu Island, named for Lieutenant Colonel Horace Meek Hickam, who died in a plane crash in 1934.

high, *n. Meteorology.* **1.** An area or region of high atmospheric pressure. **2.** A peak in a constant-pressure surface.

high, *a.* **1.** Of an airplane, element, squadron, etc.: Above other airplanes, elements, or squadrons in a formation. **2.** Above the horizontal plane extending out from an aircraft, as in the phrase, 'twelve o'clock high.' See **clock,** *n.*

high altitude. (HA) An altitude considered to be relatively high.

'High altitude' is sometimes given precise meaning (see **altitude,** *n.*, note), but it generally means any altitude at which height constitutes a special problem, as in operating aircraft or other equipment, in carrying out military operations in the air, in adapting to the rarefied atmosphere, to the cold, or other phenomena peculiar to high altitudes, or in observing objects on the ground.

As an attrib., 'high altitude' is used to designate (1) an action, operation, or performance carried out at a high altitude, as in *high-altitude acrobatics, flight, interception, test, mission*, etc.; or (2) equipment designed for use at high altitudes, as in *high-altitude aircraft rocket, bomber, clothing, engine*, etc.

high-altitude bombing. *Specif.* Bombing, esp. horizontal bombing, from a high altitude, such as from an altitude of over 15,000 feet. See **altitude,** *n.*, note.

high-altitude foxhole. A fanciful name for the P-38 or other high-altitude fighter of WW II.

high-angle fire. Gunfire from a weapon set at an elevation angle greater than that for maximum horizontal range. See **range,** *n.*, sense 6.

high-angle gun. A cannon such as an antiaircraft cannon, capable of firing at a high angle of elevation.

high-angle strafing. Strafing from an airplane at a comparatively high dive angle, e.g., of approximately forty-five degrees.

high aspect ratio. An aspect ratio considered relatively high. Said of a long, narrow airfoil.

high blower. A setting on certain internal superchargers for the supercharger to run at its highest rotational speed; such a supercharger running at its highest rotational speed.

high capacity bomb. An explosive bomb designed to produce maximum blast, with a charge/weight ratio of more than 70 percent. *British.*

high command. A term applied to the highest command echelon of a military or naval establishment, service, or field force.

high cover. Cover provided by airplanes at high altitude, esp. distinguished from that provided by airplanes at a lower altitude; the airplanes providing such cover. See **cover,** *n.*, sense 2.

higher, *a. Specif.* Above another in a chain of command, as in *higher authority, higher echelon, higher headquarters.*

high explosive. (HE) Any powerful, nonatomic explosive characterized by extremely rapid detonation and having a powerful disruptive or shattering effect. Distinguished from a low explosive.

high-explosive bomb. Any aerial bomb charged

with a high explosive; *specif.*, any such bomb chiefly dependent upon only its explosion, or blast effect, to create damage.

'High-explosive bomb,' in its broader sense, is a generic term encompassing armor-piercing bombs, general-purpose bombs, light-case bombs, and semi-armor-piercing bombs. A high-explosive bomb is distinguished from a chemical bomb or atomic bomb, and in its specific sense, from a fragmentation bomb.

high fidelity. As defined in specific AF context, the fidelity of a radio receiver for reproducing audio frequencies of from 50 to 10,000 cycles per second without serious distortion. Said of an amplifier, radio-receiving set, or the like.

The human voice has a frequency range of at least 60 to 10,000 cycles per second.

high frequency. (HF) Any radio frequency between 3,000 and 30,000 kilocycles.

In combinations, as in *high-frequency control channel, high-frequency direction finding, high-frequency radio, high-frequency resistance*, etc.

high latitude. Any latitude considered high in number, approaching either pole.

high level. 1. A high altitude (which see). **2.** A high level of command.

Attributive uses: In sense 1, as in *high-level attack, bomber, flying*, etc.; in sense 2, as in *high-leval decision, staff*, etc.

high-level bombing. High-altitude bombing.

high-lift blade. A rotor blade designed to give greater lift than a commonly-used blade.

high-lift device. Any device, as a flap, attached to, or built into, a wing to increase lift.

high-oblique photograph. An oblique aerial photograph taken at such an angle that the horizon is shown.

high octane. Short for 'high-octane fuel.'

high-octane fuel. A gasoline containing a relatively high percentage of octane, hence possessing good antiknock qualities.

high-order detonation. Complete and especially rapid detonation.

high pitch. The pitch of a propeller blade set at a high blade angle other than the feathering angle; *specif.*, on a controllable-pitch propeller, the pitch at its maximum blade angle other than the feathering angle.

A propeller blade at high pitch takes a greater bite of air than at low pitch; consequently high pitch produces more thrust at a given rpm than low pitch.

high-pressure area. *Meteorology.* A region of high atmospheric pressure.

high-pressure oxygen equipment. A kind of aircraft oxygen equipment designed to withstand a relatively high internal gas pressure.

High pressure oxygen equipment is made to withstand as much as 1,800 pounds pressure per square inch, and will function efficiently at pressures as low as 200 pounds.

high-pressure test cartridge. A cartridge containing a heavier bullet than normal and an excessive propelling charge, used in proof-testing a firearm.

High-pressure test cartridges develop pressures approximately 20% higher than those of ordinary cartridges.

high priority. A priority of a high order of precedence.

Attrib., as in *high-priority target*, a target demanding attention before other targets.

high reconnaissance. Aerial reconnaissance from a high altitude.

high rudder. Top rudder.

high side pass. A pass from above toward the side of an aerial target.

high speed. A fast speed.

'High speed' is an indefinite term, but as applied to aircraft, it often means any speed at which special problems arise, as in aerodynamics, navigation, or gunnery.

In combinations, as in *high-speed aircraft, high-speed dive, high-speed reconnaissance, high-speed refueling, high-speed target*, etc.

high-speed stall. A stall occurring when the speed becomes so great as to induce the wing or other airfoil into a critical angle of attack, resulting in turbulent separation.

hightail, *v. To hightail it*, to run or fly away fast; to clear out. *Slang.*

high-test fuel. A fuel, like high-octane fuel, that gives good performance.

high velocity. Fast velocity. Said esp. of bullets, rockets, or other projectiles.

In Army usage, high velocity for small-arms projectiles is considered to be between 3,500 and 5,000 feet per second.

high-velocity aircraft rocket. (HVAR) Any large air-to-ground aircraft rocket specially designed for high velocities, esp. such a rocket (six feet in length) developed by the US during WW II. Nicknamed 'Holy Moses.'

The HVAR was first used operationally in July 1944.

high wing. A monoplane wing attached at or near the top of the fuselage. Used attrib., as in *high-wing bomber*.

high-wing monoplane. Any monoplane having its wing mounted at or near the top of, or above, the fuselage.

A monoplane having its wing mounted above the fuselage is sometimes called a 'parasol monoplane,' and is then distinguished from other high-wing types.

Hill Air Force Base. An AF base in Ogden, Utah, named for Major Ployer P. Hill, killed in 1935.

Hiller, *n.* [*Hiller* Helicopters, Inc., US firm.] Used in the names of helicopters.

Hiller JH-2 Hornet, a two seat helicopter driven by ramjets at the blade tips; *Hiller UH-12B*, an ambulance helicopter. See **H-23A, H-23B, HTE-2**

Hindenburg, *n.* A large rigid airship built by the Germans. Also known as the 'L.Z. 129.'

The Hindenburg was commissioned in 1936 and carried more than 1,000 passengers on ten scheduled round trips between Frankfort, Germany, and the US before the fateful accident of 6 May 1937, when the airship was destroyed by fire while landing at Lakehurst, N.J. The airship displaced 7,063,000 cubic feet, and was adapted to the use of helium, as well as hydrogen, although helium was not available for its use.

hinge axis. An axis about which a control surface swings.

hinge line. A line coincident with or marking the axis about which a control surface swings.

hinge moment. The tendency of an aerodynamic force to produce motion about the hinge line of a control surface.

More technically, the hinge moment is the product of the aerodynamic force acting upon the center of pressure of a control surface and the perpendicular distance from the center of pressure to the hinge line.

Hiroshima bomb. The atomic fission bomb dropped at Hiroshima, Japan, on 6 August 1945, the first atomic bomb to be used against an enemy.

hist (*auth abbr*). 'History' or 'historical.'

histohyperoxia, *n. Medicine.* Hyperoxia of the tissues.

histohypoxia, *n. Medicine.* Hypoxia of the tissues.

histotoxic anoxia. An oxygen deficiency resulting from a decrease of oxygen utilization by the tissues due to poisoning of the tissue cells.

hit, *n. Specif.* **1.** A blow or impact on a target by a bullet, bomb, or other projectile. **2.** An instance of striking something with a bomb, or the like, as in 'he had two hits and one miss.'

hit, *v.* In specific senses. **1.** *To hit and run,* to strike the enemy a sudden blow and leave without giving further battle. **2.** In slang usage. **a.** *To hit the deck,* (1) to come down to a low or minimum altitude; (2) to get out of bed. **b.** *To hit the sack,* to go to bed. **c.** *To hit the silk,* to bail out or make a parachute jump. **d.** *To hit the panic button,* to get excited.

hitch, *n.* A given period of military service; *specif.,* a three-year period of service. *Slang.*

hit probability. The probability of hits being made on a target out of a given number of projectiles directed at the target.

HL (*code*). A US Naval designation, for administrative purposes, for four-engine landplane VP and VR type airplanes. See **VP** (*code*), **VR** (*code*).

hlpr (*abbr*). 'Helper.'

HM (*abbr*). 'Her Majesty' or 'His Majesty.' Used in combination in designations of ships, as in *HMAS,* Her Majesty's Australian Ship.

HMG (*auth abbr*). 'Heavy machine gun.'

HNG (*abbr*). 'Hawaiian National Guard.'

Ho (*code* or *abbr*). **1.** In air navigation, a code or symbol for 'observed altitude.' **2.** *Caps.* US Navy designation for a rotary-wing observation aircraft.

Hoardings (*code*). A German coastal early-warning radar of WW II, a larger version of Freya. Also called 'Mammut.'

hoarfrost, *n.* Any white or silvery frost.

Hoarfrost is the normal kind of frost.

Hohentwiel (*code*). A German airborne radar of WW II for locating ships and submarines. Also designated 'Fug 200.'

HOI (*auth abbr*). 'Headquarters Office Instruction.'

hoick, *v. Colloq.* **1.** *tr.* To jerk or yank an *airplane* around in sudden maneuvers; *specif.,* to put an *airplane* suddenly into a steep climb. **2.** *intr.* To engage in this activity. Usually with *about* or *around.*

hold, *v.* **1.** *intr.* Of an airborne aircraft or persons within: To wait for instructions to land or proceed along a route, the meanwhile maintaining a more or less constant altitude near a specified position or location. **2.** *To hold position* or *to hold station,* to maintain the position of an aircraft in a formation. **3.** *To hold fire,* to refrain from firing at a target; *hold fire,* the command given.

holdback, *n.* A device incorporated in a gun charger for holding the bolt open.

holding and reconsignment point. (HRP) A rail or motor center where cars and trucks are sent and held for future routing, and where cars and trucks are unloaded and the cargo held for transshipment. Usually called an 'H and R point.'

holding attack. An attack made to contain the enemy, esp. while a major attack is being launched elsewhere.

A holding attack may be made to deceive the enemy as to where a simultaneous major attack is being made, to prevent him from reinforcing the elements opposing the major attack, or to cause him to make errors in committing his reserves.

holding hospital. The former term for an en-route hospital.

holding pattern. A pattern flown by an aircraft while waiting landing instructions. See **hold,** *v.,* sense 1.

holding point. A designated point or location in the vicinity of which an aircraft flies or circles when holding.

holding war. A war in which both sides make little or no progress.

hold status. In supply usage, the status of an article or piece of equipment being held to determine its condition.

hole, *n.* An air pocket which causes an aircraft to drop, as if into a hole.

hole, *v. tr.* To shoot holes in an *object,* such as an aircraft.

Holloman Air Force Base. An AF base at Alamagordo, New Mexico, formerly known as Alamagordo Army Air Field, renamed for Colonel George V. Holloman, a guided-missile pioneer, killed in 1946.

hollow charge. A shaped charge.

Holophane light. [After *Holophane* Company,

Inc.] *Specif.* A highly-directional electric light sometimes used to signal aircraft, or used to mark routes for aircraft.

Holy Moses. A popular name for the high-velocity aircraft rocket (HVAR) of WW II.

Home, *n.* The British Isles. Used in the names of certain British radar systems. See **Chain Home.**

home, *v.* **1.** *intr.* Usually *home on* or *home in on.* **a.** Of aircraft or persons within: To fly toward a radiation-emitting source, esp. a radio transmitter, using the radiated waves as a guide. **b.** Of a guided missile or the like: To direct itself to its target by guiding on heat radiations, radar echoes, radio waves, or other phenomena proceeding from, or inhering in, the target. **2.** *tr.* To bring an *aircraft* to a given spot by radio transmissions, light beacons, or other signals; also to cause a *missile* to be directed toward an object emitting heat, radio waves, or some other radiation to which the missile reacts.

home base. 1. The base where stationed. **2.** *Specif.* A parent or major base, as distinguished from an auxiliary or satellite base.

home front. The home area, or zone of the interior, of a nation at war; *specif.*, the civilian industries and activities of a country forming a part of the entire war effort.

home office. *Specif.* The principal office designated by the governing body of a contractor's firm, which functions as the directing office of the firm.

homer, *n.* **1.** A kind of ground-based direction-finding station that utilizes radio transmissions from airborne aircraft to determine their bearing and guides the aircraft usually toward the station by means of voice communication. **2.** A homing beacon (sense 1). **3.** A homing adapter.

homing, *n.* **1.** The action of the verb 'home.' **2.** Attrib., as in *homing aid, homing antenna, homing beam,* and *homing signal.*

The homing of a missile may be active, semiactive, or passive. If active, the missile is both the originator and receiver of radar signals, and as such is subject both to detection and to jamming by window or tinsel. If semiactive, the missile uses a radar receiver to pick up the target from echoes of pulses sent out by a cooperating ground facility; in which case, the missile's guidance system is subject to jamming but not readily to detection. If passive, the missile depends only on radiation from the target, such as noise, infrared rays, or electrostatic discharge; in which case the missile's guiding system is more or less resistant to detection.

homing, *a.* Of an aircraft or missile: That homes.

homing adapter. A device attached to an aircraft radio receiver for homing the aircraft on a transmitting station.

The homing adapter indicates the direction of the transmitting station with respect to the receiving station by aural signals, visual signals, or both.

homing beacon. 1. A kind of radio beacon, either airborne or on the ground, that homes, or gives a bearing to, an aircraft equipped with either a radio compass or a homing adapter. See **homer,** *n.*, sense 2, **splasher beacon. 2.** Any radar, radio or light beacon that an aircraft uses for homing. See **radar beacon,** note.

In sense 1, a homing beacon may be part of a radio range or it may be a separate installation. See **Adcock antenna,** note.

homing device. 1. Any transmitter, receiver, or adapter used for homing aircraft, or used by aircraft for homing purposes; a homer. **2.** Any device incorporated in a guided missile or the like to home it on a target.

In sense 2, such a device utilizes light waves, radio waves, heat waves, etc. See **home,** *v.*, sense 1b. In the case of a moving target, a homing device may be designed either to maintain a steady pursuit course directly toward the target, or to maintain a lead angle while intercepting on a collision course.

homing guidance. The guidance given a guided missile or the like by built-in homing devices.

homing range. *Specif.* The maximum distance at which a homing device incorporated into an air vehicle becomes effective in respect to a target or to a homing station.

homing station. A station at which a beacon emits signals that may be used for homing.

homogeneous armor. An alloy-steel armor, heat-treated for uniform hardness throughout. Cf. **face-hardened armor.**

homogeneous assignment. The assignment of related or similar functions or duties to an individual or group of individuals in accordance with their skills and capabilities.

homogeneous grouping. The grouping together of related or similar functions, jobs, or duties within an organization; a group of similar functions, etc. resulting from this action.

hon (*auth abbr*). 'Honor,' 'honorable,' or 'honorably.'

honcho, *n.* [Japanese.] The boss. *Jocular.* Hence, **honcho,** *v.*, to boss a job.

honeycomb, *n.* A grid used in certain wind tunnels to straighten airflow.

Hono (*auth abbr*). 'Honolulu.'

honorable discharge. (HD) The separation of an officer or enlisted person from the Armed Forces who has met the conditions set forth by regulations as to efficiency or honorable and faithful service; a certificate testifying to such a discharge. See **discharge,** *n.*, **separation,** *n.*

Honorary Air Reserve. Formerly, that part of the reserve components of the AF consisting of retired personnel with honorable service. Now *hist.*

Persons in the HAR are now in the Retired Reserve (which see).

honor flight. A formation of airmen that partici-

pates in the ceremony honoring a very important dignitary upon his arrival or departure from an AF establishment.

The honor flight is of different sizes according to the importance of the dignitary. The President warrants 21 airmen. This flight forms into two lines facing each other to make an aisle down which the dignitary walks or marches. See **Presidential salute.**

honor guard. A specially chosen guard detailed to escort a distinguished person, or one detailed to escort a deceased person at a military funeral.

hood, *n.* **1.** A covering for some part of an aircraft. See **engine cowling. 2.** *Specif.* **a.** A cockpit canopy. **b.** Any opaque covering placed over all or part of a cockpit for practicing instrument flying. Hence, *to fly under the hood.*

hooded flight. A flight in which the pilot is under an opaque hood, simulating instrument-flying conditions.

hook, *n. Specif.* An arresting hook.

hookup, *n.* In air refueling, a juncture between the fuel hose of a tanker aircraft and the aircraft being refueled. See **wet hookup.**

hop, *n.* **1.** The flight of an aircraft between takeoff and landing: See note. *Colloq.* **2.** *Electronics.* The excursion or movement of a radio wave from a point of origin, or point of reflection, to the ionosphere and back to earth.

In sense 1, a hop is usually between two different points, but it may begin and end at the same point, as in certain test hops.

hop, *v.* In slang usage. **1.** *tr.* To attack an *aircraft* from the air. **2.** *tr.* To take a *person* on a hop. **3.** *intr.* To fly on a hop. **4.** *To hop off,* to take off. **5.** *intr.* To lift an *airplane* for a brief moment off the ground while making a practice run. *Hist.* Used in reference to a ground maneuver in the early days of flying.

hopper, *n. Specif.* A separate compartment within an aircraft engine's oil tank, from which, during warmup, the engine draws its oil. Also called a 'hotwell.'

Hoppi-copter, *n.* [*Hoppi-copters,* Inc., an American helicopter-manufacturing firm.] Used in the names of certain small, light helicopters, as *Hoppi-copter Model 101, Hoppi-copter Model 102,* etc.

The first Hoppi-copter, built in 1945, was designed to be strapped to a person's back.

HOR (*auth abbr*). 'Home of record.'

horiz (*auth abbr*). 'Horizontal.'

horizon, *n.* **1.** The line formed by the apparent meeting of the earth and sky as observed from any point. **2.** A plane that runs through the eye of an observer, or a plane parallel to that plane, at right angles to the vertical. **3.** A line that indicates such a plane on a flight instrument, as in the artificial horizon.

The horizon (in sense 1) is sometimes spoken of as the 'apparent horizon,' 'natural horizon,' 'visible horizon,' etc., esp. to distinguish it from a horizon in sense 2, which may refer to a bubble horizon, celestial horizon, rational horizon, or sensible horizon. See separate entries.

horizontal, *n.* (horiz) A horizontal plane or line, as in 'in the horizontal.'

horizontal, *a.* (horiz) **1. a.** Parallel to the earth's surface considered as a smooth and uniform sphere. **b.** Parallel to the sensible horizon. **2.** Of an airfoil: Attached so that it lies perpendicular, or nearly so, to an aircraft's plane of symmetry, and in a plane parallel, or nearly parallel, to the longitudinal axis. Said of a fin, stabilizer, etc. **3.** Of a motion or a resultant of motion: Done in a horizontal plane; lying within a horizontal plane. **4.** Of an organizational structure: Adapted to provide control by a commander or supervisor without dependence upon subordinate commanders or supervisors. Cf. **vertical,** *a.*

Hence, **horizontally,** *adv.,* in all senses.

horizontal attitude. An attitude of an aircraft in which the horizontal axes are in a plane at right angles to a plumb line.

horizontal axis. 1. Either the lateral or the longitudinal axis of an airplane. Usually *pl.* in reference to both. **2.** In a gyroscope or gyroscopic body, an axis of precession that lies more or less horizontal.

horizontal bomber. A bomber designed to drop bombs while flying horizontally, as distinguished esp. from a dive bomber.

horizontal bombing. Bombing from an airplane in horizontal flight, as distinguished from dive bombing, glide bombing, toss bombing, etc. Also called 'level bombing.'

horizontal fin. Any fin mounted horizontally (sense 2) on an airship and extending outward on one side only, to which an elevator is attached. Sometimes called a 'horizontal stabilizer.'

The term 'horizontal fin' is not commonly applied to a corresponding part on an airplane. See **horizontal stabilizer,** senses 1, 2, and note.

horizontal flight. A flight in which the aircraft maintains a uniform altitude above sea level.

With a helicopter, horizontal flight can be accomplished in a forward, sideward, or rearward direction.

horizontal line. 1. A line of uniform altitude above sea level at all its points. **2.** A line parallel to the sensible horizon.

For short distances, a horizontal line (sense 1) may be considered to be in a single plane, at right angles to a plumb line directed to the earth's center of gravity.

horizontal plane. 1. Any plane that has uniform altitude above sea level at all points. **2.** A projection of all the horizontal planes into a single plane as seen from above or below.

Strictly speaking, this plane (sense 1) is not a plane since it follows the curvature of the earth, but for practical purposes it is such. In sense 2, the term is used in such locutions as 'movement in the horizontal plane,' i.e., movement at right angles to the vertical. See **vertical plane,** note.

horizontal range. The distance measured horizontally between a gun and its target; *specif.*, in antiaircraft gunnery, the distance between a gun and a spot on the ground directly beneath the target. See **range,** *n.*, sense 6, and note.

horizontal rudder. A term used by Wilbur Wright for a control surface projecting forward of the wings, used for longitudinal balancing and steering in the manner of an elevator and horizontal stabilizer.

horizontal stabilizer. 1. The horizontal component of an airplane's empennage extending on both sides of the fuselage or boom (as in a twin-boom tail): See note. **2.** Also applied to a part of this component on only one side of the fuselage. Hence, the plural form 'horizontal stabilizers' and hence, references to the right or left horizontal stabilizer. **3.** Sometimes applied to the horizontal fin of an aerostat. See **horizontal fin.**

Strictly speaking in sense 1, the horizontal stabilizer does not include the elevator or elevators, but where the distinction is not important the term is used to include them, as in 'the left horizontal stabilizer was shot off.' The horizontal stabilizer affords the airplane longitudinal stability. See **tailplane,** *n.*

horizontal tail. The complete horizontal component of an aircraft's empennage, esp. of an airplane's empennage, consisting of both fixed (or adjustable) and movable surfaces.

horizontal tail area. The area of an aircraft's horizontal tail.

In measuring the horizontal tail area, it is customary to include also the projected area taken through the fuselage or other component upon which the tail is mounted, and to discount the extra area of any fairings or fillets.

horizontal tail surface. 1. Any of the surfaces or airfoils of the horizontal tail. **2.** Usually *pl.* All of the surfaces or airfoils comprising the horizontal tail.

horizontal target complex. An industrial target complex consisting of potential targets related by their being in the same industry, as, for example, a complex of oil refineries. See **target complex.**

horizon-to-horizon camera. A trimetrogon camera.

horn, *n.* **1.** A device for making a warning noise, as used, for example, in a landing-gear warning system. **2.** A short lever attached to a control surface, to which the control cable or other operating line or rod is attached. See note. **3.** *Electronics.* A horn-shaped radiator sometimes used at the end of a wave guide or other transmission line to direct radiation in a special pattern. See **radiator,** *n.*, sense 2a. **4.** A telephone. *Slang.*

In sense 2, 'horn' is often distinguished by a modifier signifying the control surface to which it is attached, as in *elevator horn, rudder horn,* etc.

horn antenna. A radar antenna assembly terminating in a horn (which see, sense 3), from which radar waves are radiated directly into space without benefit of a reflector.

Hornet, *n.* A British twin-engine, single-seat, long-range fighter developed by de Havilland late in WW II.

horn feed. A radar feed in the shape of a horn. See **feed,** *n.*, sense 1.

horn radiator. A horn or a horn antenna.

Horsa, *n.* A British all-wood, transport glider of WW II, developed by Airspeed.

horse, *n.* One horsepower. *Slang.*

horse, *v.* In *slang* usage. **1.** *To horse the controls,* to yank savagely on the controls of an airplane. **2.** *To horse an airplane,* to jerk an airplane about in flight. **3.** *To horse around,* to fly an airplane without regard to usual patterns or discipline.

horsefly, *n.* [Orig. a code name.] A forward air controller airborne in a liaison-type aircraft.

Attrib., as in *horsefly mission,* an aerial mission flown by a forward air controller. Cf. **Mosquito,** *n.*, sense 2.

horsepower, *n.* (hp) Construed either as *sing.* or *pl.* A power equal to the force necessary to raise 33,000 pounds one foot in one minute against the pull of gravity; a unit of measure representing this power; *specif.*, brake horsepower.

Horsepower is used esp. in measuring the power output of an internal-combustion reciprocating engine, or of a turboprop engine. Cf. **thrust,** *n.*, sense 1, and see **brake horsepower, friction horsepower, indicated horsepower, rated horsepower, thrust horsepower.**

Horten Ho 9. An experimental jet fighter of the flying-wing type being developed in Germany by Horten Brothers at the end of WW II.

hosepipe, *v. intr.* To stream forward, or squirt, as from a water hose. Said of fire from an automatic weapon.

hosp (*auth abbr*). 'Hospital.'

hospital, *n.* (hosp) A facility for the care of the sick and wounded.

This term is now used without a modifying attrib. See **general hospital.**

hospital aircraft. An aircraft furnished as a hospital for the accommodation of patients en route.

hostile, *n. Specif.* An enemy aircraft.

hostile, *a.* **1.** Belonging to, or sent forth by, the enemy. **2.** Inimical, unfriendly. See **friend,** *n.*, **neutral,** *n.*

In combinations, as *hostile air, hostile aircraft, hostile air force, hostile flak, hostile territory,* etc.

hostile act. An act that is interpreted as hostile or is intended to be hostile.

Recognition of a hostile act requires judgment, but certain criteria may be set up for guidance. For example, radar jamming without previous arrangement, or a low-level approach in airspace prohibited to friendly aircraft, or flare-dropping at night in friendly territory.

hostile maneuver. *Specif.* An aerial maneuver indicating hostile intentions.

hostility, *n.* **1.** *pl.* Acts of battle or of fighting; acts of warfare. **2.** Usually *pl.* The state or situation

under which armed conflict takes place or can be expected to take place.

Hostilities (in sense 1) may begin or cease without reference to the beginning or end of a war. For usage in sense 2, see **sneak, *n.***

hot, *a.* In *slang* usage. **1.** Of an airplane: Fast; capable of high speed. **2.** Of a pilot, esp. a fighter pilot: **a.** Skillful or expert. **b.** Reckless; pretentious; conceited as to his own ability. **3.** Radioactive, esp. highly radioactive. **4.** Of information, papers, messages, etc.: Urgent; extremely important; having a high security classification.

hot, *adv.* In a fast manner. *Slang.*

hot-air balloon. A fire balloon.

Hotel (*code*). An authorized word for the letter 'H.' See **Alfa** (*code*).

hot line. A communication channel providing instantaneous communication without switching.

hot papa. An asbestos-clothed crew member on an aircraft carrier whose duty is rescuing persons from any burning aircraft on the carrier's flight deck. *Colloq.*

hot rock. In *slang* usage. **1.** A hot pilot. **2.** A skillful, industrious person.

hot seat. An ejection seat. *Slang.*

hot spot. 1. A spot or place of intense heat, as in a jet engine. **2.** A region of intense antiaircraft fire. *Slang.* **3.** *Photog.* A spot on a photograph caused by excessive light. *Slang.*

hot start. The starting of a jet engine in such a manner as to cause the engine to exceed its normal operating temperature.

hot target. An important target, or a target requiring immediate attack. *Slang.*

hot war. A war of open armed conflict. Distinguished from 'cold war.'

hotwell, *n.* A hopper.

hour, *n.* (hr) **1.** A measure of sixty minutes in passing time; *specif.*, a flying hour, as in 'he logged 400 hours.' **2.** A measure of distance in terms of flying time, as in 'New York is less than five hours from London.'

hour angle. The angular distance between two given hour circles on the celestial sphere; *specif.*, the local hour angle.

See **Greenwich hour angle, local hour angle, sidereal hour angle.**

hour circle. Any great circle on the celestial sphere passing through both celestial poles, used as a line of angular distance or of time measured eastward between the vernal equinox and any given celestial body through which a given hour circle passes. See **right ascension.**

An hour circle is not a projection of a particular meridian on the earth, because the hour circle moves with the movement of the body. The meridian is fixed.

housekeeping, *n.* (hskpg) The activity at an installation dealing with such functions as food service, housing, payment of personnel, records, and administration.

At any installation, two kinds of responsibilities are present. The first, which has nothing to do with housekeeping, is that of carrying out the assigned mission in terms of overall operations; the second is that of taking care of wants and needs of personnel at the installation. 'Housekeeping' is the term applied to the activity connected with the latter. At larger installations, special units are usually established to take care of housekeeping. See **housekeeping unit.**

housekeeping equipment. In supply usage, that equipment listed in a table of allowance, required for the shelter, health, welfare, and administration of personnel.

housekeeping unit. At certain installations, usually large, a unit specially organized to do the housekeeping for all the activities stationed at the installation.

This unit may be on a squadron, group, or wing level. See **air base group, air base wing, base support, wing,** *n.*, sense 11 and note.

hover, *v. intr.* **1.** Of any aircraft: To fly back and forth or circle over a given spot or object. **2.** Of a helicopter or dirigible: To remain in a stationary position at a given altitude above the surface.

A helicopter is said to hover (sense 2) when it maintains itself in the air at zero translational velocity and zero vertical velocity in relation to the air.

hovering, *n.* The action of the verb 'hover,' esp. in sense 2. Attrib., as in *hovering attitude, hovering flight,* etc.

hovering, *a.* Of an aircraft: That hovers.

hovering ceiling. The maximum altitude at which a helicopter can hover under a given set of conditions.

How (*code*). A word formerly authorized for the letter 'H.' See **Able** (*code*).

how (*auth abbr*). 'Howitzer.'

Howell Commission. The Federal Aviation Commission, named for its chairman, Clark Howell (1863–1936), editor of the Atlanta *Constitution. Hist.*

howgozit, *n.* ['How goes it.'] A graph sometimes kept aboard an airplane, indicating fuel consumption and distance flown.

howitzer, *n.* (how) A cannon with a relatively short barrel, designed for high-angle fire against targets that cannot be reached by flat trajectories.

howler, *n.* An audio device for warning an operator that signals are appearing on a radar screen.

H.P. (*abbr*). **1.** 'Handley Page.' **2.** 'Hot pilot.'

Hp (*code*). 'Pressure altitude.'

hp (*auth abbr*). 'Horsepower.'

HPF (*abbr*). 'Highest probable frequency.'

HPT (*abbr*). 'High-pressure test.'

Used esp. in combinations, as in *HPT ammunition, HPT cartridge.*

hq (*auth abbr*). 'Headquarters.'

HR (*code*). The US Naval designation for rotary-wing transport aircraft.

hr (*auth abbr*). 'Hour.'

HRI (*abbr*). 'Height-range indicator.'

HRP (*auth abbr*). 'Holding and reconsignment point.'

HRRC (*abbr*). 'Human Resources Research Center.' Now *hist.*

HRRI (*abbr*). 'Human Resources Research Institute.' Now *hist.*

HRRL (*abbr*). 'Human Resources Research Laboratory.' Now *hist.*

HRS (*auth abbr*). 'Honorary Reserve Section.'

HS (*code*). The US Naval designation, for administrative purposes, for four-engine seaplane VP and VR type airplanes. See **VP** (*code*), **VR** (*code*).

Hs (*abbr*). 'Henschel.'

Hs (*code*). In air navigation, a code or symbol for 'sextant altitude.'

hs (*auth abbr*). **1.** 'Hardstanding.' **2.** *Caps.* 'High school.'

H-scan, *n.* **1.** A scan for presentation on an H-scope. **2.** An H-scope. *Popular.*

H-scope, *n.* A modified version of the B-scope.

hsg (*auth abbr*). 'Housing.'

hskpg (*auth abbr*). 'Housekeeping.'

H-system, *n.* A radar navigational system by which an aircraft fix is obtained by airborne equipment which establishes the direction of, and measures the distances from, two radar beacons on the ground.

The principal H-systems used are the Gee-H, Micro-H, Rebecca-H, and Shoran. See **H** (*letter*).

HT (*code*). A US Naval designation for rotary-wing training aircraft.

ht (*abbr*). **1.** 'Heat.' **2.** 'Height.'

HTA (*auth abbr*). 'Heavier than air.'

HTE-2. The US Navy version of the H-23A, provided with a four-wheel landing gear.

htrac (*auth abbr*). 'Half-track.'

htrk (*abbr*). 'Half-track.'

H-type engine. An H engine.

HU (*code*). A US Naval designation for rotary-wing utility aircraft.

hub, *n. Specif.* A propeller hub or a rotor hub. See separate entries.

hub cannon. A cannon mounted through a propeller hub.

hub dynamometer. An instrument built into the hub of a propeller attached to an aircraft engine for measuring thrust, torque, or both.

hub tilting. 1. The tilting of the rotor hub of a helicopter or autogiro. **2.** A method of controlling the rotor of a helicopter or autogiro by tilting the rotor hub as the means of tilting the rotor. Cf. **cyclic pitch control, direct control.**

Hub tilting is chiefly limited to autogiros and to helicopters with jet-driven rotors.

Hudson, *n.* A popular name for the A-29.

Hughes flying boat. A giant, eight-engine, all-wood, experimental flying boat built by the Hughes Aircraft Company.

The Hughes flying boat has a 320-foot span compared with a 230-foot span of the B-36. It has been test-flown but not put into service.

Huk (*auth abbr*). 'Hunter-killer.' Attrib., as in *Huk operation.*

hull, *n.* **1.** The frame or body of a thing built to move on or pass through water, as that of a vessel or the boatlike structure of a flying boat's fuselage. **2.** *transf.* **a.** An airship hull (which see). **b.** The outer casing of a rocket, guided missile, or the like.

hull displacement. The amount of water, by volume or by weight, displaced by the hull of a flying boat.

human resources research. Research in such fields as sociology, psychology, and demography with the object of discovering and using human resources, together with material resources, for the achievement of national objectives.

This phrase has been used in the titles of three AF organizations, all now historical, the Human Resources Research Laboratory formerly at Bolling AFB, the Human Resources Research Center formerly at Lackland AFB, and the Human Resources Research Institute formerly at Maxwell AFB. See **AFPTRC** (*auth abbr*) and **HFORL** (*abbr*).

humidity, *n.* Moisture or dampness in the atmosphere. See **absolute humidity, relative humidity.**

hump, *n.* **1.** A mountain or chain of mountains; *specif.* (capitalized), an eastern range of the Himalaya between China and India or Burma over which air transport missions were frequently flown in WW II. *Colloq.* **2.** Any bulge or rising in a line drawn on a graph. See **age hump.**

hump speed. The speed of a seaplane during take-off at which the water resistance is at a maximum.

hums (*auth abbr*). 'Humanitarian reasons.'

Hun, *n.* **1.** A derogatory word for a German, used in WW I and WW II. **2.** *Personified.* The German nation.

This was a word used for emotional buildup. Once hostilities were ended, its use subsided.

hun (*auth abbr*). 'Hundred.'

hung bomb. A bomb which accidentally remains hanging to the bomb rack after the releasing action has been taken.

hunt, *v. intr.* **1.** Of an aircraft, guided missile, or the like: **a.** To make weaving motions about its median flight path, as in longitudinal or phugoid oscillation, or to vary in flight speed, as if seeking a new angle of attack, flight path, etc. See note. **b.** In popular usage, to yaw repeatedly. **2.** Of a compass: To deviate or waver constantly. **3.** Of

a radar scanner: To oscillate or swing of its own accord, due to some flaw in the driving system. **4.** Of a rotor blade: To oscillate about the drag hinge.

In sense 1, the weaving or yawing may occur without movement of the control surfaces. Cf. **seek,** *v.*

Hunter Air Force Base. An AF base at Savannah, Georgia, named for Major General Frank O'D. Hunter (Ret.), a WW I ace, and recipient of the Distinguished Service Cross, four clusters.

hunter-killer operation. A coordinated air and sea operation for seeking out and destroying an enemy submarine or submarines.

hunting, *n.* The action of the verb 'hunt.'

hunting motion. *Specif.* Lagging motion.

Hurribomber, *n.* A Hurricane fighter equipped to carry bombs.

hurricane, *n.* **1.** A violent tropical cyclone, esp. one in the West Indies, with wind above 75 mph. **2.** *Capitalized.* A British low-wing fighter developed by Hawker, used in WW II.

hutment, *n.* **1.** The housing of persons in huts; a group or camp of huts. **2.** Often incorrectly used for 'hut.'

HV (*auth abbr*). 'High velocity.'

hv (*auth abbr*). 'Heavy.'

HVAP (*abbr*). 'High velocity armor-piercing.'

HVAR (*auth abbr*). 'High velocity aircraft rocket.'

HVAT (*abbr*). 'High velocity antitank.'

hvy (*abbr*). 'Heavy.' See **hv** (*auth abbr*).

H-warhead, *n.* A warhead containing a hydrogen bomb.

hwy (*auth abbr*). 'Highway.'

hyd (*auth abbr*). 'Hydraulic.'

hydraulic, *a.* (hyd) *Specif.* **1.** Designating mechanisms or devices activated by liquids forced through tubes and orifices under pressure, as in *hydraulic brake, hydraulic clutch, hydraulic gun turret.* **2.** Designating things associated with such mechanism or devices, as in *hydraulic field, hydraulic line, hydraulic power, hydraulic pressure, hydraulic shop,* etc.

hydraulic accumulator, *n.* A reservoir on an airplane or other piece of equipment for storing up hydraulic fluid under pressure to serve in emergencies as a source of hydraulic pressure.

hydraulics, *n.* **1.** That branch of science or engineering concerned with hydraulic systems and mechanisms. **2.** Hydraulic mechanisms, or a hydraulic system.

hydro (*auth abbr*). 'Hydrographic.'

hydroairplane, *n.* Also **hydroaeroplane. 1.** A seaplane, i.e., a float plane or flying boat. **2.** *Restrictive.* A float plane, as distinguished from a flying boat. *Loose* usage.

hydrocarbon, *n.* A compound containing only hydrogen and carbon, as gasoline, kerosene, or benzene.

Hydrocol process. A process for extracting and liquefying hydrocarbons from natural gas.

hydrodynamic, *a.* Pertaining to hydrodynamics.

The denotations of this word are parallel to those of 'aerodynamic' (which see, note).

hydrodynamics, *n.* That field of dynamics concerned with the motion and action of water and other liquids, or of the forces acting on bodies in motion within a liquid.

hydroflap, *n.* A hydrofoil attached underneath a seaplane near the stern and entering into the water, used as a brake or rudder.

hydrofoil, *n.* A foil or surface designed to obtain a reaction, such as support, from the water through which it moves.

hydrogen, *n.* An element which in its uncombined state is a colorless, tasteless, and odorless gas, flammable and lighter than any other known substance.

The symbol of hydrogen is H; its atomic weight is 1.0080; its atomic number is 1. The ordinary isotope (H^1) consists of a single proton in the nucleus and a single electron. Its other isotopes are deuterium (H^2) and tritium (H^3) used in nuclear fusion.

hydrogen balloon. A balloon inflated with hydrogen as the lifting agent.

hydrogen bomb. A fusion bomb in which an isotope of hydrogen is made to fuse under intense heat, with a resultant loss of weight and release of energy. Also called the 'H-bomb.'

hydrographic chart. A chart showing the features of a given body of water, as tides, currents, depths, nature of bottom, etc.

hydrographic reconnaissance. The reconnaissance of an area of water to determine the nature of a given expanse of water and any surrounding shore.

Hydrographic reconnaissance includes determining the depths of the water, nature of bottom, beach gradients, and seeking out reefs, rocks, man-made obstacles, etc.

hydrography, *n.* **1. a.** The study of water bodies, as seas, rivers, lakes, etc. **b.** The art or science of measuring water bodies, determining their characteristics and those of associated land areas, and of charting such bodies and areas. **2.** Bodies of water, esp. as shown on a map or chart.

hydrology, *n.* The science treating of the nature and distribution of water, often with special reference to underground water.

hydromatic, *a.* [*Hydr*aulic + au*tomatic.*] Pertaining to hydraulically-operating mechanisms that function automatically.

hydromatic propeller. A hydraulically-operated constant-speed propeller.

hydroplane, *n.* **1.** A hydroairplane. **2.** A hydrofoil designed to be supported in water by hydro-

dynamic action. **3.** A kind of motorboat equipped with hydrofoils, so that its support in water while in motion is entirely or chiefly derived from hydrodynamic action. Sometimes called a 'hydroplane boat.'

hydroponics, *n.* [Assonant with 'comics.'] The art, science, or practice of growing vegetables or other plants in special water solution containing the necessary nutrients, rather than in soil.

Hydroponics was used to a certain extent in WW II in the Pacific theater to supply fresh vegetables for the military; likewise in Japan after WW II.

hydrostabilizer, *n.* A sponson on a flying boat used to stabilize it upon the water.

hydrostatic fuze. A bomb fuze that functions under the influence of water pressure.

A hydrostatic fuze may be set to explode a bomb at a predetermined depth.

hydrostatics, *n.* A branch of physics dealing with the pressure and equilibrium of liquids, or of bodies immersed in liquids.

hygrometer, *n.* An instrument for measuring and indicating either the relative humidity or the dew point of the air. See **hair hygrometer, psychrometer,** *n.*

hygroscopicity, *n.* The tendency of a substance to absorb moisture.

Hygroscopicity is an undesirable quality in gunpowder and explosives.

hypenzymopraxia, *n. Medicine.* A diminished function of an enzyme system caused by an insufficiency in the quantity or quality of its enzymes, as may occur from the inhalation of a poison gas.

hyper (*prefix*). [Greek 'over' or 'above the ordinary.'] A combining form used esp. in medical terms denoting 'abnormal excess in some content or degree.' The opposite of *hypo* (which see).

hyperbarism, *n. Medicine.* A disturbed condition in the body arising from an ambient gas pressure or atmospheric pressure being higher than the pressure within the body tissues, fluids, and cavities, as may occur in a sudden descent from a high to a low altitude.

hyperbolic guidance. The guidance or control of a guided missile or the like in which the difference in the time delay of radio signals transmitted simultaneously from two ground stations, arriving at the missile at different time intervals, controls the position of the missile.

This system is based upon the geometric theorem that the locus of all points of fixed difference in distance from two base points is a hyperbola.

hyperbolic navigation system. Any system of radio navigation in which the navigating aircraft receives synchronized signals from at least three known points, as in loran, Gee, or Decca.

In any hyperbolic navigation system, the time difference between signals received from any two stations determines a line of position in the shape of a hyperbola. Crossing this line of position with another line of position using at least one other transmitting station establishes a fix.

hypergolic propellant. A rocket propellant that ignites spontaneously upon contact with an oxidizer.

'Hypergolic' is a coined word, the element 'golic' being obtained from a German code word 'Gola,' used to refer to a series of rocket propellants containing methylaniline, organic amine, pyrol, and certain other compounds.

hyperoxemia, *n. Medicine.* A condition in which the oxygen content of the blood exceeds that normally existing at sea level; excessive acidity of the blood.

hyperoxia, *n. Medicine.* Any excess of the oxygen tension in the atmosphere or in an animal body above that normally existing at sea level.

Combining forms are *aerohyperoxia, cytohyperoxia, hemohyperoxia, histohyperoxia,* and *pneumohyperoxia.* See separate entries.

hyperoxidation, *n. Medicine.* Any pathological or nonpathological elevation of oxidation within a cell or cells above the usual resting metabolic rate for the species concerned.

hyperoxidosis, *n. Medicine.* A condition characterized by pathological increase of the rate of oxidation within a cell or cells above the usual basal rate for the species concerned, such oxidation being in excess of physiological need.

hyperoxypathy, *n. Medicine.* A disorder of the body characterized by pathological changes of tissues, brought on by hyperoxia.

hypersonic, *a.* Of or pertaining to the speed of objects moving at mach five or greater. Cf. **supersonic,** *a.*

hypersonics, *n.* A field of study concerned with bodies that move at mach five or greater.

hypersonic velocity. A velocity of mach five or greater.

hyperventilation, *n. Medicine.* Excessive or prolonged ventilation, as may occur in deep breathing or overbreathing.

hypo (*prefix*). [Greek 'under' or 'less than the ordinary.'] Used esp. in medical terms denoting 'abnormal deficiency or weakness in extent or degree.'

hypobarism, *n. Medicine.* A condition in which the gas pressure within the body tissues, fluids, or cavities is greater than the surrounding gas or atmospheric pressure.

hypocapnia, *n. Medicine.* A deficiency of carbon dioxide in the blood, as may be brought on by hyperventilation. Hence, **hypocapnic,** *a.* See **altitude alkalosis.**

hypohistodiabatism, *n. Medicine.* A condition characterized by an inadequate gas diffusion between the blood stream and a cell, caused by a

qualitative or quantitative alteration in the blood-cell barrier.

Hypohistodiabatism may become apparent in high-altitude flying.

hypopnea, *n. Medicine.* A condition of hypoventilation resulting from abnormal shallowness and rapidity of breathing.

hypopneumonism, *n. Medicine.* A lack of proper diffusion of gas between the blood and lungs, caused by a qualitative or quantitative alteration of the gas-blood barrier.

hypothermia, *n. Medicine.* Subnormal temperature of the body. Hence, **hypothermic,** *a.*

hypotrophy, *n.* A condition of progressive degeneration and loss of function of certain cells and tissues, brought on by an insufficiency of substrate available for oxidation.

hypoventilation, *n. Medicine.* Diminished ventilation.

hypoxemia, *n. Medicine.* An abnormal bodily condition or disease brought on by hypoxia.

hypoxia, *n. Medicine.* Oxygen deficiency in the blood, cells, or tissues.

Hypoxia may be brought on by scarcity of oxygen in the air being breathed, or by the inability of the bodily tissues to absorb oxygen, as under decreasing pressures at high altitudes. Cf. **alveolar equation.**

Combining forms are *aerohypoxia, cytohypoxia, hemohypoxia, histohypoxia,* and *pneumohypoxia.* See separate entries.

hypoxia indicator. An instrument that warns a person when hypoxia sets in.

hypoxidation, *n. Medicine.* Any pathological or nonpathological lowering of oxidation within a cell or cells below the usual resting metabolic rate for the species concerned.

hypoxidosis, *n. Medicine.* A condition in which the oxidation within a cell or cells is too low for the cells to accomplish their functions.

Hypoxidosis may result from an inadequacy of oxygen, enzymes, or substrate. The kinds of hypoxidosis brought on by these conditions are hypoxic, hypenzymopraxic, and hypotrophic hypoxidosis, respectively.

hypoxypathy, *n. Medicine.* A disorder of the body characterized by pathological changes of tissues, brought on by hypoxia.

hypoxyphoremia, *n.* A condition in which the blood and circulatory system do not function properly in the transportation and distribution of oxygen.

hysteresis, *n. Electricity.* A delay in the increase or decrease of magnetic flow with an increase or decrease of the magnetizing force.

I

I (*letter*). See **India** (*code*).

I (*abbr*). 'Fighter' (*Istrebital*), used in the designations of Russian aircraft from 1925 to 1945, as in *I-15*, *I-17*, *I-26*, etc.

For example, Mig-3 was called 'I-20,' Yak-1 was called 'I-26.'

I&E (*abbr*). 'Information and Education.' See **IE** (*auth abbr*).

I&M (*abbr*). 'Installation and Maintenance.'

I&R (*abbr*). 'Intelligence and reconnaissance.'

IAOD (*abbr*). 'In addition to other duties.'

IAPO (*abbr*). 'Industrial accountable property officer.'

IAR (*abbr*). 'Inactive Air Reserve.' Now *hist.*

IAS (*abbr*). **1.** *auth.* 'Indicated airspeed.' **2.** 'Institute of the Aeronautical Sciences.'

IASOR (*abbr*). 'Ice and snow on runway.'

IATR (*auth abbr*). 'Is amended to read.'

IAW (*auth abbr*). 'In accordance with.'

IAZ (*auth*). 'Inner artillery zone.'

IB (*auth abbr*). 'Incendiary bomb.'

IBhd (*auth abbr*). 'Initial beachhead.'

IBM (*abbr*). **1.** *Trade name.* 'International Business Machines.' **2.** 'Intercontinental ballistic missile.' 'ICBM' is preferred to 'IBM.'

IBRL (*auth abbr*). 'Initial bomb release line.'

ICAF (*auth abbr*). 'Industrial College of the Armed Forces.'

ICAO (*auth abbr*). 'International Civil Aviation Organization.'

ICBM (*abbr*). 'Intercontinental ballistic missile.'

ICC (*auth abbr*). 'Interstate Commerce Commission.'

ICCA (*auth abbr*). 'Initial cash clothing allowance.'

ice, *v. intr. To ice up,* to become covered with ice. Said esp. of aircraft wings or of other aircraft surfaces.

ice airfield. An airfield established on ice.

icecap, *n.* Also **ice cap.** A perennial tract of snow and ice covering land; *specif.*, the Greenland Ice Cap. This term is not properly applied to the ice covering the North Pole. Cf. **ice pack.**

ice crystal. A crystal of frozen water suspended in a cloud or fog.

ice fog. A radiation fog consisting of ice crystals, formed under conditions of clear skies, very low temperature, and little or no wind. Sometimes called 'frost fog' (which see).

ice foot. Fast ice that remains throughout the summer.

ice head. A projection or mound of ice above a surface of ice or snow.

ice island. Any of a number of large, floating masses of ice found in the Arctic Ocean or adjacent waters.

An ice island is distinguished in appearance from an iceberg in being larger and in having an undulating, somewhat flat surface.

ice nucleus. Any minute particle around which an ice crystal forms.

ice pack. A tract of ice lodged over the sea, as in the Arctic Ocean.

ICFATCMUTAL (*auth abbr*). 'Individual is cleared for access to classified material up to and including.'

icing, *n.* The act or process of atmospheric moisture freezing upon the surfaces of an aircraft; the condition in which this phenomenon takes place. Also attrib., as in *icing problem.*

icing level. The minimum level or altitude at which ice forms on an aircraft under given conditions.

iconoscope, *n.* A cathode-ray tube for picking up and televising a scene, employing a photosensitive plate and an electron gun that scans the image; *capitalized*, a trade name for this tube.

ICUS (*abbr*). 'Inside continental United States.'

ICW (*abbr*). **1.** 'In compliance with.' **2.** 'Interrupted continuous wave.'

ideal rocket. A rocket motor or rocket engine that would have a velocity equal to the velocity of its jet gases.

An ideal rocket is assumed as a criterion in rocket design.

ident (*auth abbr*). 'Identification.'

identification, *n.* (ident) *Specif.* **1.** In supply usage, the process or means by which, with the aid of applicable drawings, specifications, and catalogs, an item is identified and associated both with the assembly to which it belongs and with the classification of property in which it is procured, stored, and issued in the AF. **2. a.** The act of indicating one's friendly character by any

means. **b.** The process of determining, by any means, the friendly or hostile nature of a person, aircraft, body of troops, etc. Cf. **recognition,** *n.*

identification card. Any card issued AF or civilian personnel for purposes of identification only, as the AGO card or the AF_2.

identification, friend or foe. (IFF) A general term applied to electronic equipment used to identify hostile or friendly aircraft or ships; any of several systems used in such identification.

In WW II, identification depended upon the use of predesignated signals for challenge and reply.

identification light. *Specif.* Any light used on an aircraft for identification purposes.

identification panel. A strip of cloth or other material employed by ground troops in using the identification panel code.

identification panel code. A code that is displayed with identification panels by ground troops to identify themselves to friendly aircraft.

identification tag. Either of two metal tags usually worn about the neck by a person in the military service. Often called 'dog tags.'

Each tag has the name, service number, blood type, religious preference, and tetanus record stamped upon it.

identify, *v. tr.* **1.** To establish who a *person* is, esp. in respect to his being friend or foe; to establish the identity of an *aircraft.* **2.** To determine the classification of a *supply item.*

ideological war. An armed conflict considered to be caused, in part at least, by ideological differences.

WW I, for example, was an ideological war in that it was fought, in part, 'to make the world safe for democracy.'

ideological warfare. 1. A struggle between or among powers for winning the acceptance of certain ideas considered fundamental to a way of political, social, or economic life. **2.** The waging of an ideological war.

ideology, *n.* A body of ideas, esp. as related to economic, social, religious, and political patterns of thought, usually constituted or given form by reasoned pronouncements, that underlies a culture or gives direction to a movement.

The ideology of American democracy has been formulated by such documents as the Magna Charta, the Bill of Rights, the Declaration of Independence, and the Constitution; the ideology of communism by such documents as the Communist Manifesto.

idiohyperoxidation, *n. Medicine.* A self-induced elevation of oxidation within a cell or cells above the usual basal rate for the species concerned.

idiohypoxidation, *n. Medicine.* A self-induced lowering of oxidation within a cell or cells below the usual basal rate for the species concerned.

idle, *v. tr.* and *intr.* To run an aircraft *engine* slowly, without sufficient power being developed for movement of the aircraft; also used *intr.* with reference to aircraft engines.

idle cutoff. A device in a carburetor which, when closed, stops the flow of fuel to the carburetor; the position occupied by the appropriate carburetor controls and parts when the fuel is so stopped.

idle shutoff. An idle cutoff.

Idlewild International Airport. A metropolitan airport in New York City, at which certain space is provided for a MATS terminal.

IDM (*abbr*). 'Interdiction mission.'

IE (*auth abbr*). 'Information and Education.'

IF (*abbr*). **1.** 'Intermediate frequency.' Also **i-f** or **i.f. 2.** 'Ice fog.'

IFB (*auth abbr*). 'Invitation for bid.'

IFF (*auth abbr*). 'Identification, friend or foe.'

IFF beacon. Any interrogator or responder radar beacon used in an IFF system for challenging or replying.

IFR (*abbr*). **1.** *auth.* 'Instrument flight rules.' Also used adverbially, as in 'he is flying IFR.' **2.** 'In-flight refueling.'

IFRB (*abbr*). 'International Frequency Registration Board.'

IFR clearance. An aircraft clearance for a flight under instrument conditions.

IFR conditions. Weather conditions in which instrument flight rules apply according to appropriate directives.

IFR flight. A flight under IFR conditions, conducted in accordance with instrument flight rules.

IFRU (*abbr*). 'Interference frequency rejection unit.'

IFT (*abbr*). 'In-flight test.'

IG (*auth abbr*). 'Inspector general.'

IGD (*auth abbr*). 'Inspector General's Department.'

igloo, *n. Specif.* A dome-shaped or rounded structure, usually made of reinforced concrete and earth, normally used for the storage of explosives.

igniter, *n.* Any device, chemical, electrical, or mechanical, used to ignite.

Different kinds of igniters are used for different purposes, such as for igniting a rocket propellant, a fuel mixture in the combustion chamber of a jet engine, etc.

igniter plug. A spark plug used to ignite the fuel-air mixture in a jet engine.

ignition harness. A system or assembly of wires, together with any shielding or conduits inclosing them, for conducting electric current from the distributor to the spark plugs of an aircraft engine.

ignition system. The electrical system which

supplies the spark for the combustion of fuel in certain engines.

An ignition system includes the generator, magneto, distributor, battery, wires, and spark plugs.

IHCA (*auth abbr*). 'In hands of civil authorities.'

IHP (*abbr*). 'Indicated horsepower.'

I/I (*auth abbr*). 'Inventory and inspection report.'

IJAJ (*abbr*). 'Intentional jitter antijam.'

IJJU (*abbr*). 'Intentional jitter jamming unit.'

Ike jacket. An Eisenhower jacket.

Il (*abbr*). **1.** 'Ilyushin.' Used in the designations of Russian aircraft designed by Gen. Sergei V. Ilyushin (1894–). **2.** *Caps.* 'Infantry liaison,' as formerly used (*circa* 1920) in designating US Army aircraft.

In sense 1, well-known Il aircraft are the *Il-2*, often called 'Shturmovik,' or 'Stormovik,' a single-engine, low-wing attack bomber, used during and after WW II, esp. as an antitank airplane; the *Il-10*, a development of the Il-2 for reconnaissance and close air support; the *Il-18*, a four-engine civil transport; and the *Il-28*, a twin-jet, light bomber.

ILA (*abbr*). 'Instrument landing approach.'

ILAS (*abbr*). 'Instrument low approach system.'

ILO (*auth abbr*). 'In lieu of.'

ILOUE (*auth abbr*). 'In lieu of until exhausted.'

ILS (*auth abbr*). 'Instrument landing system.'

ILS marker. A radio marker beacon.

ilst (*auth abbr*). 'Illustrate.'

ILT (*auth abbr*). 'In lieu thereof.'

IM (*abbr*). **1.** 'Interceptor missile.' **2.** *auth.* 'Instrumentman.'

image antenna. An imaginary antenna assumed, for mathematical purposes, located below the surface directly beneath a real antenna.

The image antenna is a mirror of the actual antenna. Waves transmitted by the real antenna are reflected from a depth equal to the height of the antenna.

image point. With an airburst atomic bomb, a point beneath the surface of the earth, equal in depth to the height of the exploding bomb.

The image point is a source of radiating reflected shock.

imbalance, *n.* In accounting, a condition that exists when two accounts that should be reconcilable are in fact not so.

Used esp. when the balances of one or more accounts are not in agreement with the balances of other accounts that should in some way be reconcilable.

imm (*auth abbr*). 'Immune' or 'immunity.'

immat (*auth abbr*). 'Immaterial.'

immed (*auth abbr*). 'Immediate' or 'immediately.'

immediate mission. A mission sent immediately in response to a need or request; a call mission.

immediate photo interpretation report. A report of the first interpretation of an aerial photograph sent immediately to interested units or agencies.

Immelmann, *n.* Short for 'Immelmann turn.'

Immelmann turn. [After Max *Immelmann* (1890–1916), German flyer.] An aerial maneuver or feat in which an airplane completes the first half of a loop and then rolls over to an upright position, thus changing direction by 180 degrees, with a simultaneous gain in altitude.

immersion suit. An antiexposure suit considered for its property of protection against cold water.

immobilize, *v. tr.* To prevent the movement or effective employment of *equipment*, or of a *force*, *installation*, or the like.

A thing may be immobilized by a military operation, by adverse weather, or by other causes.

IMO (*abbr*). 'International Meteorological Organization.'

impact, *n.* **1.** Forcible contact; the imparting of force by sudden impingement or by the pressure of sudden contact, as by a bomb striking the earth. **2.** *transf.* The momentary or temporary pressure or pressures that result when a military force strikes against a nation or against another military force. **3.** *fig.* The shock exerted by a new discovery; the influence of a concept or idea, as in 'the impact of the atomic bomb upon the weapons system of the nation, or upon the strategy of war,' or 'the impact of communism.'

impact air pressure. The impact pressure exerted upon an object when air in relative motion strikes it. See **impact pressure.**

impact area. In tactical air operations, an area of defined boundaries in which all bombs or other missiles launched from aircraft are to make contact with the ground.

impact fuze. A fuze, as for a bomb, in which the action is initiated by the force of impact. Sometimes called a 'contact fuze.'

See **allways fuze, delay fuze, inertia fuze, nondelay fuze, superquick fuze, supersensitive fuze.**

impact pressure. The pressure exerted when one object strikes another, consisting of the pressure derived from both static and dynamic pressures.

This pressure, in reference to the impact of air on an airplane, is equal to one half the density of the air times the square of the air's relative velocity.

impact velocity. The velocity of a projectile at the instant of impact. Also called 'striking velocity.'

impedance, *n.* **1.** The total opposition to the flow of an alternating current or to a pulsating direct current in a circuit, caused by the combined resistance and reactance of the circuit. **2.** The ratio of voltage to current in an alternating-current circuit. **3.** As applied to an electromagnetic field, the ratio of the electric field to the magnetic field.

The symbol for impedance is Z, and the ohm is the unit of impedance.

impeller, *n.* A device, usually a rotating device, that impels air or other substance in a certain direction, often increasing its velocity, as in a

jet engine's centrifugal compressor or in a supercharger.

In a centrifugal-type supercharger or other centrifugal compressor, the impeller is an essential part that consists of a rotating wheel with a number of vanes, the rotation of the wheel impelling the air or fuel under centrifugal force; in the Roots-type supercharger, the impellers consist of two intermeshing gears, acting as a gear pump, which impel the air. See **centrifugal compressor.**

impl (*auth abbr*). 'Implement.'

implement, *v.* (impl) *tr.* To take those actions required for setting up a *plan, order, regulation,* or the like upon a practical or smooth-running basis. Hence, **implementation,** *n.*

'To implement' usually connotes action complementary to, but distinguished from, execution. In the case of an operational plan, implementation covers such activities as deciding the time, place, and manner of the action, the briefing of personnel, etc. Execution begins when the action begins. Because of the difficulty in sometimes distinguishing between one action and another, 'implement' and 'execute' are sometimes used synonymously.

implement kit. An emergency survival kit that includes special articles such as a rifle, ammunition, and machete, as well as other articles standard to other survival kits.

implosion, *n.* A sudden inward burst of particles or gases that brings pressure upon the center of something.

imprg (*auth abbr*). 'Impregnate.'

improved ground. Any open ground area, such as a drill field, airfield, cemetery, or the like, that has been modified from its natural state for one purpose or another.

impulse, *n.* **1.** A force lasting over a comparatively short period of time. **2.** In specific senses. **a.** A sudden and brief rise of current or voltage in a circuit. **b.** The force exerted by a shock wave from an explosion. **c.** The total force or thrust delivered by a jet engine, rocket motor, or rocket engine in a running of given duration. See **specific impulse. d.** The detonative force delivered by a primer when fired. **3.** A pulse of electronic energy.

imrep (*auth abbr*). 'Immediately report.'

IMTP (*auth abbr*). 'Industrial Mobilization Training Program.'

in (*auth abbr*). 'Inch.'

inactivate, *v.* (inactv) *tr.* **1.** To withdraw personnel from a previously activated *unit,* remove its designation from the active list, and place it on the inactive list. **2.** To withdraw personnel from an *installation* and make it inoperative except for caretaker activities.

Hence, **inactivated,** *a.*, **inactivation,** *n.* In both senses, see **activate,** *v.*, note.

inactive, *a.* (inactv) **1.** Of a unit: Constituted but not activated. **2.** Of an installation: Discontinued.

inactive aircraft inventory. The sum of aircraft not a part of the active aircraft inventory.

The inactive aircraft inventory may vary with the particular situation, but such an inventory usually includes aircraft in storage and aircraft undergoing modification, in addition to certain other specified categories.

inactive air reserve. That part of the air reserve consisting of members no longer active in the reserve.

Now only used as a general term. Formerly applied as a specific term (IAR).

inactive duty. Duty credited to a member of the AF Reserve for taking short periods of training, as on weekends or at nights, without going on active duty. Hence, *inactive duty training.*

inactive list. A list of constituted or reconstituted inactive units under the direct control of the Department of the Air Force. See **activate,** *v.*, note.

inactive reserve. Sometimes *capitalized.* Short for 'inactive air reserve.'

Inactive Status List. A list of inactive air reservists in the Standby Reserve who no longer remain active in a reserve component, but whose retention is considered to be in the best interests of the AF.

inactive theater of operations. A theater of operations in which organized enemy resistance has ceased.

inactv (*auth abbr*). 'Inactive,' 'inactivate,' or 'inactivation.'

in-being, *a.* or *adv.* Of a military force: Actually organized, equipped, and ready to operate offensively.

Used appositively, as in 'modern war requires an air force in-being.'

inboard, *a.* Of aircraft components: Inward from an airfoil tip; close to the fuselage or hull. See following entries. Also used adverbially.

inboard engine. On an airplane having four or more engines, an engine on either side of, and next to, the fuselage.

inboard rudder. On an airplane having two or more rudders, a rudder located a short distance inward from the tip of the horizontal tail surface.

inboard stabilizing float. On a flying boat, a float supported from the wing and placed close to the hull.

inboard wing. That part of a long airplane wing that lies between the wing root and the outboard wing.

The inboard wing is distinguished from the outboard wing. As such it may be coextensive with the stubwing or the inner wing. See **wing,** *n.*, sense 3.

inbound, *a.* Coming in, as in 'inbound traffic.'

inbuilt, *a.* Built-in.

inc (*auth abbr*). 'Increase.'

incair (*auth abbr*). 'Including air.'

incap (*abbr*). 'Incapacitate' or 'incapacitation.'

incd (*auth abbr*). **1.** 'Incident.' **2.** 'Incendiary.'

incendiary, *n.* (incd) **1.** Any chemical agent designed to cause combustion, used esp. as a filling for certain bombs, shells, bullets, or the like. **2.** Short for 'incendiary bomb,' 'incendiary bullet,' etc.

Attrib. (in sense 1), as in *incendiary ammunition, charge, missile,* etc.

incendiary attack. An attack with incendiary ammunition; *specif.*, an air raid with incendiary bombs.

incendiary bomb. (IB) Any chemical bomb containing an incendiary charge such as thermite. See **electron bomb, napalm bomb.**

incendiary bullet. A bullet having an incendiary charge, used esp. against flammable targets. Cf. **tracer bullet.**

incentive pay. (IP) Additional pay given a person as an incentive to perform a special kind of duty, as flying, demolition, etc. See **flying pay.**

incidence, *n. Specif.* Angle of incidence.

incl (*auth abbr*). 'Inclose' or 'include.'

inclination, *n. Specif.* Dip (sense 1).

inclinometer, *n.* [Main accent on 'nom.'] A flight instrument for measuring the attitude of an aircraft with respect to the horizontal. Cf. **ball-bank indicator** and **clinometer,** *n.*

Fore-and-aft, lateral, and universal inclinometers measure inclinations of the fore-and-aft axis of a plane, of the lateral axis, or of both, respectively.

incom (*auth abbr*). 'Incomplete.'

incompressible flow. *Aerodynamics.* A flow of air around a moving body, with negligible change in pressure and density from its free-air state.

Incompressible flow occurs around aircraft at relatively low speeds. Cf. **compressible flow.**

Inconel, *n.* [A trademark name.] A nickel, chrome, and iron alloy designed for corrosion resistance at fairly high temperatures.

incr (*auth abbr*). 'Increment.'

increment, *n.* (incr) That which is added. Said of personnel or materiel, as in 'the men were registered in increments of ten,' or 'we received an increment of ten airplanes.'

An increment is not a replacement.

ind (*auth abbr*). **1.** 'Indorse' or 'indorsement.' **2.** 'Industry.' **3.** 'Independent.' **4.** *Capitalized.* **a.** 'Indiana.' **b.** 'Indian.'

inde (*auth abbr*). 'Indicate.'

indct (*abbr*). 'Induct' or 'induction.'

indef (*auth abbr*). 'Indefinite.'

indefinite appointment. A Civil Service appointment for an indefinite period of time, usually during a national emergency, and subject to special regulations by the Civil Service Commission.

Under Executive Order 10577 (22 Nov 1954) the indefinite appointment is expected to disappear from the Civil Service. See **carcer appointment.**

indefinite appropriation. A monetary appropriation the amount of which is not specified in the appropriation act.

The amount of an indefinite appropriation is determined by the sums obtained from sources specified in the act.

independent air force. 1. An autonomous air force, free of control by the army or navy. **2.** *Capitalized.* In WW I, a British strategic air force set up in June 1918, composed of bomber units of the RAF, but never a part of the RAF.

In sense 2, the Independent Air Force was under the command of Maj Gen Sir Hugh M. Trenchard; its targets were enemy airdromes, munition plants, and other war-making installations.

index, *n. Specif.* Either of two parts in a bombsight, indicating the dropping angle or the sighting angle for bomb release.

index error. In air navigation, an observation error caused by a mechanical fault in the sextant, for which a correction must be applied.

index map. A photo index. See separate entry.

India (*code*). An authorized word for the letter 'I.' See **Alfa** (*code*).

Indian Springs Air Force Base. An AF base near Indian Springs, Nevada.

indicated airspeed. (IAS) **1.** The airspeed shown by an airspeed indicator. **2.** In British usage, calibrated airspeed.

indicated altitude. The altitude shown by a pressure altimeter.

indicated horsepower. The total horsepower developed by an engine, equal to the friction horsepower plus the brake horsepower, as indicated by appropriate calculations.

indicated pressure altitude. The altitude above the standard datum plane (29.92 inches of mercury) as shown by a pressure altimeter. See **pressure altitude.**

indication, *n.* In intelligence usage, any betraying activity or manifestation on the part of an enemy that may point toward his intended course of action. Indications may be classified as clues, tokens, signs, or symptoms.

indicator, *n.* **1.** Any instrument or device used to show a position, angle, attitude, or the like; short for 'airspeed indicator,' 'bank-and-turn indicator,' 'ground position indicator,' etc. **2.** *Electronics.* A cathode-ray tube or screen. **3.** *Cryptog.* An element, as a word, number, letter, or group of letters, inserted in a cryptogram as a guide to the selection or derivation and application of the correct key needed to decrypt the message.

indigenous personnel. Personnel employed or drawn from the indigenous populations of a foreign country for employment there. Cf. **native,** *n.*

indirect fire. Gunfire delivered on a target that cannot be seen by the person who aims the gun.

indirect support. 1. The patrolling, by fighters, of an airspace through which friendly bombers will pass or from which they will bomb. See note. **2.** The support furnished ground forces indirectly by aircraft, as in the bombing of enemy rear-area installations. Cf. **air support, direct support, general air support.**

In sense 1, fighters, by arriving over their assigned areas before the bombers, can engage enemy aircraft attempting to form up for interception.

indiv (*auth abbr*). 'Individual.'

individual equipment. Equipment, such as arms, packs, kits, and the like (exclusive of clothing), issued to an organization for distribution to its individual members for use in carrying out the mission of the organization.

Some individual equipment is considered organic equipment (which see). Cf. **clothing, *n.*, organizational equipment, personal equipment.**

individual flight record. A record or log, maintained in the appropriate operations office, of the flying time (either actual or in ground trainers) acquired by an individual pilot, aircraft observer, or other person on flying status.

The individual flight record shows the number of hours a particular pilot, observer, or other person spends at each kind of flying he does, as dual, solo, instrument, night, etc. It is also used for pay purposes.

individual item. 1. An item authorized each individual or group of individuals in the master equipment authorization list. **2.** *pl.* and *capitalized.* The list of these items.

individual training. The training of an individual only, such as on-the-job training. Distinguished from unit training.

indivisibility, *n.* As used in the doctrinal phrase, *indivisibility of air power.*

This phrase means that an air force to maintain its own integrity must be so controlled as never to lose its essential character as a single force. If components are deployed for special tasks or missions, as in that of close air support, employment must be in such a way as to make those components readily available for coordinated total air action if need arises.

indman (*auth abbr*). 'Industrial manager.'

indoc (*auth abbr*). 'Indoctrinate.'

indoctrinate, *v.* (indoc) *tr.* To imbue or instruct a *person* with the doctrine considered relevant to the understanding of a concept or to the carrying out of an operation.

indoctrination, *n.* (indoc) The act of indoctrinating. Used as an attributive, as in *indoctrination center, indoctrination course, indoctrination lecture, indoctrination training,* etc.

indorsement, *n.* (ind) **1.** A written communication added or attached to a basic letter, made by a person in the chain of communication, as in the title '1st Indorsement,' '2nd Indorsement,' etc. See **check indorsement, wrapper indorsement. 2.** A form attached to a service record showing a change in status or station of an airman, and noting his character and efficiency ratings, etc.

indraft, *n.* The inflow of air through a revolving propeller.

induc (*auth abbr*). 'Induction.'

induced angle of attack. That part of any given angle of attack over and above the effective angle of attack.

induced drag. That part of the total drag on an airplane induced by the airflow about the lifting surfaces.

The airflow that causes lift causes drag in proportion to the square of the lift.

induced flow. In helicopter theory, the downward flow of air induced through a rotor by the rotation of the rotor blades.

induct, *v. Specif. tr.* To take a *person* into any of the armed services of the US without voluntary action on his part. Cf. **enlist,** *v.*, sense 1.

A person is selected and inducted through the Selective Service System.

inductance, *n. Electricity.* The property of an electric circuit that induces an electromotive force into the circuit itself or into a nearby circuit, which force opposes any introduction, change, or discontinuance of the current.

Inductance corresponds to inertia in matter. It is the property that causes a lag in time for a current just turned on to rise to its full value. See **mutual inductance, self-inductance.**

inductee, *n.* One who is inducted. Cf. **enlistee,** *n.*

induction, *n.* (induc) **1.** The act of inducting. **2.** *Electricity.* The act or process by which an electromotive force, electrostatic force, or magnetic force is produced or induced in a conductor by electric, electrostatic, or magnetic lines of force. **3.** *Specif.* Fuel induction.

induction compass. An earth-inductor compass.

induction system. In a reciprocating aircraft engine, the complete system for taking in air, mixing it with fuel, and delivering it to the cylinders.

An induction system includes the air scoops and ducts, the carburetor, the intake manifold, and often a supercharger.

industrial audit. A contract cost audit.

industrial complex. An entity comprised of certain basic industries, esp. those that provide steel and a source of power, together with a number of specialized industries that depend not only upon the basic industries for their development, but also upon each other for their own growth and activity.

An industrial complex is often associated with a particular geographic area, as that of the Great Lakes region, but the development of communications tends to merge

one complex with another to the end of obliterating some geographic boundaries.

industrial mobilization. The changing of industry from its peacetime productive activity to production contributive to the war effort of a nation.

Industrial mobilization includes mobilization of capital, labor, materials, productive facilities, and services essential to the war effort.

In combinations, as *industrial mobilization program, industrial mobilization training.*

industrial objective. *Specif.* An industrial plant or town considered a target for aerial bombardment. Sometimes distinguished from a military target (which see, sense 2).

inert ammunition. Any shell, bomb, grenade, cartridge, rocket, or the like with its explosive charge, fuze, or other component essential to its normal functioning removed. Usually *collective.*

Ammunition with all explosives removed is usually described as 'completely inert' or 'totally inert.'

inertia fuze. A kind of impact fuze that functions by inertial force.

Upon impact of the projectile to which an inertia fuze is attached, either a striker will fly forward against a primer or detonator, or the primer or detonator will move forward against a fixed firing pin.

inertial control. Control exercised through inertial guidance.

inertial force. The force produced by the reaction of a body to an accelerating force, equal in magnitude and opposite in direction to the accelerating force.

Inertial force endures only so long as the accelerating force endures.

inertial guidance. A kind of guidance for guided missiles or the like, effected by means of mechanisms that automatically adjust the missile after launching to follow a given flight path, the mechanisms reacting to inertial forces during flight.

inertial system. A system of inertial guidance.

inertia starter. An aircraft engine starter using a spinning flywheel set in motion by a hand crank or electric motor.

The rotating flywheel turns the engine when engaged with it by a clutch.

inf (*auth abbr*). 'Infantry.'

infantry, *n.* (inf) A branch of the Army in which soldiers are organized, trained, and equipped to fight on foot.

infect, *v. Specif. tr.* To sow the air above an *area* with a confusion reflector, such as chaff. Hence, **infection,** *n.*

infernal machine. A device disguised or cunningly concealed and designed to explode unexpectedly; *specif.*, in intelligence usage, a disguised or concealed sabotage bomb.

The infernal machine, in its broad sense, includes booby traps, disguised bombs, and concealed bombs.

infiltrate, *v. tr.* To move a body or force into or through a friendly or enemy *area,* either individually or in small groups at extended or irregular intervals.

inflammable, *a.* (infl) Flammable (which see). Cf. **nonflammable,** *a.*

inflatable stole. A type of life vest. *British.*

in-flight, *a.* Done, used, or made during flight.

In combinations, as *in-flight report, in-flight maintenance,* etc. See following entries.

in-flight lunch. A lunch prepared to be eaten during flight.

in-flight refueling. Air refueling during the course of a flight.

inflow, *n.* **1.** The flow of air through the rotor disc of a helicopter due to movement of the helicopter, as distinguished from induced flow. Cf. **induced flow. 2.** The total flow of air through a rotor disc, including the inflow of sense 1 plus induced flow. **3.** The flow of air through a revolving propeller. Cf. **indraft,** *n.*

inflow angle. In helicopter theory, the acute angle between the resultant velocity of the total inflow through a rotor disc and the plane of the rotor disc, taken at any given point on the disc.

inflow ratio. The ratio between the inflow speed of a helicopter and the rotor-tip speed.

influence fuze. A proximity fuze.

info (*auth abbr*). **1.** 'Inform' or 'information.' **2.** 'For the information of.'

InfoCen (*abbr*). 'Information center.'

information, *n.* (info) **1.** That which is known about a situation, circumstance, or fact; knowledge. **2.** The documents, reports, or the like from which knowledge or facts are obtained. **3.** Short for: **a.** 'Intelligence information' (which see). Cf. **intelligence,** *n.*, sense 1. **b.** 'Military information' (which see, sense 1). **4.** That which is disseminated in or from an AF command through its office of information services by way of keeping people abreast of current developments, or of providing background considered necessary to the fulfillment of the AF mission, or of issuing to the public pertinent news releases.

In sense 4, the information includes that formerly sponsored by the information and education program.

information addressee. A person other than the primary addressee, to whom a message is directed for information.

informational roster. A roster, maintained on a daily basis, of all personnel assigned to an AF unit, which shows the authorized needs of the unit and the specific qualifications of the individual assigned to each particular job.

The informational roster provides the commander, chief, or department head with data regarding the efficient utilization of personnel.

information and education. (IE) A service at

certain AF bases that assists officers and airmen to increase their knowledge and education in academic, vocational, and general knowledge studies; the activity that conducts this service.

This service is usually now divided between the office of information services, which handles information, and a staff section that handles education. See **information,** *n.* sense 4, **education,** *n.*, sense 2.

information copy. A copy of any document, letter, report or the like, sent for information but not for action.

information roster. An informational roster.

infrared filter. A filter through which the infrared light reflected by an object may be seen or recorded on film.

infrared light. Light the rays of which lie just beyond the red end of the visible spectrum. Also called 'black light.'

Infrared light is sometimes used with the appropriate aids to assist vision or photography in the dark. It is also emitted by a hot nonincandescent source, such as a running aircraft engine.

infrared photograph. A photograph, esp. an aerial photograph, taken on a film emulsion sensitive to red light and near infrared energy.

infrasonic frequency. A frequency below the audible range.

infrastructure, *n.* A term recently adopted from the French, esp. among personnel of the North Atlantic Treaty Organization, signifying the framework of material things that provide the means of mounting and sustaining an operation or campaign.

The infrastructure for an operation embraces physical installations, i.e., ports, depots, bases, marshalling yards, storage facilities, etc. It is the physical structure upon which the operation and the logistic support for the operation are carried out. By analogy, a scaffold erected to repair a building might be considered the infrastructure; the procurement of materials, the process of building the scaffold, bringing mortar, stone, labor, etc., to the top of the scaffold would be the logistics (sense 2); the repairing of the building would be the operation.

in-grade pay increase. A pay increase allowed Civil Service employees after a given period of satisfactory service within one of the steps in grade.

inherent stability. The stability (which see, sense 1a and note) of an aircraft which is inherent in its design and construction.

When the aircraft is disturbed in normal flight, its inherent stability causes it to return to its normal flight attitude without the use of controls.

inhibitor, *n. Specif.* A substance added to certain propellants to reduce hygroscopicity or the tendency to absorb moisture.

in-house research. Research done within the Air Force, not by contract.

init (*abbr*). 'Initial.'

initial approach. The approach of an aircraft preparatory to beginning landing procedure. See **approach,** *n.*, sense 1.

Used esp. in regard to instrument flying, and sometimes more precisely defined in appropriate directives. In a ground-controlled approach, for example, the 'initial approach' is construed to mean any holding or vectoring in the area for a specified distance away from touchdown.

initial mass. *Specif.* The mass of a rocket missile at the beginning of its flight.

initial point. (IP) **1.** A point on the ground, identified visually or by electronic means, over which an aircraft begins a bomb run, a run over a drop zone, or the like. **2.** An assembly point at which a march or movement begins. **3.** The first point at which a moving object is located for indication on a plotting board.

initial receiving point. A supply point, or an agency, to which a requisition is initially sent for action.

initial velocity. 1. The velocity of a rocket, relative to the launcher, immediately after leaving the launcher. **2.** Muzzle velocity.

initial yaw. The yaw of a projectile the instant it leaves the muzzle of a gun.

initiate, *v. tr.* **1.** To cause a *motion, action,* or the like to be undertaken. **2.** To give a start to an *idea, plan,* or *request.* Cf. **originate,** *v.*

'Initiate' is sometimes misused for 'begin,' 'commence,' or 'make,' as in 'the attack was initiated at 0500.'

initiative, *n.* **1.** The power to act first; the status of a force by virtue of its being able to strike or move before its opponent can strike or move; the status of a person or force derived from being able to force an opponent to react instead of to act. **2.** A precept of war that such status is of advantage to the force that possesses it. **3.** A quality possessed by a person or group of persons for taking action without delay or without special prodding.

In sense 1, the term is used in such phrases as 'to take the initiative,' 'to possess the initiative,' 'to recover the initiative,' 'to move over to the initiative.'

initiator, *n. Specif.* A sensitive explosive that detonates to initiate the action in an explosive train.

An explosive such as lead azide, combining the properties of sensitivity, low energy, and low brisance, is commonly used as an initiator.

inj (*auth abbr*). 'Injure.'

injection pump. A fuel-injection pump.

injector, *n. Specif.* A device for injecting fuel and an oxidizer into the combustion chamber of a rocket engine.

injured, *a.* Of a person: Suffering from an injury, as in 'the casualties were 10 killed, 8 injured.' Used *absol.* as a noun.

The injured include the wounded, as well as those suffering from other injuries. Cf. **wounded,** *a.*

injury, *n.* (inj) A hurt such as a fracture, wound, sprain, strain, concussion, acute poisoning, or dislocation, or a malcondition resulting from

compression, temperature extremes, or prolonged exposure.

Poisoning from contaminated food is not considered an injury.

inl (*auth abbr*). 'Initial.'

in-line engine. An internal-combustion, reciprocating engine in which the cylinders are arranged in one or more straight rows. Distinguished esp. from a radial engine.

An in-line engine may be upright or inverted, and includes V or W engines. In-line engines are usually liquid cooled.

InM (*abbr*). 'Interception mission.'

innage, *n.* The amount of a liquid or other bulk commodity left in a container after transportation or storage; also the amount of fuel left in a fuel tank. Cf. **outage,** *n.*, **ullage,** *n.*

inner artillery zone. (IAZ) In an air defense situation, a defined airspace in which all aircraft, friendly, hostile, or otherwise, will be engaged by antiaircraft artillery.

inner cone. A cone-shaped part in the tail pipe of a turbojet engine, just aft of the turbine wheel, forming part of the exhaust cone.

inner liner. The inner shell of a combustion chamber in certain jet engines, inserted to diffuse the compressed air in the chamber and maintain an efficient flame pattern. Also called a 'burner basket,' 'flame holder,' or 'flame tube.'

inner marker beacon. A boundary marker beacon.

inner wing. That part of a long airplane wing that lies inside the outer wing.

This term is used when no point is being made that the wing has a stubwing, as in 'the inner wings support the two-engine nacelles of the B-47.' See **wing,** *n.*, sense 3.

INO (*auth abbr*). 'Issue necessary orders.'

in-plane motion. *Specif.* An oscillating motion occurring in the plane of a rotor disc about the drag hinge.

Distinguished from flapping motion, angular motion, and training motion.

in-processing, *n.* The procedure entailed in becoming a member of a service, unit, school, or the like.

input, *n.* **1.** *Electricity.* The power or energy delivered to an electrical or electronic device. **2.** In maintenance or assembly, the quantity of unrepaired or unassembled articles that come into a shop, depot, or the like.

inquisitor, *n.* An electronic device, similar to an interrogator, used as an auxiliary with certain radar sets for interrogating radar beacons. *British.*

InReq (*abbr*). 'Information request.'

ins (*auth abbr*). 'Insure' or 'insurance.'

InsACS (*abbr*). 'Interstate Airway Communication Station.'

in-service training. On-the-job training.

inside loop. 1. A loop (which see) in which the maneuver is executed with the pilot's canopy on the inside of the circle traced. **2.** *Specif.* The usual form of this loop, in which the airplane zooms upward from an upright level flying attitude and continues around to complete a circle, returning to its original attitude at the finish. Also called a 'normal loop.'

In sense 1, see **inverted normal loop.**

inside turn. The usual kind of banking turn in an aircraft, during which the top surfaces of the craft face or incline toward the inside of the curve.

insigne, *n. pl.* **insignia. 1.** Any distinctive device that identifies a person or object as to nationality, organization, office, rank, or branch of service, as a shoulder patch, aircraft marking, or the like. **2.** A badge. *Loose* usage.

'Insignia' is often construed as a singular.

insp (*auth abbr*). 'Inspect' or 'inspector.'

inspection, *n.* (insp) The examination of AF personnel, organizations, activities, or installations to determine their effectiveness and economy of operation, adequacy of facilities, readiness to perform assigned missions, or compliance with directives; the examination of materiel to determine quality, quantity, or compliance with standards.

An inspection of personnel, an installation, etc. by a visiting dignitary is often a military formality.

The inspection of materiel entails different methods appropriate to the purpose: Comparing an article with specifications or drawings, using fluorescent penetrant, applying electrical tests, examining visually, employing tools and gauges, etc.

An inspection is based upon two approaches. The first is to examine the effectiveness of past and current operations; the second is to test the readiness for future operations. Inspection by the latter approach must be in terms of the concept. See **concept,** *n.*, sense 2.

inspection window. A window in an aircraft specially installed for the inspection of the interior.

inspector, *n.* (insp) Sometimes *capitalized.* Any one of several staff officers or one of their assistants, who performs the duties of inspection at a given level of command; one who inspects.

inspector general. 1. Often *capitalized.* The senior inspector on the staff of a command higher than that of a wing. In *pl.*, 'inspectors general.' **2.** *Capitalized.* The Inspector General, USAF.

Inspector General, USAF. The inspector general of the staff of Headquarters USAF. Often written 'The Inspector General, USAF.'

'The mission of The Inspector General, USAF, is to determine and report upon the state of readiness, effectiveness, and efficiency of the Air Force, to make recommendations pertinent thereto and to provide an effective Air Force facility for inspection, security, investigation,

provost marshal, and flight safety research activities' (AFR 20-68).

inst (*auth abbr*). **1.** 'Instrument.' **2.** 'Instruction.' **3.** 'Instant.'

instability, *n.* *Meteorology.* A condition that exists in the atmosphere when air is unquiet and easily displaced mechanically, causing air currents.

Instability exists when the lapse rate is greater than the adiabatic rate, causing rising air to accelerate. See **conditional instability, convective instability.**

instability line. The officially accepted term for a squall line.

installation, *n.* (instl) **1.** Anything installed, with special reference to large physical objects that occupy or cover an area or piece of real estate. **2.** The act of installing. **3.** *pl.* and *capitalized.* Short for 'Air Installations.'

This word (sense 1) covers a wide range of objects, and is often a point-of-view word. An air base, for example, is an installation since it is installed on a piece of land, but from another standpoint it is an establishment. Installations are either necessary or facilitating, or both. When facilitating, they are properly called 'facilities.' A concrete runway, for example, is an installation; it may also be a facility. Cf. **facility, *n.***, and see **Air Force installation, air installation.**

installed equipment. 1. Equipment installed but not an integral part of the property. **2.** Short for 'installed fixed equipment.'

In sense 1, installed equipment includes such equipment as aircraft machine guns, radios, and the like.

installed fixed equipment. Nonexpendable equipment which when installed in, or affixed to, real property becomes an integrated part of the property.

This equipment includes such things as toilets, heating units, utility fixtures, etc., but does not include machinery operated or housed in a building.

instantaneous bomb. A bomb with a superquick fuze.

instantaneous fuze. A superquick fuze.

Institute of Technology. An institute at Wright-Patterson Air Force Base, Ohio, that provides education and training to meet certain technological, scientific, and other professional requirements of the USAF. In full, 'Institute of Technology, USAF.' Formerly abbreviated 'USAFIT,' now 'ITUSAF.'

This institute maintains a residence college at Wright-Patterson AFB, and administers a civilian institutions program. It is a part of the Air University Command.

Institute of the Aeronautical Sciences. A US nongovernment organization founded in 1932 for advancing and coordinating research in the arts, sciences, and techniques applied to aviation, for disseminating aeronautical knowledge, and furthering the proficiency and prestige of its members in the aeronautical professions.

instl (*auth abbr*). 'Install' or 'installation.'

instn (*abbr*). 'Instrumentation.'

instr (*auth abbr*). 'Instruct' or 'instructor.'

instructor, *n.* (instr). *Specif.* A person who teaches some special subject, such as flying or gunnery.

Often with a designating attributive, as in *flying instructor, gunnery instructor*, etc.

instructor handbook. A book designed for use of an instructor, which contains the material, forms, and any other matter pertinent to a course of instruction.

instructor pilot. A pilot appointed as an instructor in a particular type of aircraft in which he is qualified to check out other pilots.

instrument, *n.* (inst) *Specif.* **1.** Any aircraft instrument. See **aircraft instrument. 2.** In a restricted sense, a flight or navigational instrument, esp. as used in such phrases as 'instrument approach'; also used adverbially, as in 'he flew instruments all the way.' See **fly, *v.***, note.

In attributive uses (sense 2), as in *instrument approach, instrument landing*, etc., 'instrument' or 'instruments' is construed to include certain ground-based navigational or instrument aids, including communication equipment.

instrument approach. A landing approach made without visual reference to the ground by the use of aircraft instruments and ground-based electronic or communication systems or devices. See **ground-controlled approach.**

instrument approach and landing chart. An aeronautical chart showing instrument approach and letdown procedures to an airfield, the runway layout, etc. See **approach chart,** sense 1, and **landing chart.**

instrumentation boom. A pole-like protuberance extending from an airfoil into the airflow, in or to which special instruments are located to provide checks on airspeed and other data during flight tests. Cf. **airspeed boom.**

instrument bombing. Bombing by the use of radar or other instruments without visual reference to the ground.

instrument card. An instrument certificate.

instrument certificate. Either of two certificates (AF Form 8 or 8A) issued to a pilot who has completed certain requirements for flying under specified weather conditions. See **green instrument certificate,** note, **white instrument certificate.**

instrument check. A check given a pilot to test his proficiency in instrument flying.

instrument conditions. Weather conditions in which instrument flying is mandatory, or in which continued flight is possible only by using instruments.

instrument flight. A flight made by using instruments, without visual reference to the ground; instrument flying.

instrument flight rules. (IFR) Often *capitalized.*

The collection of rules in AF directives which govern flight procedures under instrument conditions.

instrument flying. Flying in which navigation is carried out by the use of flight and navigational instruments without visual reference to the ground.

instrument landing. A landing without visual reference to the ground, esp. during its initial stages, made with the aid of aircraft instruments and ground-based electronic devices or communication systems. Cf. **weather minimums.**

instrument landing system. (ILS) A system for guiding aircraft during a final approach by means of directional radio transmitters indicating the direction of the runway and the angle of the glide path, and by means of radio marker beacons indicating for the aircraft positions along the approach path.

The term 'instrument landing system' is sometimes applied specifically to CAA systems of the type described, the equivalent AF system being called an 'instrument low-approach system.' The principal difference between the two systems is that the AF system is mobile, the other is not.

instrument low-approach system. A mobile AF instrument landing system. See prec.

instrument panel. A panel or board containing aircraft instruments.

instrument pilot. A pilot qualified to do instrument flying.

In combination, as *instrument pilot instructor.*

instrument pilot certificate. An instrument certificate.

instrument rating. In popular usage, a rating authorizing a person to do instrument flying.

instrument takeoff. A takeoff using aircraft instruments or other aids, without visual reference to the ground.

instrument weather. Weather in which instrument flying is required.

insubordination, *n.* The act of disobeying willfully, showing disrespect, or resisting authority.

insure, *v.* (ins) *tr.* **1.** Construed with a clause as object: To pledge *that* a specific operation or order will be carried out. **2.** Construed with *against:* To guarantee an *operation* against failure.

intake, *n.* Short for 'air intake' or 'air inlet.'

intake header. An air intake outside an aircraft engine cowling for taking in air to a supercharger.

intake manifold. A pipe which leads the fuel mixture from the carburetor to the cylinder or cylinders of an engine.

intake port. A valve opening in the top of an engine cylinder for the intake of fuel.

intangible personal property. Personal property which is not physical; a right to a patent, technique, copyright, process, or the like.

This term is sometimes given limited and specific meaning in special context.

intcp (*auth abbr*). 'Intercept' or 'interceptor.'

integral nacelle. A jet nacelle that fits within the contours of a wing, wing root, or fuselage. Distinguished from a pod nacelle.

integral tank. An aircraft fuel tank built into the aircraft, usually into a wing, and not removable. Cf. **drop tank.**

integrate, *v. tr.* **1.** To incorporate an *officer* into the Regular AF. **2.** To form an integrated *command;* to organize a *headquarters* so that personnel from two or more commands fit into a unified whole. **3.** To fit intelligence *data* into intelligence data already evaluated.

The process of integrating in senses 2 and 3 suggests a more or less perfect fitting together of parts rather than of assimilation. In integration, the parts remain identifiable as parts, although submerged in the whole.

Hence, **integrated,** *a.*

integrated command. A command in which two or more normally separate commands are placed under the operational control of a single commander, and in which, depending upon the degree of integration, individuals are assigned duties as individuals, without, or with little reference, to their parent commands.

This term may be applied to a command made up of different national commands, as in SHAPE or in the Eastern Air Command of CBI during WW II; or to a command composed of commands of different services.

integrated staff. A staff made up from different services or nations, in which one person only is appointed to each position regardless of nationality or service. Cf. **parallel staff.**

integrated staff action. A highly-coordinated action initiated or supervised by a staff, which, for the purposes of the action, becomes a single operating entity not broken down by separating functions; staff action coordinated to an ideal degree.

This term is a relative term, since all staff action is integrated to some extent.

integrating accelerometer. A mechanical and electrical device, usually installed in a guided missile or the like, which measures the forces of acceleration along the longitudinal axis, records the velocity, and measures the distance traveled.

When installed in a rocket the integrating accelerometer may be preset to switch off the fuel flow when the required speed is reached.

integration, *n.* The process or procedure involved in the action of integrating: See **integrate,** *v.*

intel (*auth abbr*). 'Intelligence.'

intelligence, *n.* (intel) **1.** That knowledge or information which has been evaluated and interpreted in terms of the capabilities, limitations, vulnerabilities, and probable intentions of the

enemy or potential enemy. See **air intelligence.** **2.** Usually *capitalized.* An organization or activity that so evaluates and interprets information. **3.** The process by which such information is collected, evaluated, interpreted, and disseminated.

'Intelligence' is often preceded by a word or phrase designating a specific kind or type of intelligence, as in *air intelligence, air technical intelligence, capture intelligence, combat intelligence, counterintelligence, current intelligence, electronic intelligence, flak intelligence, strategic intelligence,* etc. See separate entries.

intelligence agency. An agency engaged in, or responsible for, the collecting of information, the producing and disseminating of intelligence, or for counterintelligence activities. Cf. **agent,** *n.*

intelligence annex. Intelligence data attached as an annex to an operation order or the like.

intelligence estimate. An appraisal of the capabilities, limitations, vulnerabilities, and probable intentions (or probable reactions) of the enemy or potential enemy in any given situation, based upon intelligence. See **estimate of the situation.**

intelligence information. As technically used, unevaluated and uninterpreted information of or about the enemy or potential enemy, which when evaluated and interpreted becomes intelligence.

intelligence photograph. A photograph, esp. an aerial photograph, obtained for intelligence purposes. See **aerial photograph.**

intelligence process. The process by which information is collected, converted into intelligence, and distributed.

intentions, *n.* Those determinations made by a commander, either friendly or enemy, in regard either to *what* he expects to do, or to *how* he will carry out an operation. See **enemy intentions.**

intercept, *n.* (intcp) **1.** An act or instance of intercepting. **2.** An interception mission. **3. a.** A celestial intercept. **b.** A radio intercept.

intercept, *v.* (intcp) *tr.* **1.** In a general sense, to meet, or interrupt the course of, a moving *vessel, aircraft, train, missile, force,* etc. Also *absol.* **2.** *Specif.* To head off and engage an enemy *aircraft* in order to prevent its reaching its objective. **3.** In air rescue, to seek out and meet an airborne *aircraft* that is lost or in need, for the purpose of rendering aid. **4.** To tune or cut in and listen to a radio or telephone *message* not intended for the listener. See **radio intercept.**

Hence, **interception,** *n.*, in all senses.

intercept bearing. 1. A bearing in compass degrees given to, or taken by, an aircraft in order to intercept, esp., one given to a fighter by a GCI station as a vector towards a target. **2.** A bearing taken by electronic means on an enemy radio signal emanating from a communication station to determine the location of the station.

intercepter, *n.* Variant of 'interceptor.'

intercept heading. A heading taken by an aircraft in order to intercept.

interception mission. Any air mission assigned to intercept a moving vessel, aircraft, train, or other vehicle; *specif.*, a mission to meet and engage an enemy aircraft, or to intercept and identify an unidentified aircraft.

interception problem. An intercept problem.

intercept mission. An interception mission.

interceptor, *n.* (intcp) **1.** An airplane designed or used for interception. **2.** In a more general sense, anything that intercepts, esp. a rocket.

Usually, an interceptor is characterized by a high rate of climb, high speed, high ceiling, effective armament, and relatively short endurance. See **all-weather fighter.**

interceptor aircraft. One or more aircraft used as interceptors.

interceptor command. Any air command set up esp. to intercept enemy aircraft.

interceptor controller. An air defense controller.

interceptor fighter. A fighter aircraft used as an interceptor.

interceptor missile. *Specif.* A guided missile used to intercept aircraft or guided missiles.

intercept problem. The problem of detecting, intercepting, and downing aircraft; the problem of determining a course and speed which will enable an aircraft to intercept a moving target.

intercept speed. 1. The speed at which a vectored aircraft or other object must fly to intercept a moving object. **2.** In air refueling, the speed of closure between the tanker and the other aircraft.

interchangeability, *n. Specif.* A property given an aircraft part so that it may be used in different types of aircraft.

intercom, *n.* **1.** A communication system among different offices or places; an interphone. Used esp. in an aircraft for communication between or among the aircrew members. Cf. **intercommunication,** *n.* and **intercommunication(s) system,** sense 2. **2.** The microphone or loudspeaker, or both, used in this system; a 'squawk box.'

intercommunication, *n.* **1.** Communication between or among different activities, units, installations, aircraft, ships, or the like, as distinguished esp. from interior communication. **2.** *Specif.* Communication between or among crew members in different parts of an aircraft.

'Intercommunication' is a point-of-view word, inasmuch as the word as defined in sense 2 could be also called 'interior communication,' or 'intracommunication' if regarded as communication that takes place within the aircraft.

intercommunication(s) system. **1.** A system for intercommunication. **2.** *Specif.* A system for communication between or among the aircrew members of an aircraft, or between or among two or more aircraft. See prec., esp. note, and cf. **intercom,** *n.*

intercontinental bomber. A bomber capable of flight from one continent to targets on another without landing either in going out or return.

This bomber may be refueled while in the air.

intercontinental missile. A missile that may be propelled or trajected from one continent to another. See **ICBM** (*abbr*).

The intercontinental ballistic missile is one kind of missile of this class.

intercooler, *n.* An air cooler (which see) located between the stages of a supercharger or compressor.

interdict, *v. tr.* To stop, prevent, or hinder enemy *movement* or *lines of communication* on land, sea, or in the air; to impede an *enemy* in his movements; to isolate a particular *area* by gunfire, bombings, etc. See **isolate,** *v.*

interdiction, *n.* **1.** The prevention or destruction of, or interference with, enemy movements, communications, and lines of communication, as by gunfire, shelling, or bombing; the action of making it very difficult for the enemy to move from one place to another. **2.** *Specif.* Air interdiction.

interdiction bombing. Bombing done for purposes of interdiction.

interdiction fire. Gunfire delivered in the process of interdiction; *specif.*, the fire placed on a specified place, as a railyard, assembly area, crossroad, or the like, and intended to prevent its effective use.

interdiction line. A line that delimits an area that is, or will be, interdicted; a geographical feature, as a river, over which the enemy is denied movement.

interdiction mission. A mission undertaken for interdiction.

interdictory fire. Interdiction fire.

interf (*auth abbr*). 'Interference.'

interference, *n.* (interf) **1.** *Aerodynamics.* The occurrence when the aerodynamic reactions of one surface or component of an aircraft interfere with those of another; the resultant effects from this occurrence such as drag. See **propeller interference.** **2.** *Electricity* and *electronics.* A disturbance of a desired signal or sound by another signal or by static; the resultant noise.

interference drag. Drag induced by the interaction of wings, fuselage, tail, and other aircraft components.

interference unit. A device used to generate interference in an electronic device. Used esp. as a training device.

interhemispheric, *a.* Of or pertaining to flight between the Western and Eastern Hemispheres.

In combination, as in *interhemispheric bomber, interhemispheric range,* etc.

interim aircraft. The aircraft used by an organization while awaiting the assignment of programed aircraft of another type.

interim clearanee. A security clearance sometimes given a person considered to be a good risk, but upon whom an investigation has not been completed.

interior ballistics. That branch of ballistics concerned with the combustion of propellants, the development of gas pressures, and the motion of projectiles esp. inside the bore of a gun. Also called 'internal ballistics.'

Interior ballistics of a gun treats of the motion and action of projectiles while still in the barrel, together with associated phenomena, such as ignition of the propellant, the changes in temperature, muzzle velocity, etc. Interior ballistics of a rocket deals with the burning of the propellant inside the rocket, together with associated phenomena, such as gas escapement, pressures, etc.

interior communication. Communication between people in different parts of an aircraft, vessel, or other vehicle, or between people in different parts of an organization, activity, installation, etc. Distinguished esp. from intercommunication (which see, sense 1).

interior guard. The guards who guard and police the entrances and precincts of an air base or other installation.

intermediate frequency. In superheterodyne reception, a frequency resulting from the combination of the received modulated carrier frequency and the locally generated oscillator frequency.

An intermediate frequency is so-called because it lies between the modulated radio frequency and audio frequency.

intermediate inspection. Any of the three inspections formerly given an aircraft before a major inspection.

First, second, and third intermediate inspections were made after 50, 100, and 150 flying hours respectively; a major inspection was made at 200 hours, and the process was begun again. See **periodic inspection.**

intermediate light. The twilight that occurs between operational light and security darkness.

During intermediate light the visibility range is one-half mile to less than two miles.

intermediate records depository. Any records depository used for temporary storage of permanent records, pending their final disposition.

intermediate-scale map. A term sometimes applied to medium-scale maps of approximately 1:200,000 to 1:500,000.

Intermediate-scale maps are used generally for planning strategic operations, including the movement and supply of troops.

intermittent jet. A pulsejet engine.

intermittent-pressure breathing. Pressure breathing in which different pressures are introduced during different phases of the respiratory cycle.

Usually, a high pressure is introduced during inspiration, a lower pressure during expiration. See **pressure breathing.**

intern, *v. tr.* To confine or restrict a *person* in or to a camp or other place during the period of a war or armed conflict; to impound an *airplane* or other piece of equipment during the period of an armed conflict.

internal ballistics. Interior ballistics.

internal-combustion engine. Any engine in which the pressure of gases formed by combustion of fuel is directly used to give the engine motion; *specif.*, a piston-driven engine of this type that converts back-and-forth movement into rotary movement by means of a crankshaft.

This term is sometimes applied to jet engines, and in its broad meaning can be applied to rocket engines; the common designation for engines of this type, however, is 'reaction engine.' Cf. **external-combustion engine.**

internal-combustion reciprocating engine. An internal-combustion engine that converts back-and-forth movement into rotary movement.

internal security. The security exercised or prevailing within an organization, installation, or nation.

internal supercharger. A gear-driven supercharger built as an integral part of the engine, which compresses the fuel-air mixture from the carburetor and delivers it to the cylinders. Cf. **external supercharger.**

internal wing truss. A drag truss built inside a wing.

international candle. An international unit of luminous intensity which is the light emitted by five square millimeters of platinum at solidification temperature.

International Civil Aviation Organization. (ICAO) An international organization for civil aviation concerned with regulations, procedures, and the like for international air transportation.

The ICAO was established on 4 April 1947 and maintains headquarters in Montreal, Canada.

International Code. A code adopted by many nations to facilitate sight communication between persons of different nations.

The code uses some 26 flags, each standing for a letter of the Latin alphabet, which may be used in different combinations each signifying a certain message, or used as letters to spell out a word or sentence. If flags are not used, the international Morse code is used.

international date line. A generally agreed-to line approximating the 180th meridian, used as a reference line for beginning each calendar day.

Any given day begins at midnight on the date line, and begins at every other point on the earth's surface as the midnight line, moving westward, reaches it. At one instant before the midnight line again passes over the date line, practically the entire world has the same calendar day. When crossing the line going west, one advances the calendar day, e.g., he goes from Monday to Tuesday; when crossing eastward, one goes back a day, e.g., he goes from Tuesday to Monday.

International Meteorological Organization. An international organization of the meteorological services of several countries, established in 1878 and dissolved in 1950. See **World Meteorological Organization,** note.

international Morse code. An international code by which letters and numbers are represented by a combination of dots and dashes and used in radio telegraph, blinker-light, or other means of communication.

international silence period. A three-minute interval beginning at 15 and 45 minutes after each hour during which emergency radio channels are to be used only for distress signals. Also called the 'international distress listening period.'

International Telecommunications Union. An organization that establishes rules and regulations governing the international use of telegraph, telephone, and radio communications.

The ITU reports to the United Nations.

interphone, *n.* Any telephone, microphone, or receiver by which people communicate between adjoining or nearby offices, or by which the crew members of an aircraft, vessel, tank, or other vehicle communicate with one another. Cf. **intercom,** *n.*

interplane, *a.* **1.** Between or among airplanes, as in *interplane communication.* **2.** Between wings, as in *interplane strut.*

interplane aileron. An obsolete kind of external aileron mounted between the upper and lower wings of a biplane.

interplanetary, *a.* Between planets. Cf. **interstellar,** *a.*

interpret, *v. tr.* (intpr) **1.** In intelligence usage, to determine the meaning and significance of evaluated *information* or *data* in terms of its effect upon the existing estimate of the situation. **2.** As applied esp. to aerial photographs, to determine from a *photograph* or *photographs* the identity and physical characteristics of the photographed terrain and of any works of man thereon, and to determine the nature and extent of any indicated activity taking place.

interpretation, *n.* (interp) The act of interpreting; photographic interpretation.

interrogation, *n.* (intg) **1.** The procedure of procuring from aircrews, by questioning, information regarding a mission, esp. a combat mission

recently performed; the activity involved in this procedure. Cf. **debriefing,** *n.* **2.** The procedure or activity of questioning prisoners of war. **3.** *Electronics.* The act of transmitting radar pulses to trigger a radar beacon for purposes of identification and navigation; the pulses themselves. Also called the 'challenge.'

In sense 1, the interrogation is normally in regard to the success or failure of a mission, enemy defense encountered and observations made on the mission.

interrogation center. A center for the interrogation of prisoners of war.

interrogator, *n.* (intg) **1.** An electronic device for transmitting challenging or interrogating pulses for reception and response by a transponder; also the radio or radar beacon used for this purpose. **2.** One who puts questions to crew members or to prisoners of war.

The interrogator (sense 1) is one component of the interrogator-responser (which see).

interrogator-responser, *n.* An electronic device combining a transmitter for sending pulses interrogating a transponder and a receiver for receiving and displaying the answering pulses of the transponder. See **responser,** *n.*

This device consists of an interrogator and a responser.

interrogator-responsor, *n.* Variant of 'interrogator responser.'

interrupter, *n.* **1.** An electrical, electronic, or mechanical device which periodically interrupts the continuous flow of an electrical current so as to produce pulses. **2.** A device in the fuze of an artillery projectile which prevents the fuze from functioning until the projectile leaves the barrel.

interrupter gear. A synchronizing gear for machine guns, so-called because it interrupts the firing mechanism of the gun or guns to allow a propeller blade to pass the muzzle.

intersperse, *v. tr.* To scatter or place *aircraft* or other *objects* among other things, as in 'the aircraft were interspersed among the trees.'

interstage cooler. An intercooler.

interstellar, *a.* Between stars. Cf. **interplanetary,** *a.*

intertheater, *a.* Between or among different theaters of operation.

intertropical convergence zone. A zone in which the trade winds of the northern and southern hemispheres converge, often marked by overcast skies, strong squalls, thunderstorms, etc.

intertropical front. A narrow elongated line of meteorological activity between the southern and northern trade winds in the intertropical convergence zone.

Controversy exists among meteorologists as to the exact nature of this phenomenon, some not regarding it as a true frontal surface.

interval, *n.* The space between objects measured from side to side, as in an aircraft formation.

The space between objects from the back of one to the front of the next is called 'distance.' Cf. **normal interval.**

intervalometer, *n.* **1.** An electrical device used in bombing, by which data is preset in order to drop a desired number of bombs at a constant predetermined interval. **2.** In aerial photography, a device connected to an automatic camera, which can be preset to make exposures at a desired constant interval of time.

intg (*auth abbr*). 'Interrogate' or 'interrogator.'

intl (*auth abbr*). 'International.'

intmed (*auth abbr*). 'Intermediate.'

intns (*auth abbr*). 'Intransit.'

intpr (*auth abbr*). 'Interpret' or 'interpreter.'

intr (*abbr*). **1.** *auth.* 'Intruder.' **2.** 'Intransit.' **3.** 'Intransitive.'

intransit depot. A kind of transportation-control depot that assembles, checks, and delivers materiel and supplies for overseas shipment. Now *hist.* in the AF.

intratheater, *a.* Within a theater of operations.

intrc (*abbr*). 'Intricate.'

IntRept (*auth abbr*). 'Intelligence Report.'

intruder, *n.* (intr) **1.** A hostile or unidentified aircraft that appears in a defended airspace; in a wider sense, an aircraft that appears in a specified defended airspace without authority to do so. **2.** An aircraft sent on an intruder mission.

Attrib. in sense 2, as in *intruder aircraft, intruder attack, intruder raid, intruder squadron,* etc. Attrib. in sense 1, as in *intruder patrol.*

intruder mission. A mission, esp. a night mission of fighters or attack bombers, sent into enemy territory to destroy hostile aircraft, to attack airdromes, or otherwise to dislocate the enemy air forces.

intst (*abbr*). 'Instrumentalist.'

IntSum (*auth abbr*). 'Intelligence summary.'

InUS (*auth abbr*). 'Inside the United States.'

inv (*auth abbr*). **1.** 'Invent.' **2.** 'Invoice.'

Invader, *n.* **1.** A popular name for the Douglas B-26. **2.** For a short time, a popular name for the A-36.

invasion currency. Currency of a distinctive design prepared by an invading power and declared legal tender in the invaded territory. Cf. **occupation currency,** esp. note.

inventory, *n.* An itemized list or count of all or any designated property on hand at a given time; the property comprising an inventory.

This term is often used as a factor in establishing a rate, such as an aircraft attrition rate. In those circumstances it must be precisely defined for the purpose involved. See, for example, **aircraft inventory.**

inventory accounting. 1. A system of accounting that shows the cost, quantity, or both cost and

quantity, of property received, issued, on order or on hand, and available for issue; a record of such an accounting. **2.** The procedures involved in taking a physical inventory for the purpose of proving the accountability of custodians.

inventory cutoff voucher. The last voucher made before taking an inventory.

inventory deadline date. The date on which an inventory is begun.

inverse Mercator. A transverse Mercator the base line being a meridian.

inverse taper wing. A wing which is wider at the tip than at the root.

inversion, *n. Meteorology.* Short for 'temperature inversion.'

inverted engine. An in-line engine in which the cylinders are placed below the crankshaft.

inverted flight. Flight in which the aircraft is upside down.

inverted gull wing. An aircraft wing which near the root slants downward, then straightens out or slants slightly upward. Cf. **gull wing.**

inverted normal loop. A species of inside loop begun from an upside-down position.

An inverted normal loop is begun from an inverted flying position, with the airplane first going downward in a curving dive, then upward into a curving climb, returning to inverted flight at the finish. See **inside loop.**

inverted outside loop. A species of outside loop begun from an inverted flight position.

In this type of loop the plane first goes into a curving climb, then down into a curving dive, with a return to inverted flight at the finish.

inverted spin. A spin in which the airplane is in an inverted flight position throughout.

inverter, *n.* An electrical device for converting direct current to alternating current, as in an aircraft's electrical system.

inves (*auth abbr*). 'Investigate' or 'investigator.'

invitational order. Also called 'invitational travel order.' **1.** An authorization for a person not under military jurisdiction to travel and to receive per diem or other compensation out of funds allotted the unit issuing the authorization. See **order,** *n.*, note. **2.** A travel order issued to a person under the administrative control of a commander other than the one who issues the order, but with the former's concurrence, to travel and receive per diem, the costs being chargeable against funds allotted to the commander issuing the order. Considered *loose* usage.

I. O. (*abbr*). 'Intelligence officer.' *British.*

IOH (*auth abbr*). 'Item on hand.'

ion, *n.* A particle consisting of a positively or negatively charged atom or group of atoms.

ion chamber. An ionization chamber.

ionization chamber. An instrument consisting essentially of a closed chamber or tube of air or gas with two electrodes, used for detecting and measuring nuclear radiation.

Radiation passing through an ionization chamber ionizes the air or gas in the chamber, permitting detection and measurement of the radiation by electrical means.

ionize, *v. tr.* To convert *something* (as air or liquid) into ions. Hence, **ionization,** *n.*

ionized, *a.* Composed of ions.

ionosphere, *n.* An outer region of the atmosphere which consists of layers of ionized air particles.

The ionosphere begins approximately 25 miles above the earth, as considered by some meteorologists, or at 50 miles if the chemosphere is considered an extension of the stratosphere. It varies in height with the season of the year and the time of day, but extends to 300 miles or more. By some meteorologists, it is considered to extend to the outermost fringe of the atmosphere, by others it is bounded at its upper limits by the exosphere (which see), by others, it goes up to another sphere called the 'mesosphere.' The ionosphere has the property of reflecting certain radio waves, and is believed to reach a temperature of several thousand degrees. See **D layer, E layer, F layer, mesosphere,** *n.*

IP (*abbr*). **1.** *auth.* 'Initial point.' **2.** *auth.* 'Incentive pay.' **3.** 'Instructor pilot.'

IPW (*auth abbr*). 'Interrogation prisoner of war.'

IR (*abbr*). **1.** *auth.* 'Instrument reading.' **2.** 'Interrogator-responser.'

IRAC (*auth abbr*). 'Interdepartmental Radio Advisory Committee.'

IRAN (*auth abbr*). 'Inspection and repair as necessary.'

IRC (*auth abbr*). 'International Red Cross.'

IRO (*auth abbr*). 'International Refugee Organization.'

Iron Cigar. The B-26 of WW II. *Slang.*

ironing board. A flat board on which the boom operator of a tanker aircraft lies prone during the action of air-refueling.

iron sight. Any metallic gunsight, as a blade sight, as distinguished from an optical or computing sight.

irregularity, *n. Specif.* An instance of deviation from a regulation or law.

irreversible control. *Specif.* A system of control for control surfaces so designed that aerodynamic forces acting on the surfaces are not transmitted back to the pilot's controls.

In mechanical engineering, a worm gear and worm wheel afford an example of irreversible control: The worm gear can drive the wheel, but the wheel cannot drive the worm gear.

irreversible surface. A control surface the linkage of which is so designed that aerodynamic forces cannot move it although the pilot can move the surface as desired.

irritant gas. A nonlethal gas, as tear gas, causing irritation.

IRS (*abbr*). **1.** 'Inactive Reserve Section.' **2.** *auth.* 'Ineligible Reserve Section.'

IRT (*abbr*). 'Interrogator-responser-transponder.'

Irving, *n.* The name given by the Allies to the Nakajima two-engine reconnaissance and night fighter used in WW II.

Irving suit. A British two-piece flying suit made of fur-lined leather. Used in early WW II.

is (*abbr*). **1.** *auth.* 'Island.' **2.** *Caps.* 'Issue slip.'

isallohypse, *n.* A line on a chart connecting points having values of equal change in height.

ischemia, *n.* A local and temporary deficiency in the supply of blood, chiefly due to the contraction of a blood vessel.

ISL (*abbr*). 'Inactive Status List.'

island, *n.* (is) **1.** A section in a jet aircraft where different lines, as oil, fuel, and hydraulic lines, are braced to prevent failure from vibration. **2.** On an aircraft carrier, a structure above the flight deck containing the conning tower, navigation bridge, etc.

ISO (*abbr*). 'Information Services Officer.'

isobar, *n.* **1.** *Meteorology.* **a.** A line conceived or considered to join points having the same barometric pressure. **b.** A line on a chart or weather map representing this line. **2.** *Chemistry.* Either of two atoms or elements having the same atomic weight but different in atomic number.

isocenter, *n.* *Aerial photog.* The point at which a principal line intersects the axis of tilt.

The isocenter coincides with the center of distortion (which see).

isoclinic wing. A wing designed to twist as it bends so as to counterbalance the loss of tip incidence.

isogonal, *n.* An isogonic line.

isogonic line. A line on a map or chart which joins points having equal magnetic variation.

isogram, *n.* *Meteorology.* A line on a map or chart connecting points of equal value of some meteorological or climatological phenomenon.

An isobar (sense 1), an isopleth, or an isotherm is an isogram.

isogriv, *n.* A line on a map or chart which joins points of equal magnetic variation from grid north.

isolate, *v.* *To isolate a battlefield,* to separate a battlefield from the surrounding enemy area by destroying the enemy's lines of communication and transportation, thereby containing the enemy in the field without additional supplies and reinforcements.

Complete isolation is seldom achieved.

isoline, *n.* *Meteorology.* An isogram or isopleth.

isomer, *n.* **1.** *Meteorology.* A line on a map or chart indicating an equal proportion of some meteorological phenomenon, as rainfall. **2.** *Physics* and *chemistry.* Any of two or more compounds, substances, or isotopes having the same molecular formulas, i.e., the same constituents, but different structures or arrangement of those constituents, giving rise to different properties.

iso-octane, *n.* An octane with a particular branch structure (2,2,4-trimethylpentane) that gives it high antiknock value when used in liquid fuel. Called 'octane' for short.

isopleth, *n.* *Meteorology.* **1.** A special kind of isogram, showing the occurrence of frequency of a meteorological phenomenon in relation to two variables. **2.** In less exact usage, an isogram.

isotach, *n.* A line on a chart connecting points representing equal values of speed.

isotherm, *n.* A line drawn on a map or chart through points having equal temperature.

Isotherms may be drawn to represent either the temperature at any particular time, or the average temperature for a specified period.

isothermal, *a.* Having the same temperature throughout.

isothermal region. An atmospheric layer or shell above the troposphere, considered to have uniform temperature.

The isothermal region, extending from above 11 kilometers to 32 kilometers (7 to 19 miles), shows large departures from the isothermal assumption. It is thickest over the poles, thinnest (even absent) over the equator. It lies just above the tropopause, and coextends with a layer otherwise called the 'stratosphere' by Wares and Chapman. See **atmosphere,** *n.*, **stratosphere,** *n.*

isotope, *n.* A particular form of a given element having the same position in the periodic table that other forms of the same element have, but distinguishable from all other forms by differences in atomic weight and by certain radioactive differences.

isotropic antenna. In electronic theory, an ideal, hypothetical antenna that radiates or receives equally well in all directions.

The isotropic antenna serves as a reference in considering the directional properties of actual antennas.

iss (*auth abbr*). 'Issue.'

issue, *n.* **1.** That which is issued. **2.** The act of issuing.

issue, *v.* (iss) *tr.* **1.** To give or turn over officially to an individual or unit *equipment, supplies,* or the like. See **assign,** *v.*, sense 5. **2.** To publish or give an *order.*

issue document. Any document used to record the accountability of issued supplies.

issue in kind. An issue in goods rather than in money, but often accounted for in terms of money.

ISum (*abbr*). 'Intelligence summary.' See **IntSum** (*auth abbr*).

it, *pron.* **1.** The last of hope or luck; the last of one's life. Always used as the object of the verb 'had' (either the past participle or the preterit), as in 'he's had it if he fails to turn off,' or 'we've had

it, we're out of gas,' or 'he's had it, the old man just heard of the ground loop.' *Colloq.* and originally *British.* **2.** Any situation or crisis considered the end or consequence toward which events have been leading, as in 'this is it, men, we're in a battle.'

The consensus among airmen is that the expression of sense 1 is of British origin. One witness pinpoints hearing it in Jan or Feb 1941 at Brize Norton RAF Station, Oxfordshire. Cf. article by Louise Pound in *Am Sp* (Dec 1954), pp 263–266. The expression is related in meaning to the American expression, 'he's had it in the neck.'

Itami Air Base. An air base at Osaka, Japan.

Itazuke Air Base. An air base at Fukuoka, Japan.

Item (*code*). A word formerly authorized for the letter 'I.' See **Able** (*code*).

item of equipment. 1. In supply usage, a piece of equipment identified by a stock or part number and authorized for issue. **2.** A piece of equipment.

An item of equipment (sense 1) differs from an item of supply (which see in sense 2), in that the former is more or less permanent and can be used by itself. In this meaning, an airplane is an item of equipment, but a connecting rod is not. An accessory or attachment is an item of equipment, but a component part, such as a carburetor, is not. See **equipment,** *n.*, note.

item of supply. 1. An article, piece of equipment, or the like, identified by a stock or part number and authorized for issue. **2.** In a restricted sense, such an article exclusive of pieces of equipment.

In the restricted sense, an item of supply is considered an expendable end item or component part, as distinguished from an item of equipment.

itin (*auth abbr*). 'Itinerary.'

ITT (*abbr*). 'Individual technical training.'

ITU (*abbr*). 'International Telecommunications Union.'

IU (*abbr*). 'Interference unit.'

IWIStk (*auth abbr*). 'Issue while in stock.'

J

J (*letter*). See **Juliett** (*code*). Used as a symbol meaning 'target-towing version' in the designations of Naval aircraft so modified, or 'North American Aviation, Incorporated,' in designations of Naval aircraft.

J (*abbr*). **1.** *auth.* 'Joint,' in combination only, as in *JTF*. **2.** 'Joint staff' in combinations, as *J-1* for personnel, *J-2* for intelligence, etc. **3.** 'Jet,' esp. in the designations of jet or turbojet engines, as in *J-35*, *J-42*, *J-55*. **4.** 'Jet aircraft' in the designations of Swedish aircraft, as in *J-29* (a jet fighter). **5.** 'Junkers.' *Obs.*

J2F. A single-engine, general-purpose amphibian airplane, developed by Grumman, and formerly used by the Navy and Coast Guard before WW II.

Versions of this airplane were the J2F-1, J2F-2, J2F-3, and J2F-4.

JA (*auth abbr*). 'Judge advocate.'

Ja (*auth abbr*). 'Japan,' as used in the Nationality Condensation Code.

JAAC (*abbr*). 'Joint airlift allocations committee.'

JAAF (*abbr*). **1.** *auth.* 'Joint action Armed Forces.' **2.** 'Joint Army-Air Force.'

JAAFAR (*auth abbr*). 'Joint Army-Air Force Adjustment Regulations.'

JAAFCTB (*auth abbr*). 'Joint Army-Air Force Commercial Traffic Bulletin.'

JAAFPC (*auth abbr*). 'Joint Army-Air Force Procurement Circular.'

JAB (*abbr*). 'Joint Amphibious Board.'

jabo, *n.* Short for 'jagbomber' or 'Jagdbomber.'

JAC (*abbr*). 'Joint Aircraft Committee.'

Jack, *n.* An Allied name during WW II for the Japanese Mitsubishi J2M2.

jack box. *Electricity.* A box with connections or switches for changing circuits; *specif.*, in an aircraft intercommunication system, a box bearing a selector switch by means of which the system is turned from communication within the aircraft to communication with stations outside the aircraft.

jacket, *n. Specif.* The upper waist-length outer garment of the service uniform. See **battle jacket** and **coat,** *n.*

JADF (*auth abbr*). 'Japan Air Defense Force.'

JAG (*auth abbr*). 'Judge Advocate General.' Often pronounced as a word.

jagbomber, *n.* [German *Jagdbomber.*] A German fighter-bomber of WW II.

JAGC (*auth abbr*). 'Judge Advocate General's Corps.'

The AF does not have a Judge Advocate General's Corps as such. When used, the term is a general one. See **Judge Advocate General's Department, USAF.**

Jagdstaffel, *n.* A German term for 'fighter squadron.'

JAGIT (*abbr*). 'Joint air-ground instruction team.'

Jake, *n.* An Allied name during WW II for the Japanese Aichi E13A1.

jam, *n.* An instance of jamming in a firearm.

jam, *v.* **1.** *tr.* To make the *transmissions* of a radio unintelligible; to make a *radio* or *radar set* ineffective, either by the use of countertransmissions or by the use of a confusion reflector. See **electronic jamming. 2.** *intr.* Of a machine gun, full-automatic, semiautomatic, or other firearm: To stick or become inoperative because of improper loading, ejection, or the like.

JAMAG (*abbr*). 'Joint American Military Advisory Group.'

James Connally Air Force Base. An AF base at Waco, Texas, originally known as Waco Air Force Base, renamed for Colonel James T. Connally, killed on a bombing mission over Yokohama in 1945.

James Gordon Bennett Cup. A trophy given to the winner of an air race held each year from 1909 to 1920.

The trophy was established by James Gordon Bennett (1848–1918), an American publisher.

James hut. A Jamesway hut.

Jamesway hut. A prefabricated personnel shelter specially designed for use in cold-weather areas.

JAMMAT (*auth abbr*). 'Joint Military Mission for Aid to Turkey.'

jammer, *n.* Any electronic transmitting set used to jam radio or radar transmissions. See **jamming device.**

jamming, *n.* Electronic jamming.

jamming, *a.* Of equipment: That jams.

jamming device. Any device used to transmit or

reflect electromagnetic waves for jamming purposes. See **confusion reflector, jammer,** *n.*

JAN (*auth abbr*). 'Joint Army-Navy.'

Jan (*auth abbr*). 'January.'

JANAP (*auth abbr*). 'Joint Army-Navy-Air Force Publication.'

JANAST (*auth abbr*). 'Joint Army-Navy-Air Force sea transportation message.'

JANIS (*abbr*). 'Joint Army-Navy Intelligence Study.' Pronounced as a word. *Hist.*

J antenna. An antenna resembling the letter 'J.'

Jap (*auth abbr*). 'Japan.'

japee, *n.* Also **jaype.** A jet engine or a jet airplane. *Slang.*

JASCO (*abbr*). 'Joint assault signal company.'

JATO (*auth abbr*). 'Jet-assisted takeoff.'

jato, *n.* Also **Jato, JATO.** [See **JATO** (*auth abbr*).] **1.** A takeoff assist by use of a jet, esp. the jet of a rato unit. **2.** The auxiliary unit that gives this assist.

'Jato' is a broader term than 'rato,' but it is usually used in the specific sense of 'an assisted takeoff by a rato unit,' in which case 'rato' is the more precise term. See **assist,** *n.*, **booster rocket, reverse jato, rato,** *n.*

jato bottle. A rato bottle. *Popular.*

jato unit. *Specif.* A rato unit. *Popular.*

javelin, *n.* A javelin formation.

javelin formation. A formation, esp. a bomber formation, in which the individual elements are arranged one behind the other, not necessarily at the same altitude.

JB (*abbr*). 'Jet bomb.' See next.

JB-2. An American version of the German V-1 flying bomb. Also called the 'Loon.'

JBUSMC (*auth abbr*). 'Joint Brazil-United States Military Commission.'

JCA (*auth abbr*). 'Joint communication activity.'

JCC (*abbr*). 'Joint communication center.'

JCEC (*auth abbr*). 'Joint Communications-Electronics Committee.'

JCI (*auth abbr*). 'Joint communications instructions.'

JCS (*auth abbr*). 'Joint Chiefs of Staff.'

jd (*auth abbr*). 'Joined.'

JD-1. The US Navy designation of the A-26.

jeep, *n.* A one-quarter ton, four-wheel drive, utility vehicle in wide use in all services.

Jeffries Award. An annual award of the Institute of the Aeronautical Sciences given 'for outstanding contributions to the advancement of aeronautics through medical research.' In full, the 'John Jeffries Award.'

This award was established in 1940 to honor John Jeffries (1744–1819), American physician and pioneer aeronaut. On 7 Jan 1785, Jeffries was carried by a balloon from Dover cliff to a forest in the province of Guienne, France.

jel, *n.* Variant of 'gel.'

jellied gasoline. Gelatinized gasoline.

Jenny, *n.* A popular name for the JN-4D.

Jerry, *n. Slang.* **1.** A German, esp. of the military forces. **2.** *Personified.* A German military force.

jerry can. A five-gallon, flat-sided, narrow can, adapted from a German-made can, easily stacked and transportable, and adapted by special openings for discharging fuel. Also called 'blitz can.' *Slang.*

This term is sometimes written solid, *jerrican,* a French spelling of the English loan word.

jet, *n.* **1.** A jet engine, as in 'the airplane was equipped with two jets.' **2.** A jet airplane, as in 'three jets landed at the base.' **3.** A jet stream (which see, sense 1). **4. a.** In a carburetor, a nozzle or tube of a predetermined size for metering the flow of fuel. **b.** The fuel flow so metered. **5.** Any stream of liquid or gas squirting or flowing rapidly out of a nozzle.

In sense 1, 'jet' is used as an attrib. in combination to designate aircraft powered by jet engines, as in 'a twin-jet fighter' or 'a four-jet bomber.' This practice reserves the word 'engine' for designating a reciprocating gasoline engine, as in 'twin engine,' etc.

jet ace. 1. An expert combat pilot in a jet aircraft. **2.** *Specif.* Such a pilot credited with not less than a specified number of victories (currently five) over hostile aircraft. See **ace,** *n.*

jet air force. An air force equipped with jet airplanes.

jet airplane. An airplane, esp. a fixed-wing airplane, powered with one or more jet engines.

jet airstream. *Meteorology.* The circumpolar jet stream. See **jet stream,** sense 2.

jet arrival letdown chart. An aeronautical chart specially designed to give instrument letdown procedures for jet aircraft from high altitudes, and to provide the area layout for any given installation.

jet assist. 1. An assist in thrust given an airplane by use of a jet engine or a rato unit. **2.** The unit that provides this assist. Cf. **rocket assist.**

jet-assisted takeoff. (JATO) A takeoff assisted by use of a jet stream, esp. that of a rato unit.

jet bomb. A flying bomb using one or more jet engines for propulsion.

jet engine. 1. a. A species of reaction engine, namely, an engine that takes in air from outside for use as a fuel oxidizer and projects a jet of hot gases backward to create thrust, the gases being derived from combustion within the engine. **b.** An engine belonging to this species. Now used in many types of airplanes. **2.** In a broader sense, any reaction engine. *Obsolescent.*

Usage of this term is almost entirely in sense 1. Cf., however, **jato,** *n.*, **jet motor.** In sense 2, the term includes both jet engines (sense 1) and rocket engines, both types projecting a 'jet' of gases to the rear to derive thrust (see **reaction engine**); the jet engine (sense 1) differs from the

rocket engine, however, in that the latter carries its own oxidizer and is capable of operation in outer space, while the former is dependent upon air taken in from outside. For the purpose of precise communication in the AF, users are encouraged to restrict the term to the meaning given in sense 1, and use 'reaction engine' for sense 2.

In sense 1, see **athodyd, *n.*, turbojet engine.** See also **Heinkel 178.**

jet exhaust. The exhaust of a jet engine.

jet helicopter. A helicopter powered by one or more jet engines.

A jet helicopter is normally driven by a jet rotor.

jet horsepower. The thrust horsepower of a jet stream.

jet jockey. A jet pilot. *Slang.*

jet motor. A rocket motor. See **jet engine,** note.

Jet Navigation Chart. An aeronautical chart, scale 1:2,000,000, designed specially for high-speed, high-altitude jet airplanes.

A Jet Navigation Chart shows less detail than other aeronautical charts, but portrays the major features readily seen at high altitudes. Also shown are airports generally capable of receiving jet airplanes, principal radio ranges, radio frequencies, etc. See **USAF** (*auth abbr*).

jet nozzle. A nozzle producing a jet of liquid or gas; *specif.*, an exhaust nozzle for the escape of gases on a jet engine or rocket.

jetomic, *a.* ['Jet' plus 'atomic.'] Marked by the development of very high velocities and very great power, as in 'the jetomic age.'

JetP (*auth abbr*). 'Jet propelled.'

jet pilot. (JP) A pilot trained to fly a fixed-wing jet airplane.

In combinations, as *jet-pilot training.*

jet pod. A jet engine (sense 1) or a single unit of jet engines suspended beneath an airplane wing, as on the B-47, or on some models of the B-36.

jet power. 1. The power or thrust delivered by a jet engine, rocket engine, or the like. **2.** *Technical.* The power or kinetic energy in a mass of controlled and accelerating gases.

In sense 2, jet power is proportional to the weight of gas accelerated, multiplied by the differences of the squares of the gas velocities before and after acceleration.

jet-powered, *a. Specif.* Powered by one or more jet engines (esp. sense 1), as in *jet-powered airplane, jet-powered bomber.*

In aviation and AF contexts, this term is sometimes, though seldom, used to mean 'powered by a jet-producing propulsion unit,' and therefore, in these instances, may include the notion 'rocket-powered.' See next, **jet,** *n.*, note, **jet engine,** esp. note, **jet propulsion,** esp. note, and cf. **rocket-powered,** *a.*

jet-propelled, *a.* (JetP) *Specif.* Propelled by one or more jet engines (esp. sense 1), as in *jet-propelled aircraft, jet-propelled missile, jet-propelled squadron.* See note.

The same ambiguity inheres in this term as in 'jet-powered' (which see, esp. note). See **reaction-propelled,** *a.*, **rocket-propelled,** *a.*

jet propulsion. Propulsion by means of a jet of gas or fluid; *specif.*, propulsion by means of a jet engine (sense 1) or engines.

Ambiguity inheres in this term as in 'jet-powered' and 'jet-propelled.' See **reaction propulsion.**

jet rotor. A helicopter rotor driven by jet engines mounted on the blades.

jet stream. 1. The stream of gas or fluid expelled by any reaction device, esp. the stream of combustion products expelled from a jet engine, rocket engine, or rocket motor. **2.** A circumpolar whirl of air, generally from west to east, marked by a narrow band of high-velocity wind esp. near the base of the stratosphere where the tropopause makes its greatest change in elevation. Also called 'jet air stream.'

In sense 2, the jet stream in the northern hemisphere is further south and stronger in winter than in summer. In winter it reaches maximum velocity off the east coasts of North America and Asia, and over Northern Africa. Velocities up to 450 mph have been recorded.

jet thrust. The thrust (which see), measured in pounds, developed by a jet engine, rocket engine, or the like, in reaction to its jet stream; *specif.*, the thrust of a jet engine. See **net jet thrust, rocket thrust;** see also **laws of motion.**

Jet thrust may be measured by use of strain gauges, thrust-balancing pistons, dynamometers, or spring scales, which are calibrated in pounds to represent the static weight moved by the engine. See **thrust-pound.**

jettison, *v. tr.* To throw out or drop, esp. in an emergency situation, *cargo, bombs, fuel, armament,* or other equipment, objects, or loads in order to lighten or streamline the aircraft, or in order to provide an extra measure of safety.

jettisonable, *a.* Of an aircraft fuel tank, door, compartment, etc.: That can be readily jettisoned.

jettisonable fuel tank. A drop tank.

jettison gear. A gear or apparatus for jettisoning an object or load.

jettison system. A system for jettisoning, esp. a system for quickly jettisoning fuel from an aircraft.

jet vane. A fixed, adjustable, or movable vane placed directly in a jet stream to improve stability or control, esp. at low speeds.

Jet vanes are made of highly heat-resistant materials. See **carbon fin** and cf. **air vane.**

jet velocity. The velocity of a jet stream, usually measured with respect to surrounding air.

jet wash. The backwash caused by a jet engine, rocket engine, or the like. Cf. **propeller wash.**

JIC (*auth abbr*). 'Joint Intelligence Center.'

JICA (*auth abbr*). 'Joint Intelligence Collecting Agency.'

JICPOA (*abbr*). 'Joint Intelligence Center, Pacific Ocean Areas.'

JIG (*auth abbr*). 'Joint Intelligence Group.'

Jig (*code*). A word formerly authorized for the letter 'J.' See **Able** (*code*).

Jill, *n.* A popular Allied name for the Japanese

Nakajima B6N2, a torpedo bomber with a single radial engine, a low wing, and a single fin and rudder.

jing-bao, *n.* [Chinese 'alarm-alert.'] A bombing. Also **jing-bao,** *v.*

jink, *v. tr.* To jerk an *aircraft* about in evasive action; *intr.* to take evasive action in an aircraft. Hence, **jinking,** *n.*

jinx, *v. Specif. tr.* and *intr.* To jink.

jitter, *n.* The jittering or unstable motion of a signal on a cathode-ray screen.

JLC (*abbr*). 'Joint logistics committee.'

JLFB (*auth abbr*). 'Joint Landing Force Board.'

JLPC (*auth abbr*). 'Joint Logistics Plans Committee.'

JLPG (*abbr*). 'Joint logistics planning group.'

JMMAT (*abbr*). 'Joint Military Mission for Aid to Turkey.' See **JAMMAT** (*auth abbr*).

JMTC (*auth abbr*). 'Joint Military Transportation Committee.'

JMUSDC (*abbr*). 'Joint Mexico-United States Defense Commission.'

JN. A twin-engine, two-seated biplane, developed by Curtiss.

Built in 1916, the JN was the Army's first two-engine plane, and also its largest to that date.

jn (*abbr*). 'Join.'

JN-4D. The famous single-engine, two-place, biplane trainer of WW I, developed by Curtiss. Popularly called the 'Jenny.'

jo (*auth abbr*). 'Journalist.'

job, *n.* **1.** *Specif.* An Air Force Specialty, or the work done in such a specialty. Used in the phrases 'on-the-job training,' 'job adjustment,' etc. **2.** *Slang.* **a.** An aircraft. **b.** An aircraft engine.

job analysis. An analysis of a job based upon observation, interviews, and study, with a view to determining and identifying the duties, tasks, and functions involved, along with the skills, abilities, knowledge, and responsibilities required.

job description. A detailed and formal listing of the duties and tasks comprising a specific job, together with the skills, knowledge, and other qualifications required for performance of the job. Also called 'position description.'

job-knowledge test. A short multiple-choice test designed to measure knowledge acquired through actual experience or training in an Air Force Specialty or related civilian occupation.

JOC (*auth abbr*). 'Joint Operations Center.'

jockey, *n.* A jocular name for a pilot.

jockey, *v.* **1.** *tr.* and *intr.* To fly or pilot an *airplane;* to manipulate an *airplane* along an intricate flight path. Used *intr.,* as in 'the copilot jockeyed while I rested.' **2.** To maneuver another *airplane* to a desired position by flight tactics, as in 'he flew so close as to jockey the other airplane out of formation.'

Joe, *n.* Any male soldier or airman. Sometimes 'GI Joe.' *Slang.*

Johnson Air Base. An air base at Irumagawa, Honshu, Japan, named for Lieutenant Colonel Gerald R. Johnson of the Fifth Air Force, killed in an airplane accident, 7 October 1945.

Johnston Island Air Force Base. An AF base at Johnston Island, named for the island.

joint, *a.* Of a force, organization, operation, plan, mission, etc.: Belonging to, or carried out by, two or more military services of the US, as in 'joint air campaign,' 'joint board,' 'joint command,' 'joint exercise,' 'joint operation,' etc. Sometimes loosely used in the sense of 'combined.'

When only two of the US services are involved, both are normally identified, as in 'joint air-army operation.'

joint agreement. An operational agreement, often without formal record, whereby commanders in a joint force work in unison without creating a single tactical commander.

joint Army-Navy-Air Force publications. (JANAP) A series of joint publications produced by supporting agencies of the Joint Chiefs of Staff for distribution within the US armed forces.

Joint Army-Navy Intelligence Study. (JANIS) A joint publication (1943–1948) dealing with strategic intelligence materials.

joint assault signal company. A unit composed of elements of the appropriate services, forces, or corps, organized to provide communications in amphibious operations, and active esp. in WW II. *Hist.*

joint board. 1. Any board made up of representatives of two or more services. **2.** *Capitalized.* A joint Army-Navy board created in 1903 to provide for close cooperation between the services. *Hist.*

In sense 2, the Joint Board was for all practical purposes replaced by the Joint Chiefs of Staff in 1942 and was dissolved in 1947.

Joint Chiefs of Staff. (JCS) A body within the Department of Defense consisting of the Chief of Staff, United States Army, the Chief of Naval Operations, the Chief of Staff, United States Air Force, and a chairman, serving as the principal military advisers to the President, the National Security Council, and the Secretary of Defense, and authorized to conduct certain military operations direct, such as those of continental air defense. The chairman presides over the

JCS but does not vote. Prior to 1949, the JCS had no chairman.

The JCS was formally authorized by the National Security Act of 1947, but as early as 1942 a similar group had been established by action of the President.

Joint Chiefs of Staff committee. Any of several committees established or retained under the Joint Chiefs of Staff, which advises the Joint Chiefs of Staff on matters within the purview of the committee and performs other duties as directed.

JCS committees include the following: Joint Advanced Study Committee, Joint Communications-Electronics Committee, Joint Intelligence Committee, Joint Logistics Plans Committee, Joint Meteorological Committee, Joint Military Transportation Committee, Joint Munitions Allocation Committee, Joint Strategic Plans Committee, Joint Strategic Survey Committee, United States Military Cooperation Committee.

joint circuit. A communication circuit in which two or more services participate through use, operation, control, or the like.

joint force. A force composed of elements of two or more services, either operating under the operational control of a single commander or by joint agreement.

This term is esp. applicable to a force made up of land and sea units. Participating AF units are normally under the tactical control of an AF commander. See **force,** *n.*, note.

joint operations center. (JOC) Another name for 'air operations center.'

joint staff. 1. The staff of the commander of a joint force, including members from each service comprising the force. **2.** *Capitalized.* A staff under the Joint Chiefs of Staff consisting of approximately equal numbers of officers from the Army, Navy, and AF.

In sense 2, the Joint Staff consists of the Director of the Joint Staff and three groups: the Joint Intelligence Group, the Joint Logistics Plans Group, and the Joint Strategic Plans Group.

jointure of command. A Naval term indicating an arrangement by which command of an amphibious landing force is transferred from the Naval commander to the Army commander at a certain point in the development of the landing operation.

JOSPRO (*auth abbr*). 'Joint Ocean Shipping Procedure.'

joy-stick, *n.* A control stick. *Slang.*

JP (*abbr*). **1.** *auth.* 'Jet pilot.' **2.** 'Jet propulsion,' esp. in the designations of fuels for jet engines, as in *JP-1, JP-3.*

JPR (*auth abbr*). 'Joint Procurement Regulation.'

JRDB (*abbr*). 'Joint Research and Development Board.'

JRM. A four-engined, high-wing, cargo and personnel transport, developed for the Navy by Martin. This airplane is popularly called 'Mars.'

J-scan, *n.* **1.** A scan for presentation on a J-scope. **2.** A J-scope. *Popular.*

J-scope, *n.* A modified version of the A-scope, with the range scale showing as a circular trace near the circumference of the screen, and the signal appearing as a deflection in the range scale. See prec.

JSPC (*auth abbr*). 'Joint Strategic Plans Committee.'

JSPG (*auth abbr*). 'Joint Strategic Plans Group.'

JSSC (*auth abbr*). 'Joint Strategic Survey Committee.'

jt (*abbr*). 'Joint.'

JTF (*auth abbr*). 'Joint Task Force.'

JTR (*auth abbr*). 'Joint Travel Regulation.'

Ju (*abbr*). 'Junkers.' Also written **JU** (*abbr*).

judge advocate. (JA) Sometimes *capitalized.* In AF usage, a legal officer designated by the Chief of Staff, USAF, for duty with the Judge Advocate General's Department, USAF, and qualified to serve, on assignment, as a staff officer; such an officer serving on a staff. In *pl.*, 'judge advocates.' See **staff judge advocate.**

In administering military justice, a judge advocate's duties include acting as legal advisor and representing the government in legal proceedings. He acts as prosecutor at courts-martial and, to a certain extent, as counsel for the accused when the accused has no other counsel.

Judge Advocate General. (JAG) **1.** The senior legal officer in the Judge Advocate General's Department, USAF, having the rank of major general and having the responsibility of supervising the administration of military justice throughout the AF and of performing such other legal duties as may be directed by the Chief of Staff, USAF. In full, 'The Judge Advocate General, USAF.' **2.** Used erroneously for a staff judge advocate.

In sense 1, The Judge Advocate General is a member of the personal staff, Headquarters USAF.

Judge Advocate General's Department, USAF. An AF department or service for administering military justice throughout the AF, composed of The Judge Advocate General and all officers designated as judge advocates by the Chief of Staff, USAF.

jug, *n.* **1.** An engine cylinder, as in 'to blow a jug.' *Slang.* **2.** An affectionate term for the P-47 (F-47), in allusion to its shape.

Jul (*auth abbr*). 'July.'

Juliet (*code*). An authorized word for the letter 'J.' See **Alfa** (*code*).

jump, *n.* **1.** A parachute jump. **2.** The flight of an aircraft from one point to another, esp. over an obstacle, as an ocean. *Slang.*

jump, *v.* **1.** *intr.* To make a parachute jump, as in 'the men will jump now,' or 'he jumped at 40,000 feet.' **2.** Of a gun turret or other moving part: To jerk, rather than move smoothly,

caused by play in the mechanism, nonuniform application of moving power, etc. **3.** *tr.* To release *parachute troops* from an aircraft, as in 'he jumped his paratroops and turned east.' **4.** To attack an *aircraft* or *persons* within the aircraft, from the air. *Colloq.* **5.** To promote a *person* above one or several other persons who had previously outranked him. *Colloq.*

jump airspeed. The maximum airspeed at which parachute troops can jump with comparative safety from the aircraft.

jump casualty. A casualty resulting from a parachute jump.

jump door. A door in the fuselage of a transport aircraft, from which parachute troops jump.

jumper, *n.* One who makes a parachute jump.

jumping giro. A jumpoff autogiro. *Colloq.*

jumping light. A light in an aircraft to notify persons to jump.

jumpmaster, *n.* An officer or noncommissioned officer who controls the jumping of parachute troops and the dropping of their equipment from an aircraft.

jumpoff autogiro. An autogiro designed to take off vertically, or almost vertically, by the initial application of power to the rotor blades and by a momentary increase in the angle of attack of the rotor blades.

Power is disengaged from the rotor and rotor-blade pitch is decreased after takeoff.

jump sack. A parachute. *Slang.*

jump takeoff. In a helicopter, a takeoff made under full power and as nearly vertically as possible, done esp. when taking off from an extremely small spot or when the helicopter is overloaded.

In a jump takeoff, full throttle is used, with the rotor blades set at an angle for maximum lift, and running at a maximum rpm.

Jun (*auth abbr*). 'June.'

June Bug. The name of an early biplane, built and flown by Glenn Curtiss in 1908.

jungle suit. A one-piece flying suit for an aircrew member designed to afford special protection in case its wearer parachutes or is forced down in the jungle.

junior colonel. A colonel only recently promoted.

junior-grade officer. A company-grade officer.

junior officer. 1. An officer junior to another by virtue of his rank or date of rank. **2.** Short for 'junior-grade officer.'

junior warrant officer. The lower of the two warrant officer grades; a person holding this grade.

Junkers, *n.* (Ju) [A German airplane-manufacturing firm active during, and between, WWs I and II.] Used in the names of airplanes.

Junkers airplanes of WW I included the *Junkers J.1*, an all-metal monoplane; and the *Junkers J.4*, an attack biplane. Some Junkers planes of WW II were the *Ju 52*, a three-engine, low-wing, transport monoplane; the *Ju 87*, a widely-used, two-place dive bomber with a low inverted gull wing, popularly called the 'Stuka'; the *Ju 88*, a twin-engine, four-place airplane used in various modifications as a horizontal bomber, dive bomber, torpedo bomber, day or night fighter, or reconnaissance airplane; the *Ju 248*, a rocket-propelled interceptor, also designated the *Junkers 8-263;* the *Ju 287*, an experimental jet bomber; the *Ju 290*, a four-engine transport or reconnaissance airplane; and the *Ju 390*, a six-engine development of the Ju 290, in transport, reconnaissance, and bomber versions.

juris (*auth abbr*). 'Jurisdiction.'

jurisdictional control. The control exercised by a commander over a person, unit, place, installation, or thing that permits him to transfer operational control or administrative control from himself to another commander, and to withdraw or re-transfer either or both controls if he sees fit.

Jurisdictional control over persons or things inheres with a commander by virtue of their being assigned to him. See **assign,** *v.*, senses 1a, 1b, 2, and 3. Such control is never relinquished except by their being reassigned by action of a superior commander. Thus, persons or units on detached service may be under the operational or administrative control of another commander, but the authority to withdraw such persons or units from such operational or administrative control remains with the commander to whom the persons or units are assigned, except that he may be bound by the terms of an agreement. Air Rescue Service units, for example, are under the jurisdictional control of the MATS commander even when operationally controlled by a commander overseas.

A commander also exercises jurisdictional control over property which, through competent authority, has been assigned him, and for which he is responsible. Such control remains with him even if he lends its use to another commander, as in the case of tenancy, although again he may be bound by the terms of an agreement.

Jurisdictional control is telescopic, that is, the commander of a higher echelon has jurisdictional control over the subordinate commander; hence has jurisdictional control of persons or units assigned the subordinate commander.

See **administrative control, assign,** *v.*, note, **attach,** *v.*, **command jurisdiction,** and **control,** *n.*, sense 1.

jury strut. An auxiliary strut used to brace a main strut, used esp. on light monoplanes between the lift strut and the wing.

JUSMAG (*abbr*). **1.** *auth.* 'Joint United States Military Advisory Group.' **2.** 'Joint United States Military Aid Group to Greece.'

JUSMAP (*auth abbr*). 'Joint United States Military Advisory and Planning Group.'

just (*auth abbr*). 'Justification.'

justify, *v. tr.* To prove or show a *request* or *proposal* to be reasonable or warranted. Hence, **justification,** *n.*

JWPS (*abbr*). 'Joint War Production Staff.' Now *hist.*, but used in WW II.

K

K (*letter*). See **Kilo** (*code*). **1.** A symbol used by the Navy for 'target drone version' in the designations of certain aircraft. **2.** A Navy designation for 'pilotless aircraft.'

K (*abbr*). **1.** 'Knot' or 'knots.' **2.** 'Tanker' as used in designating aircraft, as in *KC-97E*. **3.** 'Kelvin scale.'

K-14 sight. A gyroscopic computing gunsight employing a mechanical range-control system.

K-18 sight. A gyroscopic computing gunsight employing an electrical range-control system.

Kadena Air Base. An air base at Kadena, Okinawa Island, named for the city.

Kahn's test. [After R. L. *Kahn* (1887–), Amer. bacteriologist.] A precipitation test for syphilis. A test used in the AF.

Kaman, *n.* [A US helicopter-manufacturing firm.] Used in the names of helicopters.

Some Kaman helicopters are the *Kaman HTK-1*, a three-seat training helicopter; and the *Kaman HOK-1*, a four-seat liaison helicopter. Both of these craft are in production for the Navy.

kamikaze, *n.* [Japanese 'divine wind.'] **1.** An action taken by certain Japanese pilots during WW II, in which they flew their airplanes as missiles against Allied targets, involving self-destruction on the part of the pilots; any like action performed by any pilot. Also attrib. **2.** Short for 'kamikaze airplane,' 'kamikaze attack,' or 'kamikaze pilot.'

kamikaze, *a.* Suicidal, esp. in reference to using piloted aircraft as missiles.

kamikaze airplane. An explosive-laden, piloted airplane used by the Japanese during WW II as a missile against Allied targets.

kamikaze attack. An attack by a kamikaze plane or planes; any suicidal attack.

kamikaze pilot. The pilot of a kamikaze airplane.

KAN-2. A radio-controlled, rocket-propelled, ship-to-air missile. Popularly called 'Little Joe.'

Kansan, *n.* A popular name for the T-11.

Kardex, *n.* [A trade name.] A card-index file in which each card, affixed to an individual frame, lies flat and shows a margin below the adjacent card, on which margin a notation may be inscribed.

Kate, *n.* An Allied name for the Japanese Nakajima B5N2, a single-radial-engine, low-wing torpedo bomber.

Katusha, *n.* A type of Russian multiple rocket launcher used in WW II, operating either from fixed or mobile installations.

Kawanishi, *n.* [A Japanese airplane-manufacturing company.] Used in the names of airplanes.

Some Kawanishi airplanes of WW II were the *Kawanishi H6K5*, a four-engine flying boat, used for bombing and reconnaissance; the *Kawanishi H8K2*, a four-engine flying boat for reconnaissance and transport; and the *Kawanishi N1K2-J*, a single-engine fighter.

Kawasaki, *n.* [A Japanese airplane-manufacturing firm.] Used in the names of airplanes.

Kawasaki planes of WW II included the *Kawasaki 99*, a twin-engine, light bomber; the *Kawasaki Ki 45*, a twin-engine fighter; and the *Kawasaki Ki 61*, a single-engine fighter.

K band. A designation formerly given to a band of radio frequencies between 11,000 and 33,000 megacycles. Use of this designation is no longer authorized in the AF.

kc (*abbr*). **1.** 'Kilocycle' or 'kilocycles.' **2.** 'Kilocycles per second.' See **kcs** (*auth abbr*).

KC-97E. A tanker version of the C-97, first delivered to the USAF in July 1951.

K carrier system. A carrier system providing twelve telephone channels utilizing frequencies of approximately sixty kilocycles.

K class. A class of Goodyear dirigibles having a helium capacity of 456,000 cubic feet.

kcs (*auth abbr*). 'Kilocycles per second.'

KD (*code*). A US Naval designation for a pilotless aerial target aircraft.

kd (*auth abbr*). 'Killed.'

keel, *n.* **1.** A ridge or external member running along the longitudinal center line at the bottom of a float or hull; the center bottom of any airplane fuselage. **2.** The longitudinal assembly of members along the bottom of a rigid or semi-rigid airship.

Keesler Air Force Base. An AF base at Biloxi, Mississippi, named for Lieutenant Samuel R. Keesler, killed on a special bombing mission in France, 1918.

Keflavik Airport. An Icelandic government-controlled airport at Keflavik, Iceland, with facilities for MATS operations.

Kehl (*code*). Any of several kinds of German radio-control equipment used in WW II for directing certain guided missiles.

Often in combination, as in *Kehl I-IV*, *Kehl Einrichtung*, etc.

Kellett, *n.* [The *Kellett* Aircraft Corporation, a US corporation.] Used in the names of autogiros and helicopters.

Kellett YO-60, a two-place, jumpoff autogiro; *Kellett XII-10*, an experimental helicopter. See **H-17,** note.

Kelly Air Force Base. An AF base at San Antonio, Texas, formerly known as Kelly Field, named for Lieutenant George E. M. Kelly, a pioneer Army pilot, killed in 1911.

Kelvin scale. (°K) A temperature scale that uses centigrade degrees, but makes the zero degree signify absolute zero.

In this scale, water freezes at 273.16 degrees and boils at 373.16 degrees.

This scale is named after the first Baron Kelvin (1824–1907), English mathematical physicist and inventor.

Kennelly-Heaviside layer. The E layer.

Kenney cocktail. [After General George C. *Kenney*.] A special kind of exploding incendiary bomb fashioned by personnel of the Fifth Air Force during WW II.

kern, *n. Meteorology.* A condensation nucleus.

kerosene, *n.* A thin oil distilled from petroleum or oil shale, used alone or in mixtures as a jet-engine fuel.

Chemically, kerosene is a mixture of hydrocarbons.

Kerrison system. An obsolescent fire-control system, originally developed by the British, for Bofors antiaircraft guns.

key, *n.* **1.** A hand-operated lever for opening and closing circuits in a radio or telegraph system to send signals. **2.** *Cryptography.* An element, as a group of letters, a phrase, or the like, for enciphering or deciphering a message.

key, *a.* Important; essential to a given situation, organization, system, or the like, as in *key base, key bridge, key personnel, key target.*

Keystone, *n.* [The *Keystone* Aircraft Corporation, now defunct.] Used in the names of airplanes, as in *Keystone Patrician, Keystone-Loening OL-8 Amphibian*, etc. See **B-6.**

keystone track. The track of a friendly aircraft which an air defense headquarters desires to be flight-followed and reported. See **track,** *n.*, sense 7 and note.

khaki, *n.* **1.** A stout, tan-colored, cotton cloth; the color of this cloth. **2.** *pl.* A uniform or uniforms made of this cloth, used for summer wear by AF, Army, and Navy personnel.

khaki, *a.* Khaki-colored; made of khaki cloth.

ki (*auth abbr*). 'Kitchen.'

KIA (*auth abbr*). 'Killed in action.'

kick, *v. tr.* **1.** To put an *airplane* into a sharp turn, in allusion to 'kicking the rudder.' **2.** *To kick the engine over*, to start an aircraft engine. Also *intr.* in reference to an engine.

kicker, *n.* An aircrew member who drops or shoves supplies from an airplane to forces below. *Colloq.*

kill, *n.* **1.** An act or instance of destroying an enemy aircraft or submarine, esp. as vouched for by supporting evidence or testimony. **2.** An aircraft or submarine destroyed. Cf. **certain,** *n.*

kill, *v. tr.* **1.** To cause a *person* or *animal* to die. **2.** To destroy an *aircraft* or other *vehicle*. **3.** To eliminate an undesired *effect*, as in 'a method of killing drift.'

killed in action. (KIA) A phrase applied to a person killed while fighting against an enemy.

As defined in special AF context, 'killed in action' is applied to a person immediately killed in action, or one who dies as a result of wounds or injuries received in action before reaching a medical aid facility; otherwise he 'dies as a result of wounds or injuries received in action.'

killer hunt. The hunt conducted in a hunter-killer operation.

kill potential. The potential of a weapon for killing persons or destroying aircraft.

kill probability. The probability of a given percentage of deaths resulting from a shell, bomb, warhead, or the like exploding under a set of specified conditions.

Kilo (*code*). An authorized word for the letter 'K.' See **Alfa** (*code*).

kilo (*prefix*). Thousand, as used in *kiloampere, kilovolt*, etc.

kilocycle, *n.* **1.** One thousand cycles. **2.** *Radio.* One thousand cycles per second, a measure of frequency.

kilometer, *n.* Also **kilometre.** A unit of measure in the metric system, being one thousand meters, or 3,280.8 feet, nearly two-thirds of a mile.

kiloton, *n.* **1.** A weight equal to a thousand tons. **2.** The explosive power of 1,000 tons of TNT. Cf. **megaton,** *n.*

Kimpo Air Base. An air base at Seoul, Korea, named for a nearby town.

kindergarten, *n. attrib.* Of or pertaining to gaining one's first knowledge of combat, as in *kindergarten pilot, kindergarten raid.*

Kindley Air Force Base. An AF base at St. George, Bermuda, named for Captain Field E. Kindley (1896–1920), a famous WW I flight commander.

kinematics, *n.* A branch of physics which treats of motions, but treats of them without reference to their causes. Hence, **kinematic,** *a.*

kinetic energy. That energy exerted by, or inherent in, a moving particle or particles, or in

a moving body, by virtue of its motion; more technically, the capacity of a moving particle or body for performing work, owing to its motion, being quantitatively one-half the mass times the velocity squared.

kinetic lead. The correction or allowance made for the relative motion of a target when computing the lead angle in gunnery. Cf. **ballistic lead.**

kinetics, *n.* The branch of dynamics that treats of changes of motion produced by forces.

King (*code*). A word formerly authorized for the letter 'K.' See **Able** (*code*).

Kingcobra, *n.* The popular name for the P-63.

Kingfisher, *n.* **1.** A popular name for the OS2U. **2.** A popular name for the Cant Z.1007. Translated from the Italian *Alcione.*

King's Cup. A trophy given to the winner of a British air race held each year over a different course between 1922 and WW II, when it was temporarily discontinued, but resumed in 1949 and held every year since, except 1951 when it was cancelled because of bad weather.

The trophy was established by King George V in 1922 and each year a new cup was given permanently to the winner of the King's Cup Air Race. In 1936 the cup was given by Edward VIII, and in 1937–1938 and after by George VI and Elizabeth II. In 1949, under a change in rule, the cup became a challenge cup given in turn to each annual winner.

Kinross Air Force Base. An AF base near Kinross, Michigan.

kip, *n.* [*ki*lo *p*ound.] A thousand pounds of weight, as used in the US and Britain.

Kirtland Air Force Base. An AF base at Albuquerque, New Mexico, named for Colonel Roy C. Kirtland, former Commanding Officer of Langley Field, who died in 1941.

Kisarazu Air Base. An air base at Kisarazu, Japan, named for the city.

kit, *n.* **1.** A bag containing the flying clothes and other equipment necessary for flying. **2.** A compact set or assembly of equipment or supplies, as a *first aid kit.* See **flyaway kit, technical order kit.**

kitchen police. A team or group of people detailed to assist in a mess.

kite, *n.* **1.** A kind of heavier-than-air aircraft, propelled only by means of the pull on the towline, its support being derived from the force of wind striking its under surface at an angle of attack sufficient to obtain an aerodynamic reaction. **2.** A familiar, sometimes an affectionate, term for an airplane, esp. one that is light in structure. Chiefly *British.* **3.** *Electronics.* A kind of corner reflector.

In sense 1, the kite is the oldest form of the airplane, said to have been invented by Archytas of Tarentum (flourished *c*400–350 B.C.), but flown among Asiatic peoples from times immemorial.

The kite has had several military uses, as in signaling, in floating explosives upon a target, and in carrying photographic cameras. A man-carrying kite was built in 1894 by B.F.S. Baden-Powell (1860–1937).

kite balloon. An elongated captive balloon having an empennage in the form of gas-filled lobes to keep it headed into the wind, thus usually deriving increased lift from the inclination of its longitudinal axis to the wind.

Kittybomber, *n.* A Kittyhawk modified as a fighter-bomber.

Kitty Hawk. A village in North Carolina on the east side of Albemarle Sound near which Wilbur and Orville Wright made the first piloted, powered-airplane flight on 14 or 17 December 1903.

The flight of 14 Dec was not considered conclusive, for the airplane touched down at a point some feet below its takeoff point. See **Wright flyer.**

Kittyhawk, *n.* [See prec.] A name given by the British to the late model series of the P-40, i.e., the *P-40D, P-40E, P-40F, P-40K, P-40L, P-40M,* etc.

In various modifications the Kittyhawk was also known as the *Kittyhawk I, Kittyhawk IA, Kittyhawk II, Kittyhawk III,* and *Kittyhawk IV.* In the various versions the Kittyhawk I and IA were similar to the P-40D and P-40E equipped with the Allison engine. The Kittyhawk II was the counterpart of the P-40F and P-40L equipped with the Packard 'Merlin' engine. The Kittyhawk III and IV were similar to the P-40K and P-40M equipped with the Allison engine.

kiwi, *n.* **1.** A nonflying air officer. *Slang.* **2.** A student pilot who has not flown solo. *Slang.*

Named after a New Zealand flightless bird.

klunker, *n.* A P-400. *Slang* in WW II.

klystron, *n.* A kind of vacuum tube used esp. as an oscillator, which operates by the velocity modulation of an electron beam.

km (*abbr*). 'Kilometer' or 'kilometers.'

KMAG (*auth abbr*). 'United States Military Advisory Group to the Republic of Korea.'

Knickebein (*code*). A kind of German electronic long-range navigation aid used in WW II.

knock, *n.* A detonation (which see, sense 2, and note).

knock, *v.* **1.** *To knock down,* to shoot down. *Colloq.* **2.** *To knock out,* to destroy an enemy *installation, factory,* etc. *Colloq.*

knot, *n.* (kt) A nautical mile per hour, i.e., 1.1516 statute miles per hour.

For official reporting or recording purposes in the AF, miles-per-hour readings from airspeed indicators are often converted to knots; also, in AF meteorological practice, wind speeds are expressed in knots. See **airspeed indicator.**

know-how, *n.* Knowledge and ability. *Colloq.*

Ko (*auth abbr*). 'Korea,' as used in the Nationality Condensation Code.

Kollsman number. The number at which a pres-

sure altimeter is set to correspond to the barometric pressure at a given point on the surface; the altimeter setting.

Komaki Air Base. An air base at Komaki, Japan, named for the city.

Komet, *n.* A popular name for the Me 163. See **Messerschmitt,** *n.*

Kondor, *n.* The Focke-Wulfe 200B.

Kondor Legion. An air force made up of elements of the German Air Force used by the Luftwaffe to gain experience while supporting General Francisco Franco in the nationalist rebellion against the Spanish republic (1936–1939).

Korean Service Medal. (KSM) A US military decoration awarded persons for service within the Korean Theater or adjacent areas during a given period and under certain specified conditions.

Korean War. A limited war (25 Jun 1950 to 27 Jul 1953) conducted in Korea between the forces of the United Nations and the forces of North Korea and Communist China.

KP (*abbr*). **1.** 'Kitchen police.' **2.** Used as a *noun.* A person on duty with the kitchen police.

K ration. A lightweight, packaged, emergency ration issued during WW II esp. for use in the field.

kraut, *n.* A derisive term for a German in WW I or WW II. Cf. **Hun,** *n.*

kriegie, *n.* One who was a prisoner of war in Germany during WW II. *Slang.*

K-scan, *n.* **1.** A scan for presentation on a K-scope. **2.** A K-scope. *Popular.*

K-scope, *n.* A modified type of A-scope, using a double lobe for scanning. See prec.

KSM (*auth abbr*). 'Korean Service Medal.'

kt (*auth abbr*). 'Knot' or 'knots.'

K-type airship. An airship of the K class.

KUD-1. A kind of remote-controlled glide bomb, popularly called the 'Gargoyle.'

Kunsan Air Base. An air base at Kunsan, Korea, named for the city.

Kurier, *n.* A popular name for the Fw 200C. See **Focke-Wulf,** *n.*, note.

KVA (*abbr*). 'Kilovolt ampere' or 'kilovolt amperes.'

kw (*auth abbr*). 'Kilowatt.'

kytoon, *n.* [*Kite* + ball*oon.*] A special kind of captive balloon, similar to the kite balloon, but smaller and having an empennage consisting of thin sheets of fabric, rather than gas-filled lobes, as in the kite balloon.

The kytoon is used esp. for supporting one end of an antenna.

L

L (*letter*). See **Lima** (*code*). Used as a symbol meaning 'searchlight version,' in the designations of Navy aircraft so modified, or meaning 'Columbia Aircraft Corporation' or 'Bell Aircraft Corporation' in the designations of Navy aircraft.

L (*abbr*). **1.** *auth.* 'Light,' in unit designations. **2.** *auth.* 'Liaison,' in designations of USAF aircraft, as in *L-3, L-5* etc. **3.** *auth.* 'Line,' in combination only. **4.** 'Launching,' in Navy designations of guided missiles used as test vehicles. **5.** 'Left' (or port). **6.** 'Lift,' as used in aerodynamic formulas.

L-1. A light, two-place, single-engine, high-wing, liaison and observation monoplane developed by Vultee and used in WW II. Popularly called the 'Vigilant.'

L-2. A light, two-place, single-engine, high-wing, cabin monoplane developed by Taylorcraft and used during WW II for liaison and observation. Popularly called the 'Grasshopper.'

Also known in different versions as the *L-2A, L-2B, L-2C*, etc.

L-3. A small, two-seat, single-engine, cabin liaison and observation, high-wing monoplane of WW II, developed by Aeronca. Popularly called the 'Grasshopper.'

Different versions were designated *L-3A, L-3B, L-3C.*

L-4. A two-place, single-engine, light liaison and observation, high-wing monoplane of WW II, developed by Piper, and popularly called the 'Grasshopper.'

Various modifications were designated *L-4A, L-4B, L-4C*, etc.

L-5. A two-place liaison and observation, single-engine, high-wing monoplane of WW II developed by Stinson, popularly called the 'Sentinel.'

Two modifications were designated *L-5A* and *L-5B.*

L-6. A WW II light liaison and observation, single-engine, high-wing monoplane, developed by Interstate, and popularly called the 'Cadet.'

L-10 autopilot. An autopilot produced by Lear Inc. for supersonic aircraft.

This autopilot provides automatic control of mach speed, G-forces, heading, trim, etc.

L-13. A light, two-seat or three-seat, single-engine, high-wing monoplane of distinctive design, developed by Consolidated Vultee after WW II as a liaison, observation, photographic, and ambulance airplane.

L-15. A small, single-engine, two-place liaison and observation, high-wing monoplane of unconventional design, developed by Boeing for the Army, and popularly called the 'Scout.'

L-16. A single-engine, high-wing liaison monoplane, developed by Aeronca.

The L-16 is used by the Army, and is popularly called the 'Champion.'

L-17. A low-wing, single-engine, liaison and observation airplane used by the Army, and popularly called the 'Navion.'

The L-17 was developed by North American, and the *L-17A* is a North-American built Navion; the *L-17B* and *L-17C* are Ryan-built.

L-20. A high-wing, single-engine, liaison monoplane used by the US Army, developed by de Havilland of Canada.

The L-20 is a modification of the DHC-2 Beaver.

L-21. A two-place, high-wing, single-engine, cub-type liaison and observation airplane, developed by Piper.

L-23. A twin-engine, low-wing liaison airplane, developed by Beechcraft and used by the Army. Popularly called the 'Twin Bonanza.'

LA (*auth abbr*). 'Low altitude.'

La (*abbr*). 'Lavochkin.' Used in the designations of Russian fighter airplanes designed by Semyon A. Lavochkin (1900–).

Common airplanes having this designation are the *La-5*, a single-engine, low-wing fighter of WW II; the *La-9*, a single-engine, single-seat fighter of post-WW II; the *La-11*, a development of the La-9; and the *La-17*, a single-seat jet fighter.

LAB (*abbr*). 'Low-altitude bombing.'

Used esp. to designate bombing with certain radar equipment. A technique used in LAB is to reverse direction by an Immelmann after release of the bomb.

lab (*auth abbr*). 'Laboratory.'

LAC (*abbr*). 'Leading aircraftman.' *British.*

Lackland Air Force Base. An AF base in San Antonio, Texas, named for Major General Frank D. Lackland, former Commandant of Advanced Flying School, Kelly Field, who died in 1943.

lacrimator, *n.* A tear gas.

Ladd Air Force Base. An AF base at Fairbanks, Alaska, named for Captain Arthur K. Ladd,

killed in an airplane accident at Dale, South Carolina, 13 December 1935.

Lafayette Escadrille. 1. A volunteer squadron made up principally of American fliers who fought for the French in WW I. **2.** In WW II, a fighter squadron of French pilots under American command and equipped with American aircraft, which fought in North Africa.

In sense 1, the Lafayette Escadrille, first named the 'Escadrille Américaine,' was formed in 1916 within the French service. A few of its pilots were French. In 1918, it was transferred to the American service, and became the 103rd Pursuit Squadron. Cf. **lufbery circle,** note.

lag, *n. Electricity* and *radio.* Short for 'phase lag.'

lag angle. The angle by which a rotor blade is displaced about its drag hinge, the angle being measured between the blade-span axis and a radial line taken across the rotor disc and containing the drag hinge and the axis of rotation.

LaGG-3. A single-engine, single-seat, Russian fighter and fighter-bomber of WW II, designed by Lavochkin, Gorbunov, and Gudkov.

lagging motion. The oscillating motion of a rotor blade in the plane of rotation about its drag hinge. Also called 'hunting motion.'

lag hinge. The drag hinge.

La Grande Medaille D'or. A gold medal given annually since 1925 by the Fédération Aéronautique Internationale in recognition of high contribution to the cause of aviation.

La Guardia Municipal Airport. A metropolitan airport on Long Island, at which certain accommodations are provided for USAF units, named for Fiorello H. La Guardia (1882–1947), mayor of New York City and a major in the Air Service during WW I.

Lajes Field. An air base at Praia, Terceira Island, Azores.

Lake Charles Air Force Base. An AF base at Lake Charles, Louisiana, named for the city.

LAM (*abbr*). 'Latin-American Mission.'

LAMA (*abbr*). 'Lead air materiel area.'

Lambert conformal conic projection. A conformal projection in which the meridians are first described upon the surface of a cone, then rolled out flat, and in which the parallels are spaced mathematically to impart the property of true shape to features represented. Sometimes called a 'conical orthomorphic projection.'

For limited areas, this projection is considered ideal for all purposes.

lame duck. A disabled aircraft. *Slang.*

lamina, *n.* **1.** *Meteorology.* A layer of the atmosphere between designated altitudes. **2.** *Aerodynamics.* Any one of the separate sheets of airflow making up a laminar flow.

laminar boundary layer. A boundary layer characterized by laminar flow.

laminar flow. A nonturbulent airflow over or about an airfoil or other body, made up of thin parallel layers.

laminar-flow airfoil. An airfoil specially designed to maintain laminar flow about itself, esp. at transonic or supersonic speeds.

A relatively thin airfoil with a sharp leading edge and maximum thickness approximately at the center of the chord is a type of laminar-flow airfoil.

laminar formation. An aircraft formation in which the different elements or sections are held in horizontal layers at different altitudes.

laminar separation. Separation that exists when a laminar boundary layer leaves the surface of the airfoil and moves into the free fluid.

This condition may arise when the airflow is decelerated to a point where slowly moving air near the surface is brought to rest. See **stall,** *n.*, sense 1, and **turbulent separation.**

laminated metal. Metal consisting of two or more metal plates bonded securely together.

Lanac, *n.* [*Laminar air navigation and anticollision.*' A trade name.] A method or system to assure safe air navigation at various levels or altitudes of flight.

In Lanac, each aircraft equipped under the system carries a responser which works with a ground responder beacon, enabling each aircraft to keep constant track of its whereabouts.

Lancaster, *n.* A British, four-engine, heavy bomber of WW II, developed by Avro.

Different versions of the Lancaster were designated *Lancaster I, Lancaster II,* etc. The *Lancaster IV* and *Lancaster V* were later designated 'Lincoln I' and 'Lincoln II,' respectively.

Lancer, *n.* A popular name for the P-43.

land, *n.* **1.** The solid part of the earth's surface, as distinguished esp. from water, but sometimes distinguished from snow or ice. **2.** This part of the earth's surface considered to be a domain of operations for an army. **3.** *Firearms.* One of the raised ridges in the bore of a rifled gun barrel. See **rifling,** *n.*

Attrib. in sense 2, as in *land force, land troops, land warfare,* etc. Cf. **ground,** *n.*, esp. notes c and d.

land, *v.* **1.** *intr.* **a.** Of airborne aircraft or persons: To come down to and, under most conditions, to stop upon the earth's surface, either ground or water, snow or ice, or any other surface or platform, as that of a carrier deck. Cf. **alight,** *v.*, **touch,** *v.* **b.** Of an airship: To come down to, or nearly to, the earth, prior to being moored or docked. **2.** To hit land after a jump or drop. Said of parachutists or paratroopers, or of parachuted or freedropped supplies. **3.** To come ashore from a vessel or vessels, or from one or more amphibious vehicles, esp. in an amphibious assault or operation. **4.** *tr.* To bring an *aircraft* down to earth as indicated in sense 1. **5.** To bring *cargo, troops,* or *passengers* down to the surface in one or more aircraft, and to dis-

charge such cargo or personnel from the aircraft; to deliver *troops* to the ground by parachute, or *supplies* by parachute or freedrop.

In sense 1a, 'land,' esp. in gerundive or participial uses, includes the action preparatory to, and following, touchdown. See **landing,** *n.*, senses 2a and 3.

land-air, *a.* Ground-air (which see, esp. in senses 2 and 3).

land-based, *a.* **1.** Of aircraft: Based on, and operating from, a land area, as distinguished from carrier-based or water-based aircraft. **2.** Of an air organization, air power, air attack, etc.: Based on, operating from, or launched from, a base on land.

land campaign. A campaign carried out on land by army forces, marine forces, or both, as distinguished from an air or sea campaign. See **ground,** *n.*

LandCent (*auth abbr*). 'Allied Land Forces, Central Europe.'

landfall, *n.* **1.** The sight or sighting of land after a passage over water. **2.** A landing of an aircraft. **3.** Short for 'celestial landfall.'

land fog. A fog occurring over the countryside.

Land fog usually evaporates quickly, as its nuclei are normally only slightly hygroscopic.

landing, *n.* (ldg) **1.** The action of the verb *land.* **2.** In specific senses. **a.** The complete action of bringing an airborne airplane down to the surface and bringing it to a stop, including the approach or approaches, the touchdown, and the landing roll. **b.** Limited to the action of the touchdown and the landing roll. **c.** In the Military Air Transport Service, as specially defined: The action of bringing an airplane down after having descended to a point fifty feet above the surface, of making contact with the surface, and of completing the landing roll. **3.** An instance of accomplishing the action of senses 1 or 2, as in 'he made two landings on the run between New York and London.'

In sense 2a, the landing begins when the pilot commits himself to the action. For this reason, the exact beginning of the action varies from one landing to another.

Attrib., as in *landing approach, attitude, equipment, facility, instruction, operation, place, runway, stress,* etc. See following entries.

landing aid. Any illuminating light, radio beacon, radar device, communicating device, or any system of such devices for aiding aircraft in an approach and landing.

See **ground-controlled approach, instrument landing system, landing-area floodlight.**

landing angle. The angle between the wing chord of an airplane and the horizontal at the moment of touchdown when the airplane is landing. Cf. **ground angle.**

landing approach. An approach for a landing, as distinguished from an approach for any other purpose.

landing area. 1. Any area, either on land or water, for the landing and takeoff of aircraft. **2.** An area for landing troops, materiel, or both, whether by parachute, airlanding, or, in the case of certain materiel, by freedrop.

landing-area floodlight. A floodlight for illuminating a landing area.

Attrib., as in *landing-area floodlight system.*

landing attack. An attack made by troops airlanded from aircraft, or landed from vessels or amphibious vehicles.

landing beam. A directional radio beam marking the glide path in an instrument landing system. See **glide path,** note.

landing chart. An aeronautical chart, printed on one side of the instrument approach and landing chart, showing obstructions around an airfield and the runway pattern and directions.

landing check. A check of an aircraft for a landing, normally made just prior to the final approach.

landing circle. A circle followed or described by an airplane or airplanes orbiting around an airfield prior to landing.

landing clearance. Landing permission. Considered *loose* usage. See **clearance,** *n.*, sense 4.

landing cord. A cord used as an arresting wire.

landing crew. A detail of men on the ground who aid in bringing an airship to earth and who handle the airship while it is on the ground. Also called a 'ground crew.'

landing deck. The flight deck of an aircraft carrier.

landing distance. The distance covered in a landing roll.

landing field. A cleared area on land for the landing and takeoff of airplanes.

landing flap. A flap used esp. to slow an airplane down for landing.

landing flare. A flare dropped by an aircraft or positioned on the ground to provide illumination for landing.

landing force. That part of an amphibious task force that lands in an amphibious operation.

AF units, as distinguished from Marine or Naval air units, that may participate in conjunction with such an operation remain under the tactical command of an air commander and as such are not considered a part of the landing force. See **force,** *n.*, note. A landing force is normally controlled by jointure of command between the Navy and the Army.

landing gear. Also *collective.* **1.** The complete apparatus on an aircraft for supporting it during landing or while resting or moving about on the surface, consisting either of wheels or of skids, endless tracks, floats, or skis, together with the

necessary axles, struts, wires, shock absorbers, and other assemblies or parts: See note. **2.** In some contexts, a part of the complete landing gear, as in the phrases, 'left landing gear,' 'right landing gear.' **3.** With certain rockets, a device or apparatus consisting of a parachute and release mechanism for lowering the rocket to earth at the end of its flight.

In sense 1, a landing gear may be fixed in place beneath the aircraft, or it may be retractable. A complete landing gear includes the tail skid or tail wheel, if any, but use of the term is often restricted to mean the main gear at the forward part of the airplane. Nonamphibious flying boats, although sometimes having wing floats, are not usually thought of as having any landing gear; an airship may or may not have one. Landing gear is sometimes called the 'undercarriage.' See **amphibious landing gear, fixed landing gear, retractable,** *a.*, **ski-wheel landing gear.**

landing-gear light. A light in a landing-gear warning system.

landing-gear motor. An electric motor for raising or lowering a retractable landing gear.

landing-gear tread. The tread left by a landing gear, measured between the outer contact points with the ground of the two main wheels or units.

landing-gear warning system. A system in an aircraft to indicate whether the landing gear is down and properly locked in position.

This system ordinarily incorporates warning lights and a warning horn.

landing ground. A place on the ground for landing.

landing interval. The time interval between one landing and another.

landing light. 1. Any of the lights on an aircraft used to illuminate the surface, esp. for a landing. **2.** Any of several lights on the surface used to illuminate the landing area; a landing-area floodlight.

landing load. The load or pressure exerted upon an aircraft at touchdown, or upon a runway by an airplane during touchdown and in the landing roll.

landing mat. A mat of metal mesh or pierced plank laid down in a cleared area to support aircraft in takeoff and landing. See **pierced plank.**

landing minimums. Weather minimums governing the landing of aircraft. See **weather minimums.**

landing parachute. A deceleration parachute.

landing party. A group of people landed to accomplish a given mission, combat or otherwise.

landing pattern. The traffic pattern followed by an aircraft prior to touchdown.

landing permission. Permission to land an aircraft on an airfield or runway, given to the pilot by the control tower or other appropriate control agency. Sometimes loosely called 'landing clearance.'

landing ramp. An inclined ramp leading from the water to the shore, used for beaching seaplanes.

landing roll. The landing run of an airplane with a wheeled or tracked landing gear; the distance covered in such a run. Cf. next.

Also called the 'ground roll.' See **roll,** *n.*, sense 3.

landing run. The run of an airplane after touchdown on ground, water, snow, or ice, under the impetus of its landing speed; the distance covered in such a run. Cf. prec. and **takeoff run.**

landing speed. 1. The minimum speed at which a given airplane can touch down under adequate control by the pilot. **2.** The speed of an airplane at touchdown.

landing strip. 1. An airstrip or that part of an airstrip where the airplanes actually touch the surface in landings or takeoffs. **2.** Also a part of, or an area adjoining, an airfield, esp. an unimproved area as distinguished from improved runways, suitable for landing and takeoff.

In sense 2, a landing strip is often auxiliary to the regular runways of an air base.

landing tee. A wind tee. Also written 'landing T.'

landing velocity. *Specif.* The velocity at which a parachutist strikes the earth.

landing weight. The gross weight of an airplane at touchdown.

landing wheel. A wheel in a landing gear that helps roll the aircraft on the surface.

landing wire. A wire or cable in the external rigging of certain airplanes that braces a wing against downward-deflecting forces, as encountered in a landing.

landing zone. A zone designated for the landing of aircraft in an airborne assault.

landline communication. Communication by wire over land, as by telegraph.

landlord, *n.* In a situation involving tenancy, the commander who has jurisdictional control over the land or other real property occupied by the tenant. See **tenant,** *n.*

landmark, *n. Specif.* A check point.

landmark beacon. A light beacon, other than an airport or airway beacon, that indicates a specific geographical location.

landmark navigation. Navigation by pilotage.

land mine. 1. A mine placed on or slightly beneath the surface of the ground and usually of a type designed to explode as a result of pressure. **2.** An aerial mine (sense 2). *British.*

landplane, *n.* An airplane designed or equipped to take off and alight on land, esp. such an airplane with a wheeled landing gear.

land power. 1. The power that a nation derives from its army or other ground forces. Distinguished from air power or sea power. **2.** A nation

having great power by virtue of its ground forces.

land return. *Radar.* A ground return.

Landsberg Air Base. An air base at Landsberg, Germany, named for the city.

Landstuhl Air Base. An air base at Landstuhl, Germany, named for the city.

land tail. That part of a unit that moves overland, as distinguished from the part that is air-transported. *Slang.*

lane, *n. Specif.* An air lane.

lang (*auth abbr*). 'Language.'

Langley Air Force Base. An AF base at Hampton, Virginia, named for Samuel P. Langley (1834–1906), a pioneer aeronautical scientist, and secretary of the Smithsonian Institution (1887–1906). Cf. **aerodrome,** *n.*[1]

Langley Medal. A medal presented upon occasion by the Smithsonian Institution for specially meritorious investigations in the science of 'aerodromics' as applied esp. to aviation.

This award was established on 15 Dec 1908 in honor of S. P. Langley (1834–1906). It was first awarded in 1909 to the Wright brothers.

Lant (*auth abbr*). 'Atlantic' used in combination only, as in 'ComAirLant.'

lanyard, *n.* **1.** A cord or thong attached to a pistol butt, for looping about the neck to prevent loss of the pistol. **2.** A cord, wire, or cable for firing certain cannon, pyrotechnics, etc. **3.** Any of certain foreign decorations worn over the shoulder, but distinguished from the French or Belgian fourragère.

Laon Air Base. An air base at Laon, France, named for the city.

lapel button. Any small button to be worn in the lapel of civilian clothing in lieu of a military decoration.

lapsed appropriation. An appropriation the balance of which is no longer available for payment of obligations, having passed the period of time for being available as set by law.

lapse rate. The rate of change in value of a meteorological phenomenon, usually the rate of decrease of pressure or temperature with elevation. See **normal lapse rate, standard pressure lapse rate.**

Laredo Air Force Base. An AF base at Laredo, Texas, named for the city.

large-scale map. A map having a scale of 1:100,000 or larger.

Lark, *n.* A Navy rocket-powered guided missile, designed as a short-range antiaircraft weapon.

Larson Air Force Base. An AF base at Moses Lake, Washington, originally known as Moses Lake Air Force Base, renamed for Major Donald A. Larson, killed over Germany in 1944.

lashing point. One of several points inside an aircraft to which loads may be secured by lashings.

last-resort target. A target designated for attack if for some reason higher-priority targets cannot be attacked.

last war. A distinguishing term applied to World War I during, and even after, WW II, now (in 1955) tending to be applied to WW II.

Las Vegas Bombing and Gunnery Range. An AF bombing and gunnery range near Las Vegas, Nevada.

Certain atomic tests have been conducted on this range, esp. on Frenchman's Flat and Yucca Flat.

LAT (*abbr*). 'Local apparent time.'

lat (*auth abbr*). 'Latitude.'

latch, *n. Specif.* A device designed to fasten a rocket in or on a launcher prior to firing.

lateral, *a.* **1.** Situated at the side, coming from the side, directed toward the side. Said esp. of an aircraft's movements or attitudes. **2.** In another chain of command; in a parallel organization. Hence, *lateral distribution*, distribution to organizations outside one's own chain of command. See **parallel,** *a.*

In sense 1, 'lateral' is not always a precise term: See **lateral oscillation, lateral stability.** Cf. **longitudinal,** *a.*

lateral attitude. The attitude of an aircraft with respect to its position about the longitudinal axis.

The lateral attitude of an aircraft changes when it rolls.

lateral axis. The side-to-side axis of an aircraft, about which the aircraft revolves in pitching. See **axis,** *n.*, note.

lateral control. 1. Control over the lateral attitude or movement of an aircraft. **2.** *pl.* The control surfaces, such as the ailerons, used for lateral control.

lateral oscillation. The oscillation of an aircraft about its vertical axis; also any periodic rolling or sideslipping motion. Cf. **longitudinal,** *a.*

lateral stability. 1. The stability of an aircraft against rolling. **2.** The stability of an aircraft against lateral movement, such as sideslipping or yawing. See **stability,** *n.*, sense 1a.

latitude, *n.* (lat) *Specif.* Angular distance on the surface as viewed from the earth's center, measured north or south from zero through 90 degrees, beginning at the equator.

latrine, *n.* A toilet.

latrine orderly. A person detailed to keep a latrine clean.

lattice, *n.* A pattern of fixed lines of position established by a system of radio or radar transmitters.

Laughlin Air Force Base. An AF base at Del Rio,

Texas, named in honor of Lieutenant Jack T. Laughlin, who was killed in action in the Far East, 1942.

launch, *v. tr.* In specific senses. **1.** To release or send forth, under its own power only, a *rocket missile, robot bomb,* or the like from a special launcher, rack, ramp, or other device or installation. **2.** To drop or release an *aerial torpedo* from an aircraft. **3.** To catapult, esp. to catapult or discharge a *torpedo* from a torpedo tube or to catapult an *airplane,* as from a ship's deck. **4.** To send or take a *glider* into the air by aerial pickup or by some special device, as a power winch. **5.** To get an *attack* started and under way.

launcher, *n.* **1.** A device for launching or catapulting an airplane, rocket missile, or the like. **2.** *Specif.* A device or installation from which a self-propelled missile, such as a ballistic missile, an aircraft rocket, or guided missile, is launched, usually incorporating a rail, tube, or the like for giving the missile initial guidance. See **rocket launcher, tower launcher.**

In sense 2, a launcher is distinguished from a catapult in that the launcher does not incorporate a device to give an initial push to the missile. See **launch,** *v.*

launcher adapter. A device that fits rigidly to an aircraft rocket launcher to adapt it to the firing of rockets of a different caliber than that for which the launcher was originally designed.

launcher rail. A launching rail.

launcher tube. A launching tube.

launching angle. *Specif.* The angle between the horizontal and the longitudinal axis of a rocket missile at the time of launching or firing.

launching platform. A platform from which a guided missile or the like is launched or fired. Also called a 'firing platform.'

launching rail. A rail that guides, or aids in guiding, a rocket missile or other projectile in launching.

launching ramp. A ramp used for launching an aircraft or missile into the air.

launching site. 1. A site from which launching is done, such as a site used for the German V-1 and V-2 of WW II. **2.** *transf.* The platform, ramp, rack, or other installation at such a site.

launching tube. A tube used to guide a rocket missile or other projectile during launching.

laundry bag. A parachute. *Slang.*

Laurence G. Hanscom Field. An AF air base at Bedford, Massachusetts, formerly known as Bedford Air Force Base, renamed for Laurence G. Hanscom, a Boston and Worcester newspaperman and an Army reserve pilot, killed near the field in 1941.

lawn mower. *Electronics.* **1.** A kind of preamplifier used with a radar receiver to cut down the 'grass' interference on a radar screen. *Slang.* **2.** A machine used to cut chaff into various lengths. *Slang.*

law officer. An officer on a court-martial who is a member of the bar of a federal court, or of the highest court of a state of the United States, and who is certified to be qualified for legal duty by the Judge Advocate General of the armed force of which he is a member.

A law officer is responsible for the fair and orderly conduct of the proceedings in accordance with law in all cases which are referred to the court to which he is appointed.

laws of motion. The three laws of Galileo (1564–1642) and of Sir Isaac Newton (1642–1727) found to be basic to the development of aeronautical engineering.

These are: (1) A material body, if left to itself, will maintain its condition of rest or motion unchanged. (2) A change in the motion indicates the presence of a force due to another body, and is proportional to the force. (3) Action and reaction are equal, and in opposite directions.

Lawson Air Force Base. An AF base near Columbus, Georgia, named for Captain Walter R. Lawson, killed in 1923.

lay, *v. tr.* **1.** To drop one or more *aerial bombs* or *aerial mines* onto the surface from an aircraft. **2.** To spread a *smoke screen* on the ground from an aircraft. **3.** To calculate or project a *course.* **4.** To aim a *gun.* Said esp. of ground weapons. **5.** *To lay on:* **a.** To execute a bomber *strike.* **b.** To set up a *mission.*

layout chart. A chart showing the various physical facilities of an installation, as those of an air base, and indicating the interrelationship of the facilities.

lazy eight. A kind of eight (which see) in which the performing airplane traces a flight path which is eight-shaped in the vertical plane, i.e., when viewed from the side, and S-shaped when viewed from above or below.

LB (*abbr*). 'Light bombardment.'

LB-30. A designation of the Liberator built to British specifications and delivered to Britain during WW II. This plane had no B-24 counterpart.

L band. A designation formerly given to a band of radio frequencies between 390 and 1,550 megacycles.

Use of this designation is no longer authorized in the AF.

LC (*abbr*). **1.** 'Legitimate child.' **2.** 'Line of contact.' **3.** 'Liaison-cargo,' a designation given USAF aircraft used for both liaison and cargo operations. **4.** 'Landing craft' in combinations, as in *LCI,* landing craft, infantry; *LCI(L),* land-

ing craft, infantry (large); *LCT*, landing craft, tank; etc. **5.** *auth.* 'Line of communication.'

L/C (*abbr*). 'Lieutenant colonel.' See **lt col** (*auth abbr*).

LC-126A. A liaison-cargo, high-wing, single-engine, cabin monoplane developed by Cessna.

The LC-126 has been specially modified for arctic rescue work.

LCAVAT (*auth abbr*). 'Landing craft and amphibious vehicle assignment table.'

lcdr (*auth abbr*). 'Lieutenant commander.' *Navy.*

lchr (*abbr*). 'Launcher.'

LCL (*abbr*). **1.** *auth.* 'Less than carload lot.' **2.** 'Lifting condensation level.'

L class. A class of Goodyear dirigibles having a helium capacity of 123,000 cubic feet.

LCT (*abbr*). **1.** *auth.* 'Latest closing time.' **2.** 'Local civil time.' **3.** 'Landing craft, tank.'

LD (*abbr*). **1.** *auth.* 'Line of duty.' **2.** *auth.* 'Line of departure.' **3.** 'Landing.' See **ldg** (*auth abbr*).

L/D (*abbr*). **1.** 'Lift-drag' or 'lift-drag ratio.' **2.** 'Length-diameter.'

In combination, as *L/D ratio.*

LDC (*auth abbr*). 'Light direction center.'

LDCO (*auth abbr*). 'Laundry and dry cleaning operations.'

ldg (*auth abbr*). 'Landing.'

LDO (*auth abbr*). 'Limited duty officer.'

ldr (*auth abbr*). 'Leader.'

ldry (*auth abbr*). 'Laundry.'

ldymn (*abbr*). 'Laundryman.'

LE (*auth abbr*). **1.** 'Low explosive.' **2.** 'Light equipment.'

lea (*abbr*). 'Leather.'

lead, *n.* [Rimes with 'feed.'] **1.** The action of aiming ahead of a moving target with a gun, bomb, rocket, or torpedo so as to hit the target, including whatever action is necessary to correct for deflection. **2.** The lead angle. **3.** The distance between the moving target and the point at which the gun or missile is aimed.

See **ballistic lead, kinetic lead.**

lead, *v. tr. Specif.* To aim ahead of a moving *target.*

lead, *a.* Leading others; at the head of an aircraft formation.

In combinations, as *lead aircraft, lead bombardier, lead bomber, lead navigator, lead pilot,* etc. See **lead crew.**

lead air materiel area. An air materiel area responsible for a particular weapon system or supporting system in matters related to supply, maintenance, and procurement not performed by the Weapon System Project Office.

Each weapon system and each supporting system has a lead air materiel area (LAMA). For example, the SAAMA is responsible for the B-36, the C-131, the F-102, the XC-99, etc.; the WRAMA is responsible for the B-57, the C-122, and the TM-61.

lead angle. 1. The angle between the line of sight to a moving target and the line of sight to a point ahead of the target, at which point a missile is aimed so as to strike the target. **2.** A dropping angle.

A lead angle (sense 1) may include corrections for gravity and wind effects upon the missile and also for other deflection effects if the launching device is also in motion, as well as for the motion of the target. However, a lead angle is not to be confused with a deflection angle (which see, sense 2), which need not represent a lead.

lead azide. A sensitive explosive used esp. as an initiator (which see).

lead crew. An aircrew specially trained to fly the lead bomber in certain bomber formations, navigating for the entire formation, and signaling or indicating, by one means or another, the proper time for the dropping of bombs by all the other aircraft in the formation.

leader, *n.* (ldr) *Specif.* An element leader, flight leader, or the like.

leadership, *n.* The quality, power, or ability to lead others; *specif.*, a function of command to provide sound concepts of action and inspire others to carry out a mission with energy and spirit.

Leadership is founded either upon the prestige of position, such as that imparted by the office of the Presidency, or upon ability and qualities of character. In the latter case, it is sometimes inborn, but is more often acquired or developed by the exercise or enhancement of self-discipline, by restrained but energetic actions, by special attention to the needs, feelings, and abilities of subordinates, and by the cultivation of certain character traits, such as moral or physical courage, which, when circumstances require, can usually be relied upon to inspire others in matters of fortitude and clear thinking.

lead-in, *n. Electronics.* A wire connecting the overhead part of an antenna to the transmitter or receiver.

leading edge. 1. The edge of an airfoil, as of a wing, propeller, or stabilizer, which first meets or bites the air. **2.** *Meteorology.* The advancing edge of a moving mass of air.

lead team. Any team that leads other teams; a lead crew.

lead time. The time allowed or required to initiate and develop something so that it will be available and ready for use at a given time.

Lead time is a factor inherent in all military planning. It is the time needed to requisition supplies so that they will be available at a particular time, or the time needed to train a pilot so that he will be on hand for a given operation. It is also the time needed for research and development so that the nation will not lack a particular weapon or weapons to meet a future danger. See **procurement lead time.**

leaf, *n. pl.* A descriptive name for the insignia of a major or lieutenant colonel. See **gold leaves, silver leaves.**

leaflet bomb. A bomb-like container holding informative or propagandist leaflets which, dropped from an aircraft, flies or breaks apart in the air to scatter the leaflets.

leaflet raid. A raid in which leaflets are dropped, esp. in leaflet bombs.

lean, *v.* Often with *out. tr.* To reduce the fuel in the fuel-air *mixture* supplied to an *engine.*

lean mixture. A fuel-air mixture containing a low percentage of fuel and a high percentage of air, as compared with a normal or rich mixture.

leapfrogging, *n.* A technique for setting up advanced bases, done by air parties alternately going forward for the purpose.

leave, *n.* (lv) **1.** Leave of absence; the period of time covered by a leave of absence. **2.** The time which a person in military or civil service is allowed to take off during periods of normal duty; the time with which a person is credited for this purpose.

Types of leave are *ordinary leave; sick* or *convalescent leave,* not chargeable to a person's accumulated annual leave; *emergency leave,* which may include advance leave time; *excess leave,* in excess of any accrued amount, and which does not carry pay and allowances; and *re-enlistment leave,* taken normally at the beginning of a period of re-enlistment. See **accrued leave, accumulated leave, annual leave.**

leave of absence. Official permission or authorization given a person to be absent from duty and station for a specified period of time, such absence usually being charged to the accumulated or accrued leave coming to the person under the provisions of law. See **leave,** *n.,* and cf. **liberty pass.**

leave year. Under Civil Service, the approximate twelve-month period that begins with the first day of the first pay period in the calendar year, and ends with the last day of the last pay period beginning in the same calendar year.

Because Civil Service employees have staggered pay periods, the leave year for some employees begins a week later than for others. The 1954 leave year began on 3 Jan for some, on 10 Jan for others.

Le Bourget Airport. A metropolitan airport for Paris, France, located in Le Bourget.

This airport gained special renown when Charles A. Lindbergh landed the Spirit of St. Louis on its runways at 10:21 PM (Paris time), 21 May 1927.

Leduc, *n.* [After René *Leduc* (1898–), a French aeronautical engineer.] Used in the names of aircraft.

The *Leduc 0.21* is a ramjet aircraft with a turbojet engine mounted on each wingtip, featured by a jettisonable and pressurized cockpit; the *Leduc 0.22* is a supersonic development of the 0.21.

leeward, *a.* Pertaining to the part or side of an object that is sheltered from the wind or is farthest from the source of the wind. Opposed to 'windward.'

left, *n.* The left side of an aircraft. Also called 'port,' but 'left' appears to be preferred.

left, *a.* Of aircraft components or movements: Situated on, or directed toward, the left-hand side of a person at the longitudinal center line of an aircraft, facing the front, as in *left bank, left engine, left flap,* etc.

left-hand engine. An internal-combustion reciprocating engine in which the crankshaft rotates from right to left (counterclockwise) for an observer at the rear of the engine, looking forward.

left rudder. **1.** The cockpit control used to turn an aircraft's rudder to the left; the action of using this control, resulting in turning the aircraft leftward, as in 'by giving the plane left rudder he moved into position.' **2.** The resultant position of the rudder after this action.

leftward acceleration. Acceleration of a body toward its left.

LEG (*abbr*). 'Logistical expediting group.'

leg, *n.* **1.** One segment or part of an entire flight or trip by air. See note. **2.** Any of the segments, as between turnings, of a pattern flown or traced in the air by an aircraft, as in a traffic or bombing pattern. **3.** A radio-range leg (which see).

In sense 1, a leg of a trip may be between intermediate stops, between points on the ground or fixes, or between changes in direction.

In sense 2, see **approach leg, crosswind leg, downwind leg, spacer leg.**

leg (*auth abbr*). 'Legislate,' 'legislation,' or 'legislative' in combination only.

legend, *n. Cartography.* A color scale, list of symbols, scale of miles, or the like, printed on a map or chart to aid in interpretation.

Legion of Merit. (LM) A decoration awarded to military personnel for distinguished service to the US in time of war or peace.

Awards of this decoration to members of foreign armed forces is made in the degrees of Chief Commander, Commander, Officer, and Legionnaire. See **decoration,** *n.*

Leigh light. A particular make of searchlight, used on airplanes in WW II for antisubmarine operations.

lend-lease, *a.* Of or pertaining to the administration of the Lend-Lease Act.

Lend-Lease Act. An act passed by Congress (put into effect on 11 March 1941) empowering the President to provide war materiel, supplies, and services to those countries whose defense he deemed vital to the defense of the US.

The Lend-Lease Administration was established by executive order (28 Oct 1941). During the period 11 Mar 1941 to 31 Jul 1946, goods valued at some 50 billion dollars were provided, the British Empire, the USSR, France, and China being the principal recipients. Some 7 billion dollars of goods were returned on Reverse-Lend-Lease.

length, *n.* (lgth) *Specif.* The term normally used for the dimension of an aircraft from nose to tail. Cf. **height,** *n.,* and **span,** *n.*

length/beam ratio. The ratio of the length of an aircraft's fuselage or hull to its beam.

length-diameter ratio. The ratio of the length of the combustion chamber of a rocket motor to its diameter. Usually termed the 'L/D ratio.'

lensatic compass. A compass fitted with a magnifying glass for reading the scale.

lenticular cloud. A cloud roughly shaped like a double convex lens, frequently stationary in position.

LEP (*abbr*). 'Lowest effective power.'

let, *v. To let down,* to come down in a glide from a higher altitude to a lower altitude, done esp. preparatory to an approach and landing. See next.

letdown, *n. Specif.* The gliding descent of an airplane from a cruising altitude preparatory to the approach and landing.

Attrib., as in *letdown area, pattern, procedure, system.*

lethal density. The quantity of bullets in a given airspace covered by the fire from one or more machine guns.

Lethal density is said to be low, high, etc.

lethality, *n.* The extent to which a given warhead can destroy a target or render it inoperable so that it can be eventually destroyed.

lethal radius. The radius of a circle within which the effects of a bomb explosion at its center are expected to be lethal.

letter, *n.* (ltr) Short for 'Air Force Letter,' 'military letter,' 'personal letter,' etc.

letter of appreciation. A letter expressing appreciation or thanks to a person for a service or duty performed.

letter of commendation. A letter written by a commander to express commendation for a person, usually for some unusual achievement above and beyond that required of him.

letter of instruction. *Specif.* A combat order issued by a commander during an operation in a combat situation, describing the part each major unit is to play in the operation, and informing the subordinate commanders of the general policies to be used as a guide in performing their tasks.

letter of intent. A preliminary agreement expressing the intention of the government to place an order with a contractor and authorizing the contractor to take the necessary action to start production immediately, with provision for indemnification for costs incurred if a formal contract is not later consummated.

letter of transmittal. A letter prepared to transmit one or more reports, documents, or the like, sometimes containing additional information in regard to the material transmitted.

letter order. An order issued in letter form for travel, temporary duty appointment, appointment of a board, etc., and used in lieu of a special order.

level, *n.* **1.** A horizontal line or plane at any given altitude; altitude. **2.** A level of command. **3.** A stratum of persons or of organizations within the military structure when such structure is conceived of as stratified, as in *operational level, staff level,* etc.

level, *v. To level off* or *out,* to bring an aircraft into a horizontal line of flight.

level bombing. Horizontal bombing.

level of command. Any level within the hierarchy of an organization at which a commander operates or functions.

For example, the Chief of Staff, USAF, is at a higher level of command than the commander of SAC.

level of supply. The amount or quantity of supplies available, or authorized or directed to be held in anticipation of future demands.

For purposes of planning and control of supply operations, certain terms relevant to levels of supply have been given formal definitions in various directives and other publications. These terms are *operating level of supply, requisitioning objective, safety level of supply, stockage objective, strategic reserve.* See separate entries.

level speed. The speed of an aircraft in level flight. In combination, as *level-speed trial.*

Lewis gun. [After Col I. N. *Lewis* (1858–1931), US Army, inventor.] A gas-operated machine gun with a horizontal drum magazine, manufactured in several modifications.

The Lewis gun has been used by the ground, air, and naval forces of several nations since WW I, but is now obsolete as aircraft armament.

lewisite, *n.* A volatile liquid developed as a lethal, persistent, blistering gas, recognizable by its faint, geranium-like odor.

LF (*auth abbr*). 'Low frequency.'

In combination, as *LF loran.*

L. F. (*abbr*). 'Low-altitude fighter.' *British.*

LF loran. Low-frequency loran.

LF/MF (*abbr*). 'Low frequency, medium frequency.'

Used attrib., as in 'LF/MF four-course radio range.'

LFNGFT (*abbr*). 'Landing force naval gunfire team.'

LG (*abbr*). 'Landing gear.'

lgth (*auth abbr*). 'Length.'

L.H. (*abbr*). 'Lower half.' See **rear admiral.**

lh (*abbr*). 'Lighthouse.'

LHA (*abbr*). 'Local hour angle.'

li (*auth abbr*). 'Lithographer.'

liaison, *n.* (ln) *Specif.* The contact or intercommunication maintained between different military units, levels of command, agencies, offices, departments, or the like to assure cooperation and unity of purpose in working toward a common goal. See **L** (*abbr*), sense 2.

In AF contexts, 'liaison' is often used in reference to the liaison between ground and air organizations or forces, or between US forces and Allied forces.

Attrib., as in *liaison agent, communication, flight, officer, pilot, radio, squadron,* etc.

liaison aircraft. In AF usage, any aircraft de-

signed or used for liaison work; in the Army, such an aircraft so used but also used for observing artillery fire. Construed as a singular or plural.

Aircraft of this type are designated by the abbreviation 'L,' as in *L-1*, *L-2*, etc.

Liberator, *n.* A popular name for the B-24.

In various modifications also designated *Liberator I*, *Liberator II*, *Liberator B.VI*, etc.

Liberator Express. A popular name for the C-87.

Liberty engine. A famous liquid-cooled V-12 engine, developed and first produced in the US during WW I, used esp. to power the American-built DH-4.

liberty pass. 1. An authorization given an enlisted person to be absent from duty and station for a specified period of time, not chargeable to leave time. **2.** The period of time covered by such an authorization. **3.** A form showing such authorization. Also called 'pass.'

Under current provisions, a liberty pass is not granted in excess of seventy-two hours. A liberty pass differs from leave in that it is not made a matter of record on the morning report. Cf. **three-day pass.**

licensee, *n. Specif.* An individual, company, corporation, or government that is issued a license to use a licensor's proprietary design rights, manufacturing methods, or patents. See next.

licensor, *n. Specif.* An individual, company, corporation, or government that authorizes a licensee to use his or its proprietary design rights, manufacturing methods, or patents.

lieutenant, *n.* (lt) **1.** A commissioned person in the AF, Army, or Marine Corps, in either of two grades, that of first lieutenant or of second lieutenant. See separate entries. **2.** In the US Navy, a commissioned rank or person immediately above lieutenant junior grade, corresponding to captain in the other services. **3.** *Capitalized.* The title of any of these persons.

Strictly speaking, 'lieutenant' is not a rank in the AF, although it is sometimes used as such. The rank is that of first or second lieutenant.

lieutenant colonel. (lt col) A commissioned rank or person in the AF, Army, or Marine Corps, immediately above major; (*capitalized*) the title of this person.

In official communications, this term, when used as a title, is used in full; in oral discourse, 'colonel' is used as a title of address for a lieutenant colonel. See **colonel,** *n.*

lieutenant commander. (lcdr) In the US Navy, an officer ranking immediately above lieutenant, corresponding to major in the other services; (*capitalized*) the title of this officer.

lieutenant general. (lt gen) A commissioned rank or person in the AF, Army, or Marine Corps, ranking immediately above major general; (*capitalized*) the title of this person.

lieutenant junior grade. In the US Navy, an officer ranking immediately above ensign, corresponding to first lieutenant in the other services.

life belt. 1. A kind of life preserver designed to be worn as a belt. **2.** A life vest. *Loose* usage.

lifeboat, *n.* A boat used in emergencies or disasters in water; *specif.*, an airborne lifeboat for use in ditching.

lifeguard submarine. A submarine used for rescue operations at sea in an area that cannot adequately be covered by air or other rescue facilities because of enemy opposition, distance from friendly bases, or other reasons.

A lifeguard submarine is sometimes stationed along the route flown by aircraft attacking the enemy.

life jacket. A life vest.

life line. *Specif.* A line by which an aircrew member fastens himself to his aircraft to prevent falling, esp. when airdropping supplies.

life preserver. Any kind of buoyant device, as a life belt, life vest, or a doughnut-shaped ring, used to keep the body up while in water to prevent drowning.

liferaft, *n.* Also **life raft.** As carried by aircraft, a collapsible pneumatic raft or boat inflated with gas, used esp. in the event of ditching.

Liferafts carried on ships are usually made of wood.

life rocket. A rocket designed to carry a line over, or to, a ship in distress.

life vest. A kind of vest or jacket designed to be inflated with gas from small carbon-dioxide capsules, used as a life preserver. Popularly called a 'Mae West.'

lift, *n.* **1.** That component of the total aerodynamic forces acting on an airfoil or on an entire aircraft or winged missile, perpendicular to the relative wind, and exerted, normally, in an upward direction, opposing the pull of gravity. See note. **2.** The upward force or buoyancy exerted on a balloon or airship by virtue of the lighter-than-air gas or agent within it. **3.** The transport capacity of an aircraft or group of aircraft in one trip, expressed in numbers of personnel, weight of cargo, or both. **4.** An airlift, esp. the aircraft used in an airlift. **5.** A contrivance for lifting heavy weights, as in *bomb lift* or *fork lift.*

In sense 1, the lifting action of an aerodynamically-designed body, as an airfoil, is explained in either or both of two ways: (1) In accordance with Bernoulli's law (which see). (2) In accordance with the third of Newton's laws of motion, by which an airfoil, in deflecting air in one direction (usually downward), obtains an equal and opposite force acting upon itself in the other direction.

Lift is exerted in, and is normally thought of as acting in, an upward direction; however, in some instances a force analogous to lift is created in a downward direction. In putting an airplane into a climb, for example, the stabilizer-elevator combination creates a downward pull on the tail, this pull sometimes being spoken of as 'downward lift.' A more suitable term is 'negative lift.'

lift, *v.* **1.** *tr.* To take an *aircraft* into the air, or

upward through the air. Also *intr.* in reference to aircraft. **2.** To take *personnel* or *cargo* into the air by aircraft; to airlift *personnel* or *cargo*. **3.** *intr.* Of clouds, fog, or a body of air: To rise or disappear into the surrounding air.

lift capacity. The capacity of an aircraft or group of aircraft to lift personnel or cargo.

lift coefficient. A coefficient that gives the relative lift of a particular airfoil.

lift-drag ratio. The ratio of the lift to the drag of any body, particularly of an airfoil, obtained by dividing lift by drag, or the lift coefficient by the drag coefficient. Often termed the 'L/D ratio' or, more simply, 'L/D.'

lifting airscrew. A descriptive term for a helicopter rotor.

lifting condensation level. *Meteorology.* The level at which rising air becomes saturated and condensation begins.

lifting plane. *Archaic.* **1.** A wing. **2.** An elevator.

lift-off, *n.* **1.** An act or instance of lifting an airplane off the ground. **2.** The instant at which an airplane becomes airborne.

Applied particularly to helicopters.

lift strut. A strut designed as an airfoil, giving additional lift to an airplane.

Lift struts are used esp. on light, high-wing monoplanes.

lift web. A fabric strap helping to connect a parachute harness to the suspension lines.

lift wire. A wire or cable in the external rigging of certain airplanes that prevents a wing from being deflected upward as a result of lift. Also called a 'flying wire.'

light, *v. tr.* To start a *jet engine. Slang.*

light, *a.* (lt) **1.** Of aircraft: **a.** Weighing relatively little, as in 'a light bomber.' **b.** Capable of carrying only a load of relatively little weight, as in 'a light transport aircraft.' **2.** Of a gun: **a.** Having a relatively small caliber. **b.** Having a relatively small weight.

In sense 1, see **medium bomber,** note, **transport aircraft,** note.

light airplane. Any relatively small, lightweight airplane, as a cub-type liaison plane; *specif.*, an unarmed small airplane.

light antiaircraft. Light antiaircraft artillery. See **light weapon.**

light artillery. *Specif.* Artillery, other than antiaircraft artillery, consisting of howitzers and longer-barreled cannon of 105 mm caliber or smaller. Cf. **light weapon.**

light beacon. Any of several kinds of lights set up as beacons for aid in navigation.

See **airport beacon, airway beacon, auxiliary airport beacon, auxiliary airway beacon, code beacon, landmark beacon, rotating beacon.**

light bombardment. 1. Short for 'light bombardment aviation.' **2.** A bombardment of light intensity, esp. one with light-weight aerial bombs or other missiles.

light bombardment aircraft. A light bomber. Construed as a singular or plural.

light bombardment aviation. That branch of bombardment aviation that uses light bombers.

light bomber. Any bomber considered to be relatively light in weight, such as a bomber having a gross weight, including bomb load, of less than 100,000 pounds, as the B-26 or B-45.

In WW II, the A-20 and the A-26 were considered to be light bombers. See note under **medium bomber.** See also **taetical light bomber.**

light-case bomb. An aerial bomb having a thin, light, metal casing, giving a high charge-weight ratio and designed to accomplish damage primarily by blast. Also called a 'blast bomb.' See **blockbuster,** *n.*, **depth bomb.**

A light-case bomb usually contains a charge of from 70 to 80 percent of the total weight.

light colonel. A lieutenant colonel. *Colloq.*

lightening hole. Any of several holes in the structural parts of an aircraft, designed to reduce weight.

lighter-than-air aircraft. An aircraft that rises and is supported in air by virtue of a contained gas weighing less than the air displaced by the gas. Also called an 'aerostat' (which see).

lighter-than-air gas. A gas, such as hydrogen or helium, weighing less than air. See **fire balloon** and **montgolfier,** *n.*

light flak. Flak (sense 1) of light intensity, or of small caliber.

light gun. A traffic-control projector.

light line. A string of light beacons located along an airway.

The beacons in a light line are spaced at approximately ten-mile intervals. See **airway beacon.**

light machine gun. 1. Any aircraft machine gun of 0.30 caliber or smaller. **2.** In Army usage, any light-weight machine gun, including the 0.30 caliber air-cooled machine gun, but excluding full-automatic rifles, submachine guns, and machine pistols. **3.** In specific nonofficial context, any full-automatic rifle or any machine gun having a total weight with mount, if any, of between twenty and thirty pounds, approximately.

In sense 3, such guns as the Browning automatic rifle and the Lewis machine gun typify the type.

Lightning, *n.* A popular name for the P-38.

lightplane, *n.* A light airplane.

light slick. A shining surface area of water caused esp. by moonlight.

light transport aircraft. A transport aircraft capable of transporting only relatively light loads. See **transport aircraft,** note.

Airplanes such as the C-47 and C-82 are sometimes

designated as 'light transport aircraft.' The C-82, however, is also sometimes designated as a 'medium transport aircraft.'

light warning-radar. A transportable and relatively lightweight radar set or assembly used in an aircraft-warning service.

Light warning-radar is used to fill gaps in a radar network, to extend the range of a more permanent radar installation, or to substitute for a more permanent installation when the latter is not operating.

light weapon. *Specif.* Any antiaircraft weapon having a caliber of 75 mm or smaller. Cf. **light artillery.**

The term 'automatic weapon' is sometimes used to refer to a light weapon, since antiaircraft light weapons are all automatic.

Ligue Internationale des Aviateurs. An international organization formed in 1925 upon the suggestion of Colonel Clifford B. Harmon (1866–1945) as 'an aerial league for peace.'

Lilienthal glider. Any of several gliders designed by Otto Lilienthal (1848–1896), a pioneer German glider enthusiast.

Lily, *n.* An Allied name for the Japanese Kawasaki 99, a light bomber.

Lima (*code*). An authorized word for the letter 'L.' See **Alfa** (*code*).

limdat (*auth abbr*). 'Limiting date.'

limitation, *n. Specif.* **1.** A legislative restriction on the amount of money that may be expended or for which obligations may be incurred, with respect to such matters as number, time, type, purpose, function, activity, etc. **2.** Usually *pl.* **a.** The borderline between what can be done and what cannot be done with an aircraft or other piece of equipment, or by a military force or person. **b.** The negative attribute of a person or thing that represents what cannot be done, as in 'the missiles will be employed in accordance with their capabilities and limitations.'

limited duty. The duty status of a person who is physically disqualified for performing military duty in certain categories. Cf. **general duty.**

A person on limited duty is sometimes designated as 'physically restricted.'

limited mobilization. A mobilization of military forces that falls short of general mobilization.

limited objective. A political or military objective for which a nation or commander commits, or is willing to commit, but a small part of his resources.

In a sense, all objectives are limited since by the mere process of defining them, certain limitations are imposed. The term 'limited objective,' however, is used, esp. in situations like the Korean War, where one or other nation may consider the effort to be made less than all-out.

limited standard item. An item of supply or item of equipment that is not as satisfactory as a standard item, but usable as a substitute for the standard item and either in actual use or available for issue to meet demand.

limited storage. *Specif.* Storage for, or of, vehicles intended for use within ninety days.

limited war. 1. A war looked upon by one or the other of the contestants as not involving its own sovereignty, and as being limited in one respect or another, as, for example, to a particular geographical area, to the employment of only certain resources, or to the number of contestants. **2.** A war considered by a detached observer as relatively limited in some respect, esp. with regard to political objectives.

In sense 1, a given war may be limited from one standpoint, yet be a total war from another. For example, in the Korean War, the war was limited from the point of view of the US, but total from that of the Republic of Korea. A limited war may, or may not, be waged with nuclear weapons. See **war,** *n.*

In sense 2, the limitations imposed by political considerations are always relative, because political objectives by their nature are limited.

limiter, *n. Electronics.* A clipper.

limiter link. *Radar.* A limiting link.

limiting link. *Radar.* That electronic linkage between an interrogator and a radar beacon which determines the reliable range of the beacon.

limit of fire. 1. Any angular limit, established for safety purposes, for firing at a towed aerial target. **2.** The boundary of an area within which gunfire is placed.

limit stop. An arm or part used to limit angular motion, as of a gun turret.

limousine, *n.* Any large automobile used to carry passengers between an airport or other transportation terminal and certain designated places. Hence, *limousine service.*

Limousine service is often commercial, but differs from taxi service in that the limousine runs only between certain places. See **airline terminal.**

Lincoln, *n.* A British heavy bomber of WW II, developed from the Lancaster (which see, note).

Different versions of the Lincoln, and Lincoln airplanes built by different factories, were distinguished as *Lincoln I, Lincoln XV,* etc.

Lincoln Air Force Base. An AF base at Lincoln, Nebraska, named for the city.

Lincoln project. Any project conducted for the Air Force by the Lincoln Laboratory of the Massachusetts Institute of Technology.

line, *n.* Short for such locutions as 'airline,' 'flight line,' 'front line,' 'shroud line,' etc. Often *pl.* with respect to 'front line.'

line, *v. To line up,* to bring an aircraft's projected line of flight into a direct line with a target, another aircraft, a runway, etc.

line abreast. A line of aircraft one beside the other.

Used adverbially, as in 'they flew line abreast'; also attrib., as in *line-abreast formation.*

linear acceleration. Acceleration in a straight line; *specif.*, acceleration along the longitudinal axis of an aircraft.

linear array. An assembly of antenna elements arranged in a straight line.

linear scan. A radar scan projected and fixed in a straight line, used esp. in sector scanning to increase the intensity of the echoes.

linear velocity. Velocity in a straight line.

line astern. A line of aircraft one after another. Used in phrases, 'from line astern' or 'in line astern.' Also used adverbially, as in 'they flew line astern.'

line check. In the Military Air Transport Service, an in-flight proficiency check of transport aircrew members.

A line check is conducted by MATS instructor personnel. Such a check carried out over an entire route normally flown by the crew is designated a 'line check (initial)'; over a segment of the route the check is designated merely a 'line check.'

line chief. A noncommissioned officer who supervises flight line maintenance.

line crew. A ground crew that works on a flight line.

line defense. Defense of a line, or a defense established along a line, as distinguished from area defense or point defense in air defense operations.

line item. In supply usage: **1.** Any item of issue in the Air Force. **2.** A complete descriptive entry regarding an item or number of like items on any form, record, or other document, including quantity, unit of issue, stock or part number, and description.

line layout crew. A crew that surveys the route of a pole communication line, clears brush, etc. Also called a 'surveying and staking crew.'

lineman, *n. Specif.* A mechanic who works on the flight line.

line map. A planimetric map.

line of aim. A line from a person's eye, as that of a gunner or bombardier, through a sight, along which aim is taken.

The line of aim may or may not be directed at the target; in allowing for lead with fixed sights, for example, the line of aim is ahead of the target. Cf. **line of sight,** sense 1.

line of authority. A chain of command.

line of bore. The gunbore line.

line of command. A chain of command.

line of communication. Sometimes **line of communications.** (LC) **1.** Any land, air, or water route connecting a military force in the field with its supplying source or base of operations, and along which supplies and reinforcements move. **2.** A line by which telephonic or other electronic messages are transmitted; wire or wireless communication.

This term in sense 1 is well established in military usage, but because of its ambiguity out of context, a writer may use other phrases for it, such as 'line of supply or troop movement' or 'line of supplies.'

line of departure. (LD) **1.** The direction of a bullet or shell at the instant it clears the muzzle of the gun. See note. **2.** The direction of a bomb or rocket at the instant of launching.

In sense 1, the line of departure may be coincident with the gunbore line or, in the case of an aircraft-mounted gun, it may be the resultant of the aircraft velocity vector and the muzzle velocity vector.

line of duty. (LD) **1.** The performance of military duty as required or imposed. **2.** The entire sphere of activity peculiar to, or legitimately associated with, the performance of military duty or service.

line-of-duty investigation. An investigation to determine whether or not a sickness, injury, or death was incurred in line of duty.

line officer. An officer engaged in operational duties, esp. combat duties. *Navy* or *Army*.

line of fire. The flight path or paths followed by projectiles fired from a gun or group of guns.

line of flight. The line of movement, or the intended line of movement, of an aircraft, guided missile, projectile, or the like in the air.

The line of flight may or may not be coincident with, or parallel to, the longitudinal axis of the aircraft, projectile, etc.

line of position. In air navigation, a line along which an aircraft is known to be, and which may be utilized to establish a position or fix.

An LOP may be determined by any of various means: A railroad or highway may serve the purpose, or a line drawn from a check point; or a line determined by radio or by celestial navigation. A fix along an LOP is determined by crossing it with another LOP. See **pressure line of position.**

line of sight. 1. The straight line between an observer's eye and a target or other observed object or spot, along which sight is taken; *specif.*, the straight line between eye and target in gunnery, bombing, or rocket firing. Cf. **line of aim. 2.** The straight line from a transmitting radar antenna in the direction of the beam, esp. toward a target.

line-of-sight distance. *Specif.* The distance to which radar scanning beams and certain other electronic beams are limited, due to intersection of the beam by the horizon.

Under certain conditions, the distance may be extended by atmospheric refraction of the beam or beams.

line-of-sight stabilization. *Radar.* The stabilization of a radar antenna mounted on a ship or aircraft to compensate for roll and pitch, by means of changing the elevation angle of the antenna.

line squall. A squall or series of squalls extending

along a squall line, or instability line. See **squall line,** note.

Link, *n.* Short for 'Link trainer.'

link, *n.* **1.** *Firearms.* A metal part that links one cartridge to another to form an ammunition belt. **2.** Anything that establishes or is used as a communication between one person or place and another.

link chute. A link ejection chute.

link chute adapter. A unit attached to a gun to allow a link ejection chute to be fastened to the gun, and to lead ejected links to the chute.

linked ammunition. Cartridges fastened to one another side by side with metal links, forming a belt for ready feed to a machine gun.

As the linked ammunition runs through the breech mechanism, the links and cartridge cases separate.

link ejection chute. A chute or passage attached to a machine gun, through which links are thrown or conveyed to a desired point after being separated from the cartridges.

Such a chute may be either fixed or flexible.

Link gunnery trainer. A ground trainer made by Link Aviation, Inc., for gunnery training.

Link trainer. A ground trainer made by Link Aviation, Inc., *specif.*, such a ground trainer for pilots, esp. for instrument flying.

In combinations as *Link-trainer instructor, Link-trainer pilot, Link-trainer time.*

Lionoil, *n.* [A trade name.] A special kind of vegetable oil, together with other ingredients, used to prevent metal corrosion and to seal wood.

liq (*auth abbr*). 'Liquid.'

liquid, *n.* (liq) A substance, like water, neither solid nor gaseous, that freely flows and conforms to the shape of a container except that its upper surface, when at rest, is level.

Liquids and gases are both fluids.

liquid-cooled, *a.* Cooled by a liquid, as water or glycol. Said esp. of engines or machine guns.

liquid fuel. Any fuel in a liquid state, such as gasoline, kerosene, alcohol, etc.

Attrib., as in *liquid-fuel propellant, liquid-fuel rocket.*

Liquidometer, *n.* The commercial name for a potentiometer-type fuel gauge.

liquid propellant. A propellant in a liquid state used in rockets, as distinguished from a solid propellant.

liquid-propellant rocket engine. A rocket engine using a propellant in liquid form. See **rocket engine,** esp. note.

liquid rocket. A rocket using liquid fuel.

listening station. A radio-receiving station or radar-receiving station that is continuously in operation to receive radio or radar waves or signals.

A listening station may be established for any of various purposes, such as for radio-direction finding or for gaining information in regard to enemy electronic devices.

lithium, *n.* (Li) A metallic element, the lightest metal known. Atomic weight: 6.940.

litter, *n.* A frame or other platform utilized for carrying an injured person.

litter aircraft. An aircraft specially fitted out to carry litter patients.

litter patient. (LP) A nonambulatory patient requiring to be borne on a litter.

Little Joe. A popular name for the KAN-2 missile.

Little Rock Air Force Base. An AF base at Jacksonville, Arkansas.

live ammunition. Any ammunition filled with explosive or other charge and ready for use, as distinguished from inert ammunition or drill ammunition.

live runway. A runway that is designated or used for takeoff and landing, as distinguished from an idle runway.

live storage. *Specif.* **1.** Storage for, or of, motorized equipment to be placed in service within thirty days, or for equipment designated for emergency use. **2.** The equipment put in such storage.

LL (*abbr*). 'Light line.'

LM (*auth abbr*). 'Legion of Merit.'

LMF (*auth abbr*). 'Last meal furnished.'

LMG (*auth abbr*). 'Light machine gun.'

lmn (*auth abbr*). 'Lineman.'

LMT (*abbr*). 'Local mean time.'

lmt (*auth abbr*). 'Limit' or 'limitation.'

ln (*auth abbr*). 'Liaison.' See **L** (*abbr*), sense 2.

LO (*abbr*). **1.** *auth.* 'Lubrication order.' **2.** *auth.* 'Law officer.' **3.** 'Letter order.'

lo (*auth abbr*). 'Local' in combination only.

load, *n.* **1.** The force or pressure exerted upon an object, under static or dynamic conditions, either by virtue of its own weight or by some imposed object or force. **2.** That which is placed upon a vehicle or person for conveyance, or that which is held up or sustained. Cf. **payload,** *n.* **3.** The weight or quantity of anything that is supported. Also *transf.*, as in 'student load' or 'teaching load.' **4.** Short or specific for 'payload' or 'useful load.' **5.** A round of ammunition. See **basic load,** sense 1. **6.** *Electricity.* The power carried by an electric circuit; the impedance to which energy is being supplied.

'Load' is sometimes ambiguous in context or is used where a more specific term could be used. See **basic load,** sense 1, **dynamic load, gross load, payload,** *n.*, **useful load, wing load.**

The load of sense 1 includes the load of sense 2, if present; it also includes any dynamic load present.

load, *v.* **1.** *tr.* To place *cargo* or *passengers* into an airplane or other vehicle; to fill a *vehicle* with cargo or passengers. **2.** To place *bombs* on an

airplane ready to be dropped; to fill fuel *tanks* with *fuel*. **3.** To place *ammunition* in a *gun*. **4.** *intr.* with *up*. **a.** Of a person: To take on cargo, fuel, or the like, as in 'he loaded up with fuel.' **b.** Of an induction system: To choke up with excess fuel. **c.** Of a spark plug: To foul up with carbon or lead.

'Load' is a flexible verb, its object sometimes being the cargo, as in 'he loaded the supplies on the plane,' or sometimes the vehicle, as in 'he loaded the plane with men,' or sometimes the person operating the vehicle, as in 'he was loaded with bombs.' Cf. **offload,** *v.*, **onload,** *v.*

load adjuster. A special kind of slide rule used for calculation in adjusting or balancing a load in a cargo aircraft.

load factor. A factor representing the ratio of the weight or pressure of a specified load or force to a standard weight or pressure.

A load factor is often used to measure or express the stress to which an airplane is subjected under certain conditions. With a helicopter, for example, the load factor may represent the ratio of the total weight of the helicopter to a weight or pressure imposed by aerodynamic forces, inertia forces, or ground effect. In air transport usage, the load factor expresses the percentage of seats utilized out of the total number of seats on an aircraft, or the percentage of allowable cabin load utilized.

loading, *n.* A load; *specif.*, a wing loading. See also **blade loading.**

loading apron. An apron on which aircraft are loaded and unloaded.

loading chart. A chart, graph, table, plan, or the like showing the capacity of an aircraft, method of loading, plan of loading, etc.

loading coil. *Electricity.* A coil attached to a circuit for adding inductance to the circuit.

loading ramp. 1. An inclined works, track, or structure for loading and unloading aircraft. **2.** Loosely, a loading apron. See **ramp,** *n.*

load limit. The maximum allowable static or dynamic load that may be placed on or in an aircraft or part thereof under normal operating conditions.

loadmaster, *n.* In the Military Air Transport Service, an aircrew member with certain heavy transport aircraft who supervises loading and unloading of the aircraft, looks after cargo in flight, etc.

loadmeter, *n. Electricity.* An aircraft instrument that measures and indicates, in percentages, the output or load of a generator.

load waterline. A line placed on a seaplane float or hull to indicate the limit of safe loading as the float or hull sinks into the water.

lobe, *n.* Any rounded and elongated pattern or object; *specif.*, the pattern of electromagnetic waves radiated esp. by a radar antenna.

lobe switching. A method of scanning or direction finding in which a lobe is periodically switched in two or more directions.

LOC (*abbr*). 'Line of communication.' See **LC** (*abbr*), sense 5.

loc (*auth abbr*). 'Location.'

local air defense. Air defense of a specific target or small area, usually by means of light automatic weapons, passive defense measures, and local ground defense.

local air superiority. Air superiority over a specified limited area. Cf. **general air superiority.**

local apparent time. Apparent time measured with reference to a given meridian; *specif.*, in celestial navigation, the apparent time of the observer's meridian.

local civil time. Local mean time. *Obs.* See **Greenwich mean time.**

local clearance. A local flight clearance.

local command manual. A manual published by authority of a particular major air command, covering a subject peculiar to that command, and of primary interest only to that command.

local control. *Specif.* The control of a radio transmitter or other electronic device directly at the transmitter or device, as distinguished from remote control.

local defense. *Specif.* Local air defense.

local flight. A flight that departs from, and returns to, the same base, without making a scheduled stop at any other base, other than an auxiliary base; a flight between parent and auxiliary bases, or between auxiliary bases.

local flight clearance. A form completed to authorize one or more aircraft to make a local flight under visual conditions; the authorization granted by this form.

A local flight clearance is not required for a student training flight conducted at an Air Training Command base, or for a sortie performed by a tactical fighter unit.

local government. The government of a county, city, municipality, or other limited locality.

local hour angle. In air navigation, the angle between the hour circle passing through a projection of the observer's position and the hour circle passing through any given celestial body, measured westward from 0 through 360 degrees.

localizer, *n.* A runway localizing beacon.

localizer station. A radio station from which a runway localizing beacon transmits. See **runway localizing beacon.**

local mach number. The mach number at some specified point on a moving body, as distinguished from the remote mach number.

local mean time. Mean time measured with reference to any particular meridian; *specif.*, in celestial navigation, the mean time of the observer's meridian.

local purchase. The authorized individual pur-

chase of certain equipment, supplies, or nonpersonal services not provided for under central procurement, by an AF activity for its own use or for the use of other activities.

A local purchase is not necessarily made in the area or region in which the purchasing activity is located.

Local purchases are made with appropriated funds allocated for the purpose.

local sidereal time. The time of the sidereal day, measured with reference to any particular meridian; *specif.*, in celestial navigation, the time of the sidereal day with reference to the observer's meridian.

local time. *Specif.* Local mean time.

locator, *n.* A radar device or any other device designed to detect and locate airborne aircraft.

locator file. A file maintained on a large base showing the names of persons assigned, their addresses, telephone numbers, and duty assignments. Cf. **master locator.**

lock, *n.* Any fastening device used to secure something against accidental movement, as on a control surface.

lock, *v. To lock on,* to fasten onto and automatically follow a target by means of a radar beam. Said of a radar set or antenna.

Lockbourne Air Force Base. An AF base at Lockbourne, Ohio, near Columbus, named for the city.

Lockheed, *n.* [The *Lockheed* Aircraft Corporation.] Used in the names of airplanes, or in designating airplanes built by Lockheed, as in *Lockheed A-29, Lockheed Electra, Lockheed interceptor, Lockheed F-80,* etc.

Lockheed Lightning. The P-38 or F-38.

loco (*auth abbr*). 'Locomotive.'

locpuro (*auth abbr*). 'Local purchase order.'

LOD (*abbr*). 'Line of duty.' See **LD** (*auth abbr*), sense 1.

Lodestar, *n.* A twin-engine transport airplane developed by Lockheed, used in both civilian and military service prior to, and during, WW II. See **C-56.**

lodgment area. An area resulting from the consolidation of one or more beachheads or airheads, used as a base of operations.

Loening Intercollegiate Trophy. A trophy given between 1930 and 1942 by Grover C. Loening (1888–), American aircraft designer, to the college flying club most successful in getting students to become pilots or student pilots.

LofC (*abbr*). 'Line of communication.' See **LC** (*abbr*), sense 5.

lofting, *n.* As applied to airplanes, the act or process of laying out full-size drawings of an airplane that is to be built, of designing and making templates, etc.

Although the main activities comprising the lofting process are as given above, 'lofting' also connotes such activities as making models and mockups of airplanes and erecting templates, jigs, and forms.

log, *n.* **1.** A record, usually made on or in a specified book or form, of a particular flight by an aircraft, of the performance or history of a piece of equipment, of the flying hours of a pilot or other aircrew member, of any series of events, or of the progress of a particular operation. See note. **2.** The form or book containing such a record. **3.** A listing or catalogue of items showing their nomenclature, classification, disposition, etc., as a *classified documents log.*

In sense 1, AF Form 1, the 'Aircraft Flight Report and Maintenance Record,' is a kind of log, and is often referred to as a 'log.' This form, in its various parts, provides for entries on a flight or series of flights conducted by one or more persons on flying status in a particular aircraft during one day's operation; on maintenance, inspection, and servicing performed on an aircraft; on the flying hours of an aircraft, basic weights, and other general data concerning the aircraft; etc. Other standard AF forms are used as logs on other items of equipment, such as engines, propellers, etc.

See **flight log, individual flight record, radio log.**

log, *v. tr.* Sometimes *log up.* To enter an *item* or *series of items* in a log or logs, as in 'to log 1,200 flying hours,' 'to log up mileage,' etc.; hence, *fig.*, to fly a *mission,* as in 'he logged ten combat missions.'

log (*auth abbr*). 'Logistics.'

logarithmic computer. A part of an electronic computing system that resolves problems in terms of logarithmic values, or as a logarithmic function.

The logarithmic computer is a part of such electronic computers as Eniac, and is used in the complicated calculations of gunnery.

logbook, *n.* A book in which a log is kept.

logistic, *a.* (log) Of or pertaining to logistics. Also **logistical,** *a.*

logistic air support. The support furnished surface forces or forward air forces by the transportation of personnel and materiel for those forces in aircraft. See **air support.**

logistic concept. 1. A plan or idea on how to build up or support a military force, i.e., to provide supplies, equipment, transportation, maintenance, etc. **2.** As used in military theory, a concept of war in which success in arms is considered to depend largely upon the degree of effectiveness in the logistics effort, as in 'the logistic concept made creation of huge stockpiles inevitable.' Cf. **strategic concept, tactical concept.**

logistician, *n.* One whose specialty or profession is planning logistic operations, or who is responsible for seeing that logistics are carried out.

This term is applied by some users only to the highest-level logistic planners.

logistic reserve. A seldom-used term meaning a 'reserve of materiel,' or 'supply reserve,' as distinguished from a reserve of personnel.

logistics, *n.* (log) [French *logis* quarters.] **1. a.** In an operational sense, that part of the military activity that provides for the buildup and support of a military force by providing for supplies, equipment, transportation, maintenance, construction and operation of facilities, movement and evacuation of personnel, and other like services, so as to render the military force efficient and effective in both combat and noncombat operations. **b.** *Restrictive.* The furnishing of supplies and equipment. **2.** In terms of military theory, the art or science of building up a military force and of providing support by the means suggested in sense 1, including aspects of recruitment, training, and assignment of personnel; the practice of this art or science.

Originally, 'logistics' was restricted to the art and practice of quartering, supplying, and transporting troops. By extension, with increasing complexity of warfare, the term in a broad sense came to cover (**a**) the design and development, procurement, storage, movement, distribution, maintenance, transportation, evacuation, and disposition of *materiel;* (**b**) the induction, classification, welfare, training, assignment, movement, transportation, evacuation, and separation of *personnel;* (**c**) the acquisition or construction, maintenance, operation, and disposition of *facilities;* (**d**) the acquisition or furnishing of *services* (sometimes including administrative support); (**e**) the planning and implementation involved in any of these activities.

This broad sense derives from the nature of a military force. This force consists of trained men with materiel (weapons and equipment), likewise of intangibles—a will to endure or fight, and leadership. The processes by which the physical parts of this force (materiel and personnel) are procured, made ready, transported, supplied, served, and maintained are the processes of logistics. Since these processes are inextricably engaged with those of tactics and strategy, their manipulation and control is that of an art or science. However, since they are apart and distinguishable from the things that the force is created to do, they are not in themselves the operation. Instead they are the helpmates of the operation. Cf. **infrastructure,** *n.,* note.

Attrib., as in *logistics officer, logistics planning,* etc.

logistics potential. The extent to which a nation can provide the physical means for the conduct of war, including materiel, manpower, infrastructure, and administration.

logistic support. Also **logistics support.** The support given by a command or other organization to a person, activity, unit, or force, by means of which are furnished all, or any part of, its supplies, equipment, combat materiel, maintenance, transportation, administration, or any other like service, so as to enable the person, activity, unit, or force to carry out its own operation more expeditiously.

This term, if unrestricted, is broad enough to include all the services covered by logistics (which see, note). It thus requires delimitation, in most cases, either by implication or by explicit statement. For example, an order that merely states that a unit is attached 'for logistic support only,' makes it clear that operational control and administrative control are not responsibilities of the commander, but the order in itself does not make it clear as to the extent and kind of logistic support. Further delimitation is therefore required. In the case of Air Rescue Service units, the extent and kind of logistic support expected under attached service is specified by AF regulation.

See **administrative control, administrative support, command jurisdiction, control,** *n.,* note, **operation,** *n.,* **operational control.**

loiter, *v. intr.* Of an aircraft: To cruise about at a given altitude, without heading for any particular destination.

London Airport. An airport some 15 miles west of London, located in the municipal borough of Heston and Isleworth, Middlesex, used esp. for intercontinental traffic and accommodating certain USAF units. Formerly called 'Heath Row.' See **Northolt RAF Station.**

long (*auth abbr*). 'Longitude.'

Long Beach Municipal Airport. An airport at Long Beach, California, used in part by the Air Force.

long-delay fuze. A type of delay fuze, esp. for bombs, in which the fuze action is delayed for a relatively long period of time, usually for any length of time from two minutes to five days. See **delayed-action bomb,** note.

long-distance, *a.* **1.** Of aircraft or missiles: Capable of going or being sent great distances. **2.** Of a raid: Conducted at a great distance. **3.** Of communications: That cover a great distance. **4.** Of an electronic navigation aid or other device: That lends assistance at a distance greater than that of line of sight.

longeron, *n.* Any relatively heavy longitudinal structural member in an airplane fuselage or nacelle, or in a similar aerodynamically designed body, usually running continuously across a number of formers.

A longeron may be either of wood or metal, and is distinguished from a stringer (which see).

longevity, *n.* (longv) **1.** Length of time in service. **2.** Short for 'longevity pay.'

longevity pay. An amount of pay given a person for cumulated years in service.

Longevity pay is a part of base pay, and increases periodically at a rate fixed by law. The amount of pay and the rate of increase varies with grade.

longitude, *n.* (long) Angular distance east or west of the prime meridian, measured either in hours and minutes or from 0 through 360 degrees.

longitudinal, *a.* Of or pertaining to the length or the lengthwise attitude or action of an airplane.

This term as used in various combinations, such as *longitudinal attitude* or *longitudinal oscillation,* is subject to misunderstanding because meaning depends upon the way a person looks at the airplane. Whether the airplane

moves about its lateral axis or its vertical axis, the action may be said to be 'longitudinal,' since the position of the longitudinal axis is affected. See **longitudinal oscillation** and cf. **lateral,** *a.*, note.

longitudinal (antenna) fuze. An electronic fuze in which the sensitivity pattern is principally to the sides of the missile or other explosive.

longitudinal attitude. The attitude of an aircraft with respect to its position about the vertical axis.

The longitudinal attitude of an aircraft changes when it yaws. Cf. **lateral attitude, vertical attitude.**

longitudinal axis. The axis along the length of something; *specif.*, the nose-to-tail axis of an aircraft, about which the aircraft revolves in rolling. See **axis,** *n.*, note.

longitudinal control. 1. Control over the longitudinal attitude or movement of an aircraft. **2.** *pl.* The control surfaces or other controlling devices used for this control.

longitudinal decalage. The difference between the angular settings of airfoils mounted one behind the other, as between a wing and a stabilizer. Cf. **decalage,** *n.*

The angular setting is measured by the acute angle between the airfoil chord and the longitudinal axis of the airplane, looked at from the side.

longitudinal oscillation. 1. Oscillation of an aircraft in the plane of symmetry about the lateral axis, consisting of pitching and the accompanying periodic climbing and diving motions, with consequent changes in flight speed. **2.** Also the hunting or porpoising motion resulting from this oscillation, combined with forward motion. See **phugoid oscillation,** and cf. **hunt,** *v.*, **porpoise,** *v.*, sense 1.

Use of 'longitudinal' in this phrase is inconsistent with its use in 'longitudinal attitude.' The term *vertical oscillation* could just as well be used. See **longitudinal,** *a.*

longitudinal stability. The stability of an aircraft against longitudinal oscillation.

long-life item. Any item having an estimated service life of five years or more.

long-persistence screen. A fluorescent screen coated with a phosphorescent compound to give a lasting time of several seconds to the light emitted by the fluorescent compound.

long range. A capability of an aircraft, gun, radio set, etc., for operating effectively at distances considered long.

The criteria for judging what is long, and what short or medium, vary by circumstance.

long-range, *a.*, or *attrib.* (LR) **1.** Of an aircraft, missile, or radio set: Having a range of great distance. **2.** Of plans or actions: Intended to show results sometime in the distant future. **3.** Of an electronic navigation aid or other device: That operates over greater than line-of-sight distance. **4.** Of a radar set: Having a range of between 300 and 800 miles on a reflecting target one meter square and perpendicular to the signal path, providing that line of sight exists between the radar set and the target.

Long-range Navigation Chart. Any one of a series of aeronautical charts designed for long flights using dead reckoning and celestial navigation as the principal means of navigation.

Long-range Navigation Charts are small scale, usually of 1:3,000,000 or less, showing only the larger cities, towns, and landmarks, and the more important airports and navigation aids. They thus provide for a limited amount of radio navigation and pilotage.

long-range weather forecast. A weather forecast covering a period of more than 48 hours from the time of the forecast. Often applied specifically to the thirty-day outlook.

long-term storage. *Specif.* Storage for, or of, vehicles for periods of over three years.

long ton. The weight of 2,240 pounds, as generally used in England. Also called a 'British ton.' Cf. **short ton.**

longv (*auth abbr*). 'Longevity.'

long wave. 1. *Radio.* An electromagnetic wave longer than those in the standard broadcast band. See note. **2.** *Meteorology.* A specific kind of atmospheric wave in the westerlies at high latitudes, associated with cyclogenesis.

In sense 1, 'long wave' has been variously defined to mean a wave (1) longer than 545 meters, or (2) 600 meters long or longer. See **short wave,** note.

Loon, *n.* The US Navy designation for the JB-2.

loop, *n.* **1.** A flight maneuver in which an airplane flies a circular path in an approximately vertical plane, with the lateral axis of the airplane remaining horizontal; *specif.*, an inside loop. **2.** The flight path described in this maneuver.

See **inside loop, inverted normal loop, inverted outside loop, outside loop.**

loop, *v.* **1.** *tr.* To put an *airplane* through a loop. **2.** *intr.* To make a loop. **3.** *To loop the loop,* to make a loop.

loop antenna. A directional antenna consisting of one or more turns or loops of wire or other conductor.

A loop antenna may be in the shape of a circle, a rectangle, or any other convenient shape. It is normally bidirectional, but may be made unidirectional. See **sense antenna.**

loop-the-loop, *n.* A loop.

loop-type radio range. A radio range using two separate loop antennas utilizing a single transmitter.

The pattern of a loop-type radio range is similar to that of an Adcock radio range, and is utilized for navigation in the same manner; most loop-type ranges, however, do not have simultaneous transmission of voice communication and radio-range signals. Loop-type ranges are designated in radio facility charts as *RL* (Range, Loop) for full-power ranges, *MRL* for medium-power ranges, *ML* for low-power ranges. See **Adcock radio range.**

loose ammunition. Firearm ammunition in

which two or more components of each round, usually the projectile and propelling charge, are separate from one another, and are handled separately in loading, as distinguished from fixed ammunition.

Loose ammunition is used in certain large cannon, and is the usual form of ammunition for old-fashioned muzzle-loading arms.

loose formation. A formation of aircraft in which the individual aircraft are separated by relatively wide distances and intervals.

LOP (*abbr*). 'Line of position.'

LORAN (*abbr*). 'Long-range navigation.'

loran, *n.* Sometimes *capitalized.* [See prec.] A particular kind of pulsed, long-range, hyperbolic navigation system; *specif.*, standard loran (which see).

See **hyperbolic navigation system, low-frequency loran, sky-wave synchronized loran.**

loran chain. A system or combination of four or more loran stations, forming three or more pairs of stations for loran navigation. Cf. **loran triplet.**

loran chart. A kind of aeronautical chart used with loran, showing loran lines of position and also showing a limited amount of topographic detail. Often *capitalized.*

The normal loran chart of the USAF is the Loran Chart (Atlantic), scale 1:3,000,000, 1:4,000,000, or 1:5,000,000, suitable for use with loran navigation in the North Atlantic Ocean. This chart shows drainage outlines and limited cultural features.

loran fix. A fix obtained by crossing one loran line of position with another. See **hyperbolic navigation system.**

loran set. A receiving set or indicator that displays the pulses from loran transmitting stations.

loran station. Any transmitting station in a loran system. See **master station, slave station.**

loran triplet. A system or combination of three loran stations, providing two pairs of stations for loran navigation.

One station in a loran triplet forms a pair with each of the others. Cf. **loran chain.**

Lorenz instrument landing system. A special kind of continuous-wave instrument landing system using a runway localizing beacon and two radio-marker beacons, developed in Germany prior to WW II and used in continental Europe and England.

A British version of Lorenz was called 'standard beam approach' (S.B.A.).

Loring Air Force Base. An AF base at Limestone, Maine, named for Major Charles J. Loring, killed in Korea in 1952.

LOS (*abbr*). 'Line of sight.'

Los Angeles. A rigid airship built by the German Zeppelin Works and commissioned into the US Navy in 1924, but withdrawn from service in June 1932. Also known as the 'Z.R. III.'

The Los Angeles was in 1933 used as a training ship. It later was used in mooring-mast experiments.

Losey Award. An annual award given for outstanding contributions to the science of meteorology as applied to aeronautics. Also called 'Robert M. Losey Award.'

The award was established in 1940 by the Institute of the Aeronautical Sciences in memory of Captain Robert Moffatt Losey, USAAF, a meteorological officer, killed in Norway, 21 Apr 1940.

losing unit. In transferring personnel by reassignment, the unit that loses the personnel. Distinguished from a gaining unit.

loss, *n.* In specific senses. **1. a.** An instance of losing a person, aircraft, or other thing by reason of enemy action or other defined causes: See note. **b.** Short for 'permanent loss.' **2.** In fiscal practice. **a.** The entire cost of any materiel that has no subsequent value in operations, or the excess cost of any materiel which has a measurable value less than cost. **b.** The cost of any materiel destroyed, damaged, stolen, or lost, less any remuneration for salvage. **3.** *Electronics.* The absorption of radiation within a dielectric.

In sense 1, a loss is a loss even though the person or object lost may be replaced. But a loss is a temporary loss if the person or object lost is restored. A loss in which the person or thing cannot be restored is a permanent loss. See **permanent loss.** Cf. **aircraft attrition, attrition,** *n.*, **wastage,** *n.*

loss rate. An attrition rate.

lost aircraft. 1. An aircraft designated as a loss (which see, sense 1). **2.** In some contexts, an aircraft that fails to return to a friendly base.

loudspeaker, *n.* A device for converting audio-frequency electrical impulses into sound waves, as in a radio receiving set, public-address system, or the like.

louver, *n.* Also **louvre.** A slotted opening or slit in a cowling, fuselage, or the like, for the passage of cooling air or for ventilation.

Attrib., as in *louver shutter.*

Love (*code*). **1.** 'Visit is informal, accord no honors,' as formerly used on a flight plan when a very important person or persons were on the flight. See **VIP code. 2.** A word formerly authorized for the letter 'L.' See **Able** (*code*).

low, *n. Meteorology.* **1.** An area or region of low atmospheric pressure; *specif.*, a cyclone. **2.** A depression or trough in a constant-pressure surface.

low, *a.* Of aircraft or formations: Flying at a low or lower altitude.

low, *adv.* Below the horizontal plane extending out from an aircraft, as in the phrase, 'twelve o'clock low.' See **clock,** *n.*

low altitude. An altitude considered to be relatively low.

'Low altitude' is sometimes given precise meaning, and is then distinguished from minimum altitude: See **altitude,** *n.*, note.

As an attrib., 'low altitude' designates (1) an action, operation, or performance carried out at a low altitude, as in *low-altitude attack, mission, navigation, operation, stunting*, etc.; or (2) equipment specially designed for use at a low altitude, as in *low-altitude fighter, power plant*, etc.

low-altitude bombing. *Specif.* Bombing, esp. horizontal bombing, from a low altitude, given by the JCS dictionary (1955) at between 900 and 8,000 feet. See **altitude,** *n.*, note, and cf. **low-level bombing,** note.

low-angle bombing. Bombing from an airplane at a slight dive angle.

Although low-angle bombing is sometimes distinguished from dive bombing, it is actually a species of dive bombing. See **dive-bomb,** *v.*

low-angle strafing. Strafing from an airplane at a comparatively low dive angle, e.g., of approximately ten degrees.

low approach. An approach flown or begun at a relatively low altitude, normally 1,000 feet, associated esp. with instrument flying.

low aspect ratio. An aspect ratio considered relatively low. Said of a short, wide airfoil.

low blower. 1. A setting on certain internal superchargers for the supercharger to run at its lowest rpm. **2.** A supercharger running at its lowest fixed rpm.

low ceiling. *Specif.* A ceiling of clouds considered relatively low above the earth.

low cover. Cover provided by airplanes at a low altitude, esp. as distinguished from that provided by airplanes at a higher altitude; the airplanes providing such cover. See **cover,** *n.*, sense 2a.

low drag. Drag relatively low in value.

Used attrib. to designate aircraft structures or components specially designed to produce a minimum of drag, as in *low-drag airfoil* (see **laminar-flow airfoil**), *low-drag cowling, low-drag target sleeve*, etc.

Lowe, *n.* Used in the names of objects connected with the Balloon Corps of the Civil War, as in *Lowe hydrogen generator.*

Thaddeus Sobieski Constantine Lowe (1832–1913) was an American inventor and aeronaut, chief of the Balloon Corps.

lower, *v. tr.* **1.** To bring the retractable *gear* or *wheels* of an airplane from a recessed to a down position so that they may take the weight of the airplane in landing. **2.** *To lower the boom,* to act decisively or vigorously against someone; often with *on*, as in 'the Captain lowered the boom on the adjutant'; to expose; to knock out. *Slang.*

lower atmosphere. A term used to refer to any layer of the atmosphere relatively near the earth; *specif.*, the troposphere.

lower branch. In air navigation, that half of a celestial meridian, from pole to pole, on the other side of the earth from an observer, i.e., that half of a celestial meridian, from pole to pole, that contains the observer's nadir.

lower camber. The camber of the under side of an airfoil.

lower critical parachute-opening altitude. The lowest altitude at which safe bailout can be accomplished, i.e., at which a parachute has time to open and lower its burden safely to the ground.

lower deck. In certain aircraft, as in the C-124, a level for seats or cargo that is lower than some other deck on the aircraft. See **flight deck, upper deck.**

lower echelon. 1. A headquarters, unit, or establishment considered from the standpoint of being lower in the chain of command than its superior headquarters. Usually *pl.* **2.** The level in the chain of command of such a headquarters, unit, or establishment.

lower transit. The transit of a given celestial body across the lower branch of a celestial meridian.

lower turret. A bottom turret. Attrib., as in *lower-turret gunner.*

low explosive. Any nonatomic explosive, such as smokeless gunpowder, characterized usually by deflagration rather than detonation, and used esp. as a propellant in guns or rockets.

low flying. Flying at a low or minimum altitude.

Attrib., as in *low-flying attack, low-flying patrol, low-flying target*, etc.

low-flying, *a.* Of an aircraft: That flies at a low or minimum altitude.

low frequency. (LF) *Electronics.* Any frequency between 30 and 300 kilocycles.

low-frequency loran. A modification of standard loran, operating in a low-frequency range of approximately 180–200 kilocycles to increase range over land and during daytime. Often called 'LF loran.'

low level. *Specif.* A low altitude (which see).

Unlike 'low altitude,' 'low level' has not been given specific meaning. In combinations, as in *low-level attack, low-level bomber, low-level flying, low-level strafing*, etc.

low-level bombing. Bombing from any altitude considered relatively low.

Low-level bombing is not distinguished from minimum-altitude bombing. See prec.; cf. **low-altitude bombing.**

low oblique. Short for 'low-oblique photograph.'

low-oblique photograph. An oblique aerial photograph taken at a relatively small angle from the vertical; *specif.*, one in which the horizon is not shown.

low-order detonation. An incomplete and relatively slow detonation.

low pitch. The pitch of a propeller blade set at a low blade angle; *specif.*, on a controllable-

pitch propeller, the pitch at its minimum blade angle. Cf. **high pitch,** esp. note.

low-pressure area. *Meteorology.* An area of low atmospheric pressure. Sometimes called a 'low' (which see).

low-pressure chamber. A strongly-built chamber in which air pressure can be reduced to simulate different atmospheric pressures at high altitudes. Also called an 'altitude chamber' or 'decompression chamber.'

This chamber is used to test the effect of high altitudes upon the functional processes of persons and equipment.

low-pressure oxygen equipment. A kind of aircraft oxygen equipment designed to function at a relatively low internal gas pressure.

Low-pressure oxygen equipment is made to withstand up to 450 pounds pressure per square inch, and will function at a pressure as low as 50 pounds.

low rudder. Bottom rudder.

Lowry Air Force Base. An AF base at Denver, Colorado, named for Lieutenant Francis B. Lowry, a recipient of the Distinguished Service Cross, killed on a photographic mission over France, 1918.

low side pass. A pass from below toward the side of an aerial target.

low speed. Any airspeed considered relatively low.

In combinations, as in *low-speed aircraft, low-speed stability,* etc.

low-tension ignition system. An ignition system in which the current is held at a low tension throughout most of the system, being stepped up by a transformer to a high tension prior to delivery to a spark plug.

Low-tension ignition systems are less subject to breakdown at high altitudes than other systems.

low velocity. Slow velocity. Applied esp. to projectiles. Cf. **high velocity.**

low visibility. A relative term signifying little or no visibility. See **visibility,** *n.*

low wing. An airplane wing attached at or near the bottom of the fuselage.

Used attrib. to signify a monoplane having a low wing, as in *low-wing bomber, low-wing fighter, low-wing monoplane,* etc.

low-winged, *a.* Of a monoplane: Having a low wing.

lox, *n.* A shortened term for 'liquid oxygen.' Also **loxygen,** *n.*

loy (*auth abbr*). 'Loyalty.'

loyalty, *n.* (loy) A quality in a person that makes him faithful to a cause, a principle, or another person. **a.** With special reference to supporting the American Constitution, the American government, and the American economic, political, military, and social system. **b.** With reference to a commander's attitude toward his subordinates, or to that of subordinates to their commander.

LP (*abbr*). **1.** *auth.* 'Last paid.' **2.** *auth.* 'Litter patient.' **3.** 'Local procurement' in supply usage, signifying that an activity is authorized to make local procurement of a requisitioned item.

LPD (*abbr*). 'Local procurement direct.'

Used to signify that requisitioned items are being procured locally by a supply activity and that shipment will be made direct to the requisitioning activity from the source of procurement.

LR (*abbr*). **1.** *auth.* 'Long range.' **2.** 'Expendable-limited-recoverable.'

L/R (*auth abbr*). 'Leave rations.'

LRPGD (*abbr*). 'Long Range Proving Ground Division.' *Hist.*

LRTgt (*auth abbr*). 'Last resort target.'

LRTM (*abbr*). 'Long range training mission.'

LS (*abbr*). **1.** 'Light vessel.' **2.** 'Light ship.' **3.** 'Landing ship' in combinations, as in *LSM,* landing ship, medium; *LST,* landing ship, tank; *LSV,* landing ship, vehicle; etc.

L-scan, *n.* **1.** A scan for presentation on an L-scope. **2.** An L-scope. *Popular.*

L-scope, *n.* A kind of radarscope in which range is indicated by a vertical scale, with target displacement to right or left indicated by horizontal pulses from the vertical scale. See prec.

The L-scope is a modification of the A-scope.

LSPAFRO (*auth abbr*). 'Lump sum payment to Air Force Reserve officers.'

LST (*abbr*). 'Local sidereal time.'

LT (*abbr*). **1.** *auth.* 'Landing team.' **2.** 'Long ton.' See **LTon** (*auth abbr*).

lt (*auth abbr*). **1.** 'Lieutenant.' **2.** 'Light.'

LTA (*auth abbr*). **1.** 'Lighter than air.' **2.** 'Leave travel allowance.'

lt col (*auth abbr*). Also **LTCOL** in communications. 'Lieutenant colonel.'

ltd (*auth abbr*). 'Limited.'

LTG (*abbr*). 'Lieutenant general.'

ltgc (*auth abbr*). 'Lithographic.'

lt gen (*auth abbr*). Also **LTGEN** in communications. 'Lieutenant general.'

lthr (*auth abbr*). 'Leather.'

LtJG (*auth abbr*). 'Lieutenant junior grade.' *Navy.*

LTL (*auth abbr*). 'Less than truckload.'

LTon (*auth abbr*). 'Long ton.'

ltprs (*abbr*). 'Letterpress.'

ltr (*auth abbr*). 'Letter.'

LtrO (*auth abbr*). 'Letter order.'

lub (*auth abbr*). 'Lubricate.'

lubber line. A mark or line on a compass or cathode-ray indicator, which, when the compass or indicator is properly placed in an aircraft or vessel, represents the heading of the aircraft. Also (chiefly *nautical*) **lubber's line.**

lube, *n.* Short for 'lubricating oil.'

Lucero, *n.* A kind of inquisitor or interrogator used with a radar set. *British.*

The name is used in allusion to a member of the Spanish Inquisition.

LUF (*abbr*). 'Lowest useful high frequency.'

lufbery, *n.* Short for 'lufbery circle.'

'Lufbery' is often misspelled with two 'r's.'

lufbery, *v. intr.* To go into, or fly in, a lufbery circle.

lufbery circle. [After Raoul G. *Lufbery,* 1885–1918.] An aircraft formation in which two or more airplanes follow one another in a vertical spiral, or in a more or less horizontal circle, in order to protect one another and also to be in position to face attacking planes.

R. G. Lufbery was French born, and an ace in the Lafayette Escadrille. He was, however, commissioned a major in the American Air Service in January 1918. He was killed in combat in May.

Luftwaffe, *n.* [Literally, 'air weapon.'] The name of the German air force from 1935 through WW II. *Hist.*

lug band. *Specif.* Any of the bands on an aircraft rocket, which with the appropriate fittings attaches the rocket to a rail-type or post-type aircraft rocket launcher.

Luke Air Force Base. An AF base near Phoenix, Arizona, named for Lieutenant Frank Luke, Jr., Medal of Honor, WW I ace, killed in France, 1918.

lung irritant. A choking gas.

Lux, *n.* A flare of WW II dropped on land by German pathfinders.

lv (*auth abbr*). 'Leave.'

LVG [*L*uft-*V*erkehrs-*G*esellschaft.] A German two-place biplane of WW I, used as a fighter, reconnaissance, or bombing plane.

LVT (*abbr*). 'Landing vehicle, tracked.'

LW (*auth abbr*). 'Light warning.' Attrib., as in *LW station.*

LWASV (*abbr*). 'Light weight aircraft-to-surface vessel.' See **ASV** (*abbr*).

LWAW (*abbr*). 'Light weight aircraft warning.' *Australian.*

LWL (*abbr*). 'Load water line.'

lwop (*auth abbr*). 'Leave without pay.'

Lysander, *n.* A British two-place, single-engine, high-wing monoplane of WW II, developed by Westland as an Army cooperation airplane, but later used for target-towing, training, air rescue, and other purposes.

LZ (*abbr*). **1.** *auth.* 'Landing zone.' **2.** 'Luftschiff zeppelin,' in designations of German zeppelin airships. See **Hindenburg,** *n.*

M

M (*letter*). See **Mike** (*code*).

M (*abbr*). **1.** *auth.* 'Medium,' when used in unit designations. **2.** 'Mark,' used in combination with number, as in *M-1 carbine, M-2 height finder, M-4 gun, M-9 director, M-11 cluster, M-76 bomb.* **3.** 'Missile.' **a.** In designating aircraft modified for use as missiles or drones: See **MB** (*abbr*), sense 2. **b.** In designating guided missiles: See **GM** (*auth abbr*), **SM** (*abbr*), sense 2, **TM** (*abbr*), sense 4. **4.** Short for 'M-day,' as in 'M plus 4.' **5.** 'Messenger,' as formerly used (*circa* 1920) in designating US Army aircraft. **6.** 'Mother.'

This abbreviation also has many occasional uses, e.g., for 'monoplane,' 'missile aircraft,' 'Glen L. Martin,' 'General Motors Corporation,' etc., all in contexts connected with Naval missile and aircraft designations.

MA (*abbr*). **1.** *auth.* 'Marshaling area.' **2.** *auth.* 'Machine accountant.' **3.** 'Military attaché.'

M/A (*auth abbr*). 'Mess attendant.'

MAAF (*abbr*). 'Mediterranean Allied Air Forces.' Now *hist.* This was a combined command in WW II with both AAF and RAF elements, and also certain French, Italian, Polish, and RAAF elements.

MAAG (*auth abbr*). 'Military Assistance Advisory Group.'

ma'am, *n. Capitalized.* A term of respect used instead of 'sir' when applied to a WAF officer. See **sir,** *n.*

MAAMA (*auth abbr*). 'Middletown Air Materiel Area.'

MABRON (*auth abbr*). 'Marine air base squadron.'

MAC (*abbr*). **1.** *auth.* 'Major air command.' **2.** 'Mean aerodynamic chord.' **3.** 'Mediterranean Air Command.' Now *hist.*

MACAF (*abbr*). 'Mediterranean Allied Coastal Air Force.' Now *hist.*

Macchi, *n.* [An Italian aircraft-manufacturing concern.] Used esp. in the names of fighter airplanes of WW II, i.e., *Macchi C.200, Macchi C.202,* and *Macchi C.205.*

MacDill Air Force Base. An AF base at Tampa, Florida, named for Colonel Leslie MacDill, a fighter pilot killed in 1938.

MACG (*auth abbr*). 'Marine air control group.'

mach, *n.* Also **Mach.** [Named for Ernst *Mach* (1838–1916), Austrian physicist.] The speed of a relatively moving body or a part thereof, as measured by the speed of sound in the medium in which it moves, indicated by a number, as in *mach .5* (a speed equal to one-half the speed of sound), *mach 1* (a speed equal to that of sound), or *mach 1.33* (a speed one-third greater than the speed of sound).

The speed of sound in dry air at 32° F, sea level, is about 1,087 feet a second (741 mph); its speed in water at 8° C is about 4,708 feet a second. At transonic speeds, an aircraft as a whole may have a speed less than mach 1 at the same time that local points on the aircraft have speeds greater than mach 1.

mach (*auth abbr*). 'Machine,' 'machinist,' or 'machinery.'

mach angle. The acute angle between a mach line and the line of flight of a moving body.

mach effect. A single effect, or a total effect, resulting from objects moving at transonic or supersonic speeds.

Mach effect may be considered in terms of: **a.** The changes in the air brought on by a shock wave, i.e., changes in pressure, velocity, density, and temperature. **b.** The fusion of shock waves in atomic explosions. **c.** The changes in the drag coefficient, lift coefficient, or movement coefficient of an aircraft or missile.

mach front. A mach stem.

machine, *n.* (mach) **1.** *Specif.* A powered aircraft, esp. an airplane. **2.** A business machine.

machine accounting. The keeping of records or accounts, as in statistical control, by use of business machines.

machine gun. (MG) **1.** *Specif.* A full-automatic small arm mounted on a tripod, on wheels, in an aircraft, etc. **2.** Originally, a gun, esp. a small arm, designed to deliver successive shots rapidly, utilizing a crank-operated or lever-operated machine or mechanism built integral with the gun to accomplish this purpose. **3.** By extension, any recoil-operated or gas-operated full-automatic small arm, including full-automatic rifles, machine pistols, submachine guns, and full-automatic mounted weapons. See **automatic,** *n.*

The term 'machine gun' was first generally applied to such weapons as the Gatling and Lowell guns, literally firing by crank-operated machines. The first important operational use of such machine guns was in the American Civil War. The first full-automatic and modern machine gun was a recoil-operated gun built by Hiram Maxim in the year 1884.

Attrib., as in *machine-gun belt, bullet, fire, mount, operator, sight,* etc.

machine-gun, *v. tr.* To riddle a *target* with machine-gun fire.

machine-gun camera. A gun camera having an outward appearance of a machine gun.

machine pistol. 1. A pistol capable of full-automatic fire. **2.** A submachine gun.

The application of the term in sense 2 has been introduced since WW II, from the German and Russian words for the submachine gun, *Maschinenpistole* ('machine pistol') and *pistolyet-pulemyot* ('pistol-machine gun'), so-called because the submachine gun ordinarily uses pistol-type ammunition.

machine records unit. (MRU) A unit whose personnel are trained and responsible for operating certain business machines.

mach line. A theoretical line representing the backsweep of a cone-shaped shock wave made by an assumed infinitesimally small particle moving at the same speed and along the same flight path as that of an actual body or particle. Used in defining effects resulting from supersonic speeds.

This line, as represented on any plane bisecting the shock-wave cone, forms an angle with the flight path usually somewhat more acute than the angle formed by the shock wave of the actual body, since the angle of the actual shock wave depends, among other things, upon the shape of the body. A very weak shock wave forms an angle approximating the angle of the mach line.

machmeter, *n.* A special airspeed indicator that measures speed relative to the speed of sound, and indicates the speed which the particular airplane using the machmeter cannot exceed without encountering damage due to compressibility or mach effects.

mach needle. A special needle or pointer on the airspeed indicator of a high-speed airplane which can be preset to indicate when the airplane is approaching the speed of its critical mach number.

mach number. 1. A number expressing the ratio of the speed of air, or of a moving body (or a part thereof) through the air, to the speed of sound in the air (see **mach,** *n.*); the speed represented by this number. **2.** The critical mach number of a given aircraft, as in 'the plane has a mach number of 0.7.' See **critical mach number** and **transonic speed.**

machst (*abbr*). 'Machinist.'

mach stem. A shock wave or front formed above the surface of the earth by the fusion of direct and reflected shock waves resulting from an air-burst atomic bomb. Also called 'mach wave.'

mach wave. 1. A species of shock wave theoretically formed by an infinitesimally small particle moving at supersonic speed, the same as that of an actual body, which wave forms a mach angle with the line of flight of the body. **2.** A mach stem resulting from an atomic explosion.

In sense 1, the mach wave is represented by the mach line (which see).

mackay Trophy. A trophy awarded annually by the National Aeronautic Association to 'the Air Force person or persons who made the most meritorious flight of the year.'

The trophy was established by Clarence M. Mackay in 1911 and has been given every year since except for the years 1940–1945.

mackerel sky. Sky covered by a form of cirrocumulus (which see, note).

Macon, *n.* A sister airship of the Akron, commissioned in 1933, lost at sea during Navy maneuvers, 12 February 1935. See **Akron,** *n.*

MACR (*auth abbr*). 'Missing aircrew report.'

MAD (*auth abbr*). 'Marine air detachment.'

MADAEC (*auth abbr*). 'Military Application Division of the Atomic Energy Commission.'

made, *a.* Beyond further worry, as in 'he has it made.' *Colloq.*

MADW (*abbr*). 'Military Air Defense Warning Net.'

MAE (*auth abbr*). 'Medical air evacuation.'

Mae West. A popular name for a life vest. Originally *British.*

MAF (*auth abbr*). 'Major academic field.'

MAFS (*abbr*). 'Mobilization Air Force Specialty.'

MAFSC (*abbr*). 'Mobilization Air Force Specialty Code.'

MAG (*auth abbr*). 'Marine aircraft group.'

mag (*abbr*). 'Magneto.' Pronounced as a word, as in *mag drop,* a decline and stoppage in the flow of electricity from the magneto as seen by a drop in rpm on the tachometer.

magazine, *n.* **1.** A structure or compartment for storing ammunition or explosives. **2.** That part of a gun or firearm that holds ammunition ready for chambering. **3.** A film magazine.

In sense 2, magazines for small arms may be detachable or nondetachable from the rest of the piece. A *box magazine* is a detachable magazine in the shape of a rectangular box (see **clip,** *n.*, sense 2); a *drum magazine* is a detachable magazine in the shape of a drum.

maginot line. A symbol of unrealistic and outmoded military planning, in allusion to the Maginot Line of WW II, named after the French minister of war, André Maginot (1877–1932).

magnesium bomb. 1. An incendiary bomb in which the burning agent is magnesium. **2.** A magnesium flare bomb.

magnesium flare. A flare using magnesium as the illuminating agent.

magnesium flare bomb. A magnesium flare dropped like a bomb.

magnesyn, *n. Communications.* A trademark name for a small electro-magnetic device for transmitting a position signal, used in a repeater unit.

Magnet, *n.* A code name for the Russian UYak-17, a two-place trainer version of the Yak-17.

magnetic bearing. A bearing in which the reference line is magnetic north.

magnetic compass. 1. Any compass in which the sensing element, as a magnetic needle or compass card, aligns itself with the direction of the horizontal component of the earth's magnetic field at any given place. **2.** In a broader sense, any compass that senses the earth's magnetic field, including the gyro flux-gate and the gyro-syn compasses.

In sense 1, the magnetic compass at any given place does not necessarily point to the magnetic pole. See **magnetic north.**

magnetic course. A course in which the direction of the reference line is magnetic north.

magnetic declination. Magnetic variation.

magnetic deviation. Compass deviation.

magnetic field. 1. Any space or region in which magnetic forces are present, as in the earth's magnetic field, or in or about a piece of magnetized steel, or in or about an electrical current. **2.** The magnetic forces present in such a space or region.

magnetic heading. A heading in which the direction of the reference line is magnetic north.

magnetic meridian. Any line representing the horizontal component of the earth's magnetic field that passes through the magnetic poles.

magnetic mine. An underwater mine detonated when the hull of a passing vessel causes a shift of the magnetic field at the mine.

magnetic north. The direction indicated by the north-seeking element of a magnetic compass when influenced only by the earth's magnetic field. Cf. **compass north.**

Because magnetic meridians often follow zig-zag lines (although bearing generally toward the magnetic pole) the compass needle or card at any given place does not necessarily point to the magnetic pole.

magnetic pole. Either of two small areas on the earth's surface toward which the lines of force of the earth's magnetic fields converge.

The magnetic poles shift or move their positions constantly, but remain within limited areas, one in the far north, the other in the far south. See **north magnetic pole** and **south magnetic pole.**

magnetic variation. The angular difference between magnetic north and true north, as in 'the magnetic variation of X is 5° east.' Also sometimes called 'magnetic declination.'

'Magnetic variation' is preferred over 'magnetic declination' to avoid confusion with 'declination' as used in astronomy.

magneto, *n.* A generator using permanent magnets to generate an electric current, esp. for the ignition in an internal-combustion engine.

magnetron, *n.* A vacuum tube of the diode type, in which the flow of electrons is controlled by a magnetic field external to the tube.

mail, *n.* **1.** The letters, papers, etc., conveyed under public authority by a postal service; the service which conveys these letters, etc. **2.** By extension, letters, papers, etc. conveyed by an AF courier or other military aircraft.

main air base. A base of primary interest, as distinguished from an ancillary or auxiliary air base.

main control surface. Any one of the control surfaces used to change the direction of flight, i.e., the rudder, an elevator, or an aileron.

main plane. The principal supporting surface, i.e., the wing, of an airplane. Chiefly *British.*

This term had some currency in the early development of aviation to distinguish the wing surfaces from certain control surfaces. Cf. **balancing plane, lifting plane.**

main rotor. The main system of rotating airfoils of a helicopter as distinguished from a tail rotor.

maint (*auth abbr*). 'Maintenance.'

maintain, *v. tr. Specif.* To keep *aircraft* or other *vehicles* operational or in commission.

maintenance, *n.* (maint) *Specif.* The servicing, repair, and care of materiel or equipment to keep it in operating condition; the repair, reconstruction, and care required to keep an installation in operating condition. See **depot maintenance, field maintenance, organizational maintenance.**

Used in many combinations, as in *maintenance activities, maintenance base, maintenance cost, maintenance department, maintenance equipment, maintenance facilities, maintenance group, maintenance handbook, maintenance inspection, maintenance kit, maintenance man, maintenance personnel, maintenance record, maintenance schedule, maintenance team, maintenance unit, maintenance work.*

With reference to materiel and equipment, maintenance includes inspection, testing, servicing, classification as to serviceability, repair, rebuilding, and reclamation.

main wheel. One of the wheels of the landing gear bearing the main weight of the aircraft. Also *attrib.*, as in *main-wheel strut.*

maj (*auth abbr*). 'Major.'

maj gen (*auth abbr*). Also **MAJGEN** in communications. 'Major general.'

major, *n.* (maj) A commissioned rank or person in the AF, Army, or Marine Corps, immediately above the rank of captain; (*capitalized*) the title of this person.

major air command. (MAC) Any of the several large subdivisions of the USAF directly subordinate to Headquarters USAF, and established by authority of the Department of the Air Force.

The Air Force Organization Act of 1951 provided for 'the air defense command, the strategic air command, the tactical air command, and such other major air commands as may be established by the Secretary.' Although directly subordinate to Hq USAF, certain major air commands may receive directives from the Joint Chiefs of Staff, as in the instance of the Strategic Air Command.

major air commander. A commander of a major air command.

major command. In the Air Force or Army, a command directly below either of the service headquarters in the Department of Defense; in the AF, a major air command.

major damage. Damage to a piece of equipment that makes it either irreparable or repairable only by use of facilities such as those afforded under depot maintenance.

major general. (maj gen) A commissioned rank or person in the AF, Army, or Marine Corps, immediately above brigadier general; (*capitalized*) the title of this person.

major inspection. *Specif.* An inspection formerly given an aircraft after each two hundred flying hours. See **intermediate inspection,** esp. note, and **periodic inspection.**

majority, *n.* The rank or position held by a major, as in 'Jim received his majority last month.'

major overhaul. The kind of overhaul afforded under the procedures of depot maintenance.

major subordinate command. A command directly responsible to, or directly subordinate to, a major air command.

Numbered air forces, for instance, are major subordinate commands when directly subordinate to a major air command.

MAL (*auth abbr*). 'Material allowance list.'

malassignment, *n.* An unsuitable personnel assignment resulting from bad judgment on the part of the classification or assigning officer, or from extenuating circumstances. Cf. **misassignment,** *n.*

male airman. An airman of the male sex. Used to distinguish him from a WAF airman, as in 'this regulation applies to male airmen only.'

malfunction, *n.* Failure of a piece of equipment or of a part to function normally; an instance of such failure, as in 'they had fewer malfunctions.'

Mallory Air Force Station. An AF depot at Memphis, Tennessee, formerly the 830th AF Depot, renamed for Major William N. Mallory, died 1945.

Malmstrom Air Force Base. An AF base at Great Falls, Montana, named for Colonel Einar A. Malmstrom, WW II ace, who died in 1954.

MAM (*auth abbr*). 'Medium automotive maintenance.'

mammatocumulus, *n.* A small cumulus having large pouches or other protuberances hanging from its lower surface.

Mammut (*code*). Another name for Hoardings.

man, *n.* An enlisted person esp. of the male sex. Usually plural, as in the phrase 'officers and men.'

In some contexts this word is ambiguous. It is like 'airman' (which see).

man, *v. tr.* **1.** To provide or furnish a *unit* with personnel. **2.** To put a person at a *station,* as in 'each gun was manned as we entered the combat airspace.'

man (*auth abbr*). 'Manifest.'

management, *n.* (mgt) That part of administration concerned with the procedures, techniques, and processes employed in an operation; the persons concerned with these procedures, etc.

The object of management is unified, economic, and coordinated effort. Those responsible for management resolve, or attempt to resolve, problems inherent in planning, deciding, organizing, measuring, communicating, etc.

mand (*auth abbr*). 'Mandatory.'

M&O (*abbr*). 'Manpower and organization.'

M&R (*auth abbr*). 'Maintenance and repairs.'

Mandrel, *n.* A low-frequency jamming transmitter.

M&S (*abbr*). 'Maintenance and supply.'

maneuver, *n.* **1.** A military move taken in anticipation of making another move based upon an advantage to be gained by the first move. **2.** *Specif.* A flight maneuver (sense 1 or 2). **3.** Often *pl.* A practice tactical operation in which two opposing forces simulate battle or combat under the appraisal of an umpire. See note. Also attrib., as in *maneuver area, maneuver commander.*

In sense 1, a pilot makes a maneuver when he climbs with the purpose of attacking, or a commander makes a maneuver when he moves a group from one point to another to gain an advantage.

In sense 3, the maneuver is for the purpose of testing and evaluating equipment, doctrine, tactics, and techniques, also to test and evaluate the training and readiness of units, staffs, and commanders. Its purpose, unlike that of an exercise, is not for training; its purpose, rather, is to measure combat readiness, although it may be assumed that some training may also result from it. Cf. **air maneuver,** sense 1, **exercise,** *n.*, **field maneuver, war game.**

maneuver, *v. tr.* **1.** To fly an *airplane* skillfully to achieve a relative position, esp. to gain an advantage over an opponent in combat, or to get into position for landing, or to get set for any action. **2.** To force an *opponent* into a position disadvantageous to himself. Used with *into.*

maneuverability, *n.* The quality in an airplane which permits the pilot to change its direction or attitude with minimum effort.

maneuverable, *a.* Of an aircraft: Responsive to the movement of the controls.

Although 'maneuverable' simply means capable of being maneuvered, it is frequently used in the sense of 'highly maneuverable.'

maneuvering area. That part of an airdrome used for taxiing, for takeoff, and for landing.

This is a term of the International Civil Aviation Organization, and is often spelled 'manoeuvring area.'

Manhattan Beach Air Force Station. An AF personnel processing center at Sheepshead Bay, Brooklyn, New York, named for nearby Manhattan Beach.

Manhattan District. A district established in August 1942 in the North Atlantic Division of

the Corps of Engineers of the War Department; the people in charge of this district, noted for their administration of the Manhattan Project during WW II.

The Manhattan District was jointly controlled in Aug and Sep 1942 by the War Department and the Office of Scientific Research and Development; from Sep 1942 to Apr 1943 by the Military Policy Committee; from Apr 1943 to Aug 1946 by the War Department. Its facilities were transferred to the Atomic Energy Commission by the Atomic Energy Act of 1 Aug 1946. The District maintained three main field installations, and worked closely with many scientific and industrial groups.

Manhattan Project. A project of the Manhattan District, lasting from August 1942 to August 1946, that developed the atomic-energy program, with special reference to the atomic bomb.

This project consolidated work begun in 1939–1940 under joint auspices of the War and Navy Departments.

man-hour, *n.* A unit of work representing the productive effort of one person in one hour. Used in cost and manpower analysis.

In working a man-hour, the person is assumed to lose no time in idleness, relaxation, or nonproductive effort.

manifest, *n. Specif.* A document that lists in detail the passengers or other items carried in one aircraft for a specific destination.

manifold pressure. The pressure in the intake manifold of an internal-combustion engine. Cf. **boost pressure.**

Manifold pressure is expressed in inches of mercury, and is sometimes called 'manifold absolute pressure.'

manifold-pressure gauge. A gauge which measures the pressure in the intake manifold, esp. of a supercharged aircraft engine. Cf. **boost gauge.**

Manly Memorial Medal. An annual award, established by the Council of the Society of Automotive Engineers in 1928, in honor of Charles Matthews Manly, and awarded 'for meritorious contribution to aeronautic engineering.'

Charles Matthews Manly (1876–1927) was Samuel P. Langley's assistant. He designed and built the engine for the aerodrome, the first full-sized radial engine ever built, and was the pilot of the aerodrome. He patented (1902) a hydraulic speed-change device known as the Manly drive.

manning, *n.* The action of the verb 'man,' esp. in sense 1. Used attrib., as in *manning requirement.* See **unit manning document.**

manning document. Any document giving the mission, the authorized strength, and the functions of an organization, as well as the job title, the code number, and grade of each job in the organization. Cf. **unit manning document.**

manning table. A table that gives a list of personnel spaces in an organization, and shows the duties of the persons assigned.

'Manning table' is a generic term, embracing the unit manning document, the table of organization, and the formerly-used table of distribution.

manning unit. A unit to which personnel are directly assigned.

In a sense, a person may be assigned to a particular air command, but his direct assignment is to a squadron or to a headquarters, or to an equivalent organization, for it is at this level that the manpower space is provided. See **assign,** *v.*, senses 1a and 1b, **unit,** *n.*, sense 2.

MANOP (*abbr*). 'Manual of operations.'

manpower, *n.* **1.** The power available from the use of men's labor (physical or mental), measured by the number of units or bodies, as in 'both manpower and machines are needed.' **2.** Personnel considered from the standpoint of this power.

Attrib., esp. in sense 2, as in *manpower allocation, manpower authorization, manpower board, manpower ceiling, manpower pool,* etc.

manpower authorization voucher. An accounting instrument issued by Headquarters USAF to a major air command that authorizes personnel for a definite period for organizing non-T/O units.

The MAV is for both military and civilian personnel. It represents a bulk allotment against which the command draws up unit manning documents.

manpower utilization. The manner in which available personnel are used in an organization in terms of the mission and the functions. See **function,** *n.*, sense 3.

manpower yardstick. A quantitative measuring device for determining the manpower required for accomplishing a particular task under given conditions.

A unit manning document (which see) reflects the use of a manpower yardstick.

manual, *n.* A publication in which materials of a diverse or voluminous nature are presented in a simplified form, relating to a particular subject or field of operation essential to the carrying-out of the AF mission.

Manuals are of three types, the Air Force Manual (which see), the Air Force Training Manual, and the local command manual.

manual direction-finder. A rotatable loop radio compass operated manually. Hence, **manual direction-finding** (MDF).

manual of operations. Any of various local command manuals, in which appropriate flying regulations, available facilities, local policies, etc. are summarized for the particular command or base served by the manual.

manual pip control. In radar bombing with certain fighter aircraft, a control system within an electrically caged sight for determining the instant for release of bombs.

man-year, *n.* A unit of work representing the productive effort of one person in one year.

This unit varies with the length of the work week or work month. For purposes of manpower and cost analysis, the year is considered to be 52 weeks with 40 hours in each week. See **man-hour,** *n.*

MAP (*abbr*). **1.** *auth.* 'Military Aid Program.' **2.** 'Manifold absolute pressure.'

map, *n.* **1.** In a generic sense, a representation, usu-

ally on a sheet of paper, of the earth's surface, or of a part of it; also, a representation of the celestial sphere, or of a part thereof. **2.** As distinguished from a chart, such a representation with a high degree of geodetic control.

The generic term 'map' is often used for the specific 'aeronautical chart.' In a specific sense, however, 'map' implies greater detail and control than normally found on a chart, except for data specifically used for navigation.

Used attrib., as in *map coverage, map data, map grid, map overlay, map scale,* etc.

MAPAG (*auth abbr*). 'Military Assistance Program Advisory Group.'

mapping camera. An aerial camera designed for making vertical photographs used for the compilation and correction of topographic and planimetric maps and in the preparation of other maps, including mosaics and aeronautical charts.

Mapping cameras are especially made to eliminate perspective distortion.

mapping photograph. A vertical photograph taken by a mapping camera.

map reading. The study and interpretation of a map or maps.

This term is also coming into slight use in the sense 'pilotage with the aid of a map.' See **pilotage,** *n.*

map reference code. A code for designating locations on a map.

MAQ (*auth abbr*). 'Monetary allowance in lieu of quarters.'

Mar (*auth abbr*). **1.** 'Marine,' in combinations only. Also written **MAR** (*auth abbr*). **2.** 'March.'

MarAllWeaFiTraRon (*auth abbr*). 'Marine all-weather fighter training squadron.'

Marauder, *n.* A popular name for the B-26 built by Martin.

MARC (*abbr*). 'Manpower authorization request for change.'

March Air Force Base. An AF base at Riverside, California, formerly known as Riverside Drive Aviation Field, renamed for Lieutenant Peyton C. March, killed in 1918.

MarCor (*auth abbr*). 'Marine Corps' in combinations only. Also **MARCOR** as used in communications.

Marine aviation. The Marine counterpart of Army aviation, except that, in practice, Marine aviation includes certain fighter and ground-support aircraft. See **Army aviation.**

Marine Corps. (MarCor) Short for 'United States Marine Corps.'

Mariner, *n.* The popular Navy name for the PBM.

marine sextant. A kind of sextant, normally used on shipboard, that measures angular altitude by reference to the apparent horizon of the sea, rather than by reference to a bubble. Cf. **bubble sextant.**

MaritAdmin (*auth abbr*). 'Maritime Administration.'

MaritCom (*auth abbr*). 'Maritime Commission.'

mark, *n.* (mk) A designation, used with a numeral, for a model of equipment, as in 'Mark 53 Fuze.'

marker, *n. Specif.* Anything on the surface that marks or is used to mark directions or locations, such as a smoking smoke bomb, a visible sign, or a radio marker beacon. See **air marker, sea marker, slick marker.**

marker beacon. Short for 'radio marker beacon.'

marking, *n. Specif.* A symbol, color, or a combination of the two, used to identify the nationality and service to which an aircraft belongs. Often *plural.*

marking panel. A strip of cloth or other material laid out by ground troops to signal their position to, or otherwise communicate with, friendly aircraft.

Marlin, *n.* A popular name for the P5M-1.

MARS (*auth abbr*). 'Military Affiliated Radio System.'

Mars, *n.* The popular Navy name for the JRM, Martin-built flying boat.

marsh, *n.* Wet treeless land, often periodically inundated. See **bog,** *n.*, note.

marshaling, *n.* The process by which forces that are to participate in an operation are put in order, so that each force may be ready for action in accordance with an overall plan.

In airborne assault operations, marshaling is the process of moving ground units to their billets at or near departure airfields, preparing them for combat, and of loading them into aircraft.

marshaling yard. A large railroad yard in which the cars are switched from trains, put on sidings for loading, unloading, or being made ready for further use, and again assembled into new trains; a switching yard.

The marshaling yard, as an essential part of a transportation system, was a natural air target in WW II.

Although 'marshaling yard' is used in lexicons before WW II, and has been cited as of American origin, its use among American railroaders is rare. As a military term, it was widely used by the British in the early part of WW II, and was quickly adopted by the Americans after US entry into the war.

Marshal of the Royal Air Force. The highest commissioned rank in the RAF, equivalent to General of the Air Force in the USAF; a person holding this rank. Cf. **air chief marshal.**

Martin, *n.* [Glenn L. *Martin* Co.] Used in the names of aircraft, as in *Martin B-26, Martin XB-51, Martin Marauder, Martin Maryland,* etc.

In WW II, the B-26 was often called the **Martin bomber.**

Martin 4-0-4. A twin-engine, low-wing monoplane used as a commercial transport, developed by the Glenn L. Martin Company.

Martlet, *n.* A British name for the F4F.

MAS (*auth abbr*). **1.** 'Monetary allowance in lieu of

subsistence.' **2.** 'Military Agency for Standardization.'

MASAF (*abbr*). 'Mediterranean Allied Strategic Air Force.' *Hist.*

MASC (*abbr*). 'Middletown Air Service Command.' *Hist.*

mask, *n.* The generic term for 'gas mask' or 'oxygen mask.'

mask, *v. tr.* To cover or otherwise modify a projecting *point* on an aircraft so as to avoid fouling during an airdrop.

mass, *n.* **1.** The quantity of matter in a given body, being determined by comparing the resultant changes in velocities when the body impinges upon a standard body. **2.** The principle of concentration. See **concentration,** *n.*

In sense 1, mass is a quantity of measure only, its value a function of the body's velocity relative to the observer. With time and length, mass is one of the three quantities on which all physical measurements are based. The unit for determining mass in the United States is the quantity of matter in a certain piece of platinum kept in Washington by the National Bureau of Standards. This piece of platinum is called the 'pound.' Mass differs from weight in that the unit for determining weight is the attraction of the earth's force of gravity upon this piece of platinum in Washington. At that point, the mass and the weight of the pound have equivalent values; at other points the mass remains the same, the weight, however, varies with latitude and elevation.

mass, *a.* **1.** Of an air attack: Delivered by a large number of aircraft acting in concert. **2.** Of air transport: That delivers, or is capable of delivering, large quantities of cargo. **3.** Of combat power: Arising from a concentration of forces. **4.** Of destruction: Done on a large scale, either by mass attack or by heavy weapons, or by both.

mass bombing. 1. Bombing with a great quantity of bombs. **2.** Bombing by a concentration of many airplanes.

mass flight. A flight in which large numbers of aircraft fly together.

mass formation. 1. A flying formation made up of large numbers of aircraft. **2.** A formation on the ground in which large numbers of persons march or stand abreast in each rank.

massive bomb. An atomic or hydrogen bomb.

massive retaliation. Retaliation involving destruction on a large scale, as by use of atomic or hydrogen weapons.

massive weapon. A weapon that uses, or consists of, an atomic or thermonuclear warhead.

mast, *n.* **1.** A spar for the support of an antenna. **2.** A rotor mast (which see). **3.** In certain early airplanes, any of various vertical members used to hold guy wires or struts. See **cabane,** *n.*

master, *n.* Short for 'master station.'

master bomber. In WW II mass-bombing attacks, any one of the bombers that circled over the target and directed other planes to their aiming points. *Hist.*

master depot. An air depot that stores and distributes common items above those amounts authorized to be stored at other depots.

A master depot may distribute common items for an area depot when directed to do so by the Commander, Air Materiel Command.

master equipment allowance list. (MEAL) Usually *capitalized.* A consolidated list, prepared by Headquarters USAF, of unit mission equipment allowed to standard units.

master equipment authorization list. The former name of the master equipment allowance list.

master green instrument rating card. The highest instrument rating card issued by the RAF.

master indicator. In any system where more than one indicator is used, as in a gyro flux-gate compass system, that indicator that is either considered the main one or is used as a transmitter to another.

master locator. The activity that maintains a locator file for a large base; the file itself.

master personnel record. (MPerR) The master file of the personnel records of an officer or airman.

The master personnel record of an officer or airman on active duty is maintained in the office of the Air Adjutant General, Headquarters USAF; that of an AF Reservist not on extended active duty is normally maintained by the Continental Air Command at the Air Reserve Records Center in Denver, Colorado.

master plan. An overall plan that outlines or specifies the objectives, and into which the details of other specific plans are fitted; a plan that gives overall guidance.

master sergeant. In the AF, Army, and Marine Corps, a noncommissioned officer with the highest noncommissioned rank; the rank or grade of this person.

master station. In a hyperbolic navigation system, that station in a given pair of transmitting stations that controls the transmissions of the other station in the pair (the slave station) and maintains the time relationship between the pulses of the two stations.

mastery of the air. Control of the air (which see).

masthead bombing. Very low bombing, esp. against shipping.

MAT (*auth abbr*). 'Mechanical Aptitude Test.'

mat, *n.* Short for 'matting.' Attrib., as in *mat runway.*

mat (*auth abbr*). 'Material' or 'materiel.'

Matador, *n.* The TM-61.

MATAF (*abbr*). 'Mediterranean Allied Tactical Air Force.' *Hist.*

MATCon (*abbr*). 'Military air traffic control.'

material, *n.* (mat). **1.** The substance or goods out of which a thing is, or can be, made. **2.** *pl.* The articles required for doing a particular thing, as in *medical materials, war materials, writing materials.*

materiel, *n.* (mat) Also sometimes spelled **matériel** as in the French. **1.** Things of all kinds required for the equipment, maintenance, operation, and support of military activities, both combat and noncombat. **2.** In a restricted sense, those things used in combat or logistic support operations, as weapons, motor vehicles, airplanes, component parts of machines, special-purpose clothing, etc., as distinguished from items of ordinary use, such as uniforms, food, bedding, medicines, housekeeping equipment, etc. **3.** These weapons, vehicles, etc., considered as items of supply. See **supply,** *n.*, sense 4b and note.

Attrib. in sense 1, as in *Air Materiel Command, materiel area, materiel officer, materiel wing;* in sense 2, as in *materiel division* (as used esp. in the Air Corps prior to Sep 1939), *materiel efficiency, materiel failure, materiel modification.*

'Materiel' usually connotes that the attention is on the use of things in operations. From this standpoint, things are not primarily items of supply, but rather the partners of men. Thus, it is said that a military force consists essentially of personnel and materiel.

All three senses are implied in the phrase 'Air Materiel Command.'

Materiel Command. An AAF Command in WW II responsible chiefly for the development and procurement of technical materiel. Established in March 1942. *Hist.* See **Air Service Command, Air Technical Service Command.**

materiel failure. The failure of materiel (sense 2) resulting from defects in its manufacture or from an insufficiency for meeting requirements.

Failure due to misuse of materiel is considered personnel failure. Cf. **mechanical failure.**

Mather Air Force Base. An AF base at Sacramento, California, named for Lieutenant Carl S. Mather, killed in 1918.

matno (*auth abbr*). 'Material (requested) not available.'

MATS (*auth abbr*). 'Military Air Transport Service.' Pronounced as a word. Used attrib., as in *MATS base, MATS directive, MATS mission, MATS Service Unit.*

MATSC (*abbr*). 'Middletown Air Technical Service Command.' *Hist.*

matso (*auth abbr*). 'Material requested being supplied.'

matting, *n. Specif.* A pierced steel or aluminum sheeting used for emergency or temporary runway construction.

MAV (*abbr*). 'Manpower authorization voucher.'

Mavis, *n.* An Allied name for the Japanese Kawanishi H6K5.

MAW (*auth abbr*). 'Marine aircraft wing.'

max (*auth abbr*). 'Maximum.'

maximum altitude. In flying operations, the highest altitude considered near, or at, the limits of practical flight for the particular equipment or purpose involved.

This term is relative, but see **altitude,** *n.*, note.

maximum ceiling. 1. The maximum altitude at which a given aircraft can be flown. **2.** The maximum height that a given type projectile can attain.

maximum climb. A climb made by an aircraft at maximum recommended power setting, and at an angle to give the greatest gain in altitude in feet per minute.

maximum climbing angle. The angle at which a given aircraft gains altitude most rapidly. Cf. **critical angle of attack.**

maximum cruise. The power setting on the throttle, fuel-air mixture, and rpm controls of an airplane so as to give maximum cruising speed at a given altitude.

maximum cruise rating. The maximum continuous power to be obtained in the auto-lean mixture setting.

maximum flying distance. The longest total distance a given aircraft can fly under cruise control from its point of takeoff to its point of landing. Cf. **maximum range.**

maximum power. The greatest amount of engine power available to a given aircraft for use in emergency operation by control of the power settings and the use of certain augmentation devices, such as the afterburner for jet engines or the water injector.

Maximum power is normally used for brief periods only. Cf. **military rated power, war-emergency power.**

maximum range. 1. A capability of an aircraft, gun, radar transmitter, or the like that expresses the most distant point to which the aircraft can fly, the gun can shoot, etc. See **range,** *n.*, senses 1 and 3. **2.** The longest distance at which this capability is effective. See **range,** *n.*, sense 5.

maximum speed. The fastest speed which a given aircraft can attain in level flight at a given altitude.

Maxwell Air Force Base. An AF base at Montgomery, Alabama, named for Lieutenant William C. Maxwell, killed in the Philippines on a routine flight in 1920.

mayday, *n.* [French *m'aidez* 'help me.'] A distress signal or call.

MB (*abbr*). **1.** 'Munitions Board.' **2.** 'Missile bomber,' as in *MB-17*. See **M** (*abbr*), sense 3.

MBad (*auth abbr*). 'Medical badge.'

MBCA (*abbr*). 'Munitions Board Cataloging Agency.' Now *hist.*

MBI (*auth abbr*). 'May be issued.'

mbl (*auth abbr*). 'Mobile.'

MBR (*abbr*). 'Short range reconnaissance seaplane' (*Morskoi blizuii razvedchik*), used in the names of Russian aircraft from 1925 to 1945, as in *MBR-2*.

mbr (*auth abbr*). 'Member.'

MBRUU (*auth abbr*). 'May be retained until unserviceable.'

MC (*abbr*). **1.** *auth.* 'Medical Corps' or 'Member of Congress.' **2.** 'Megacycle.' **3.** 'Materiel Center' or 'Materiel Command.' *Hist.* **4.** 'Marine Corps,' esp. in combination, as in 'MCAB.'

mc (*abbr*). **1.** 'Megacycle.' **2.** 'Megacycles.' **3.** 'Megacycles per second.'

MCA (*abbr*). 'Ministry of Civil Aviation.' *Hist. British.*

MCAB (*auth abbr*). 'Marine Corps air base.'

MCAF (*auth abbr*). 'Marine Corps air facility.'

McAndrew Air Force Base. An AF base at Argentia, Newfoundland, named for Major General James W. McAndrew, who died in 1922.

MCC (*auth abbr*). 'Military Coordinating Committee.'

McChord Air Force Base. An AF base at Tacoma, Washington, named for Colonel William C. McChord, killed in 1937.

McClellan Air Force Base. An AF base at Sacramento, California, named for Major Hezekiah McClellan, a pioneer in arctic aeronautical experiments, killed in 1936.

McConnell Air Force Base. An AF base at Wichita, Kansas, named for two McConnell brothers, Lieutenant Thomas L. McConnell, killed in the South Pacific in 1943; and Capt Fred M. McConnell, Jr., who perished in a private plane crash in Kansas in 1945.

McDonnell, *n.* [*McDonnell* Aircraft Corporation.] Used in the names of aircraft, as in *McDonnell Banshee, McDonnell Phantom, McDonnell XF-85*.

mcflm (*auth abbr*). 'Microfilm.'

McGhee-Tyson Airport. A municipal airport near Knoxville, Tennessee, named for Charles McGhee Tyson, WW I flyer whose family donated the land for the airport, at which certain accommodations are provided for USAF units.

McGill fence. The mid-Canada line.

Named for McGill University, the site of the Eaton Electronics Research Laboratory.

McGough Memorial Award. An award established in 1940 by the Air Service Post 501, American Legion, in memory of Post Commander William J. McGough, and given to men or women for contributions in, or to, aviation. The award is presented occasionally.

McGuire Air Force Base. An AF base at Fort Dix, Wrightstown, New Jersey, formerly known as Fort Dix Army Air Field, renamed for Major Thomas B. McGuire, Medal of Honor and WW II ace, killed over Leyte, Philippine Islands, 1945.

M class. A class of Goodyear dirigibles having a helium capacity of 725,000 cubic feet.

MCM (*auth abbr*). 'Manual for Courts-Martial.'

MCO (*auth abbr*). 'Main civilian occupation.'

MCR (*auth abbr*). 'Master change record.'

MCS (*auth abbr*). **1.** 'Megacycles per second.' **2.** 'Marine Corps School.'

MCW (*auth abbr*). 'Modulated continuous wave.'

MD (*auth abbr*). **1.** 'Movement directive.' **2.** 'Medical department.'

Md (*auth abbr*). 'Maryland.'

MDAA (*auth abbr*). 'Mutual Defense Assistance Act.'

MDAC (*auth abbr*). 'Mutual Defense Assistance, General Area of China.'

MDAGT (*auth abbr*). 'Mutual Defense Assistance, Greece and Turkey.'

MDAIKP (*auth abbr*). 'Mutual Defense Assistance, Iran, Republic of Korea, and Philippines.'

MDANAA (*auth abbr*). 'Mutual Defense Assistance, North Atlantic Area.'

MDAP (*auth abbr*). 'Mutual Defense Assistance Program.'

M-day, *n.* The day on which mobilization begins or is postulated to begin.

'M-day' is sometimes shortened to 'M,' as in *M + 2*, i.e., M-day plus two months. 'Though the term is "M-day," related figures, unless otherwise specified, will refer to months before or after M-day' (*Dict of US Mil Terms for Joint Usage* (1955)). Cf. **D-day,** *n.*, **P-day,** *n.*

MDF (*abbr*). 'Manual direction-finder' or 'manual direction-finding.'

MDR (*abbr*). 'Long range reconnaissance seaplane' (*Morskoi dal'nii razvedchik*), used in the names of Russian aircraft from 1925 to 1945, as in *MDR-6*.

MDRS (*auth abbr*). 'Mobilization Designation Reserve Section.'

mdse (*auth abbr*). 'Merchandise.'

MDW (*auth abbr*). 'Military District of Washington.' See **military district.**

ME (*auth abbr*). 'Multi-engine.'

ME-1. A twin-jet basic instrument trainer developed by the Air Research and Development Command and manufactured by Link Aviation, Inc.

This trainer provides space for both an instructor and student, and simulates movements controlled by analogue computers.

Me (*abbr*). **1.** *auth.* 'Maine.' **2.** 'Messerschmitt.'

MEAL (*auth abbr*). 'Master equipment allowance list.' Pronounced as a word, also by letter.

mean, *n.* A quantity representing the average of two or more other quantities, arrived at by add-

ing the quantities together and dividing by their number. Also called 'arithmetic mean.'

In weather reporting by the U.S. Weather Bureau, the average of the maximum and minimum temperatures is often given as the mean temperature.

The *geometric mean* of two quantities is the square root of the product of the quantities.

mean, *a.* Having the value of the mean; average.

mean aerodynamic chord. The chord of an assumed rectangular airfoil, representing the mean chord of an actual airfoil.

mean area of effectiveness. The area that can, on the average, be expected to suffer certain specified damage from the impact or detonation of a given bomb, shell, or the like.

mean blade-width ratio. The ratio of the mean chord of a propeller to the diameter (which see) of the propeller.

mean camber. The mean of the lower camber and the upper camber. See **camber,** *n.*

mean chord. That chord of an airfoil that is equal to the sum of all the airfoil's chord lengths divided by the number of chord lengths added.

A mean chord is equal to the area divided by the span.

mean effective pressure. The average pressure, in pounds per square inch, exerted inside the cylinder of an internal-combustion engine during the power stroke.

mean line of an airfoil section. The intermediate line between the upper and lower contours of an airfoil section.

mean point of impact. In bombing, the mean, or geometrical, center of a bombfall pattern, excluding gross errors. Also applied in gunnery.

mean sea level. The level of the sea midway between mean low water and mean high water.

mean solar day. A day of twenty-four hours, as reckoned by ordinary methods, measured from midnight to midnight and defined as the interval between two successive transits of a mean sun over the same meridian. Also formerly called a 'civil day.' See **Greenwich mean time.**

mean sun. A sun assumed to move eastward on the celestial equator at a uniform rate of 15° of longitude per hour, thus making all days of equal length.

mean time. Time reckoned by reference to the mean sun.

meas (*auth abbr*). 'Measure' or 'measurement.'

meat wagon. A crash ambulance. *Slang.*

mech (*auth abbr*). 'Mechanic' or 'mechanical.'

mechanic, *n.* (mech) *Specif.* An aircraft mechanic.

mechanical efficiency. The external efficiency of an engine rated in horsepower, as of an internal-combustion reciprocating engine, expressed as the ratio of brake horsepower to indicated horsepower.

mechanical failure. Failure in the operation of a machine resulting from malfunctioning, as from wear or from parts getting out of adjustment.

In aircraft accident analysis, mechanical failure is distinguished from pilot error or materiel failure.

mechanical flight. Flight by a powered aircraft.

A term used in the early history of aviation. Distinguished from flight in a glider or aerostat.

mechanical lift. Lift imparted to an air mass by its kinetic energy.

mechanical pilot. An automatic pilot.

mechanical tachometer. Any of a class of shaft-driven tachometers.

Types of mechanical tachometers are: the centrifugal tachometer, the chronometric tachometer, and the magnetic-drag tachometer.

mechanical time fuze. A fuze whose time action is controlled by a clocklike mechanism.

mechanized, *a.* (mecz) Of or pertaining to the use of equipment or weapons operated or driven by some type of motor power, as in *mechanized gear, mechanized force,* etc.

mechanized warfare. Warfare conducted by use of motored vehicles and weapons.

mecz (*auth abbr*). 'Mechanized.'

med (*auth abbr*). **1.** 'Medico,' 'medical,' or 'medicine.' **2.** 'Medium.' **3.** *Capitalized.* 'Mediterranean.'

medal, *n.* **1.** A piece of metal struck or cast as the symbol of an award to a person. **2.** *transf.* The award represented by this piece of metal. See **decoration,** *n.*, note.

Medal for Humane Action. (MFHA) A US military decoration awarded persons for meritorious participation in the Berlin airlift (26 June 1948 to 30 September 1949).

This medal was awarded posthumously as well as to the living. Recipients were both American and foreign, military and civilian.

Medal for Merit. (MM) A US military decoration awarded civilians 'who distinguish themselves by exceptionally meritorious conduct in the performance of outstanding services.'

The awarding of the Medal for Merit to foreign civilians was limited in WW II to those of Allied Nations who aided in WW II.

Medal of Freedom. A US military decoration awarded civilians who have aided the US or any of its allies in the prosecution of a war against an enemy or enemies, or who have furthered the interests of security of the US or its allies during national emergency on or after 7 December 1941, for which other awards or decorations appear inappropriate.

Medal of Honor. (MH) A US military decoration awarded a person who, while in the armed services of the US and while engaged in conflict with an enemy of the US, has distinguished himself conspicuously by gallantry and intrepidity at the risk of life above and beyond the call of duty.

This decoration is the highest US decoration. Recommendation for it must incontestably prove that the bravery or self-sacrifice involved conspicuous risk of life, and that had such risk not been taken there would be no just grounds for censure. The award is made in the name of Congress and is usually presented by the President. Originally authorized by Congress in 1861, it is sometimes called the 'Congressional Medal of Honor.' The award is sometimes made posthumously.

Medal of Merit. (MM) A misnomer for 'Medal for Merit.'

median, *n.* A median number, line, or point.

median, *a.* At the halfway point in a series.

In the series 4, 6, 7, 8, and 9, the median number is 7.

medic, *n.* **1.** Short for 'medical officer.' **2.** A nickname for anyone connected with or in a medical service.

medical, *a.* (med) *Specif.* Of or pertaining to the practice of medicine in the Air Force: **a.** As used in the designations of units, as in *Medical Administrative Corps, Medical Air Ambulance Squadron, medical detachment, medical group,* etc. **b.** As used in connection with the services of medicine, as in *medical aid, medical care, medical evacuation, medical examination, medical supplies,* etc. **c.** As used in designating persons, as in *medical NCO, medical orderly,* etc.

medical air evacuation. (MAE) The evacuation of patients by aircraft. Often shortened 'air evacuation.' Also called 'aeromedical evacuation.'

Medical Corps. (MC) *Specif.* A corps in the AF Medical Service whose members are Doctors of Medicine.

medical intelligence. Intelligence in regard to the problems of health that may be encountered by friendly forces entering enemy territory.

medical officer. An officer who is a Doctor of Medicine.

Medical Service. Short for 'Air Force Medical Service.'

Medical Service Corps. (MSC) A corps in the AF Medical Service whose members are men who perform functions not requiring a Doctor of Medicine degree, such as pharmacists, supply and administrative specialists, medical science specialists (psychologists, bacteriologists, and sanitation engineers), and optometrists.

Medical Specialist Corps. The successor of the Women's Medical Specialist Corps (which see).

medium, *n.* A medium bomber. Attrib., as in *medium group, medium reconnaissance.*

medium altitude. Any altitude considered in context to be neither low nor high.

This term is relative, and depends for its meaning upon such factors as the equipment being flown and the highest altitudes being reached by recently developed equipment. Arbitrary limits, however, are sometimes indicated by the term as between 5,000 and 13,500 feet, or between 8,000 and 15,000 feet. See **altitude,** *n.*, note.

Attrib., as in *medium-altitude aircraft, medium-altitude bombing,* etc.

medium artillery. *Specif.* Artillery, other than antiaircraft artillery, consisting of howitzers of a caliber greater than 105 mm up to, and including, the 155 mm howitzer, and of all longer-barreled cannon of a caliber greater than 105 mm caliber and smaller than 155 mm. Cf. **medium weapon.**

medium bombardment. 1. Short for 'medium bombardment aviation.' **2.** Attrib., as in *medium-bombardment group.*

medium bombardment aircraft. *Collective.* Aircraft of the medium-bomber class.

medium bombardment aviation. That branch of military aviation concerned with the use of medium bombers.

medium bomber. Any bomber considered to be intermediate in weight between the light and heavy bombers; currently (1956), a bomber having a gross weight, including bomb load, of between 100,000 and 250,000 pounds, as the B-29, B-47, or B-50.

In WW II, the B-25 and B-26 (sense 2) were considered to be medium bombers.

The words 'medium,' 'light,' and 'heavy,' when used to modify 'bomber,' have connotations of range and altitude, as well as of weight. This is particularly evident in the use of 'medium,' which is not necessarily a term of weight as the words 'light' and 'heavy' are. That is, a medium bomber is thought of as having medium range, and as being best used at medium altitudes, as well as having a medium gross weight. In the past, no serious inconsistencies have arisen from these connotations, but the future may introduce some. Clarity requires that the words 'medium,' 'light,' and 'heavy' be used in such contexts as terms of weight only.

medium bomb group. A bombardment group equipped with medium bombers.

medium-capacity bomb. A general-purpose bomb. *British.*

medium cargo aircraft. A medium transport aircraft.

medium-delay fuze. A type of delay fuze, esp. for bombs, in which the fuze action is delayed for a period of time between that of short-delay fuzes and long-delay fuzes, normally four to fifteen seconds. See **delayed-action bomb,** note.

medium dive bombing. Bombing done from a dive between 30 and 60 degrees off the horizontal.

medium frequency. (MF) *Electronics.* Any frequency between 300 and 3,000 kilocycles.

medium range. The range of an aircraft, search radar, or the like considered in context as neither short nor long.

medium-range weather forecast. A forecast of weather conditions covering a period from 12 to 48 hours from the time of forecast.

medium-scale map. A map having a scale from 1:100,000 through 1:1,000,000.

See **large-scale map, small-scale map;** cf. **intermediate-scale map.**

medium transport aircraft. A transport aircraft

considered capable of carrying a medium-weight payload; *specif.*, as defined in special context, an aircraft capable of carrying a ten-ton payload. Also *collective*.

Medium transport aircraft include such planes as the C-82 and the C-119. See **transport aircraft,** note.

medium weapon. *Specif.* Any antiaircraft weapon of a caliber between, but not including, 75 mm and 120 mm. Cf. **medium artillery.**

MedP (*abbr*). 'Medium port.'

MEE (*auth abbr*). 'Minimum essential equipment.'

meg (*prefix*). Also **mega.** One million, as in *megacycle* (mc), *megaton*, *megawatt*, *megohm*, etc.

megaton, *n.* **1.** One million tons. **2.** The explosive power of 1,000,000 tons of TNT, as in 'a megaton atomic bomb.'

mekiwi, *n.* ['*Me*chanical *kiwi*.'] A plane grounded for mechanical reasons, the mechanical failure being due to faulty maintenance. *Slang.*

melee, *n. Specif.* An air battle in which several aircraft of both friend and foe are confusingly intermingled.

Member of Congress. A member either of the United States Senate or of the United States House of Representatives.

memo (*auth abbr*). 'Memorandum' or 'memoranda.'

memo/r (*abbr*). 'Memorandum receipt.'

memorandum, *n.* (memo) A type of written communication used to transmit informal instructions or remarks requiring no reply, used esp. between staff offices of the same headquarters; any brief, informal message.

The plural form is either *-da* or *-dums.*

memorandum receipt. A receipt kept by the accountable officer of certain property to reflect the transfer of its responsibility on a loan basis.

This term, although still used, is not appropriate to the system employing the unit authorization lists. Cf. **custody receipt.**

memo routing slip. A routing slip with space provided for a brief memorandum.

Memphis Municipal Airport. An airport at Memphis, Tennessee, which provides certain space for USAF units.

mention in despatch. A British award, the lowest in precedence.

MEP (*abbr*). 'Mean effective pressure.'

Mercator, *n.* A popular name for the P4M.

Mercator chart. A chart drawn by use of a Mercator projection.

Mercator course. A true course, as shown by a straight line between two points on a Mercator projection.

See **Mercator projection,** note, and **rhumb line.** Cf. **great circle course.**

Mercator projection. A projection with the base line at the equator that shows the meridians as parallel lines equally spaced and the parallels as straight lines, perpendicular to the meridians, so spaced mathematically as to produce the property of true shape in the imposed geographic representation.

Exaggeration of area increases with distance from the point of tangency, but a straight line on this projection, between any two points, represents a rhumb line or a true course.

Mercedes engine. 1. A WW I German aircraft engine manufactured by the firm of Benz. **2.** A misnomer for the Daimler-Benz of WW II.

mercury, *n. To pull so many inches of mercury,* to develop so much manifold pressure. *Colloq.*

mercury barometer. A barometer using mercury as the sensitive element for measuring atmospheric pressure.

The mercury barometer in its simplest form consists of a tube filled with mercury, closed at one end, and inverted in a cup containing mercury. Atmospheric pressure acting on the surface of the mercury in the cup causes the mercury in the tube to rise or fall, thus measuring the pressure.

mercury fulminate. An explosive compound extremely sensitive to shock, spark, or friction, used to set off other explosives.

Mercury fulminate is a mercury salt of fulminic acid, $Hg(ONC)_2 \cdot \frac{1}{2}H_2O$.

meridian, *n.* **1.** *Geography.* Any great circle on the surface of the earth that passes through the poles, esp. either half of such a circle between the poles, i.e., an upper or lower branch. **2.** A celestial meridian. **3.** A line representing such a circle or half circle, as on a globe or projected upon a flat surface.

Also called 'meridian of longitude.'

meritorious, *a.* Of an action, service, or performance: Worthy of official recognition and honor. Used in citations of awards.

Meritorious Unit Commendation. A unit commendation awarded units of the US or allied armed forces for outstanding services for at least six months against an armed enemy of the US.

This commendation is no longer awarded by the AF, and its emblem is not worn on an AF uniform. Cf. **Distinguished Unit Citation** and **Outstanding Unit Award.**

Merlin, *n.* A British WW II, liquid-cooled, in-line aircraft engine designed and manufactured by Rolls-Royce, Ltd.

This engine was also manufactured by the Packard Motor Car Co. in the US. It was used as the power plant in the Spitfire and in certain models of the P-51, Avro Lancaster, and P-40.

meson, *n. Physics.* A particle with a mass approximately 200 times that of an electron, having either a negative or positive charge. Also called a 'mesotron' or 'heavy electron.'

The meson was first detected in cosmic rays.

mesosphere, *n.* Literally, a sphere that lies in between. Applied to two different layers in the upper atmosphere. **1.** In the nomenclature of Chapman, a layer that extends approximately from 32

kilometers to 80 kilometers (19 to 50 miles) above the earth's surface, its lower limit being at the top of the stratosphere (which see, sense 1). **2.** In the nomenclature of Wares, a layer that extends approximately from 400 kilometers to 1,000 kilometers (250 to 600 miles), lying between the ionosphere and the exosphere.

In sense 1, the mesosphere is coextensive with the chemosphere. In sense 2, the mesosphere is the region of sunlight auroras, of high but decreasing temperatures, of solar radiation in the ultraviolet.

mesotron, *n.* A meson.

mess, *n.* **1.** A place on a military installation or camp where food is prepared and served. **2.** The occasion of a meal served at such a place, or the eating of such a meal, as in 'he showed up at mess' or 'mess was at six.' **3.** A group of persons who mess together.

Some effort has been made to discourage use of this word among AF personnel (see **dining hall**), but the term persists and has the sanction of common usage.

Used attrib., as in *mess bar, mess building, mess council, mess hall, mess officer,* etc.

mess, *v.* **1.** *tr.* To serve personnel in a mess. **2.** *intr.* To eat in a mess.

message, *n.* (msg) Any communication, word, or notice sent through some intermediary from one person to another.

A message, either in plain or encrypted text, may be written or oral and delivered by messenger, or transmitted by mail, signal, teletype, pigeon carrier, newspaper notice, or the like.

message center. 1. A service or facility for the acceptance, checking, and forwarding, or the delivery or transmittal of outgoing written messages, packages, and the like, as well as for the acceptance and delivery of incoming written messages, packages, etc. **2.** The group of people who operate this service. **3.** The office or other central place where such messages, packages, and the like are handled.

The message center may sometimes be a part of a communications center.

mess attendant. (M/A) A person who works in a mess. Usually called a 'KP.'

Messerschmitt, *n.* [After Prof. Willy *Messerschmitt* (1898–), a German aeronautical engineer.] **1.** A popular designation for certain German aircraft developed by Professor Messerschmitt. **2.** Used in the names of such aircraft, as in *Messerschmitt 109.* Usually abbreviated 'Me.'

Prominent among Messerschmitt aircraft of WW II were: *Me 109,* a low-wing fighter with an in-line engine, used in the Battle of Britain and noted for its speed record in 1939; *Me 110,* a low-wing, twin-engine fighter; *Me 163,* a single-seated, tailless, sweptwing, rocket-propelled interceptor, occasionally used for ramming, and popularly called the 'Komet'; *Me 262,* a low-wing, twin-jet fighter, converted by special order of Hitler for use as a fighter-bomber in ground attack and reconnaissance, but later reconverted for use as a fighter, in which capacity it was very effective in the latter days of the war; *Me 323,* a high-wing, six-engine transport, sometimes called the 'Gigant' or 'Giant'; *Me 410,* a low-wing fighter-bomber with twin, liquid-cooled engines.

The Me 262 was first flown in 1940 with a propeller driven by a Diesel engine. Under jet propulsion it was first flown in May 1942, powered by a Jumo 004 engine. Cf. **Heinkel 178.**

mess kit. A kit consisting of platter, fork, spoon, etc., for use by a person in eating, esp. under combat or field conditions.

mess sergeant. A mess supervisor.

mess supervisor. A food service supervisor. See **mess,** *n.*, note.

met (*auth abbr*). 'Meteorology.'

metal fatigue. A weakening in the strength of a metal caused by repeated or fluctuating stresses.

metascope, *n.* A device for transforming invisible infrared rays into visible signals. Used in communications where detection is guarded against.

meteorograph, *n.* An apparatus that measures two or more meteorological elements or characteristics, as air pressure, temperature, humidity, or the like, and which automatically either records these measurements on a sheet or, when airborne, transmits them by radio to ground observation stations. See **radiosonde,** *n.*

meteorological, *a.* (met) Of or pertaining to phenomena in the atmosphere, esp. to conditions and changes that affect the weather; of or pertaining to the study of these phenomena.

This term is applied not only to data and information, but to physical equipment, persons, etc., as in *meteorological apparatus, balloon, flight, map, officer, radar station.*

meteorologist, *n.* (met) A person professionally competent in meteorology.

meteorology, *n.* (met) That branch of physics that treats of the atmosphere and its phenomena, esp. heat and moisture changes, low and high pressures, or other such phenomena that affect the weather. See **aerology,** *n.*

meter, *n.* **1.** An instrument for measuring, esp. for measuring the quantity flow of something. **2.** An instrument that regulates the flow of something.

metering, *a.* (mtrg) That regulates the flow of fuel or other substance, as in *metering jet, metering orifice.* Cf. **fuel metering.**

method, *n.* A manner or procedure for doing something, esp. a set manner or procedure. Attrib. in plural form, as in *methods analysis, methods improvement.*

Metro (*code*). A formerly authorized word for the letter 'M.' See **Alfa** (*code*).

metro (*abbr*). 'Meteorological.' Sometimes pronounced as a word. See **met** (*auth abbr*).

Mev (*abbr*). 'Million electron-volts.'

MEW (*auth abbr*). 'Microwave early warning.' A designation for a high-power, long-range, early-warning radar.

MF (*auth abbr*). 'Medium frequency.'

MFcT (*auth abbr*). 'Major fraction thereof.'
mfg (*auth abbr*). 'Manufacturing.'
MFHA (*auth abbr*). 'Medal for Humane Action.'
mfr (*auth abbr*). 'Manufacture' or 'manufacturer.'
MFS (*abbr*). 'Military Flight Service.'
MftFld (*auth abbr*). 'Moffett Field, California.'
MG (*abbr*). **1.** *auth.* 'Machine gun.' **2.** 'Major general.' See **maj gen** (*auth abbr*). **3.** 'Military government.'
MGO (*auth abbr*). 'Military government officer.'
mgr (*auth abbr*). 'Manager.'
mgt (*auth abbr*). 'Management.'
MH (*abbr*). **1.** *auth.* 'Medal of Honor.' **2.** 'Magnetic heading.'
MHA (*abbr*). 'Modified handling authorized.'
MHD (*auth abbr*). 'Medical Holding Detachment.'
MHE (*auth abbr*). 'Materials handling equipment.'
MI (*auth abbr*). 'Military Intelligence.'
mi (*auth abbr*). 'Mile.'
MIA (*auth abbr*). 'Missing in action.'
Miami International Airport. An airport at Miami, Florida, which provides certain space for USAF units.
MIAPD (*auth abbr*). 'Mid-Central Air Procurement District.'
mic (*auth abbr*). 'Microphone.'
Mickey, *n.* A popular name applied to various airborne radar sets, radar range finders, and switch boxes. In full, **Mickey Mouse.** *Slang.*
micro (*prefix*). **1.** One-millionth, as in *microinch, microhm, microsecond,* etc. **2.** Enlarging, as in *microscope.* **3.** Very small; visible only with a microscope, as in *micro-organism.*
microclimate, *n.* The climate of a very small area.
microclimatology, *n.* The study of climate for a very small area.
In some places where radical changes in elevation, tree growth, or soil productivity occur, different climates may exist only a few hundred feet apart.
microfilm, *n.* (mcflm) **1.** A strip or roll of continuous film, usually high-contrast film, used in the photography of manuscripts, documents, and the like, to permit a photographic record of such manuscripts, etc., to be safeguarded and stored in a small space. **2.** The photographic record kept on such film and used by projection.
Microfilm is usually of a 16 mm or 35 mm size. It serves the archivist and librarian in solving certain problems of space and provides a ready means of retiring seldom-used materials; it serves the user somewhat less because of its nuisance features, its limitations in reproducing colors (as on maps), and its inadaptability to collation and bibliographical research.
microfilm, *v. tr.* To photograph a *document, manuscript,* or the like on microfilm.
Micro-H, *n.* An H-system bombing and navigational radar set which operates in the region of 10,000 megacycles per second.
micrometeorology, *n.* The study of the variations in meteorological conditions over very small areas, such as hillsides, forests, river basins, and the like.
microphone, *n.* (mic) An instrument for transmitting sound or for increasing the intensity of sound, used in the intercom of an aircraft or for radio communication.
The microphone is the instrument into which a person speaks when broadcasting or using the intercom. See **close-talking microphone, throat microphone.**
microswitch, *n.* A trade name for a small switch in which a slight motion makes or breaks contact.
microwave, *n.* A very short electromagnetic wave, esp. in the frequency range of 1,000 to 30,000 megacycles, or in the wavelength range of 30 centimeters to 1 centimeter.
While the above definition is approved for AF usage, some users of the word set different limitations on the frequency and wavelength ranges.
microwave early warning. (MEW) A high-power, long-range radar, giving high resolution and used for early warning.
mid (*auth abbr*). 'Middle.'
mid- (*combining form*). Designating a middle part, as in 'mid-section' (of an airplane), 'midship' (in reference either to a ship or an aircraft), 'mid-upper gunner,' etc.
mid-air, *n.* Any point or place in the air where something may, or does, happen.
This term is in common idiom, but it retains a connotation of marvel, as in the phrase, 'collision in mid-air' or 'refuel in mid-air.' Matter-of-fact phrases would be 'an air collision' or 'air-refueling.'
mid-air, *a.* Of actions: That take place in mid-air.
mid-Canada line. A chain of radar stations in Canada financed and built by the Canadian government along the 55th and 56th parallels. Cf. **Dew line, Pinetree line.**
middle marker. Short for next.
middle marker beacon. A fan marker beacon (which see) located between the boundary and outer marker beacons in an instrument landing system to enable a pilot or navigator to determine distance from the runway.
Middletown Air Materiel Area. (MAAMA) An air materiel area with headquarters at Middletown, Pennsylvania.
Midget, *n.* A code name for the Russian UMig-15, a two-place trainer version of the Mig-15.
midpoint, *n.* A point halfway between two linear extremes. Cf. **median,** *a.*
midwing, *a.* Of a monoplane: Having its wings set approximately halfway between the top and bottom of the fuselage.
Mig, *n.* [After Gen Artem *Mi*koyan and Gen Mikhail *G*urevich, Russian aeronautical engineers.] **1.** A popular designation for certain Russian fighter aircraft designed and developed by

Mikoyan and Gurevich. **2.** Used as an attrib., as in *Mig Alley*, *Mig fighter*, and *Mig jet*.

Some of the aircraft developed by Mikoyan and Gurevich are the *Mig-9*, one of the first all-Russian jet fighters to go into squadron service, and the *Mig-15*, a jet fighter made famous by its part in the air war over Korea. The *Mig-3* was a WW II single-engine, low-wing fighter.

Miho Air Base. An air base at Miho, Japan, named for the city.

MII (*auth abbr*). 'Military intelligence interpreter.'

Mike (*code*). A word authorized for the letter 'M.' See **Able** (*code*), **Alfa** (*code*).

mike, *n.* Short for 'microphone' or 'micrometer.' Attrib., as in *mike button*.

Mil, *n.* A designation for certain Russian airplanes designed by Mikhail L. *Mil*.

mil, *n.* A unit of angular measurement used in gunnery and in the launching of bombs and guided missiles.

A true mil is the angle determined by an arc the length of which is 1/1000 of the radius. But for practical purposes, the mil is considered to be 1/6400 (instead of 1/6283 +) of 360°, which represents a linear measurement of approximately 1/1000 of the radius for any given circle. Thus, movement of a 1,000-foot radius by 1 mil will cause a movement of 1 foot, or approximately 1 foot, on the circumference.

mil (*auth abbr*). 'Military.'

MilAdGru (*auth abbr*). 'Military Advisory Group.'

mile, *n.* (mi) As used in the AF unless otherwise stated, a measure of distance equal to 5,280 feet. Also called a 'statute mile.'

Used esp. in the phrase 'miles per hour' (mph) in measuring airspeed, groundspeed, etc., and in 'miles per gallon.' See **knot,** *n.*, and **nautical mile.**

mileage, *n.* **1.** The total number of miles flown or traversed; the distance between two points. **2.** An allowance for travel based on a certain rate per mile.

milgovt (*abbr*). 'Military government.'

military, *n.* (mil) **1.** The members of the armed services considered collectively, as in 'the military understood the role perfectly.' **2.** The armed services, as in 'this was built for the military.'

military, *a.* (mil) **1.** Of or pertaining to war or to the traditions and disciplines of war. **2.** Of or pertaining to a nation's armed forces, including its army, navy, and air force. **3.** In restricted senses: **a.** Of or pertaining to a nation's army and air force, exclusive of its navy. **b.** Of or pertaining to a nation's army alone.

This adjective, sometimes used without precise distinction in terms of the senses shown, often carries the connotations of all three senses. Sense 1 may be illustrated by such combinations as *military axiom*, *military emergency*, *military information*, *military logic*, *military target*, etc., but some of these carry connotations of the other senses, as do the following: *military affairs*, *military attitude*, *military courtesy*, *military duty*. Sense 2, although clear enough in certain contexts, also sometimes carries connotations of the other senses, as in *military department*, *military order*, *military staff*, etc. Likewise, sense 3 is a valid sense in certain contexts, but again may not always be distinguishable, as in *military academy*, *military officer*, *military police*, etc.

Within the framework of the three major senses of the word, special meanings may also be observed, as in the following: **a.** Of a person's actions: Having an appearance suggestive of the discipline of a soldier or sailor, as in 'he had a military bearing.' **b.** Of an era or period of time: Noted for its development of the art of war; marked by warfare. **c.** Of installations, equipment, supplies: Made for, or belonging to, the armed services. **d.** Of equipment: Used in, or by, one of the armed services. **e.** Of actions: Performed by members of the armed services. **f.** Of persons: Belonging to one of the services. **g.** Of records: Relating to war or to an armed service, as in 'military history.'

Military Affiliated Radio System. (MARS) A world-wide network of radio stations operated by amateurs both on and off military installations, but sponsored jointly by the AF and Army to provide an alternate communication system in case of emergency need.

MARS was called 'Military Amateur Radio System' until 10 September 1952.

military aircraft. Aircraft used for military purposes, as distinguished from commercial or private aircraft.

military air power. That part of a nation's total air power that is military in its character. See **air power.**

military air traffic control center. The AF counterpart of an air route traffic control center.

Military Air Transport Board. An advisory board to the Secretary of Defense and to the Commander of the Military Air Transport Service on matters of policy and operation of the Military Air Transport Service.

This board consists of three members, one each appointed by the Secretaries of the Army, Navy, and Air Force.

Military Air Transport Service. (MATS) A service within the Department of Defense the chief responsibility of which is to provide air transportation for all departments and agencies of the Department of Defense and for other government agencies as authorized.

MATS is 'under the command and direction of the Chief of Staff, United States Air Force' (Memorandum of MATS Organization, 3 May 1948). Its commander, appointed by the Chief of Staff, USAF, with the consent of the Secretary of Defense, may be either an AF or a Naval officer. MATS was created on 1 June 1948 by merger of the Air Transport Command and the Naval Air Transport Service.

Military Amateur Radio System. (MARS) The former name of the Military Affiliated Radio System (which see).

military aviation. 1. Aviation conducted by or for the military, as distinguished from commercial or private aviation. See **civil aviation. 2.** Aviation conducted for a military purpose.

military channel. Usually *pl.* A prescribed route for military communication within a chain of command or between lateral commands. Some-

times called 'channels.' Cf. **command channel.**

military characteristic. Those characteristics of an aircraft or other equipment found desirable or necessary to the performance of a military mission, either combat or noncombat. See **characteristic,** *n.*

military climatology. The science and study of climates employed specifically to serve military ends.

An example of military climatology would be the study of the climate of a given area to compute the number of days during which a given military operation could be carried out.

military correspondence. Correspondence within the military services, esp. that correspondence written in accordance with a prescribed form.

military department. *Specif.* The Department of the Air Force, the Department of the Army, or the Department of the Navy, as distinguished from an executive department. See **executive department.**

military district. Any of the several districts throughout the US established for administering and coordinating military reserve activity, as that of the Air National Guard, each district's boundaries being coincident with those of the state or District of Columbia with which identified.

military establishment. 1. Any establishment serving a military purpose. **2. a.** That agency of government responsible for the defense of the state or for other military operations, including its personnel, organizational structure, installations and equipment. **b.** Any one of a nation's military services.

See **Department of Defense** and **establishment,** *n.*

military force. 1. A force organized and equipped under military discipline, provided with both arms and services, and responsive both defensively and offensively to the constituted authority of a nation, coalition of nations, belligerent power, or faction. **2.** A power that may be used for the attainment of a military objective.

A military force consists of personnel, materiel, leadership, and a collective will to fight and endure.

military grid system. A grid system set up or adopted by a military establishment, usually providing a method for subdividing larger grid quadrangles into smaller ones to allow accurate location of points on the ground.

The Georef grid (which see) is an example of a grid set up by a military grid system.

military information. 1. Facts and data, esp. closely guarded secret facts and data, regarding the military position of the US or its allies. **2.** Intelligence information upon the military capabilities, limitations, or intentions of the enemy or potential enemy, or upon a theater of operations in which the enemy is, or is to be, engaged. See **intelligence information.**

In sense 1, the term is used chiefly in contexts concerned with the safeguarding of information or with regulating its distribution.

military installation. 1. Any installation directly serving a military purpose. **2.** An installation operated or controlled by a military force.

military instrument. *Specif.* An instrument of government that may be used to help resolve conflict, consisting either of the whole of the military establishment or of any part thereof adapted to the particular object in view.

The military instrument is considered one of several instruments that may be used to help resolve conflict. See **economic instrument, political instrument, psychosocial instrument.**

military intelligence. 1. Intelligence concerned with military aspects of international conflict, or with actual military operations, as distinguished from political or diplomatic intelligence, or from strategic intelligence. **2. a.** An intelligence agency under the direction and control of a military organization. **b.** An army intelligence agency, as distinguished from an air intelligence agency or a naval intelligence agency.

military interdepartmental purchase request. A request for procurement submitted by one service to another.

military justice. Justice as administered under the Uniform Code of Military Justice.

military letter. A letter written in a form prescribed by military directive, and used between various organizations and activities of an armed service, or between organizations and activities of different services below the level of departmental secretaries.

A military letter deals with only one subject; it follows a prescribed order in regard to heading, date line, subject, addressee, channel of communication, body, command line, signature, and inclosure notation; and its paragraphs are numbered except under certain conditions.

military management. 1. *Specif.* The management of those affairs in the AF that are essentially military in character. **2.** The management of a military organization.

military map. A map or chart that bears special data or markings of a military character, such as grid lines, declination markings, etc.

military mind. 1. The mind of a particular person in the military. **2.** A mind that has attributes considered characteristic of certain real minds to be found in the military profession; a mind inclined to think in terms of military objectives or other military criteria. **3.** *The military mind,* a nonexistent mind conceived of as a composite of all, or nearly all, the real minds in the military, but often used in context as if it had existence in reality.

In sense 1, the military mind stands for a military person, as in 'he did not need a lawyer's mind, he needed a military mind.' In sense 2, the mind is real but categorized by subjective criteria, as in the phrase 'possessed of a military mind.' In sense 3, the mind is not real, a fiction comparable to the average mind or the German mind, as used in the clause 'the military mind is only too often unreceptive to new ideas.' Usage in senses 1 and 2 conveys more or less precise meaning; in sense 3 it does not.

military objective. 1. An objective, which when defined and understood, gives direction and guidance to a military commander in his operations, as in 'the first military objective was to gain control of the air.' **2.** In concrete usage: **a.** A place to be reached. **b.** A military target, as distinguished from an industrial objective. **c.** Any target having direct or indirect military significance. See **military target.**

In sense 1, the military objective may be a subordinate or overall objective, or, from another standpoint, a phase objective or a final objective. Cf. **capture,** *n.*, **denial,** *n.*, **destruction,** *n.*, **neutralization,** *n.*, **persuasion,** *n.*

Used in senses 2b and 2c, this term appears to have no difference in meaning from 'military target,' but it is in common use in the AF because of the connotation of reaching targets by air, as in sense 2a. See **objective,** *n.*

military occupational specialty. (MOS) **1.** The Army equivalent of an Air Force Specialty, used in the AF until superseded by the latter. **2.** In loose usage, an Air Force Specialty.

military operation. 1. An action or series of actions, either combat or noncombat, conducted by a military organization. **2.** In a restricted sense, an operation involving, or primarily involving, combat personnel against an enemy, as distinguished from a logistic operation.

military payment certificate. (MPC) A special monetary certificate printed as scrip, used as currency at certain overseas bases and stations. Often called 'scrip.'

MPC's are issued as fractional currency or in different dollar denominations.

military pay order. (MPO) An order on a specified form authorizing an accountable disbursing officer to make certain payments to individuals and to enter such payments in appropriate records.

military personnel. 1. That group of persons who are enlisted, commissioned, or certified by warrant as members of an armed service, as distinguished esp. from civilian personnel. **2.** The category or class that covers this group.

In some contexts, reservists on inactive duty are considered military personnel; on active duty, they are always so considered.

military personnel record. Usually *pl.* A set of official military records maintained on an individual belonging to an armed service.

These records are kept at various command levels, the contents of any one varying with the command level. The master personnel record (which see) is a species of military personnel record.

military police. (MP) The police force of the Army. Cf. **air police.**

military rated power. The maximum power or thrust specified for an engine by the manufacturer or by the AF as allowable in flight under specified operating conditions for periods of thirty minutes' duration. Cf. **normal rated power.**

military requirement. A requirement computed to serve a military purpose; a computed need for the support of a military activity. See **requirement,** *n.*

military reservation. 1. The land area of a base, post, camp, or station. **2.** Land reserved for military use, such as for maneuvers, or for bombing or gunnery practice.

Military Sea Transportation Service. (MSTS) A service within the Department of Defense but under the operational control of the Navy, responsible for providing 'sea transportation for personnel and cargo of the Department of Defense (excluding that transported by units of the fleet) and as authorized or directed for other government agencies of the United States subject to policies and priorities issued by the Joint Chiefs of Staff.'

The MSTS operates assigned government-owned vessels, merchant vessels that have been purchased by the government, and such other merchant-type vessels acquired on one or another basis. Cf. **Military Air Transport Service.**

military service. 1. The military establishment as a whole, as in 'all branches of the military service.' **2.** A branch of the military establishment, i.e., the Air Force, Army, or Navy, as in 'he belongs to one of the military services.' **3.** Duty or the status of duty in a military activity, as in 'subject to military service.' **4.** In a restricted sense, duty in the Army or Air Force, as in 'military and naval service.' **5.** Service that is military as distinguished from civilian service. Used in reference to equipment, as in 'the plane was put into military service.'

military space. A space in an organization occupied, or to be occupied, by a military person. See **space,** *n.*, sense 5.

military strategy. Strategy (which see) with respect to the employment of military forces, i.e., the art and science of employing the armed forces of a nation to attain overall military or national objectives by force or the threat of force.

military target. 1. Any industrial plant, city, or other object, or any person, group of persons, or force marked as a target for destruction, damage, injury, or capture because of its direct or indirect use in the conduct or support of an enemy's military endeavor. **2.** In restricted usage, a mili-

tary person, force, installation, or area marked as a target because of its use, or potential use, in direct military operations. Distinguished from an industrial target.

Unless context makes it otherwise clear, sense 1, under the impact of modern total warfare, has come to supersede sense 2. See **military objective.**

military thrust. Military rated power.

military title. The title of a military person that distinguishes him by rank, as the military title of a sergeant is 'sergeant.' Cf. **position title.**

A military title is used with a proper name, as in 'Captain Smith,' or without the proper name as a form of address, as in 'Sergeant, may I enter?' Likewise, titles, preceded by the article 'the,' are used in formal situations instead of the second person, as in 'Would the Colonel allow a question?' instead of 'Would you allow a question?' It is also common to refer to a military person by his title preceded by the article, 'the,' as in 'You may ask the Captain to assist you.'

A senior officer may address a person junior to himself by his first or last name, but the junior addresses his senior by use of the proper title, or by use of 'sir,' depending upon the situation.

military training. 1. As used in the Air Training Command, the basic training given airmen, aviation cadets, and officer candidates. See **basic military training. 2.** In a broad sense, the training incident to becoming a member of a military service.

milk, *v. To milk up,* to get foggy or cloudy. Said of the weather. *Slang.*

milk run. A routine mission or flight flown repeatedly; also a mission involving little danger. *Slang.*

milliampere, *n.* A unit of electric current equal to one-thousandth of an ampere.

millibar, *n.* A unit of pressure equal to one-thousandth of a bar, a force equal to one thousand dynes per square centimeter.

In measuring atmospheric pressure, a millibar is a unit of pressure equal to approximately .0295 inch of mercury at 32° F, under standard conditions of gravity.

millimeter, *n.* (mm) A unit of length in the metric system, equal to one-thousandth of a meter, or 0.03937 of an inch.

The projectiles of many firearms are expressed in millimeters, as in '20-millimeter cannon.'

min (*auth abbr*). 'Minimum,' 'minute,' or 'minister.'

mine, *n.* **1.** An encased explosive or chemical charge designed to be placed in position so that it detonates when its target touches or moves near it or when touched off by remote control. See **aerial mine, land mine, sea mine. 2.** Also an explosive charge placed in a subterranean tunnel under a fortification.

mine, *v. tr.* To lay or drop mines into *water* or in or upon a *place;* to place an explosive charge under a *fortification* or the like.

mine field. The space either in water or on land in which mines have been placed.

mine-laying, *n. Specif.* Short for 'aerial mine-laying.' See **aerial mine.** Also used *attrib.,* as in *mine-laying aircraft, mine-laying campaign, mine-laying operation, mine-laying sortie,* etc.

miniature, *a.* Of aviation badges or medals: Of a size less than the standard size.

Miniature aviation badges, with a 2-inch span, may be worn instead of the standard badge.

minimal flight path. The path that must be flown between two points to arrive at the destination in the shortest possible time.

A great circle path is the shortest distance between two points, but a minimal flight path may be followed to take advantage of favorable winds or pressure systems.

minimum altitude. In flying operations, the lowest altitude considered near, or at, the limits of practical flight for the particular equipment or purpose involved.

This term is relative (see **altitude,** *n.,* note), but in bombing is sometimes considered to be below 900 feet, sometimes below 2,000 feet. Attrib., as in *minimum-altitude attack, minimum-altitude bombsight, minimum-altitude navigation,* etc.

minimum-altitude bombing. Horizontal bombing or glide bombing from a minimum altitude.

minimum design weight. Design weight computed on a minimum operating basis.

The accepted formula for determining this weight is: Empty aircraft, plus standard equipment, plus crew, plus fuel (¼ lb per maximum hp, not counting takeoff), plus oil.

minimum essential equipment. (MEE) Those items of individual and organizational equipment specified as essential for a unit and its members to take overseas to meet minimum requirements of the new environment or conditions.

This equipment is specified in authorized allowances of equipment, and accompanies a unit from its home base through staging areas to destination.

minimum flying speed. The lowest steady speed that can be maintained by an airplane in level flight at an altitude above the ground greater than the span of the wings.

minimum gliding angle. The acute angle, as measured in still air, between the horizontal and a flight path as near as possible to the horizontal that yet permits an airplane to descend steadily without benefit of thrust.

minimum individual training. A term formerly used for combat readiness training (which see). Abbreviated MIT.

minimum operational base. A base that maintains only the minimum standards for air operations, often unusable under adverse conditions.

minimum reserve level. A level of supply from which no requests are supplied except those in the first three supply priorities.

This term, used by zonal, master, and specialized depots, is considered one-half the warning point level unless otherwise specified.

Minneapolis-St. Paul International Airport.

An airport near the twin cities which provides certain space for USAF units.

mioenzymism, *n.* A state of diminished enzymic activity.

MIPR (*auth abbr*). 'Military interdepartmental purchase request.'

mis (*auth abbr*). 'Missing.'

misassignment, *n.* A personnel assignment resulting from error or inadequate information. Cf. **malassignment,** *n.*

Misawa Air Base. An air base at Misawa, Japan, named for the city.

misc (*auth abbr*). 'Miscellaneous.'

miscon (*auth abbr*). 'Misconduct.'

misfire, *n.* **1.** A momentary or permanent failure of a round of ammunition to fire after igniting action is taken; an instance of such failure. Cf. **hangfire,** *n.* **2.** An instance of failure to fire in the ignition of other charges, as in the combustion chamber of an internal-combustion engine, or in the propelling charge of a rocket.

MISR (*auth abbr*). 'Major item status report.'

miss, *n. Specif.* An instance of failing to hit a target with a missile, as in 'he had two misses, one hit.'

missile, *n.* (msl) **1.** Any object thrown, dropped, projected, or propelled, or designed to be thrown, dropped, projected, or propelled, for the purpose of making it strike a target. **2.** *Specif.* A guided missile.

Often attrib., as in *missile barrage, missile warhead,* etc. These combinations are usually in sense 2, as in *missile base, missile force, missile guidance, missile research,* etc.

A certain difficulty has been experienced by some persons in the use of 'missile,' esp. when an object called a 'missile' is designed with wings and looks like an airplane. The word, however, is properly applied, if the attention is upon the object as something to be sent out (Latin *mittere, missum*) toward a target. See **ballistic missile, guided missile,** note.

missile attitude. The position of a guided missile as determined by the inclination of its axes (roll, pitch, and yaw) in relation to another object, as to the earth.

missilier, *n.* [Coined by analogy with *bombardier* and *grenadier.*] A person skilled in launching and directing guided missiles.

missing, *a.* (mis) Of a person: Considered lost to a command because his whereabouts or fate cannot be ascertained. Also said of an aircraft.

A missing person is neither AWOL nor in desertion. A person *missing in action* (MIA) is one whose disappearance occurred during combat and whose death cannot be established beyond reasonable doubt.

mission, *n.* (msn) **1.** In its primary sense of 'being sent': **a.** The service, purpose, or duty to be discharged by a person or group of persons sent somewhere, as in 'your mission is to deliver medical supplies to the Agra hospital.' **b.** The action involved in this duty or service, as in 'during the mission, he fell off course.' **c.** The persons or organization sent upon such duty, as in 'a mission is being sent to serve you.' **d.** The accomplishment involved in such service or duty, as in 'the mission was a success.' **2.** By extension without regard to any sense of being sent: **a.** Any particular business, service, or duty assigned to be accomplished by a person, organization, office, detachment, or the like, with the object of contributing functionally to an overall objective. **b.** A statement of such business, service, or duty, as in 'here is your mission, understand it well.' **3.** *Specif.* **a.** An air mission (which see, esp. in senses 1, 2, and 4); *specif.,* an instance of carrying out a combat air mission, as in 'he flew 5 missions.' **b.** An operational mission (which see). **4.** In loose usage, a task. **5.** *Mission accomplished,* a laconic phrase indicating that the purpose of an action has been achieved.

Attrib., esp. in sense 3a, as in *mission briefing, mission commander, mission data, mission folder, mission headquarters, mission number, mission order, mission pilot,* etc.

Also used as the second element of combinations as in *bombing mission, fighter mission,* etc.

Sense 3a is a specific sense of sense 1; sense 3b is a specific sense of sense 2.

mission aircraft. 1. An aircraft designed for, or assigned to, the accomplishment of a particular mission. **2.** An aircraft designated for use in carrying out an organization's mission. See **air mission,** sense 1.

mission integrity. The soundness of a mission that arises from its consistency with overall objectives and from a proper employment of personnel and equipment for the end desired.

In the AF, mission integrity involves the proper employment of air power.

mission of fire. The total amount of ammunition of all kinds needed by a given squadron of combat aircraft for a given mission.

mission report. In intelligence usage, any report pertaining to a given air mission, based on information obtained primarily by interrogation of the aircrew or aircrews. See **flash report.**

mist, *n.* Minute water droplets rising, floating, or falling near the surface, and distinguished from fog in that the droplets are approaching rain. A nonmeteorological term in the US.

As used in British weather reports, 'mist' means an obscurity in the surface layers of the atmosphere caused by particles of condensed moisture in suspension in the air in which visibility is greater than one kilometer but less than two kilometers.

MIT (*abbr*). **1.** *auth.* 'Military intelligence translator.' **2.** 'Minimum individual training.'

MIT aircraft. Aircraft designated for use in providing minimum individual training. Now called 'operational support aircraft.'

Mitchel Air Force Base. An AF base at Hempstead, Long Island, New York, named for Major

John P. Mitchel, Mayor of New York and a fighter pilot, killed in 1918.

Mitchell, *n.* The popular name for the B-25. Attrib., as in *Mitchell bomber, Mitchell pilot,* etc.

Named after Brig Gen William Mitchell (29 Dec 1879–19 Feb 1936), pioneer in the development of air power.

Mitchell Award. An award, established in 1938 by Frank A. Tichenor, Publisher of *Aero Digest,* in memory of General William L. Mitchell. The award is presented occasionally by the Aviators Post 743, American Legion, to a US citizen who has made an outstanding individual contribution to the progress of aviation.

Mitsu, *n.* Short for 'Mitsubishi.'

Mitsubishi, *n.* **1.** A popular designation in WW II for any Japanese aircraft manufactured by the Mitsubishi Heavy Industries, Ltd. **2.** Used in the names of such aircraft: See note.

Well-known Mitsubishi aircraft of WW II were the *Mitsubishi 00,* a single-engine fighter, called the 'Zero'; *Mitsubishi J2M2,* a single-engine Navy fighter, called 'Jack,' *Mitsubishi A6M5,* a single-engine Navy fighter, called 'Zeke.'

mixed-flow compressor. A jet-engine compressor that provides for both axial-flow and radial-flow of the air or other fluid.

mixed uniform. A set of clothes made up of items belonging to different uniforms or to clothing worn for different duties.

mixing ratio. The ratio of water vapor to dry air, used as a measure of humidity.

Expressed in grams of water per kilogram of dry air.

mixture, *n. Specif.* Short for 'fuel-air mixture.'

mixture control. 1. A control in a pilot's cockpit for changing the ratio of the fuel-air mixture. **2.** The control exercised over the fuel-air mixture.

mk (*auth abbr*). 'Mark.'

mkm (*auth abbr*). 'Marksman.'

ML (*code* or *abbr*). **1.** 'Low-power loop range.' See **loop-type radio range,** note. **2.** A US Naval designation, for administrative purposes, for two-engine landplane VP and VR type airplanes. See **VP** (*code*), **VR** (*code*).

ml (*auth abbr*). **1.** 'Molder.' **2.** *Caps.* 'Military payroll money list.'

MLCAEC (*auth abbr*). 'Military Liaison Committee to the Atomic Energy Commission.'

MLG (*auth abbr*). 'Main landing gear.'

MLR (*auth abbr*). 'Main line of resistance.'

MM (*auth abbr*). 'Medal for Merit.'

mm (*auth abbr*). 'Millimeter.'

MN (*abbr*). 'Magnetic north.'

mntn (*auth abbr*). 'Maintain.'

MO (*abbr*). **1.** *auth.* 'Movement orders.' **2.** 'Mobile station.' **3.** 'Medical officer.'

mo (*auth abbr*). **1.** 'Month.' **2.** *Capitalized.* 'Missouri.'

MOAMA (*auth abbr*). 'Mobile Air Materiel Area.'

MoARS (*auth abbr*). 'Mobilization Assignment Reserve Section.'

Moazagotl cloud. One or more stationary cloud banks, on the lee side of a mountain barrier or chain, and parallel to the mountains.

mob (*auth abbr*). 'Mobilize.'

mobile, *a.* (mbl) **1.** Readily movable from one place to another, either by being mounted on wheels or by being readily placed in or on a vehicle. Said of equipment or other physical objects, as of guns, hangars, radio equipment, repair depots, and warehouses. **2.** Organized and equipped for ready movement from one place to another, esp. by air or motor vehicle. Said of units and organizations. **3.** Characterized by actions involving movement, esp. by means of mobile equipment, as in *mobile defense* or *mobile warfare.*

Mobile Air Materiel Area. (MOAMA) An air materiel area with headquarters at Mobile, Alabama.

mobile training. The kind of training given through use of mobile training detachments or units. See next.

mobile training unit. (MTU) A training unit organized and equipped to move from place to place in order to provide on-the-job training for operational and maintenance personnel.

mobility, *n.* **1.** A quality or capability of a person, organization, or piece of equipment that permits it to move or be moved readily from place to place. Cf. **flexibility,** *n.* **2.** A principle of warfare embodying the thesis that this capability is necessary to success in war. See **principle of war.**

mobilization, *n.* (mob) **1.** The calling-up of reserves and the assembly of military forces in accordance with a mobilization plan in order to meet a military or national emergency; the process of augmentation associated with these actions. **2.** The action of organizing and marshaling industry for war purposes.

In sense 1, see **general mobilization, limited mobilization;** in sense 2, see **industrial mobilization, total mobilization.**

mobilization Air Force Specialty. An Air Force Specialty as applied to Air Force Reservists.

The mobilization Air Force Specialty Code (MAFSC) has only three instead of four digits. A fourth digit is added to make up the AF Specialty Code when the reservist enters on extended active duty.

mobilization assignee. An AF Reservist who holds a mobilization assignment, and as such is a member of the Ready Reserve.

Mobilization assignees are of two sorts, those that are paid, and those not paid. An assignee takes training to bring him to, and to maintain himself at, a level of proficiency so that he may be immediately mobilized.

mobilization assignment. 1. An assignment of an Air Force Reservist to a specific position pro-

vided for in an active AF organization by Headquarters USAF, which position affords inactive duty training to the reservist prior to mobilization, and a place for assignment to active duty upon mobilization. **2.** The position held under this assignment.

To retain a mobilization assignment, the reservist must complete a specified number of inactive duty training periods in a given time. Pay may be received for this duty.

mobilization designation. **1.** An assignment of an AF Reservist to an authorized Reserve position in an active AF organization, where without pay he obtains inactive duty training, proficiency being attained either by performance of duties as a civilian in the AF organization, or by participation in some AF Reserve activity. **2.** The position held under this assignment.

mobilization designee. An AF Reservist who holds a mobilization designation.

mobilization plan. A plan that sets forth the procedures and actions to be taken in case of a national emergency calling for the augmentation of military forces, together with a statement of purpose, a statement on the resources in personnel and materiel to be assembled and marshaled, a description of the organizational structure to be obtained, and a statement on alternative courses of actions as determined by circumstances.

mobilization reserve. The reserve of supplies, materiel, and equipment above normal operating levels for use in event of mobilization.

mobilize, *v.* (mob) **1.** *tr.* To convert an *industry, economy,* or *country* to a wartime basis; to call a *person* up to active duty under a mobilization plan. **2.** To bring together the *units* or *persons* of a military force; to bring the *force* together. **3.** *intr.* Of persons: To assemble and make ready for action.

mockup, *n.* **1.** A model, often full-sized, of an airplane, other piece of equipment, or installation, so devised as to expose its parts for study, training, or testing. Also attrib., as in *mockup board.* **2.** An occasion when such a model is being studied or tested, as in 'he attended the mockup.' **3.** An exhibition that makes use of such a model.

A mockup (sense 1) is sometimes made from a functioning piece of equipment by cutting it into parts, but kept generally together by hinges, clamps, or the like.

mod (*auth abbr*). **1.** 'Modify' or 'modification.' **2.** 'Moderate.'

mode, *n.* In statistics, the value or number, in any large grouping, which appears most frequently.

model, *n.* **1. a.** An object, usually in miniature, built to give some idea of what a functioning prototype would be like. See **production model** and **prototype, *n.* b.** A miniature copy of an object, as an airplane or motor vehicle. Attrib., as in *model airplane.* **2.** In the classification of certain equipment, the category immediately below type or subtype and above model series, i.e., the category covering all members produced after the same prototype. Cf. **mark,** *n.*

The categories for classifying aircraft have not been firmly established except for the lower five. These are (in ascending order): The individual (usually designated by a serial number), the model series (as in B-17E), the model (as in B-17), the subtype (as in light bomber), the type (as in bomber). The B-47 is a model of the bomber type. It includes the model series B-47A, B-47B, etc.

model series. In classifying certain equipment, the category below model. See prec., note.

modern, *a.* Of, or characteristic of, recent times; embodying new ideas. Said of airplanes, warfare, etc. This is a relative term.

modernization, *n.* The process of converting an obsolete or obsolescent piece of equipment, installation, or organization into something that embodies recent ideas; the process of bringing up to date.

modification, *n.* (mod) *Specif.* The physical alteration of an aircraft or other piece of equipment so as to change its capabilities or characteristics.

This term covers any change or correction in structure, arrangement, equipment, or accessories affecting capability or characteristics. It does not cover changes for other purposes.

modification center. A place for the modification of aircraft or other equipment.

modify, *v.* (mod) *tr.* **1.** To change somewhat the form or qualities of a *thing.* **2.** *Specif.* To subject to modification.

modulate, *v. tr.* **1.** To vary the *amplitude, frequency,* or *phase* of a radio or electric wave; to change a *wave* by varying its amplitude, frequency, or phase. **2.** To vary the *velocity* of the electrons in an electron beam. See **velocity modulation.**

modulator, *n.* That part of a transmitter which triggers the modulating signal.

Moffett Field. A Navy air station near Sunnyvale, California, named for Rear Admiral William A. Moffett (1869–1933), killed when the Akron crashed off the New Jersey coast.

Originally constructed as a Navy dirigible base, and known as the Sunnyvale Air Station, Moffett Field was used by the Army for a basic flying school between Oct 1935 and Apr 1942. Under the jurisdiction of the Navy since 1942, it provides space for a NACA laboratory, first established there in Sep 1939.

mogas (*auth abbr*). 'Motor gasoline.'

Mohawk, *n.* A popular name for the P-36. See **Hawk,** *n.*

MOIC (*auth abbr*). 'Medical officer in command.'

moist adiabat. A pseudoadiabat (which see).

molecule, *n.* The smallest particle into which an element or compound may be divided and still retain the chemical properties of the element or compound in mass.

Molotoff, *n.* [V. M. Molotov (1890–), Russian foreign minister.] Used in the names of certain WW II incendiaries: See note. *Slang.*

Molotoff breadbasket, a particular adapter for holding 12 or more small incendiaries and for scattering them over an area; *Molotoff cocktail,* a frangible bottle containing a flammable liquid.

moment, *n. Mechanics.* The tendency, or its measurement, to produce motion about an axis or point.

This tendency is a resultant of mass, force, velocity, or the like, and is measured by the product of one of these and the perpendicular distance (moment arm) from the point of application to the axis or point of rotation. See **hinge moment.**

moment arm. A factor in the product of moment (which see).

momentum, *n.* The energy in a moving body that continues its motion without application of external force; the measure of this energy.

Momentum is either angular or linear. Linear momentum is expressed as the product of the body's mass and its linear velocity.

Momson lung. [After Rear Admiral Charles B. *Momson* (1896–), USN, inventor.] A portable breathing device used in the US Navy as an aid to a person in escaping from a sunken submarine.

mon (*auth abbr*). **1.** 'Monetary.' **2.** *Capitalized.* 'Monday.'

monetary allowance. An allowance in money in lieu of a provision or payment in kind.

monitor, *n.* A person who monitors something.

monitor, *v. tr.* **1.** To exercise general surveillance over a *project, program, operation,* or the like, in order to assure coordination and observance of command policy, without exercising, however, direct supervision or direct control. See **supervision,** *n.* **2.** To listen in on, or to observe, a *lecture, briefing, telephone call, radio message, classroom* or *field exercise, exhibition,* or other performance, with the object either of keeping abreast of what is being done or said, or of providing a basis for coordination and observance of command policy. **3.** To keep a check on a communication *channel* or *network,* so as to maintain or improve communications service. **4.** To keep track of an airborne *aircraft* by radar and to transmit to it necessary flight information to assure its safe operation or guidance. See **flight monitoring. 5.** To maintain a check on the amount of radioactivity in an *area, laboratory,* or the like, so as to provide for the safety of personnel; to measure such *radioactivity.*

monitoring, *n.* **1.** The action of the verb 'monitor.' **2.** Attrib., esp. in sense 1 of the verb, as in *monitoring depot;* in sense 2 in regard to radio messages, as in *monitoring station;* in sense 3, as in *monitoring antenna;* in sense 5, as in *monitoring instrument.*

monitor log. The log maintained by, or for, a person who monitors radio, telephone, or teletype messages. See **monitor,** *v.*, sense 2.

monocoque, *n.* [French 'single shell.'] **1.** A type of airplane construction in which the skin of the fuselage bears the primary stresses arising in the fuselage. **2.** An airplane of this construction, such as the Messerschmitt 109. **3.** A monocoque fuselage.

monocoque, *a.* In the manner of a monocoque; built or designed after a monocoque. Said of a design, fuselage, structure, or airplane.

monocoque fuselage. A fuselage constructed like a shell, the skin bearing the primary stresses; also a class of fuselage being the monocoque proper, but also the semimonocoque (which see).

The monocoque fuselage may be provided with bulkheads. If provided with longerons, it becomes a semimonocoque.

monoplane, *n.* An airplane having only one main lifting surface or wing, usually divided into two parts by the fuselage. Distinguished from a biplane or triplane. Attrib., as in *monoplane design, monoplane fighter,* etc.

monopropellant, *n.* A liquid rocket propellant in which the fuel and oxidizer are mixed into a single substance ready for burning in the combustion chamber.

A monopropellant may be a mixture of compounds, such as hydrogen peroxide mixed with alcohol, or it may be a compound itself, such as nitromethane. Cf. **bipropellant,** *n.*

montgolfier, *n.* A fire balloon.

Named after Jacques and Joseph Montgolfier, inventors of the first balloon, a fire balloon, in France, 1783.

montrg (*auth abbr*). 'Monitoring.'

Moody Air Force Base. An AF base at Valdosta, Georgia, named for Major George P. Moody, a bomber pilot killed in 1941.

moonlight requisition. The surreptitious appropriation of equipment or supplies during hours of darkness. *Slang.*

moor, *v. Specif. tr.* To secure a land *airplane* to the ground by tying it down by ropes or cables; to secure a *seaplane* by fastening it to an anchor, dock, or the like; to secure an *airship* by fastening it to a mooring mast or tying it down by cables.

mooring, *n.* **1.** The action of mooring an aircraft or ship. **2.** A place where an aircraft may be moored. **3.** *pl.* The weights or anchors that secure an aircraft or ship.

Attrib., esp. in sense 1, as in *mooring band,* a band over the top of a kite balloon; *mooring cone,* a grooved fitting on the bow of an airship for coupling it to a *mooring mast.*

MOP (*auth abbr*). 'Mustering-out pay(ment).'

Mop, *n.* A code name for the Russian GST (mean-

ing unknown in the West), the US PBY Catalina built under license in the USSR.

mop, *v. tr. To mop up.* **a.** To free an *area* of the last remnants of an enemy. **b.** To capture or destroy the remnants of an *enemy* in an area.

MOPR (*auth abbr*). 'Manner-of-performing rating.'

MOQ (*auth abbr*). 'Married officers' quarters.'

morale, *n.* **1.** The state of an individual person's mental attitude or feeling in respect to what he is, does, or is going to do, as determined by the presence or absence of such psychological factors as confidence in his leaders, recognition of a spirit of sacrifice in others, feelings of comradeship for associates, physical comfort, hope, etc. **2.** A state of mind or feeling attributed to a group of individuals or to an organization: See note.

In both senses, morale is said to be high or low, good or bad. In sense 2, morale is considered by some to have meaning only in a statistical sense, since a group, as such, does not have a mind nor the power of feeling. Thus, to say that 'the morale of a unit is high' is to say that the individual morales of a majority, or of all, the members of the unit are high. Cf. **will,** *n.*

Morane, *n.* In full, **Morane-Saulnier.** Any of several French aircraft manufactured by the Morane-Saulnier company, founded in 1911.

Morane-Saulniers of WW I included both monoplanes and biplanes, some of which were procured and flown by the A.E.F.: the *Morane 406* of WW II was a single-seat, low-wing fighter; the *Morane-Saulnier M.S. 477* of the present French AF is a two-seat, low-wing advanced trainer.

morning report. (M/R) The daily record or log of any one of certain military units or unit sections required to keep records on the daily strength and official status of personnel assigned or attached to a command.

The units or unit sections that make out morning reports are either those that report on personnel engaged in their own activity, as is normally the case in a combat squadron, or those serving personnel assigned duty with activities outside the reporting unit. In a wing, the wing as such does not normally make out a morning report; instead a number of separate reports are made out by its operating units and by a headquarters squadron section serving personnel assigned duty with different activities throughout the headquarters.

Morrow Board. A board appointed by President Calvin Coolidge in September 1925, of which Dwight W. Morrow was chairman, to study 'the best means of developing and applying aircraft in national defense.'

Morse code. The telegraphic code invented by Samuel F. B. Morse (1791–1872).

The original Morse code has been adapted to other codes, notably the international Morse code.

mort (*abbr*). 'Mortar.'

mortgage, *n. To pay off a mortgage,* to crash. *Jocular.* Cf. **farm,** *n.*

MOS (*auth abbr*). 'Military occupational specialty.'

mosaic, *n.* **1.** A patchwork assemblage of two or more aerial photographs, usually vertical, to provide a continuous picture. **2.** A map made from such a continuous picture.

Attrib., as in *mosaic map, mosaic room,* etc.

Mosquito, *n.* **1.** A British twin-engine night fighter and light bomber of WW II, developed by de Havilland Aircraft Company of England and Canada. **2.** A popular name in the Korean War for the T-6 used as a target-spotting aircraft; also the person operating this aircraft.

The Mosquito of WW II was flown by certain American units as a photo-reconnaissance aircraft.

MOT (*auth abbr*). 'Month of travel.'

Mote, *n.* A code name for the Russian MBR-2, a single-engine (pusher-type propeller) flying boat, used as a reconnaissance bomber.

Moth, *n.* A generic name for certain light trainers developed by the de Havilland Aircraft Company after WW I.

The original Moth was the *Gipsy-Moth* produced in 1925, a two-seat biplane fitted with the D. H. Gipsy engine. Moths also include the *Moth-Minor,* a low-wing monoplane used by the Royal Australian AF in WW II; and the *Tiger-Moth,* a two-seat biplane.

mothball, *v. tr.* To subject an *aircraft* or other piece of equipment to mothballing.

mothballing, *n.* The action or activity of treating equipment so as to protect it from the elements and prevent deterioration over a long period of time.

Mothballing may include cocooning (which see) but is not necessarily limited to this activity.

mother, *n.* Used attrib. to designate aircraft or ships that carry, launch, or direct other aircraft or ships, as in *mother carrier, mother plane, mother ship.* See next.

mother aircraft. 1. An aircraft which carries the electronic equipment necessary to direct a drone, and from which the drone is directed. **2.** An aircraft so constructed as to carry another airplane, piloted or pilotless, which can subsequently be launched during flight.

motor, *n.* (mtr) A power unit or plant that imparts motion.

This term is applied to various kinds of power units: **a.** A machine that transforms electric energy into mechanical energy, normally resulting in a rotating part, often called an 'electric motor.' **b.** A reciprocating gasoline engine used in an automobile, truck, or boat. **c.** An aircraft engine, esp. a reciprocating gasoline engine. **d.** The propulsion unit in any of certain rockets. See **rocket motor.**

This word and 'engine' have overlapping areas of application. In sense c above the term is a natural extension of sense b, and is in wide use despite efforts to encourage the use of 'engine' in its place. But 'motor' is not normally applied to the power plants of a ship or railway locomotive, or to other large-sized units. See **engine,** *n.*

motor head. The upper part of a liquid-fuel rocket motor, usually containing the propellant injection parts and the igniter.

motorized, *a.* (mtz) **1.** Of a piece of equipment: Provided with wheels, skids, or tracks, and

moved by use of a motor. **2.** Of units: Provided with motor vehicles.

motorjet, *n.* **1.** A jet engine having its compressor driven by a reciprocating gasoline engine. **2.** An aircraft having such a jet engine.

motor learning. The learning of motor skills. See **motor skill.**

motorless, *a.* **1.** Of aircraft: Designed for flight without use of engine or motor power. **2.** Of flight: Performed without benefit of a power plant.

motor march. The movement of two or more motor vehicles under control of a single commander.

motor nacelle. An engine nacelle.

motor pool. 1. The place or area at which motor vehicles are parked or garaged, made available for use, and provided minor repairs. **2.** The activity involved in operating such a place. **3.** The organization or activity that operates such a place.

motor-pool officer. The officer in charge of a motor pool.

motor skill. The skill of an individual to move his body or parts of his body with grace, speed, coordination, power, and economy of effort, usually as such skill is related to the performance of a task or feat.

motor vehicle. A vehicle propelled by a self-contained motor that operates on land, as an automobile, truck, motorcycle, or the like. Attrib., as in *motor vehicle operator.*

This term usually excludes railway vehicles as well as motorized vehicles for handling materiel.

mount, *n.* **1.** A device to which, or upon which, something, such as a machine gun, camera, or searchlight, can be attached and supported in order to facilitate its installation, use or accessibility, or to protect it. **2.** A pilot's airplane. *Jocular.*

Mounts for equipment in an airplane are often provided with damping parts against vibration or shock.

mount, *v. tr.* **1.** To place a *gun, bomb, camera,* or the like upon a mount. **2.** To get an *offensive* or other action under way; to bring *firepower* to bear. **3.** To post a *guard.*

Mountain Home Air Force Base. An AF base at Mountain Home, Idaho, named for the city.

mountain sickness. Hypoxemia suffered at high altitudes.

mountain standard time. (MST) The standard mean time of the mountain standard time zone, i.e., between approximately 97.5 degrees and 112.5 degrees west longitude.

mounting, *n.* **1.** That which serves as a mount. **2.** The action of positioning something on a mount. Attrib., as in *mounting flange, mounting lug,* etc.

mounting area. The area in which forces are assembled prior to taking part in an amphibious or airborne operation.

mouse, *n.* **1.** The radar station used as a reference by an airplane using the Oboe system. See **Oboe,** *n.* **2.** A particular satellite vehicle, named for '*M*inimum *O*rbital *U*nmanned *S*atellite of the *E*arth.'

mov (*auth abbr*). 'Movement.'

movable, *a.* Of a control surface: Subject to being moved about an axis, along a slide, or otherwise.

Movable surfaces are normally controlled from the cockpit. They include the ailerons, elevators, and rudder. See **adjustable,** *a.*

movable slot. A slot that comes and goes according to the position of the auxiliary airfoil: See **slot,** *n.*, sense 2 and note. Also called an 'automatic slot.'

move, *v.* **1.** *tr.* To cause a *person* or a *body* of *persons,* together with their organic equipment, to go from one place to another. **2.** *intr.* To go from one place to another; to be in motion.

movement, *n.* (mov) **1.** An act or instance of motion, as in 'a movement of the wing.' **2. a.** The action of moving a person or group of persons, together with organic equipment and supplies, from one place to another. See note. **b.** The action of moving supplies or equipment. **3.** A component part of maneuver, i.e., the directional motions made in maneuver. **4.** A principle of war equivalent to mobility (which see).

In sense 2a, movement includes the planning involved; the preparation at the point of destination; property accounting; intransit storage, billeting, and feeding; loading; and actual transport of personnel, equipment, and supplies. Attrib., as in *movement control, movement directive, movement officer, movement order,* etc.

moving coordinate system. A system for establishing position or speed that uses coordinates that move relative to the earth. Cf. **fixed coordinate system.**

For example, if the origin of a projectile fired in aerial gunnery is considered to be the muzzle of the gun, a moving coordinate system is being employed. See **origin,** *n.*

moving target indicator. A radarscope that distinguishes between moving and fixed objects, or shows only moving targets.

MP (*abbr*). **1.** *auth.* 'Military police.' **2.** By extension and used as a noun, a member of the military police.

In sense 1, used attrib., as in *MP unit, MP detachment.*

mp (*abbr*). 'Manifold pressure.'

MPC (*abbr*). **1.** *auth.* 'Military payment certificate.' **2.** *auth.* 'Military Police Corps.' **3.** 'Manual pip control.'

MPerR (*auth abbr*). 'Master Personnel Record.'

mph (*auth abbr*). 'Mile per hour' or 'miles per hour.' Also written 'MPH' and 'm.p.h.'

MPI (*abbr*). 'Mean point of impact.' Also written 'M.P.I.' and 'm.p.i.'

MPO (*auth abbr*). **1.** 'Military pay order.' **2.** 'Military Permit Office.'

MPP (*abbr*). 'Most probable position.'

MPR (*abbr*). **1.** *auth.* 'Military pay record.' **2.** 'Master personnel record.' See **MPerR** (*auth abbr*).

MR (*abbr*). **1.** 'Medium range,' in respect to radar. **2.** 'Military requirement.' **3.** 'Memorandum Receipt.' **4.** *auth.* 'Machine records.' **5.** *auth.* 'Machine repairman.'

M/R (*abbr*). **1.** *auth.* 'Morning report.' **2.** 'Memorandum receipt.' **3.** 'Reconnaissance seaplane' (*Morskoi razvedchik*), used in the names of Russian aircraft from 1925 to 1945, as in *MR-5*.

Mr. The written form of 'Mister,' used as the title of a warrant officer.

In the Navy, this title is generally used for all commissioned officers below the rank of commander, except for doctors and the commander of a ship.

MRA (*code* or *abbr*). 'Medium-power Adcock range.' See **Adcock radio range,** note.

MRC (*auth abbr*). 'Movement Report Center.'

MRCC (*auth abbr*). 'Movement Report Control Center.'

MRL (*code* or *abbr*). **1.** *auth.* 'Multiple rocket launcher.' **2.** 'Medium-power loop range.' See **loop-type radio range,** note.

MRO (*auth abbr*). 'Movement Report Office.'

MRS (*auth abbr*). 'Military Railway Service.'

MRU (*abbr*). **1.** *auth.* 'Machine records unit.' **2.** 'Mobile radio unit.'

MS (*abbr*). **1.** *auth.* 'Major subject.' **2.** 'Ship station,' as used by NATO.

MS (*code*). US Naval designation, for administrative purposes, for two-engine seaplane VP and VR type airplanes. See **VP** (*code*), **VR** (*code*).

MSA (*auth abbr*). 'Mutual Security Agency.'

MSC (*auth abbr*). 'Medical Service Corps.'

M-scan, *n.* A modified A-scan.

M series. Short for 'model series' or 'mark series.'

MSF (*auth abbr*). 'Mobile striking force.'

msg (*auth abbr*). 'Message.'

msgcen (*abbr*). 'Message center.'

msgfm (*auth abbr*). 'Messageform.'

MSGp (*auth abbr*). 'Mobile support group.'

msgr (*auth abbr*). 'Messenger.'

MSgt (*auth abbr*). 'Master sergeant.'

MSL (*abbr*). 'Mean sea level.'

msl (*auth abbr*). 'Missile.'

msn (*auth abbr*). 'Mission.'

MSP (*auth abbr*). 'Mutual security program.'

MSR (*auth abbr*). 'Main supply route.'

msry (*auth abbr*). 'Masonry.'

MST (*abbr*). 'Mountain Standard Time.'

mstr (*abbr*). 'Master.'

MSTS (*auth abbr*). 'Military Sea Transport Service.'

MSTSO (*auth abbr*). 'Military Sea Transportation Service Office.'

MT (*abbr*). **1.** 'Measurement ton.' **2.** *auth.* 'Motor transport.'

mt (*abbr*). 'Mountain.'

MTCA (*abbr*). 'Ministry of Transport and Civil Aviation.' *British.*

MTCC (*auth abbr*). 'Military Air Transport Service, Transport Control Center (Hq).'

mtd (*abbr*). 'Mounted.'

MTI (*abbr*). 'Moving target indicator.'

mtl (*abbr*). **1.** 'Material' or 'materiel.' See **mat** (*auth abbr*). **2.** 'Metal.'

mtn (*abbr*). 'Motion.'

MTO (*abbr*). 'Mediterranean Theater of Operations.'

MTP (*auth abbr*). 'Mobilization training program.'

mtr (*auth abbr*). 'Motor.'

mtrcl (*auth abbr*). 'Motorcycle.'

mtrg (*auth abbr*). 'Metering.'

MTU (*auth abbr*). 'Mobile training unit.'

MTUOP (*auth abbr*). 'Mobile training unit out for parts.' Attrib., as in *MTUOP requisition.*

M-type airship. An airship of the M class.

mtz (*auth abbr*). 'Motorize.'

mu (*auth abbr*). 'Musician.'

MUE (*auth abbr*). 'Meritorious Unit Emblem.'

Mug, *n.* A code name for the Russian MDR-6, a twin-engine, long-range, reconnaissance flying boat.

mukluk, *n.* A rubber and canvas shoe for arctic wear.

Mule, *n.* A code name for the Russian Po-2.

multi (*combining form*). More than one, more than two, or more than three; many, as in *multicolumnar, multicylindered, multiengined, multijet.*

In contexts where a distinction is being made between one and more than one, 'multi' signifies more than one, as in 'multiengined aircraft include the B-25 and the B-36.' But in contexts where a particular object is being described, the term usually signifies more than two or more than three, as in 'the B-25 is a two-engined airplane, the B-36 a multiengined airplane.'

multiplace, *a.* Of an aircraft: Providing a seat or compartment for more than one individual.

The two-place T-6 is a multiplace trainer.

multiplane, *n.* **1.** A category of airplanes having more than one main lifting surface. Contrasted with 'monoplane.' **2.** An airplane having more than two, or more than three, main lifting surfaces.

multiple, *a.* Consisting of more than one, or pro-

viding for more than one, as in 'multiple aiming points,' 'multiple dials,' 'multiple wheel gear.'

This term in certain contexts has the connotation of more than two, as in 'they crossed the Atlantic in one of those multiple engine jobs.'

multiple crit. Something more than a critical mass of fissionable material. See **partial crit.**

multiple-disc brake. A wheel brake on a landing gear, having several layers of brake discs which bear against each other for braking purposes. See **single-disc brake.**

multiple drift wind. The drift of the wind as computed on course by readings taken on two or more headings. Cf. **double drift.**

This differs from double drift in that the latter is taken by departing from course.

multiple-stage missile. A multistage rocket used as a missile. Also called a 'composite missile.'

multiple tropopause. The tropopause conceived as being at sharply different altitudes in different parts of the atmosphere.

multiple-year appropriation. An appropriation available for incurring obligations for a definite period of time in excess of one fiscal year.

multipropellant, *n.* A rocket propellant consisting of two or more unmixed chemicals fed into the combustion chamber separately. Cf. **bipropellant,** *n.*

multiseater, *n.* A multiplace aircraft. Attrib., as in *multiseater fighter.*

multistage compressor. A centrifugal compressor that utilizes two or more impellers acting successively upon the flow of air or other fluid so as to increase pressure energy; *specif.*, an axial-flow compressor having two or more rows of rotor and stator blades one behind the other: See **axial-flow compressor,** note.

multistage rocket. A rocket or rocket missile having two or more thrust-producing units, each used for different stages of the rocket's flight.

Normally, each unit of a multistage rocket is jettisoned when its fuel is consumed.

mun (*auth abbr*). 'Munition.'

muni (*auth abbr*). 'Municipal.'

munition, *n.* (mun) Usually *pl.* **1.** In a broad sense, any and all supplies and equipment required to conduct offensive or defensive war, including war machines, ammunition, transport, fuel, food, and clothing, but excluding personnel and excluding supplies and equipment for purposes other than for direct military operations. **2.** In a restricted sense, ordnance.

Used attrib., as in *Munitions Board, munitions depot, munitions dump,* etc.

Munitions Board. A board established by the National Security Act of 1947 under the Secretary of Defense to support certain strategic and logistic plans prepared by the Joint Chiefs of Staff, esp. in the fields of procurement and industrial mobilization. Now *hist.*

This board was abolished in 1953 by the Reorganization Plan No. 6; its functions were divided among different Assistant Secretaries of Defense.

Munroe effect. [After Charles E. *Munroe* (1849–1938), American chemist and inventor.] The effect produced by a shaped charge. See **shaped charge.**

musette bag. A small bag with shoulder strap in which personal items can be carried; an officer's field bag.

mush, *v.* **1.** *intr.* Of an airplane or of a person in the airplane: **a.** To gain little or no altitude or to lose altitude when the angle of attack would normally indicate a gain, without, however, going into a complete stall. **b.** To proceed by alternately stalling and moving forward. See **stall,** *n.* **2.** Of an airplane's controls: To react ineffectively or sluggishly. **3.** *tr.* To cause an *airplane* to mush.

Musick Memorial Trophy. A trophy, awarded annually to promote safety in the air, established by the citizens of Auckland, New Zealand, in the memory of Captain Edwin C. Musick and his six companions on the 'Samoan Clipper,' who were lost on the first commercial flight from the US to New Zealand, on January 12, 1938.

The awarding of the trophy was suspended during WW II, and has not been awarded since. The custody of the trophy was entrusted to the Institute of Aeronautical Sciences, where it has been on display since 1941.

Mustang, *n.* The popular name for the P-51 (now the F-51) or for its fighter-bomber version, the A-36.

muster, *v. tr.* **1.** To assemble or summon *persons* or *aircraft*, esp. for orders, review, or inspection. **2.** *To muster out*, to give final inspection to a *person* who has served during wartime, then to release him from active duty.

mustering-out pay. (MOP) An extra sum of money payable to any of certain persons upon or after his release from active duty for service during wartime.

After WW II and the Korean War, enlisted men and commissioned officers below the rank of major were, with some exceptions, eligible for this pay. A cutoff date for mustering-out pay is usually provided. AFM 173–20 summarizes the rules for this pay. It is not to be confused with terminal-leave pay.

mutilation, *n.* The act of rendering classified property unfit for further use; the act of obliterating or destroying parts of a text, design, or other record so as to render the whole unintelligible or unfit for use.

Mutual Defense Assistance Program. (MDAP) The program of military assistance given by the US to foreign nations participating in the defense alliances for a free world.

mutual inductance. *Electricity.* Inductance be-

tween two or more circuits; the measure of this inductance. See **inductance,** *n.*

mutual security program. A program designed to maintain the security, promote foreign policy, and provide for the general welfare of the United States, based upon the Mutual Security Act of 1954.

This program is conducted by furnishing military, economic, and technical assistance to friendly nations in the interest of international peace and security. It is a successor program to several foreign assistance programs merged into a single integrated effort.

mux (*auth abbr*). 'Multiplex.'

muzzle, *n.* The end of the barrel of a gun from which the bullet or projectile emerges.

muzzle booster. A unit attached to the muzzle of a gun to divert a part of the blast pressure to help actuate the recoil mechanism and increase the rate of fire.

muzzle flash. A spurt of flame that appears at the muzzle of a gun when a projectile leaves the barrel.

muzzle velocity. The velocity of a bullet or shell, relative to the gun, at the instant it leaves the muzzle. Cf. **initial velocity.**

Muzzle velocity of a bullet fired from an aircraft is unaffected by the speed of the aircraft, e.g., a bullet fired backwards from a tail gun has the same muzzle velocity as if fired forward.

MVD. [Russian *Ministerstvo Vnutrennikh Del.*] The Soviet Ministry of Internal Affairs.

mvmt (*abbr*). 'Movement.'

MWO (*auth abbr*). 'Modification work order.'

M/Y (*auth abbr*). 'Marshaling yards.'

Myrt, *n.* A popular name among US personnel for the Nakajima C6N1.

Mystère, *n.* One of a series of French supersonic jet fighters designed and built by Marcel Dessault.

One model of the Mystère has been adopted for use by Nato forces.

N

N (*letter*). See **November** (*code*). **1.** Used as a code meaning 'United States registry' in the identification marks on civil aircraft. **2.** Used as a code or symbol for 'all-weather operating version' in US Navy designations of aircraft. **3.** 'Informal visit' as used in the VIP code.

In sense 1, the letters 'NC,' 'NL,' etc., formerly displayed on civil aircraft designated US registry and the status of an aircraft with regard to its airworthiness.

N (*abbr*). **1.** 'North.' **2.** 'Negro' when inclosed in parentheses. **3.** *auth.* 'Navy' in combinations or in the designations of Navy guided missiles. **4.** 'Naval Aircraft Factory' or 'Naval Air Development Station' in designations of Navy aircraft or guided missiles. **5.** 'Naval staff' in combinations, as *N-1*, *N-2*, etc. Used when a naval staff is set up along the lines of a general staff.

n. (*abbr*). 'Noun.'

N2S. The US Navy version of the PT-13.

NA (*abbr*). **1.** *auth.* 'Not applicable.' **2.** *auth.* 'Naval Air' in combination only. **3.** 'Northwest African,' used in combination in WW II, as in 'NASAF.'

NAA (*abbr*). 'National Aeronautic Association.'

NAAFI (*abbr*). 'Navy-Army-Air Force Institute.' The British counterpart of the USO.

NAB (*abbr*). **1.** 'Naval Air Base.' **2.** 'Navigational aid to bombing.' Used esp. in designations of electronic navigation and blind-bombing equipment.

NAC (*auth abbr*). **1.** 'North Atlantic Council.' **2.** 'National agency check.'

NACA (*auth abbr*). 'National Advisory Committee for Aeronautics.' Sometimes pronounced as a word.

Often used in combinations to designate aircraft components designed or developed under the NACA, as in *NACA high-speed wing* and *NACA hood*, or to designate testing conditions or the like specified by the NACA, as in *NACA standard atmospheric conditions*.

NACA cowling. A particular type of cowling for a radial engine developed by the National Advisory Committee for Aeronautics, consisting of a circular ring or hood, together with a part of the body behind the engine, both components designed so as to provide for a low-drag flow of cooling air around the engine.

nacelle, *n.* [French 'a small boat.'] A separate, streamlined inclosure on an airplane for sheltering or housing something: **a.** A compartment for a crew, as in the P-38; a cockpit. See **fuselage,** *n.*, note. **b.** An engine nacelle.

In French, *nacelle* is applied to the car of a balloon, the gondola of an airship, and the cockpit of an airplane; *fuseau-moteur* is applied to an engine nacelle.

NaDefCol (*auth abbr*). 'Nato Defense College.'

NaDevCen (*auth abbr*). 'Naval Air Development Center.'

nadir, *n.* A point on the celestial sphere 180 degrees from the zenith, i.e., directly beneath the observer.

nadir point. *Aerial photog.* The plumb point. See separate entry.

NAF (*auth abbr*). 'Naval Air Facility.'

Nagoya Air Base. An air base at Nagoya, Japan, named for the city.

Naha Air Base. An air base at Naha, Okinawa Island, Ryukyu Islands, named for the city.

NAIOP (*abbr*). 'Navigational aid inoperative for parts.'

Nakajima, *n.* [A Japanese airplane-manufacturing concern of WW II.] Used in the names of airplanes.

Nakajima airplanes of WW II included the *Nakajima Ki43* (Oscar), a single-engine army fighter; the *Nakajima C6N1* (Myrt), a single-engine, three-place monoplane, used for naval reconnaissance or as a torpedo bomber; the *Nakajima Ki44* (Tojo), a single-engine army fighter; and certain others called *Frank*, *Helen*, *Irving*, *Jill*, *Kate*, and *Nate*.

name chart. A person chart.

named air force. An air force on the same level of command as, and comparable to, a numbered air force, but designated by name rather than by number, as the Central Air Defense Force of the Air Defense Command.

NAMilCom (*auth abbr*). 'North Atlantic Military Committee.'

NAMilRepCom (*auth abbr*). 'North Atlantic Military Representatives Committee.'

Nan (*code*). A word formerly authorized for the letter 'N.' See **Able** (*code*).

napalm, *n.* **1.** A powder consisting of a mixture of aluminum soap, used to jellify oil or gasoline for use in napalm bombs or flame throwers. **2.** The resultant jellified substance.

napalm bomb. A bomb filled with napalm (sense 2). Hence, **napalm bombing.**

The napalm bomb is primarily an antipersonnel weapon and is often distinguished from an incendiary bomb, which is used primarily against installations or materiel.

napalm tank. A droppable fuel tank filled with napalm (sense 2), used as a bomb.

Napier, *n.* [D. *Napier* & Son, Ltd., a British manufacturing concern.] Used in the names of aero-engines, as in *Napier Lion*, *Napier Nomad*, *Napier Sabre*, etc.

NAPO (*abbr*). 'Naval Air Priorities Office.' *Hist.*

NARS (*auth abbr*). 'Non-affiliated Reserve Section.'

Narsarssuak Air Base. An air base at Narsarssuak Reach, Greenland, named for the city.

NAS (*auth abbr*). 'Naval Air Station.'

nat (*auth abbr*). 'National.'

NatDefSM (*auth abbr*). 'National Defense Service Medal.'

Nate, *n.* A name given by the Allies to the Japanese Nakajima Army 97, single-seat fighter of WW II.

National Advisory Committee for Aeronautics. (NACA) A government committee created by an act of Congress approved 3 March 1915, to direct and supervise study of the problems of flight and to direct and conduct aeronautical research and experiment.

The NACA has seventeen members appointed by the President, including two representatives from the Department of the AF. The three principal aeronautical laboratories operated under the NACA are the Langley Aeronautical Laboratory at Langley Field, Va.; the Ames Aeronautical Laboratory at Moffett Field, Calif.; and the Lewis Flight Propulsion Laboratory at Cleveland, Ohio.

National Aeronautic Association. The successor of the Aero Club of America reorganized in 1922 to promote private flying, flying safety, air defense, and the establishment of airports. See **Aero Club of America.**

The NAA is the US member of the Fédération Aéronautique Internationale (which see).

national agency check. Sometimes *capitalized.* A security check which consists of the investigation of the records kept on a particular person by such agencies as the Federal Bureau of Investigation and the Office of Naval Intelligence.

national air capacity. That capacity of a nation which measures its ability (a) to build and operate aircraft of all kinds, together with the weapons, facilities, and other things used in their full employment, and (b) to use such aircraft as instruments of national policy either in peace or war.

Thus, national air capacity arises from more than physical resources. It arises from an understanding of how to employ these resources in terms of air power (which see, sense 1), and of the welfare of the nation.

national air races. A name used to refer to several air races run over the years, such as those for the Bendix Trophy, and the Thompson Trophy. Often *capitalized.*

National Archives. 1. A part of the National Archives and Records Service, which preserves government archives and records of permanent value and makes them available to the public. **2.** The building or place where such archives and records are kept; the collection of such archives.

The National Archives and Records Service was established on 11 December 1949, and succeeded the National Archives Establishment.

national color. *Specif.* Any US flag carried in ceremonies. *Obs.* See **color,** *n.*

National Defense Building. The Pentagon.

National Defense Service Medal. (NatDefSM) A service award granted to all members of the Armed Forces who served honorably on active duty between 27 June 1950 and 27 July 1954.

national emergency. A critical national situation created by a war, armed conflict, flood, or other disaster, or the anticipation of such.

This term, when applied to a war crisis, is sufficiently elastic in time to cover not only the war crisis itself but a period of time before and after the crisis.

National Guard. (NG) **1.** A militia force under the US Army, corresponding in status to the Air National Guard. See **Air National Guard. 2.** A generic term for both the Army's National Guard and the Air National Guard.

national intelligence. Intelligence concerned with activities that threaten the security of the nation as a whole, transcending the exclusive interests of any one particular department or agency.

National Intelligence Survey. (NIS) A publication, the successor of the *Joint Army-Navy Intelligence Study* (JANIS), published and revised since 1948.

NIS deals with basic intelligence required for strategic planning. It is extensive in coverage and is kept up to date under coordination of the Central Intelligence Agency.

national military establishment. 1. *Capitalized.* The former designation (1947–1949) of the Department of Defense. **2.** The military establishment of a nation.

The NME of sense 1 was headed by the Secretary of Defense, who was a member of the Cabinet.

national objective. An objective, which when defined and understood, gives direction to a nation in the development of policy and in the actions it takes in economic, political, diplomatic, or military affairs.

A particular national objective is not always easy to define because of conflicting internal interests. However, some objectives are recognized by common consent, such as those expressed in the Preamble to the Constitution. Others, such as that of establishing peace through-

out the world, may not be so firmly recognized as to make possible a consistent development of policy. As a practical matter, the defining of national objectives beyond those recognized by common consent, usually becomes the responsibility of persons in government, as in the US, of the President and of Members of Congress.

national security. That condition of a nation when it is reasonably free from possible military invasion or attack or free from effective political or economic sabotage, to the end that it remains able to pursue its national objectives without encountering effective outside interference.

National Security Act of 1947. An act of Congress (approved 26 July 1947) that provided a comprehensive program for the security of the United States.

This act established three military departments within the National Military Establishment, i.e., the Department of the Air Force, the Department of the Army, and the Department of the Navy. It likewise established the National Security Council, the CIA, and the National Security Resources Board, and provided means and procedures for coordination and unified effort in problems of national defense.

National Security Agency. (NSA) An agency that functions under the Department of Defense, but serves other agencies of the government concerned with communications security and other technical matters.

National Security Council. (NSC) A council serving as an advisory body to the President on the integration of domestic, foreign, and military policies relating to the national security in order that the armed forces and other departments and agencies of the government may cooperate effectively.

The NSC was established by the National Security Act of 1947.

National Security Medal. (NatSecM) A medal awarded to a person for distinguished achievement or for an outstanding contribution on or after 26 July 1947 in the field of intelligence as related to national security.

This award was authorized by Executive Order 10431 (19 Jan 1953). Any person, without regard to nationality, may be awarded this medal. Recommendations are made through the National Security Council.

National Security Resources Board. (NSRB) A board established by the National Security Act of 1947 'to advise the President concerning the coordination of military, industrial, and civilian mobilization.'

National Service Life Insurance. (NSLI) Life insurance once issued by the US to service personnel in amounts up to $10,000, available on a voluntary basis during the years 1940–1951. See **term insurance.**

national strategy. The art and science of developing and using the political, economic, military, and psychological powers of a nation during peace or war to establish favorable conditions for the attainment of national objectives; a strategy that employs this art and science.

National War College. (NWC) An educational institution established in 1946 at Washington, D.C. to prepare students for high-level policy, command, and staff functions and for the performance of strategic planning duties.

The NWC is open to selected members of the Armed Forces and of certain other government organizations.

national weapons system. The whole of the national military establishment, including personnel, equipment, and weapons of all services, so conceived and built that that arm considered best suited to the delivery of firepower upon a particular enemy is given paramountcy.

If in the present stage of development, the best medium for firepower delivery should be considered to be the air, the national weapons system would be built about the air forces.

Nativ, *n.* An experimental guided missile built by North American for the US Army.

native, *n.* As used in manpower and organization, any civilian employee other than a United States civilian. Hence, **native,** *a.* Cf. **indigenous personnel.**

native national. A person who is a national of a particular country by virtue of having been born within the jurisdiction of that country, and not by virtue of having been naturalized.

NATO (*auth abbr*). 'North Atlantic Treaty Organization.' Pronounced as a word, and often spelled 'Nato.' Used attrib., as in *Nato forces.*

Nato Defense College. (NaDefCol) A college in the École Militaire, Paris, founded under the sponsorship of General D. D. Eisenhower, SHAPE Commander, in November 1951 for training both military and civilian personnel for service in the defense of Nato countries.

NATS (*abbr*). 'Naval Air Transport Service.' *Hist.*

Natter, *n.* [German, 'viper.'] A small, experimental, rocket-propelled and rocket-firing interceptor in development in Germany at the end of WW II.

The Natter was midway between a fighter aircraft and a guided missile, the human pilot being intended to have control only during the actual attack, after which he would bail out. The craft was never used operationally.

natural frequency. The frequency at which a body vibrates, or will vibrate, as determined by the physical characteristics of the body.

natural horizon. The apparent horizon.

Nautical Almanac. In full, **American Nautical Almanac.** An annual publication prepared by the US Naval Observatory, giving the positions of the various celestial bodies used by navigators, times of sunrise, sunset, moonrise, moonset, and other information of interest to navigators at sea. Cf. **Air Almanac.**

nautical mile. A measure of distance equal to approximately 6,080 feet. See **knot,** *n.*

The nautical mile in navigational practice is one minute of a great circle. Because the earth is not a perfect sphere, different distances have been assigned to this measure. AF Regulation 55-16 (12 Nov 1954) gives it at 6,076.10333 feet.

nautical twilight. 1. That part of the twilight period that occurs, for computation purposes, when the sun is between the horizon and a point about 12 degrees below the horizon, the latter measured at the middle of the sun. **2.** The light diffused or reflected during this period.

Nautical twilight on clear nights permits the use of the marine sextant to measure angular altitudes of the moon and stars. See **twilight,** *n.*, and cf. **observational twilight.**

nav (*auth abbr*). **1.** 'Navigate,' 'navigation,' 'navigational,' or 'navigator.' **2.** 'Naval.' **3.** *Capitalized.* 'Navy.'

Navaglobe, *n.* A particular kind of long-distance navigation system using one or more omnidirectional radio ranges with the appropriate airborne equipment to furnish aircraft with automatic azimuth and direction-finding indications in respect to a range station.

Navaho, *n.* A supersonic cruise missile, the SM-64, said to have an operating range of 4,000 miles, powered by two ramjet engines.

After launching, this missile is rocket-boosted to more than 50,000 feet, then continues to 100,000 feet on its own engines.

navaid, *n.* Short for 'navigational aid.'

naval, *a.* Of or pertaining to a navy.

This word is sometimes capitalized, esp. in specific reference to the US Navy.

In combinations, as in *naval aeronautics, naval air arm, naval aircraft, naval aviator, naval force, naval operation.*

naval air. A term for such locutions as 'naval air force,' 'naval aircraft,' etc. Cf. **air,** *n.*, sense 4.

Naval Aircraft Factory. The manufacturing branch of the Naval Air Material Center, located at the US Naval Base Station, Philadelphia, Pennsylvania.

This factory is equipped to build complete aircraft; it designs and manufactures catapults and arresting gear, builds prototypes, and engages in modification and overhaul.

Naval air station. (NAS) A Naval establishment comprising facilities for the operation, maintenance, and supply of either heavier-than-air or lighter-than-air aircraft and including any associated facilities or installations, corresponding to an air base in the AF.

Naval Air Transport Service. (NATS) An organization of the US Navy with a primary mission of air transportation for the Navy. *Hist.* See **Military Air Transport Service.**

naval aviation. 1. The air establishment of a navy. **2.** The activity of flying naval aircraft.

In combinations, as *naval aviation pilot.*

Navar, *n.* [Coined by contraction and combination.] A radar air navigation and control system in which ground radar scanning stations along an airway and in the vicinity of an airport detect aircraft flying in the area, and transmit, by relaying radar equipment, their scope presentations to airborne aircraft.

Navar is used esp. in the congested region around an airport, furnishing continuous navigational information and collision warning to flying aircraft.

navarho, *n.* A long-range radio navigational system, suited esp. to fast-flying jet aircraft.

This word is said to be coined from *navigation, aid,* and the Greek letter *rho;* and is said to be pronounced 'navarow' by those who coined it. By others it is pronounced 'navar'-ho.'

Navascope, *n.* An airborne radarscope used in Navar, indicating the position of the aircraft in which the scope is mounted, and of other aircraft in the vicinity.

Navascreen, *n.* A ground-based electronic apparatus in a Navar system, which receives information from various sources regarding the position of airborne aircraft in its vicinity and displays the received data on a large screen for use by controllers and for relay to the airborne aircraft.

NavCm (*auth abbr*). 'Navigation countermeasures and deception.'

NavCommSta (*abbr*). 'Naval Communication Station.'

NavFE (*auth abbr*). 'Naval Forces Far East.'

navigation, *n.* (nav) *Specif.* Air navigation.

navigational aid. 1. Assistance or help given in navigation. **2.** An aid used in navigation; *specif.*, an air-navigation aid (which see, in both senses).

navigational beacon. Any light, radio, or radar beacon that provides navigational aid to aircraft.

navigational countermeasure. (NavCm) Usually *pl.* Any electronic countermeasure (which see) against navigational aids.

navigational escort. An escort that navigates for the escorted aircraft.

navigational flight. A training flight made to develop proficiency in air navigation.

Navigational Flight Chart. Any one of a series of flight charts for long-range flights, projected on a smaller scale than most flight charts, and designed primarily for use in dead reckoning and celestial navigation.

The scales of these charts are 1:3,000,000, 1:4,000,000, and 1:5,000,000.

navigational instrument. An instrument or device used in air navigation, as a directional gyro, magnetic compass, radio compass, gyro flux-gate compass, air position indicator, absolute altimeter, driftmeter, radio or radar

navigational device, etc. Often called a 'navigational aid' or 'air-navigation aid.'

Certain navigational instruments are also referred to as 'flight instruments.' Cf. **flight instrument.**

navigational planet. A term sometimes applied to Venus, Mars, Jupiter, or Saturn, the four planets commonly used in celestial navigation for obtaining lines of position.

navigation chart. *Specif.* An aeronautical chart.

navigation instrument. A navigational instrument.

navigation light. Any one of the lights mounted on the exterior of an airplane to make its dimensions and position visible at night. Also called a 'position light.'

The navigation lights on an airplane consist of a green light at the right wingtip, a red light at the left wingtip, and one or more white lights prominently located at the tail end of the airplane. This is standard on both military and civil US airplanes. Some lights have both dim and bright intensities and are equipped with flasher units.

navigator, *n.* (nav) **1.** A person who plots and directs the movement of an aircraft or ship from within the aircraft or ship; *specif.*, in the AF, a person who holds an aeronautical rating qualifying him to plot and direct the movements of an aircraft. **2.** The aeronautical rating of such a person. See **aircraft observer.**

navigator-bombardier, *n.* **1.** A person who holds the aeronautical rating of a navigator and bombardier combined. **2.** The rating of this person. See **aircraft observer.**

navigraph, *n.* A name for a particular kind of early driftmeter, which incorporated a pencil and paper connected with the sighting piece so that the aircraft's track could be graphically recorded.

Navion, *n.* A popular name for the L-17 and its nonmilitary counterpart.

navy, *n.* (nav) **1.** The sea forces or the naval establishment of a nation. Sometimes capitalized with reference to a particular national navy. **2.** *Capitalized.* Short for 'United States Navy.'

This word has many attrib. uses in either sense, as in *navy air unit, Navy pilot, navy plane,* etc. See **naval,** *a.*

Navy Cross. A naval decoration awarded for heroism in action against an enemy of the US.

In the order of precedence for US decorations, the Navy Cross is between the Distinguished Service Cross and the Distinguished Service Medal.

NaWAF (*auth abbr*). 'Navy with Air Force.'

NaWAr (*abbr*). 'Navy with Army.'

NB (*abbr*). **1.** 'Naval base.' **2.** *auth.* 'New Brunswick, Canada.'

NBL (*abbr*). 'Night bombardment—long distance,' as formerly used (*circa* 1920) in designating US Army aircraft.

NBS (*abbr*). 'Night bombardment—short distance,' as formerly used (*circa* 1920) in designating US Army aircraft.

nbst (*abbr*). 'Nimbostratus.' See **Ns** (*abbr*).

n/c (*auth abbr*). 'No change.'

NC-4. A Curtiss four-engine flying boat built in 1918, which was the first aircraft to fly across the Atlantic (May 1919).

The NC-4 was flown by US Naval personnel, under the command of Lieutenant Commander Albert Cushing Read (1887–), retired Rear Admiral.

NCD (*auth abbr*). 'Notice of credit due.'

N class. A class of Goodyear dirigibles having a helium capacity of 875,000 cubic feet.

NCO (*auth abbr*). 'Noncommissioned officer.'

NCOIC (*abbr*). 'Noncommissioned officer in charge.'

NCS (*auth abbr*). 'Net control station.'

NCW (*abbr*). 'Not complied with.'

ND (*abbr*). 'Navy Department.'

NDR (*abbr*). 'Normal daily requirement.'

NDRC (*abbr*). 'National Defense Research Committee.'

NEAC (*auth abbr*). 'Northeast Air Command.'

NEAPD (*auth abbr*). 'Northeastern Air Procurement District.'

near miss. The strike of an explosive missile, esp. of an aerial bomb, near but not on the object of attack, and usually close enough to it to cause effective damage.

neatline, *n.* The border line of a chart or map that delimits the graticule.

Nebelwerfer, *n.* [German 'smoke thrower.'] A German ground mobile rocket launcher of WW II, having six chambers fired singly.

nec (*auth abbr*). 'Necessary.'

Nectar (*code*). A formerly authorized word for the letter 'N.' See **Alfa** (*code*).

need-to-know, *n.* A criterion used in security procedures that requires a person requesting classified information to establish his need to know such information in terms of his mission.

neg (*auth abbr*). 'Negative.'

negative, *a.* (neg) **1.** Arbitrarily used in describing certain electrical phenomena: **a.** Having lower electric pressure than that of another point or part taken as reference, and toward which the current flows. Said of a point or part in an electrical circuit, as a plate or pole. **b.** Having more electrons than protons. Said of a particle, a charge, or of electricity. **2.** Having an effect that is opposite in direction to that which is considered positive, as in *negative lift, negative thrust.* Cf. **positive,** *a.*

negative, *adv.* In jargon usage: **a.** Not so. **b.** No.

This usage appears to have originated in communication practice, as in ' "We understand two men are aboard." "Negative." '

negative acceleration. *Medicine.* Footward acceleration. *Obsolescent.*

This term has also been used in the sense 'headward

acceleration.' Because of its ambiguity, the term is being discarded for 'footward acceleration.'

negative displacement. The displacement of a control surface that causes the airfoil either to drop or to move leftward.

To cause a wing to drop, the trailing edge of the aileron is moved upward; to cause a tail to move leftward, the trailing edge of the rudder is moved to the right.

negative film. Exposed and developed film having the lights and shades opposite or negative to the actual lights and shades of the subject.

negative G. A G-force exerted upon the human body as a result of footward acceleration.

negative lift. A force analogous to lift, which when exerted upon an airfoil causes it to go downward, as in the case of an aileron-wing combination moving downward when the trailing edge of the aileron is raised upward. See **lift,** *n.*

negative report. Any report made for the sake of completing the record when the report carries no additional information or data not already reported, or when the report indicates no change in a situation.

negatron, *adv.* No. Used as a distortion of 'negative' (which see). *Jocular.*

NEIAF (*abbr*). 'Netherlands East Indies Air Force.' *Hist.*

Nellis Air Force Base. An AF base at Las Vegas, Nevada, originally known as Las Vegas Air Force Base, renamed for Lieutenant William H. Nellis, a fighter pilot killed over Germany in 1944.

neoprene seal. A synthetic rubber seal used esp. in fuel, oil, or hydraulic line connections.

Neoprene is chosen for this purpose because of its resistance to deterioration from fuel, oil, or the like, and because of its chemical stability and nonflammability.

nephoscope, *n.* An instrument for determining the direction of cloud movement and, when used in conjunction with a timepiece, for determining the speed of such movement.

Neptune, *n.* A popular name for the P2V.

neptunium, *n.* A radioactive element produced by the neutron bombardment of uranium.

The symbol for neptunium is Np; its atomic number is 93, and its atomic weight is 237, with two other isotopes of mass numbers 238 and 239 known. The latter two isotopes decay to form plutonium.

Nesa glass. [A trade name.] A kind of glass coated with a transparent chemical conductor of electricity.

This glass permits electricity to pass over its surface to keep it free of ice.

NET (*auth abbr*). 'Not earlier than.'

net, *n.* **1.** Any organized system of communication services, radar stations, or the like. See **radar net. 2.** A rigging of ropes or twine spread over the bag of certain lighter-than-air aircraft, esp. of a free balloon, which supports the weight of the basket or load and distributes this weight equally over the upper surface of the bag.

net control station. (NCS) A station within a communication network, which enforces circuit discipline in that network.

net fuel. In planning air operations, the fuel load carried by an aircraft, minus a certain percentage allowed for reserve.

net jet thrust. The effective thrust of a jet engine, as measured by subtracting the ram drag from the gross thrust. See **gross thrust** and **ram drag.**

net weight. *Specif.* The gross weight of an airplane less the weight of crew and payload.

The definition of this term may vary in different contexts; however, the term is infrequently used in AF contexts. See **basic weight.**

Neubiberg Air Base. An air base at Munich, Germany, named for a nearby city.

neutral, *n.* **1.** A nation that maintains a position of not participating in an armed conflict; a person, aircraft, or vessel belonging to such a nation. Hence, **neutral,** *a.* **2.** Usually *in neutral* or *at neutral.* The position of any or all of the cockpit controls or control surfaces of an aircraft when there is no positive or negative displacement of the control surfaces about their hinge axes.

A control surface in neutral is in alignment with the surface to which it is attached.

neutral equilibrium. *Meteorology.* A state or condition of the atmosphere such that any vertical air currents present are neither accelerated nor suppressed in their motion.

neutrality, *n.* In international law: **a.** The status of a country that refrains from taking part in a war between other powers. **b.** The condition of immunity given an area, country, or waterway, from invasion or use by belligerent powers.

neutralization, *n.* **1.** The action of rendering a place, force, or nation relatively ineffective, either temporarily or indefinitely, so far as its usefulness to an enemy is concerned. **2.** This action considered as a military objective (which see). **3.** This action considered as one of the broad effects that military forces are capable of bringing about.

neutralize, *v. tr.* **1.** To render an enemy *force, installation, action, operation,* or the like ineffective by military action. **2.** To invest an *area* or *country* with inviolability by belligerents.

In sense 1, to neutralize does not necessarily imply to destroy, as an airfield may be *neutralized* for a short time by cratering the runways. In some contexts, 'neutralize' and 'immobilize' can be used interchangeably. See **neutralization,** *n.*

neutral stability. 1. That condition of an aircraft in which its reactions to a disturbing motion neither increase nor decrease in magnitude.

2. A characteristic of an aircraft that affords it such stability.

For example, in sense 1, an airplane given a certain oscillating movement is in neutral stability if such movement is neither increased nor decreased.

neutron, *n.* A particle which is one of the constituents of an atomic nucleus in most elements, having no electric charge.

Neutrons are released as radiation in the atomic disintegration of certain elements, and because they are uncharged they serve as particles with which to bombard the atomic nuclei of fissionable matter.

neutron bombardment. The bombardment of atomic nuclei by neutrons, esp. so as to produce nuclear fission.

New Castle County Airport. A municipal airport in New Castle County, Delaware, named for the county, at which certain accommodations are provided for USAF units.

next of kin. The person or persons considered by consanguinity, marriage, statute, or court decision to be the closest relative of an individual.

The AF recognizes next of kin, as it pertains to such matters as awards, decorations, and notifications of death, missing, or illness, in a certain order, beginning with wife or husband, and so on down in the order of relationship in accordance with civil law. Under civil law, in respect to inheritances, 'next of kin' does not normally include the wife or husband.

NF (*abbr*). **1.** *auth.* 'Newfoundland.' **2.** 'Noise figure.'

N.F. (*abbr*). 'Night fighter.' *British.*

NFBC (*abbr*). 'Newfoundland Base Command.'

NFC (*auth abbr*). 'Not favorably considered.'

NFR (*auth abbr*). 'No further requirement.'

NG (*auth abbr*). 'National Guard.'

NGB (*auth abbr*). 'National Guard Bureau.'

NGF (*abbr*). 'Naval gunfire.'

NGFT (*abbr*). 'National Guard on field training exercises.'

NGLO (*auth abbr*). 'Naval gunfire liaison officer.'

NGLT (*auth abbr*). 'Naval gunfire liaison team.'

NGNF (*abbr*). 'National Guard not in Federal service.'

NGR (*auth abbr*). 'National Guard Regulations.'

NGUS (*auth abbr*). 'National Guard of the United States.'

NH (*abbr*). **1.** 'Nonhygroscopic.' Attrib., as in *NH powder.* **2.** *auth.* 'New Hampshire.'

ni (*auth abbr*). 'Night.'

Niagara Falls Municipal Airport. A municipal airport near Niagara Falls, New York, named for the city, at which certain accommodations are provided for USAF units.

Nick, *n.* An Allied name for the Japanese Kawasaki Ki 45.

nickel, *n.* A propaganda leaflet. *Slang.*

nickeling mission. In Europe in WW II, an air mission for the purpose of dropping leaflets. *Slang.*

'Nickeling' was adopted as a code word by the British.

Nieuport, *n.* [A French airplane-manufacturing concern, now defunct.] **1.** A popular designation for certain airplanes, esp. WW I airplanes, built by the Nieuport concern. **2.** Used in the names of airplanes: See note.

Nieuport fighter airplanes of WW I included the *Nieuport 11*, *Nieuport 17*, *Nieuport 27*, *Nieuport 28*, and others. The 11, 17, and 27 were closely similar, all being biplanes with V interplane struts and having a lower wing of exceptionally short chord; the 28 was a more conventional biplane. Several models of Nieuport airplanes, particularly the Nieuport 28, were procured and flown by the A.E.F.

night, *n.* **1.** That period of the day when visual operations cannot normally be carried on by sunlight or twilight; the hours of darkness. Sometimes called 'full night.' **2.** In general, the period between sunset and sunrise.

Attrib. in sense 1, as in *night attack*, *night bombardment*, *night flight*, etc.

night bomber. A bomber designed, modified, or used for bombing at night.

In WW II usage, this term ordinarily connoted a slow-flying, lightly-armed bomber carrying a heavier bomb load than the day bomber.

night fighter. A fighter that operates at night, esp. a fighter provided with special equipment for detecting enemy aircraft at night.

British fighters early in WW II were equipped with searchlights to operate as night fighters; later developments introduced radar as a means of locating enemy aircraft. Current aircraft development and production emphasize the more versatile all-weather fighter (which see), rather than the night fighter.

night intruder mission. An intruder mission at night. See **intruder mission.**

night photograph. A photograph taken at night under artificial lighting conditions, as with flares or infrared light.

Nike, *n.* A US Army, rocket-propelled, surface-to-air guided missile, without wings, using booster rockets. *Popular.*

NIL (*code*). 'Equipment not on hand,' in supply usage.

NIM (*abbr*). 'Night intruder mission.'

nimbostratus, *n.* (Ns) An extensive, thick, dark-gray layer of cloud, composed of ice crystals, occurring at altitudes between 6,500 and 20,000 feet, and commonly accompanying precipitation.

ninety-degree approach. An approach for landing in which the airplane makes a 90-degree turn in order to land. Usually written '90-degree approach.'

NIS (*abbr*). **1.** *auth.* 'Not in stock.' **2.** 'National Intelligence Survey.'

Nissen hut. [P. N. *Nissen* (died 1930).] **1.** A half-cylindrical metal structure, similar to the Quonset hut. **2.** A Quonset hut.

nitrocellulose, *n.* Cellulose nitrate.

nitrogen desaturation. Denitrogenation.

nitrogen dilution. The act of using nitrogen to lower the oxygen tension of inspired air and thus produce an alveolar oxygen tension equal to that at a given altitude.

In combination, as *nitrogen-dilution technique.*

nitromethane, *n.* A liquid compound, CH_3NO_2, oily and colorless, used as a rocket monopropellant.

NLD (*auth abbr*). 'Not in line of duty.'

NLF (*auth abbr*). 'Nearest landing field.'

NLG (*auth abbr*). 'Nose landing gear.'

NLO (*abbr*). 'Naval liaison officer.'

NLT (*auth abbr*). 'On or before but not later than.'

NM (*abbr*). 'Nautical mile' or 'nautical miles.'

NME (*abbr*). 'National Military Establishment.'

nmi (*abbr*). 'No middle initial.'

NO (*abbr*). 'Night observation,' as formerly used (*circa* 1920) in designating US Army aircraft.

NOA (*auth abbr*). 'Not otherwise authorized.'

nocost (*auth abbr*). 'This travel is authorized with the understanding that no expense to the government will be involved.'

noctilucent cloud. Any cloud illuminated by the sun from beneath the horizon.

nodal point. A node.

node, *n.* **1.** *Physics.* A line, point, or surface of a vibrating body which is free or relatively free from vibration. **2.** *Electricity* and *electronics.* **a.** A point on a conductor at which there is zero voltage or zero current. **b.** A point in a radio wave or the like where amplitude is zero. **3.** *Photog.* A point where light rays enter or emerge from a photographic lens. Also called a 'nodal point.'

NOE (*auth abbr*). 'Notice of exception.'

no-feathering axis. In a cyclic pitch control system of a helicopter, an axis perpendicular to the swashplate, in relation to which the rotor blades do not change their pitch.

NOFORN (*auth abbr*). 'Special handling required. Not releasable to foreign Nationals.' Used on certain classified materials.

NOIBN (*auth abbr*). 'Not otherwise indexed by name.'

noise, *n.* Unwanted sound or disturbances found in or introduced into a communication system, or appearing on a radarscope.

Crosstalk, grass, and clutter are all forms of noise. Minimum noise is caused by input of power impedance; other noise may be caused by atmospheric conditions, electronic circuit components, etc.

noise figure. *Radio* or *radar.* A figure, stated in decibels, that expresses the ratio of the actual noise output to the theoretical noise output that would result if only input impedance were contributing noise to the receiver.

The higher the noise figure, the less efficient the performance of the receiver.

nolo flight. A term sometimes applied to the flight of a drone aircraft without a human pilot aboard.

nom (*auth abbr*). 'Nominate.'

Nome Field. An AF base at Nome, Alaska, named for the city.

nomen (*auth abbr*). 'Nomenclature.'

nomenclature, *n.* (nomen) A set or system of names or symbols given to items of supply and equipment, to organizations, or to other variously identifiable things as a means of classification and identification.

nominal atomic bomb. Any theoretical atomic bomb similar to those used in WW II, which would release energy roughly equivalent to 20,000 tons of TNT.

nominal burst. The burst of a nominal atomic bomb.

nominate, *v.* (nom) *tr. Specif.* Of action by the President: To name an *officer* or an *official* to the Senate for promotion or appointment.

nonappropriated fund. A fund not appropriated by act of Congress.

A fund used to operate an open mess is an example of a nonappropriated fund.

nonatmospheric control. Any device or system designed or set up to operate a guided rocket missile, rocket craft, or the like outside the atmosphere or in regions where the atmosphere is of such tenuity that it will not affect aerodynamic controls; the control provided by such devices or systems.

Some of the systems used to accomplish nonatmospheric control incorporate vanes or fins directly in the jet stream; others are based on the swivelling or gimballing of the entire rocket motor, or the use of exhaust ports to direct the exhaust in such a manner as to change the course.

nonbattle casualty. A person sick, wounded, missing, or dead through circumstances not directly attributable to the enemy. See **casualty,** *n.*, note.

noncom, *n.* Short for 'noncommissioned officer.' *Colloq.*

noncombat, *a.* **1.** Of persons or organizations: Not normally engaged in, or not assigned to, combat or combat duties. **2.** Of materiel: Not designed for, or not normally employed in, combat. **3.** Of operations or activities: Not carrying out, or not directly forwarding, combat. See **combat,** *n.*

noncombatant, *n.* **1.** A military person who does not ordinarily carry out combat duties. A cook or clerk is a noncombatant in this sense. **2.** A civilian, esp. a civilian not serving in a military organization.

See **combatant,** *n.*, for pronunciation.

noncombat duty. Duty outside a combat area,

or duty not involving actual battle with the enemy. Cf. **combat duty.**

noncombat flying hour. A flying hour not spent in the performance of a combat mission.

noncombat operational ammunition. Ammunition, such as guard ammunition, used for operational purposes other than training or combat. See **guard ammunition.**

noncommissioned officer. (NCO) An officer other than a commissioned or warrant officer; i.e., in the AF, an airman in the grade of staff sergeant, technical sergeant, or master sergeant.

noncommitted transport hours. In the Military Air Transport Service, those flying hours performed by an air transport unit over and above the committed flying hours for the unit. See **committed flying hours.**

noncompetitive appointment. A Civil Service appointment made by special waiving of the normal rules for a particular case, as under authority of Civil Service Rules, an executive order, or a statute.

nonconductor, *n.* Any substance or material that does not conduct an electric current. Cf. **dielectric,** *n.*

nonconstituted unit. A unit not designated by a Department of the Air Force letter, but organized under appropriate authority such as that of a major air command.

noncurrent record. A record which is not required, or only infrequently required, for the conduct of current administrative work.

Noncurrent records include records of inactive or discontinued installations and inactivated or disbanded units.

nondelay fuze. An inertia-type impact fuze that functions quickly, before penetrating or glancing off the target.

A nondelay fuze is distinguished from a delay fuze, but its type of action is inherently slower than that of a superquick fuze.

nondirectional, *a.* Omnidirectional (which see).

nondirectional beacon. A radio beacon transmitting omnidirectional signals, usually serving as a homing beacon (which see).

noneffective, *n.* A person unable to perform his normal military duties because of illness or injury.

noneffective sortie. A sortie that fails to accomplish its intended mission for whatever reason. Cf. **abortive sortie.**

noneg (*auth abbr*). 'Negative replies neither required nor desired.'

nonexpendable, *a.* Of a supply item or piece of equipment: That is not consumed in use and does not lose its identity in use, as a weapon, vehicle, machine, tool, piece of furniture, or instrument.

nonflammable, *a.* Not flammable.

nonflying officer. An officer whose regular duties do not require flying status, esp. an officer without an aeronautical rating.

nonoperational, *a.* Not operational. See **operational,** *a.*, in all senses.

nonoperational attrition. Attrition sustained by an organization during activities not directly connected with its operation. See **operation,** *n.*, sense 1.

For example, attrition in a fighter group occurring during training or administrative flights is considered nonoperational attrition. Likewise attrition because of sickness is nonoperational. See **operational mission.**

nonoperational flying hour. A flying hour spent in activity not directly connected with the operation of an organization or unit, as in flights for combat readiness training or for a nonoperational mission. See **operational mission.**

nonrated, *a.* Not having or not requiring a currently effective aeronautical rating.

A nonrated person may or may not be on flying status.

nonregular officer. Any officer of the USAF who does not have a permanent commission in the Regular Air Force.

nonretractable landing gear. A landing gear that cannot be drawn into, or up against, the aircraft, but instead remains fixed in place at all times. Also called a 'fixed landing gear.'

nonrigid, *n.* Short for 'nonrigid airship.'

nonrigid, *a.* Of lighter-than-air aircraft: Having a gas bag, envelope or skin that is not supported by any framework nor reinforced by stiffening, maintaining its shape by internal pressure only.

nonrigid airship. An airship without supports or framework in its gas bag. Distinguished esp. from semirigid and rigid airships. See prec.

nonstop, *a.* Of a flight: Having no intermediate landings between takeoff and destination. Hence, **nonstop,** *adv.*, as in 'to fly 8,000 miles nonstop.'

non-T/O unit. A unit not authorized by a table of organization, but normally authorized by a unit manning document for personnel available through bulk allotment.

NOPE (*auth abbr*). 'New Orleans Port of Embarkation.'

Nor (*auth abbr*). **1.** 'Nonrated.' **2.** 'North,' used in combination only.

Nord, *n.* A French airplane-manufacturing industry. Used in the names of airplanes.

Nord 1402, a twin-engine amphibian, designed for reconnaissance and rescue; *Nord 1601*, a twin-jet, single-place, research monoplane; *Nord 2501*, a twin-engine, twin-boom transport monoplane.

Norden bombsight. [Named for its developer, C. L. *Norden* (1880–), a US aeronautical

consultant.] A gyroscopically-stabilized synchronizing bombsight used mainly for synchronous bombing but useful for fixed-angle bombing.

Utilizing preset data and manual operation by the bombardier, the Norden bombsight computes the correct dropping angle and, in connection with an automatic pilot or pilot direction indicator, determines the proper course of the aircraft required to maintain the necessary line of sight to the target.

norm (*auth abbr*). 'Normal.'

normal aiming error. In bombing, an aiming error that falls within the boundary for gross errors. See **boundary for gross errors.**

normal axis. The vertical axis of an aircraft. See **axis,** *n.*, note.

normal climb. A climb in an airplane at more than cruising power and less than maximum power, and at an angle which produces the greatest gain in altitude in feet per minute at that particular power designated for the airplane.

The power setting in a normal climb varies with the particular airplane.

normal distribution. A distribution of documents, orders, directives, or the like, normally or usually made unless special circumstances require changes in the distribution.

normal glide. A glide of an airplane at an angle and speed which gives the greatest distance forward for a given loss of altitude.

normal interval. The interval or space between any two persons side by side in a formation, measured by extending the left arm sideways at shoulder height until the fingers just touch the shoulder of the next person in line.

normal landing. A landing of an airplane in which the airplane, at that instant when it loses flying speed, comes into contact with the surface in the manner usual for that airplane.

normal lapse rate. *Meteorology.* The average rate of decrease in temperature with rise in altitude.

The normal lapse rate is 3.3° F decrease per 1,000 feet of altitude, See **standard pressure lapse rate.**

normal loop. The normal inside loop. See **inside loop,** sense 2.

normal power. Normal rated power.

normal rated power. The maximum power or thrust specified for an engine by the manufacturer or by the AF as allowable for continuous operation under specified conditions. Cf. **military rated power.**

normal spin. By specific definition, a spin from which recovery may be made within two revolutions of the airplane. Sometimes called a 'controlled spin.'

A normal spin may begin either accidentally or by intention.

normal stall. A stall of an airplane brought about by a nose-high attitude, i.e., by excessive angle of attack.

A normal stall may or may not be intentional.

north, *n. Specif.* True north (which see).

See also **compass north, grid north, magnetic north.**

North American. [*North American* Aviation, Inc., a US firm.] Used in the names of aircraft, as in *North American B-25, North American Mustang,* etc.

North American airplanes include the F-51, F-82, F-86, and the T-6.

North Atlantic Council. The supreme administrative authority of NATO, composed of representatives of member governments.

Originally made up of the foreign ministers of the member governments, since May 1951 this council includes also the defense and finance ministers at the discretion of the member governments.

North Atlantic Treaty Organization. (NATO) An organization of several nations in a treaty alliance for collective defense and the preservation of peace and security against aggression, organized in 1949.

The signatory nations to the North Atlantic Treaty are the US, Great Britain, France, Canada, Italy, Belgium, Luxemburg, the Netherlands, Norway, Denmark, Portugal, and Iceland. Greece, Turkey, and the Federal Republic of Germany were admitted as member nations after the original ratification of the treaty.

northerly turning error. An error in the indication of an aircraft's magnetic compass caused by the tilting of the indicator when the aircraft, flying in a northerly or southerly direction, banks and turns toward the east or west.

A compass indicator tilted from a level position responds to both the vertical and horizontal components of the earth's magnetic field; therefore it can only be considered to give reliable readings in a level position. See **compass error,** sense 1 and note.

north magnetic pole. The magnetic pole located approximately at 71° N, 96° W, and at about 1,140 nautical miles south of the North Pole. See **magnetic pole.**

Northolt RAF Station. A large RAF station located at Northolt, Middlesex, the airfield of which was formerly used for European and domestic air traffic, but now restricted to RAF use. Also called 'RAF Station, Northolt.'

North Pole. A geographical point on the earth which is one end of the axis about which the earth revolves and which is almost directly beneath the star Polaris.

Northrop, *n.* [*Northrop* Aircraft, Inc.] Used in the names of military aircraft, as in *Northrop Flying Wing, Northrop Black Widow.*

Northrop aircraft include the F-61 and F-89.

north-stabilized PPI. An azimuth-stabilized PPI. See separate entry.

Norton Air Force Base. An AF base at San Bernardino, California, formerly known as San

Bernardino Air Force Base, renamed for Captain Leland F. Norton, killed on a fighter mission over France in 1944.

nose, *n.* **1. a.** The forward point or section of an aircraft, esp. of an airplane's fuselage. Cf. **bow,** *n.* **b.** The foremost point or section of a bomb, guided missile, or the like. **2.** *Radar.* A feature of a radar beam that appears when the beam is radiated in a direction where maximum intensity is manifested. **3.** The leading edge of an airfoil. *Rare.* See **nose rib.**

Attrib. (in sense 1a), as in *nose bay, nose cannon, nose hatch, nose turret, nose wheel,* etc.

In sense 1b, 'nose' is often used in reference to a bomb, as distinguished from the 'point' of a cannon shell. See **nose fuze.**

nose, *v.* **1.** *tr.* **a.** To turn or point the nose of an *aircraft* in a given direction while in flight. Used with the adverbs *down, over,* and *up;* with the prepositions *into* and *through.* **b.** To turn an *aircraft* over on its nose while moving on the ground. Used with *over.* **2.** *intr.* Of an aircraft or of its crew: To point or turn, as in 'we nosed up through the smoke.' Used with *down, over, up,* etc.

nose dive. A steep dive by, or in, an airplane.

nose dock. A special dock (which see, sense 1) used generally for a large airplane to enable the ground personnel to work on the forward part of the airplane.

nose-down, *a.* and *adv.* Of an aircraft: With its nose pointing downward.

nose fuze. A fuze assembled in the nose of a bomb. Cf. **point fuze.**

nose gear. That part of an airplane's landing gear which is located in or at the nose, consisting essentially of a wheel or ski and strut.

nose-gear scissors. A set of torque arms in the nose gear of an airplane. See **torque arms.**

nose hangar. A special hangar or shelter for accommodating only the forward part of an airplane, including the engine nacelles.

The nose hangar also normally incloses a nose dock.

nose-heavy, *a.* Of an airplane: Having a tendency to sink at the nose while in flight. Hence, **nose-heaviness,** *n.* Cf. **bowheavy,** *a.*

nose-high, *a.* and *adv.* With its nose pointing upward while in level flight.

nose-low, *a.* Of an aircraft: Having the nose inclined downward while in level flight.

nose-over, *n.* An act or instance of nosing an airplane over on the ground.

nose rib. A short rib between the front spar and the leading edge of an airfoil. See **false rib.**

Nosmo (*code*). [*N*orden *o*ptics *s*etting, *m*echanized *o*peration.] A particular kind of electronic device attached to certain radar bombing sets to permit more accurate and coordinated bombing.

no strain. An alternate phrase for 'no sweat.' *Slang.*

no sweat. No difficulty at all. *Slang.*

NOTAM (*auth abbr*). 'Notice to airmen.' Pronounced and used as a word.

notice to airmen. (NOTAM) A notice or report containing nonmeteorological information considered essential to the safety and efficiency of flight operations.

Information contained in NOTAMS generally pertains to hazards in the flying or landing of aircraft and to changes in the condition or situation of air-navigation aids or other facilities.

Nouasseur Air Depot. An air depot at Nouasseur, French Morocco, named for the city.

noumenon, *n.* That which is apprehended by rational thought or intuition without the aid of the senses; also something unknowable but having probable theoretical existence.

In certain ways of thinking about them, space and time are noumena, receptacles in which phenomena have being or come to pass. Also, concepts like those of God or the soul are considered to be noumena.

November (*auth code*). A word for the letter 'N.'

no-wind position. An air position. See separate entry.

nozzle, *n.* A duct through which a liquid or gas is directed, designed to increase the velocity of the liquid or gas; *specif.,* a jet nozzle for a jet engine or rocket.

nozzle box. A kind of collector ring surrounding the turbine wheel of a turbosupercharger, containing a series of nozzles through which the exhaust gases from the engine pass to drive the turbine wheel.

nozzle diaphragm. In a turbojet engine, a kind of semipartition separating the combustion chambers from the turbine wheel, consisting of two circular bands one within the other with equally-spaced blades between the bands, forming nozzles through which the gases pass from the combustion chambers to drive the turbine wheel.

nozzle screen. A filter screen installed immediately upstream of a fuel nozzle in a turbojet engine.

NP (*auth abbr*). 'Neuropsychiatry.'

NPO (*auth abbr*). 'Navy Post Office.'

NPOPR (*auth abbr*). 'Not paid on prior rolls.'

NPS (*auth abbr*). 'No prior service.'

N-quadrant, *n.* The northernmost quadrant and its counterpart in an Adcock or loop-type radio range, in which the N-signal is heard. See **Adcock radio range,** note.

NR (*abbr*). 'Expendable nonrecoverable.'

nr (*auth abbr*). 'Number.'

NRA (*auth abbr*). 'No repair action.'
NRFI (*auth abbr*). 'Not ready for issue.'
NRL (*auth abbr*). 'Naval Research Laboratory.'
Ns (*abbr*). 'Nimbostratus.'
ns (*auth abbr*). 'Nonstandard.'
NSA (*auth abbr*). 'National Security Agency.'
NSC (*auth abbr*). 'National Security Council.'
N-scan, *n.* **1.** A scan for presentation on an N-scope. **2.** An N-scope. *Popular.*
N-scope, *n.* A combination of the type K and M scopes.
NSI (*auth abbr*). 'Nonstandard item.'
N-signal, *n.* A dash-dot signal heard either in a bi-signal zone or in an N-quadrant of a radio range. See **Adcock radio range,** esp. note.
NSLI (*auth abbr*). 'National Service Life Insurance.'
NSRB (*auth abbr*). 'National Security Resources Board.'
N-struts, *n.* An N-shaped set of struts.
ntcaval (*auth abbr*). 'Notice of availability.'
ntfy (*auth abbr*). 'Notify.'
NTI (*auth abbr*). 'No travel involved.'
NTIOC (*auth abbr*). 'No travel involved for officer concerned.'
NTL (*auth abbr*). 'No time lost.'
nuclear, *a.* **1.** Of or pertaining to a nucleus, esp. to the nucleus of an atom. **2.** Of or pertaining to the fission or fusion of an atomic nucleus.
nuclear attack. An attack upon a position, a city, or military force with the use of a nuclear bomb, shells, or other missiles.
nuclear bomb. A bomb that releases explosive energy either through nuclear fission or nuclear fusion.

This term is applied to either the atomic bomb or the hydrogen bomb.

nuclear energy. Energy held within the nucleus of an atom, released in part in certain isotopes by the process of fission, or in certain other elements by the process of nuclear fusion; *restrictive,* that part of this energy that is released by fission or fusion.

In nuclear fission, the energy released comes from the atomic nucleus being split, resulting in the emission of nuclear particles, such as neutrons, the alpha particle, or the beta particle. In nuclear fusion, the combining atomic nuclei fail to utilize their entire atomic mass in forming the new nucleus, the unused mass being converted into energy in accordance with the formula, $E = mc^2$, where E is the energy, m the mass, and c the velocity of light (299,796 kilometers per second). E.g., $H^2(2.014741) + H^2(2.014741) \rightarrow He^4(4.003873) + .025609$, the latter amount of atomic mass being the measure of released energy, about .7 percent of the original atomic mass.

nuclear fission. The splitting of an atomic nucleus, as by neutron bombardment.

In an atomic bomb, nuclear fission is carried out so as to release great amounts of energy manifested by thermal radiation, nuclear radiation, and blast. Cf. **critical mass.**

nuclear fusion. The act or process of fusing or uniting the atomic nuclei of an isotope, as those of deuterium, to form other nuclei under the influence of intense heat.

In the nuclear fusion of deuterium into helium, a loss of weight occurs that results in the release of energy. See **nuclear energy,** note.

nuclear parity. A condition that exists when two or more nations have equal strength in the possession of nuclear weapons.
nuclear pile. A nuclear reactor.
nuclear propulsion. Propulsion by means of atomic energy.

Nuclear propulsion utilizes atomic, or nuclear, energy to provide heat, which in turn is converted, in one way or another, to mechanical energy. Instances of this propulsion are in the submarines, the Nautilus and the Sea Wolf.

nuclear radiation. The radiation of neutrons, gamma particles, and other particles from an atomic nucleus, resulting from nuclear fission or from the escape of particles in the process of nuclear fusion.
nuclear reactor. An assembly of radioactive material at critical mass together with certain other materials, used to produce other elements or isotopes or to generate heat.

A nuclear reactor is also called an 'atomic pile,' or 'nuclear pile.' See **pile,** *n.*

nuclear rocket. A rocket propelled by reaction to released nuclear energy.
nuclear warhead. A warhead that contains fissionable or fissionable-fusionable material.
nuclear weapon. A bomb, shell, guided missile, or the like that carries a nuclear warhead.
nucleus, *n.* **1.** The central core around which something is built, as in 'this group was the nucleus for the air force.' **2.** *Physics* and *chemistry.* The core of an atom, containing all of the positive charge of the atom and most of its mass. **3.** *Meteorology.* A condensation nucleus or a sublimation nucleus.
nuisance raid. An air raid to annoy or harass the enemy.
null, *n.* **1.** A condition existing when a minimum signal is received by a radio-receiving set using a directional antenna. See **aural null. 2.** *Cryptography.* A dummy letter or symbol, i.e., one having no meaning in plain text, inserted as a filler in an encrypted message.
number, *n.* (nr) **1.** A numeral used to designate something, as an engine on multiengined airplanes, as in 'engine number 1,' the engine on the left, looking forward. **2.** *By the numbers.* **a.** By count. Used as a command or hortative during drill or exercise. Also said of drilling, exercising, or the like. **b.** Thoroughly; in military fashion. *Jocular.*
numbered air force. An AF unit bearing an assigned number, which is at a level between a

major air command and an air division, composed of the necessary wings or air divisions together with the appropriate technical or service units. Often called an 'air force.' See **unit,** *n.*, sense 1.

A numbered air force is a flexible organization and does not have a fixed pattern, its composition in any particular circumstance being determined by its mission. The specific number of any given air force appears in its title, as in 'Twelfth Air Force.' See **numbered unit.**

numbered unit. Any AF unit that is designated by a number.

Numbered T/O units are assigned their numbers by Hq USAF; numbered non-T/O units are assigned their numbers by major air commands from blocks of numbers allotted them by the Department of the AF. Major air commands and certain air forces are named rather than numbered. See **named air force, numbered air force.**

The numbers of numbered air forces are, in authorized practice, spelled out, but in common practice, often written in Arabic numerals; the numbers of subordinate units are indicated by Arabic numerals. In WW II, Roman numerals were used for the designation of an air service command subordinate to an air force.

nur (*auth abbr*). 'Nurse' or 'nursing.'

nurse, *n.* (nur) *Specif.* An officer in the Air Force qualified as a registered nurse and a member of the Air Force Nurse Corps (which see).

Nurses' Corps. The Air Force Nurse Corps.

nutcracker, *n.* A set of torque arms used in an aircraft's landing gear. *Slang.* See **torque arms.**

nval (*auth abbr*). 'Not available.'

NWC (*auth abbr*). 'National War College.'

NX (*abbr*). 'Nonexpendable.'

nylon, *n.* A parachute. See **silk,** *n.*

NYPE (*auth abbr*). 'New York Port of Embarkation.'

NYPFO (*auth abbr*). 'New York Air Force Procurement Field Office.'

NYR (*abbr*). 'Not yet reported.'

O

O (*letter*). See **Oscar** (*code*). A symbol meaning 'Lockheed Aircraft Corporation (Factory B),' in designations of US Navy aircraft, as in *R5O*.

O (*abbr*). **1.** *auth.* 'Office,' 'officer,' or 'order,' in combinations only, as in *GPO, OD, DO*. **2.** 'Observation,' in aircraft designations. Now *hist.* in the AF. See **R** (*abbr*), sense 1, **VO** (*code*).

'O,' as an abbreviation of 'officer' (sense 1) is combined with numbers to indicate the grade of an officer, as in *O–8*, the grade of major general, lieutenant general, general, Chief of Staff USAF, General of the Air Force, Chairman of the JCS, and the Chief of Staff to the President; *O–7*, the grade of brigadier general; *O–6*, the grade of colonel; *O–5*, the grade of lieutenant colonel; *O–4*, the grade of major; *O–3*, the grade of captain; *O–2*, the grade of first lieutenant; *O–1*, the grade of second lieutenant.

O (*code prefix*). 'Male officer' when used with a service number as in 'O921702.' Used in the Army and historically in the AAF. Cf. **A** (*code suffix*). **AO** (*code prefix*).

O-47. A three-place, midwing, observation monoplane, developed by North American and used in the 1930's.

O-52. A two-place, high-wing, observation monoplane, developed by Curtiss, and used in early WW II. Popularly called the 'Owl.'

OA (*auth abbr*). 'On or about.' Often written **o/a** (*abbr*).

OA-10. The AAF designation for the PBY-5A.

OA&S (*abbr*). 'Other Arms and Services.'

oak-leaf cluster. (OLC) A small emblem consisting chiefly of a number of bronze or silver oak leaves bunched together, representing an additional award or awards of the same kind.

See **bronze oak-leaf cluster, silver oak-leaf cluster.**

O and R (*abbr*). 'Overhaul and repair.'

OAR (*auth abbr*). 'Organized Air Reserve.'

OAT (*abbr*). 'Outside air temperature.'

OAT_c or *OAT(C)*, 'corrected OAT'; OAT_i or *OAT(I)*, 'indicated OAT.'

oath, *n. Specif.* A pledge to bear faith and allegiance to the US and to serve faithfully in a particular military service or office.

Hence, *oath of allegiance, oath of enlistment, oath of office*, etc.

OB (*auth abbr*). 'Order of battle.'

ob (*auth abbr*). 'Obsolete.'

OBI (*abbr*). 'Omnibearing indicator.'

obj (*auth abbr*). 'Object' or 'objective.'

object, *n.* (obj) **1.** A thing external in space that may be noted by the sense of sight or the sense of touch; also a conception in physical terms taken note of by the mind. **2.** That which is sought out; an objective.

object class. A category of objects used in object classification.

object classification. In fiscal usage, the classification of an obligation, expenditure, or disbursement in terms of the services received or the articles obtained, rather than in terms of the purposes served or the activities carried out.

objective, *n.* (obj) **1.** A goal to be attained which, when defined and understood, gives direction to an operation or a series of operations. Sometimes used in such phrases as 'national objectives,' or 'strategic objective.' **2.** *Specif.* A place to be reached, esp. a target or target area, or destination. Attrib., as in *objective area, objective folder*, etc. See **military objective,** note. **3.** A principle of war embodying the thesis that success in war or battle requires that the goal to be achieved should actually guide and determine every action taken in the conduct of the war or battle. **4.** A somewhat emphatic term for 'purpose.' *Colloq.*

In sense 1, the objective is defined either correctly or mistakenly, in terms of the nation's or commander's desires and realistic needs, tempered by the facts of capability. In a given situation major and minor objectives may be entertained together, and the guidance that each gives to the action is determined by consideration of alternatives, capabilities, and strategy. Cf. **strategy,** *n.*

objective folder. An air objective folder.

object of interest. An object reflected on a radar screen in which interest attaches. See **background,** *n.*, sense 2, **radar target.**

object of search. *Radar.* An object of interest being searched for.

obl (*auth abbr*). 'Oblique.'

oblg (*auth abbr*). 'Obligate' or 'obligation.'

obligation, *n.* (oblg) **1.** A commitment to pay. **2.** The action of incurring such a commitment. **3.** In fiscal usage, the monetary amount of any transaction for which an appropriation or fund has been legally reserved, as for an order placed, a contract awarded, or service received.

An *obligation incurred* is an uncancelled obligation, either liquidated or unliquidated, undertaken during a designated period.

obligation authority. *Specif.* Authority to incur a specified monetary obligation in anticipation of funds available from a resource authorized by law; the instrument that gives this authority.

oblique, *n.* (obl) An oblique aerial photograph.

In AF usage, 'oblique' rimes with 'like.'

oblique aerial photograph. An aerial photograph of the earth's surface taken with the camera axis at an oblique angle to the plane of the horizon.

See **high-oblique photograph, low-oblique photograph.**

oblique approach chart. A target chart showing a perspective view of a target and target area from the air at a specified distance on a given heading, used in locating and identifying the target.

oblique Mercator. A transverse Mercator the base line forming an oblique angle with the equator.

oblique shock wave. A kind of shock wave forming an oblique angle with the line of flight greater than that of the mach wave.

The velocity of air passing through the oblique shock wave drops more than the theoretical flow that passes through the mach wave.

Oboe, *n.* A radar navigation and blind-bombing system using two ground stations measuring distance to a radar beacon carried by an aircraft.

In Oboe, the course flown by the navigating aircraft is circular. The ground station at the center of the circle is designated the 'cat' station; the circle passes through the target or destination at a predetermined range from the 'mouse' station. Communication signals sent over the system instruct the pilot the course to fly, and the bombardier when to drop his bombs. This system was widely employed in Europe during WW II.

Oboe (*code*). A word formerly authorized for the letter 'O.' See **Able** (*code*).

OBS (*abbr*). 'Omnibearing selector.'

obs (*auth abbr*). 'Obstacle.'

obs. (*abbr*). 'Obsolete.' See **ob** (*auth abbr*).

observation, *n.* (obsn) **1.** The act or activity of observing, esp. from the air, anything of interest on the ground, such as friendly artillery fire, enemy activity, or enemy terrain. See note. **2.** In air navigation, the act of observing a celestial body to determine its angular altitude. **3.** Short for 'observation aviation,' 'observation units,' etc.

In sense 1, 'observation' was used advisedly between 1936 and 1943 to suggest that the activity was for surface forces rather than for air forces. Thus the attrib. uses, such as *observation airplane, observation balloon, observation flight,* etc., may suggest, in certain contexts, activity for ground forces. In 1943, 'reconnaissance' replaced 'observation' in the AAF when used in reference to observation activity for the ground forces, esp. in the designations of aircraft and units. 'Reconnaissance' had already been used in reference to activities conducted for air force operations. See **O** (*abbr*), sense 2.

observational twilight. That part of the twilight period during which the horizon may be observed as a sharply defined line, and during which the navigational stars may be seen; the light diffused during this period.

For computation purposes, this twilight begins or ends when the middle of the sun is at a point about 10 degrees below the horizon. See **twilight,** *n.,* and cf. **nautical twilight.**

observation aviation. A branch of aviation concerned with observation esp. (historically) for ground forces.

observation battalion. An Army air battalion used for observation.

observation error. In air navigation, any of certain errors inherent in the sextant observation of a celestial body, for which corrections must be applied to obtain the correct altitude of the body. See **observed altitude.**

See **accelération error, coriolis error, dip,** *n.,* **index error, parallax,** *n.,* **refraction,** *n.,* **semidiameter,** *n.*

observation post. A post on the surface established for observation, as for the observation of flying aircraft in an aircraft control and warning system, or for the observation of friendly and enemy troops in the field.

observation squadron. Before 1943, in the Air Service of WW I, the Air Corps, and the AAF, an aviation squadron that observed primarily for ground units. Cf. **balloon squadron.**

After 1943, the reconnaissance squadron observed for both ground and air units.

observe, *v.* **1.** *intr.* To look out for and take notice of something, esp. in connection with the duties of an observer. **2.** *tr.* To watch and take notice of *artillery fire, enemy movements,* or the like.

observed altitude. The sextant altitude with corrections applied for observation errors.

The code or symbol for observed altitude is 'Ho.'

observer, *n.* (obsr) A person who observes in one way or another. In specific senses: **1.** An aircraft observer (which see). **2.** An air observer, forward observer, ground observer, weather observer, or the like. See separate entries. **3.** A person who makes celestial or other navigational observations in the process of air navigation. **4.** A person allowed to sit in, watch and listen, and sometimes, if invited, to speak, at a conference or other gathering, but not to participate in any decision or official act of the conference.

Historically, the observer in military operations has been essentially a person who was advantageously placed to overlook the battlefield, either from a high point on the ground or from a balloon. His normal function has been to note the accuracy and effects of friendly artillery fire, and to spy upon enemy positions and movements. By the time of WW I, the airplane brought him over and beyond enemy lines, giving emphasis to his duties of reconnoitering the enemy. In performing these duties, he was normally an extra man in an airplane, and was called a 'combat observer.' In WW II, the rating of combat observer was separately retained, but the bombardier and navigator

were also rated as observers. Since WW II, the term tends to be dissociated from the action of observing, and is indifferently applied to a gunner, bombardier, navigator, radarman, etc. See **aircraft observer.**

The observer (sense 4) may attend as a private individual or as the representative of some organization. Cf. **Air Force representative.**

Observer Corps. *Specif.* Short for 'Ground Observer Corps.'

observer-pilot, *n.* **1.** A rating formerly given to a person qualified both as an observer and a pilot. **2.** A person holding this rating.

obsn (*auth abbr*). 'Observation.'

obsolescence, *n.* **1.** The condition or process of becoming obsolete. **2.** In accounting, the decrease in value of tangible property due to economic, social, technological, statutory, or other like changes. Cf. **depreciation,** *n.*

obsolescent, *a.* Becoming obsolete.

obsolete, *a.* (ob) **1.** Of a plan, regulation, mode of action, and the like: No longer in use or in force; no longer valid; outdated. **2.** Of aircraft or other materiel: No longer satisfactory for the purpose for which obtained due to improvements or revised requirements.

In sense 2, obsolete aircraft, in particular, may be satisfactory for purposes other than those for which originally intended, as an obsolete bomber may be satisfactory for air rescue.

obsr (*auth abbr*). 'Observe' or 'observer.'

obstacle course. A course on the ground on which fences, ditches, hurdles, and other obstacles are set up, used for physical conditioning.

obstruction, *n. Specif.* A building, mountain, or other object rising up far enough above the surrounding surface to create a flying hazard.

obstruction balloon. A barrage balloon.

obstruction light. A light on or near an obstruction to warn of the presence of the obstruction.

obsy (*auth abbr*). 'Observatory.'

obturation, *n. Ordnance.* The sealing of a chamber in a gun or fuze to prevent the escape of gas in a particular direction.

OC (*auth abbr*). **1.** 'Officer candidate.' **2.** 'Object class.'

O.C. (*abbr*). **1.** 'Officer commanding.' **2.** 'Open cockpit.'

Chiefly *British* in both senses.

OCAC (*abbr*). 'Office, Chief of Air Corps.' *Hist.*

OCAFF (*auth abbr*). 'Office, Chief of Army Field Forces.'

OCAMA (*auth abbr*). 'Oklahoma City Air Materiel Area.'

OC&R (*abbr*). 'Operations, commitments, and requirements.'

occ (*auth abbr*). 'Occupation.'

occluded front. *Meteorology.* **1.** A line on the earth's surface between the two cold air masses involved in an occlusion; a representation of this line on a map. Cf. **upper front. 2.** An occlusion.

occlusion, *n. Meteorology.* **1.** A frontal situation, (a) in which a cold air mass, having run a wedge under a warm air mass, is itself underrun at its front by a colder air mass, or (b) in which a cold air mass overruns a colder air mass displacing upward a warm air mass—in either case, the warm air being occluded or shut off from the earth's surface. **2.** The act or process by which this situation develops.

occult light. A light beacon on the surface used esp. in sea navigation, distinguished by a flashing light that goes into sudden and total eclipse at regular intervals, the duration of the eclipse always being shorter than the duration of the lighted periods.

occupational area. A grouping of two or more career fields having an occupational or functional relationship.

occupational specialty. Short for 'military occupational specialty.' Popularly applied to an Air Force Specialty.

occupation currency. Currency issued by an occupying power and declared legal tender for the occupied territory.

Occupation currency may or may not be identical to invasion currency for a given country. It is of distinctive design, different from the usual currency of the occupied country, or from that of the occupying country, although the currency may be denominated in the monetary unit of either country. Cf. **invasion currency.**

occupied territory. A territory held by foreign armed forces.

OCD (*abbr*). 'Office of Civil Defense.'

OCE (*auth abbr*). 'Officer conducting the exercise.'

o'clock. See **clock,** *n.*

OCLUS (*abbr*). 'Outside continental limits United States.' See **OConUS** (*auth abbr*).

OCMH (*auth abbr*). 'Office of the Chief of Military History.' *Army.*

OCofF (*auth abbr*). 'Office of the Chief of Finance.'

OComS (*auth abbr*). 'Office of Community Services.'

OConUS (*auth abbr*). 'Outside Continental US.'

OCS (*auth abbr*). 'Officer candidate school.'

ocst (*auth abbr*). 'Overcast.'

Oct (*auth abbr*). 'October.'

octane, *n.* **1.** Any of several isomeric hydrocarbons (C_8H_{18}) of the methane series; *specif.*, normal octane, a colorless liquid obtained in refining petroleum. **2.** Short for 'iso-octane.' **3.** A fuel containing an octane, esp. iso-octane.

octane number. A number assigned to a liquid fuel to designate its relative antiknock value in a reciprocating engine.

The octane number is the percentage by number of the iso-octane in a given fuel mixture of iso-octane and

normal heptane. The higher the octane number, the more compression the fuel can withstand without detonation.

The development of fuels superior in antiknock qualities to iso-octane have made the octane number system unsatisfactory for many aviation fuels. AF fuels are now designated by grades or performance numbers, such as 73, 87, 100/130, etc. See **performance number.**

octane rating. The rating of a liquid fuel indicated by its octane number; an octane number.

octant, *n.* An instrument similar to a sextant, but constructed with its arc graduated in degrees for an eighth of a circle. Frequently called a 'sextant.'

Octave Chanute Award. An award presented annually since 1940 by the Institute of the Aeronautical Sciences 'for a notable contribution made by a pilot to the aeronautical sciences.'

OD (*abbr*). **1.** *auth.* 'Officer of the day.' **2.** *auth.* 'Olive drab.' Hence, *OD's,* a uniform made of olive drab wool material. Cf. **Air Force blue,** sense 2. **3.** 'Outside diameter.'

O-day (*abbr*). 'Organization day.'

ODM (*auth abbr*). 'Office of Defense Mobilization.'

odograph, *n.* **1.** A device that measures distance traveled. **2.** An instrument used esp. on ships at sea to record on a chart the course followed.

ODT (*abbr*). 'Office of Defense Transportation.' *Hist.*

O.E.D. (*abbr*). 'The Oxford English Dictionary.'

OEL (*auth abbr*). 'Organizational equipment list.' *Hist.*

OER (*abbr*). 'Officers' evaluation report.'

OERL (*abbr*). 'Officer Education Research Laboratory.'

Oerlikon, *n.* [*Oerlikon,* Switzerland.] Any of certain Swiss-developed, 20 mm, automatic aircraft or antiaircraft cannon, shooting greased ammunition.

These cannon have been used by various nations, including the US, Great Britain, Germany, and Japan.

OFACS (*abbr*). 'Overseas Foreign Aeronautical Communications Station.'

ofc (*auth abbr*). 'Office.'

off (*auth abbr*). 'Officer.' See **O** (*abbr*), sense 1.

off-airway area. Any navigable airspace outside of an established airway. Also **off-airways area.**

off-base, *a.* Outside of a military base. Said of military activities, property, etc., as in *off-base housing, off-base installation, off-base patrol.*

off-center PPI. A PPI scope in which the sweep rotates about a point that may be offset from the center of the scope, or entirely off the scope, allowing expansion of a portion of the represented area and thus better resolution. Also called an 'offset PPI.'

off-duty, *a.* **1.** Of a person: Not on duty; absent from duty, as authorized by proper authority. See **duty,** *n.,* sense 4a; **duty hour. 2.** Done or occurring during or otherwise pertaining to the period of time away from duty, as in *off-duty entertainment, off-duty hour, off-duty privilege.*

offensive, *n.* **1.** The state or condition of a person or military force which is attacking; an attitude of attack. Used esp. in phrases, as in 'to be on the offensive,' 'to regain the offensive,' 'to take the offensive,' etc. Cf. **initiative,** *n.* **2.** An attack, esp. a large-scale or sustained attack, as in 'the offensive began at dawn.' **3.** A principle of war embodying the thesis that success in war requires offensive action, esp. in reference to the use of the air arm to achieve air superiority and to exploit the advantages of initiative, movement, and surprise.

offensive, *a.* In special uses: See note.

1. Of actions: That carry the attack to the enemy, as in *offensive air mission, offensive gunnery, offensive operation, offensive patrol,* etc. **2.** Of aircraft: Designed or used for offense, as opposed to defense, as in *offensive fighter.* **3.** Of forces, organizations, or the like: Established or used to carry out offense, as in *offensive air arm, offensive air unit,* etc. **4.** Of airborne equipment or weapons: Used for offense, as in *offensive armament, offensive bomb load,* etc. Cf. **defensive,** *a.*

offensive air. An air unit or force designated for, or engaged in, offensive action in the air.

offensive grenade. A grenade having a light container, designed to kill or injure by blast and concussion. Distinguished esp. from a fragmentation grenade.

The offensive grenade is so called because the thrower, being out of range of the grenade's effects, can continue to advance as he throws, and does not have to take cover.

office, *n.* (ofc) **1.** *General.* **a.** A room, building, or the like in which a person or a group of persons conducts work of an administrative, clerical or professional character. **b.** A group of people, an activity, or an organization identified by reference to the office in or out of which they work. **2.** *Specif.* A commonly used designation for certain staff organizations or their activities as in 'Adjutant General's Office,' or 'Secretary's Office.' **3.** A pilot's cockpit or compartment. *Slang.*

In WW II, 'office' was used in the official names of several special emergency agencies, as in 'Office of War Information,' 'Office of Civilian Defense,' 'Office of Economic Stabilization.'

office instruction. Instruction in the operation of a particular office; a written directive setting forth instructions for the operation of an office. *Capitalized* in reference to a specific directive.

office of information services. An office within the staff structure of a command, in which all matters connected with disseminating information both within and outside the Air Force is examined and appraised in order to advise and assist the commander and his staff in establishing

and carrying out policies consistent with the public interest.

The OIS in any given command coordinates its activity with the OIS of the Secretary of the Air Force, and is guided by the policies and practices established by the Secretary. Each office provides three services: internal information, external information, and AF history.

office of record. 1. The office that keeps the records on the possession, transfer, and destruction of registered documents. **2.** An office that maintains a copy file on current military correspondence, reports, and the like for the organization concerned.

Office of Scientific Research and Development. A WW II emergency agency created by executive order, 28 June 1941, to assure adequate provision for research on scientific and medical problems relating to the national defense.

Office of Special Investigations. (OSI) An activity under the Inspector General, USAF, providing a centrally directed criminal, counterintelligence, and special investigative service for all AF activities.

officer, *n.* (off) **1.** One who holds an office or position of authority or command, esp. a commissioned officer, warrant officer, or noncommissioned officer. **2.** *Restrictive.* **a.** A commissioned officer. **b.** A commissioned officer or warrant officer, as distinguished esp. from a noncommissioned officer or other enlisted person. See **O** (*abbr*), sense 1.

Unless context indicates the contrary, the unqualified word 'officer' does not include the noncommissioned officer.

'Officer' is frequently preceded by an attrib. designating the specialty or duty of the officer, or the organization to which he belongs, as in *equipment officer, chemical warfare officer, liaison officer, supply officer, WAF officer.*

officer candidate. (OC) A person undergoing training, esp. rigorous, short-term training, to qualify for an officer's commission.

Attrib., as in *officer candidate school* (OCS), *officer candidate test.*

officer of the day. (OD) A duty officer representing the commander, and responsible, usually for a period of twenty-four hours, for the security of a base or other installation or of a particular activity within a base. See note.

The OD at a given base is responsible for the proper performance of duty by the main guard and of other guards when so directed. He is charged with the execution of all orders of the commander relating to the interior guard. In addition, certain activities on a base, as a hospital, also appoint officers of the day as duty officers responsible for order and security for the particular activity.

officer of the guard. (OG) A commissioned officer assigned as commander of the guard for a given base.

officers' club. An officers' open mess. *Popular.* See **open mess.**

officers' mess. 1. A mess set up for officers. **2.** *Specif.* An officers' open mess. Often called an 'officers' club.' See **open mess.**

officers' quarters. Quarters for commissioned and warrant officers.

'Officers' quarters' is often preceded by an adjective or attrib., as in *bachelor officers' quarters* (BOQ), *married officers' quarters* (MOQ), *visiting officers' quarters* (VOQ).

officer training school. 1. A school for giving basic military training to commissioned officers. **2.** Loosely, an officer candidate school.

official, *a.* (ofl) Authorized, necessary, or done by competent military, naval, or other government authority, esp. AF authority; necessary in the conduct of authorized government affairs, esp. AF affairs.

off limits. Used predicatively. Of a place: Not to be entered, patronized, or used, as in 'the district was off limits to all military personnel,' or 'the power plant was placed off limits to all except electricians.'

offload, *v. tr.* and *intr.* To unload.

offset bombing. Any bombing procedure which employs a reference or aiming point other than the actual target.

This type of bombing is employed when the target cannot be seen or is a poor reference point. When employed, the compensating factors are either set into the bombsight or computed by the bombardier.

offset-course computer. A course-line computer.

offset PPI. An off-center PPI. See separate entry.

offshore procurement. Procurement from a foreign country.

off-the-shelf, *a.* Suitable for military use without major or extensive modification. Said of commercial aircraft or other commercial products.

Offutt Air Force Base. An AF base at Omaha, Nebraska, named for Lieutenant Jarvis J. Offutt, killed in fighter action in France, 1918.

ofl (*auth abbr*). 'Official.'

Oflag, *n.* [German *Offizierlager.*] A German prisoner-of-war camp for officers.

OG (*auth abbr*). 'Officer of the guard.'

ogive, *n.* [Pronounced 'oh jive.'] The curved or tapered front of a projectile.

With a bullet, shell, bomb, or other projectile having a fuze forming the nose, the ogive is included between a point where the projectile begins to curve or taper and a point on the line where fuze and body meet; in other types of projectiles, the nose of the projectile is included as a part of the ogive. See **false ogive.**

O'Hare International Airport. An airport at Chicago, Illinois, which provides certain facilities for the USAF, named for Lieutenant Commander Edward H. O'Hare, Navy pilot killed in action near Tarawa in 1943.

OIC (*auth abbr*). 'Officer in charge.'

OICC (*auth abbr*). 'Officer in charge of construction.'

oil bomb. A napalm bomb.

oil burner. *Specif.* A jet engine or jet airplane using kerosene or other like fuel, as distinguished from an engine that uses gasoline. *Popular.*

oilcanning, *n.* A bulging outward of the metal skin of an aircraft.

Oilcanning occurs when the skin is insufficiently supported. Also called 'panting' in reference to the in-and-out movement of the skin.

oil cooler. A kind of radiator in the lubrication system of an aircraft's power plant for cooling the lubricating oil. See **heat exchanger,** sense 2.

oil dilution. The act or process of diluting the oil in an aircraft's power plant with gasoline, to make for easier starting in cold weather.

In combination, as *oil-dilution method, oil-dilution system.*

oil dipstick. A dipstick (which see) for measuring oil in tanks or similar containers.

oil pump. A pump that maintains the pressure of, and circulates, the oil in the lubrication system of an aircraft's power plant.

oil slick. A film of oil floating on top of a body of water.

oil tank. *Specif.* A reservoir or tank for oil in the lubrication system of an aircraft's power plant.

oil-tank vent. A vent leading gases from an oil tank to an engine, or from an engine to an oil tank.

An oil-tank vent may lead from the oil tank to the engine, where a common vent relieves the gases both from the oil tank and from the engine; or an oil-tank vent may lead from the engine to the oil tank, thence through a common vent to the open.

oil-temperature regulator. A device consisting of an oil cooler and an automatic control valve that regulates the temperature of the oil in an aircraft's lubrication system.

The control valve in the oil-temperature regulator operates either to conduct the oil through the oil cooler or to pass it on to the tank without cooling.

OIR (*auth abbr*). 'Office of Industrial Relations.'

OIS (*abbr*). 'Office of Information Services.'

OJT (*auth abbr*). 'On-the-job training.'

In combinations, as *OJT advisory service, OJT program.*

Oklahoma City Air Materiel Area. (OCAMA) An air materiel area with headquarters at Oklahoma City, Oklahoma.

OL (*auth abbr*). 'Operating location.'

OLC (*auth abbr*). 'Oak-leaf cluster.'

old head. A person who has been around a long time. *Slang.*

old man. Sometimes *capitalized.* The commander. *Slang.*

oleo, *n.* Short for 'oleo strut.'

oleo gear. A kind of hydraulic shock-absorbing apparatus used in the landing gear of many types of aircraft. See **oleo strut.**

oleo leg. An oleo strut. *Popular.*

oleo strut. A special kind of shock-absorbing strut used in certain landing gear, depending essentially on a hydraulic action.

The oleo strut is a telescoping strut consisting of a hollow piston, which, upon compression, forces a fluid through a small orifice in the piston, causing the piston to travel slowly so as to cushion the shock. Most types of oleo struts employ, in addition to the hydraulic device, compressed air, coil springs, or both.

OLF (*auth abbr*). 'Outlying field.'

oligochromemia, *n. Medicine.* A condition of insufficient hemoglobin in the blood.

olive drab. (OD) **1.** A standard olive-green color used to signify the US Army. **2.** A material of this color used in Army uniforms.

Olmsted Air Force Base. An AF base at Middletown, Pennsylvania, originally known as Middletown Air Depot, renamed for Lieutenant Robert S. Olmsted, a balloon pilot killed in Belgium, 1923.

OM (*auth abbr*). **1.** 'Occupation Medal,' as used with special reference to Germany or Japan. **2.** 'Officer messenger.'

OMA (*auth abbr*). 'Office of Military Assistance.'

OMB (*abbr*). 'Outer marker beacon.'

OMGUS (*auth abbr*). 'Office of Military Government, United States.'

omnibearing, *n.* A bearing toward an omnidirectional radio-range station, as given to an aircraft by the omnidirectional radio range.

omnibearing indicator. An instrument that continually indicates a bearing toward a VHF omnidirectional radio-range station.

omnibearing selector. An instrument by which a pilot selects an omnibearing from a VHF omnidirectional radio-range station, and which indicates whether he is flying toward or away from the station.

omnidirectional, *a.* Of a radio transmitter or antenna: Sending, radiating, or receiving equally well in all directions.

omnidirectional radio range. A kind of radio range giving bearings in all directions from its transmitter; also, the equipment used to create such a range.

A person in an aircraft within range of an omnidirectional radio range can determine his bearing from the range transmitter irrespective of the location or heading of the aircraft. See **phase-shift omnidirectional radio range, VHF** (*auth abbr*).

omnidirectional range station. The transmitting station of an omnidirectional radio range.

omnirange, *n.* Short for 'omnidirectional radio range.'

on, *prep.* See note.

In the days when airplanes were open and without cockpits, the expression was 'to fly *on* his machine'; today we would say 'to fly *in* his airplane.'

on call. The status of a call mission pending completion of the briefing. See **call mission.**

on-call mission. A call mission.

on-course signal. A signal, esp. a monotone aural signal, indicating that the aircraft in which it is received is on course, following a guiding radio beam. See **course,** *n.*, note.

one, *n.* **1.** *One per rev,* a noticeable quiver or shake of a helicopter or of its control stick with each revolution of the main rotor. **2.** As used in the VIP code (written '1'), a number indicating that a general will arrive.

one atmosphere. The pressure of the atmosphere at sea level, used as a unit of measure.

This pressure can be expressed in different ways: See **atmospheric pressure.**

one-eighty, *n.* **1.** Short for 'one-hundred-and-eighty-degree turn.' **2.** A reversal of stand, policy, or the like, as in 'he did a one-eighty and agreed with the commander.' *Colloq.*

one-eighty-degree approach. An approach for a landing during which the airplane makes two 90-degree turns between the beginning of the approach and the landing. Usually written '180-degree approach.'

one-hundred-and-eighty-degree turn. A turn in which an aircraft or other object reverses its heading. Often written '180-degree turn.'

one-way, *a.* Without return; in one direction only.

In combinations, as *one-way mission, one-way tactics.*

one-way trunk. A telephone trunk line for transmission in one direction only.

on hand. A term used in inventory procedure to denote property physically held by the reporting activity.

ONI (*auth abbr*). 'Office of Naval Intelligence.'

onion, *n.* Short for 'flaming onion.'

on limits. Used predicatively. **1.** Available or open for use. Said of places. **2.** Of persons: In a place declared on limits.

onload, *v.* **1.** *tr.* To load *cargo, passengers,* or *mail* onto a vehicle, as an aircraft. **2.** *intr.* To load.

ONR (*auth abbr*). 'Office of Naval Research.'

on-the-job training. (OJT) The training received by an individual in actual performance of his duties or while he is performing assigned duties.

OOAMA (*auth abbr*). 'Ogden Air Materiel Area.'

OP (*auth abbr*). 'Observation post.'

op (*abbr*). **1.** *auth.* 'Operate.' **2.** 'Opinion.'

opacifier, *n.* A substance used to treat a solid rocket propellant so as to absorb light and heat and thus protect the propellant from deterioration until ready for use.

OpD (*abbr*). 'Operations Division.' Primarily *hist.*

open, *v.* **1.** *tr.* To cause a *parachute* to inflate and spread out by air caught under its canopy; to deploy a *parachute.* Also *intr.*, as in 'the parachute opens.' Cf. **deploy,** *v.*, sense 3. **2.** *To open the throttle,* to advance the throttle.

In sense 1, 'open' is more commonly used than 'deploy,' but the two words have slight differences in connotation.

open bomb. In intelligence usage, an undisguised or unconcealed sabotage bomb, distinguished esp. from an infernal machine.

open circuit. A circuit in which current cannot flow, or in which continuity is interrupted.

open city. A city of a belligerent power declared by that power to be noncombatant, and made so in order to avoid bombing or shelling from any of the combatant forces.

open cockpit. An exposed, uncovered cockpit.

open column. A column of motor vehicles with considerable open space between the vehicles.

open-cycle turbine. A gas turbine in which the working gas is drawn in from the open, heated within the circulating system by the combustion of fuel, and discharged from the system after having completed its work. Cf. **closed-cycle turbine.**

open mess. An association of military (and sometimes civilian) persons for messing and recreational purposes, organized and operated with nonappropriated funds under the provisions of official service regulations. Often called a 'club.'

An open mess may be set up either for officers and warrant officers (*officers' open mess*), for aviation cadets, or for noncommissioned officers. Civilians are sometimes included in the membership of an officers' open mess, usually in a nonvoting status.

open sight. A rear gunsight having a notch.

Distinguished esp. from a peep sight.

open stick. A stick of bombs in which the bombs are released singly. Cf. **close stick, intervalometer,** *n.*, **salvo,** *n.*, note.

open storage. The storage of certain materiel outdoors; the materiel so stored.

open work order. A blanket work order.

operating, *a.* **1.** Of an establishment, unit, or other organization: That carries out an operation delegated by a higher headquarters, as in 'the Tenth Air Force was an operating air force of General Stratemeyer's command.' See **operating base. 2.** Of a level of command: From which an operation is carried out, as in 'one must go to the operating levels to see how the thing works.' **3.** Of equipment or an installation: Actually in operation, as in 'operating bases during the week were limited to three.' **4.** Of a function: Contributing to a unit's operation as a whole, as in 'the operating function of this unit is to strike at enemy targets.' See **function,** *n.*, sense 2. **5.** Of conditions or situations: In which operations are possible or are actually carried out, as in 'operating altitude.' **6.** Of persons: **a.** Who operate a piece of equipment, as in 'oper-

ating crew.' **b.** Who carry out the details of an operation, as in 'operating personnel had to be sacrificed to provide for his headquarters administration.'

'Operating' and 'operational' are often used synonymously, as in *operating altitude, operating ceiling, operating unit*, etc., but their usage is not coextensive. Cf. **operational,** *a.*

'Operating' in some of its combinations may be construed as a verbal noun used attributively, as in *operating altitude, operating function, operating cost, operating procedure*, etc.

operating agency. An agency that executes or carries out the plans, programs, and policies of a higher headquarters, as the major air commands are the operating agencies of Headquarters USAF, or the Air War College is an operating agency of the Air University.

operating base. 1. A base from which an operation is carried out. See **base,** *n.*, sense 4. **2.** A base that is operative.

operating command. A command in which the details of a program or operation are carried out in accordance with plans and policies formulated by higher authority, as in 'the operating commands of FEAF require a sound policy of rotation.'

operating level of supply. The level of supply required to sustain operations in the intervals between requisitions or between arrivals of successive shipments.

operating location. (OL) *Specif.* The location or station at which, or out of which, a detached person, group of persons, or organization regularly operates.

Such a location is considered an 'operating location' only if the detachment is located there permanently, i.e., if there for a period of three months or longer, or for an unspecified period.

operating radius. Radius of action.

operating range. 1. The range of an aircraft for carrying out a particular operation, as in 'the operating range of this aircraft is 1,000 miles.' See **range,** *n.*, sense 2a. **2.** The range of an air base that defines the limit of its effectiveness, as in 'the operating range of this air base is 300 miles.' See **range,** *n.*, sense 2b.

operating range of supply. The range between a minimum operating level of supply and the level reached when operating supplies are at their highest level.

operating speed. 1. Cruising speed. **2.** The rotative speed of an aircraft engine maintaining cruising speed.

operating unit. A unit that directly forwards the operational mission of the establishment to which it is assigned. Distinguished from an administrative or a housekeeping unit.

In a sense, every unit is an operating unit, but a term is required to distinguish those units that directly forward the mission from those that indirectly forward it.

operating weight. The basic weight of an aircraft plus the weight of oil, trapped fuel, the crew and their baggage, and emergency and extra equipment.

This term usually requires special definition in context, since the weight of certain items, such as that of cannon and machine-gun ammunition, may be considered a part of the operating weight of certain aircraft, while not so considered for other aircraft. Operating weight, however, does not include the weight of fuel in the tanks, or of bombs, cargo, or other payload, nor of droppable fuel tanks that are to be dropped during flight.

operation, *n.* (op) **A. 1. a.** That which a person or group of persons is expected to do in terms of the mission and the overall function assigned to such person or group of persons, as in 'our operation was research,' or 'their operation was supply,' or 'our operation was held up by our inexperience in administration': See note. **b.** The activity directly involved in carrying out an overall function. **2.** The total activities, both direct and incidental, that a person or group of persons performs while discharging an overall function, as in 'our operation consisted of more than carrying bombs, we also had to keep accounts, pay our men, forage for food, etc.' **3.** *Specif.* in sense 1. That undertaken or performed in carrying out a special air mission, as in 'Operation Crossroad' or 'Operation Haylift'; also that undertaken in carrying out a program, as in 'Operation Bootstrap.' **B. 4. a.** The guidance and control of a machine, as in 'he was skilled in the operation of the F-86.' **b.** The mechanical running movement of a machine, as in 'the engine has a smooth operation.' **c.** The extent to which an airplane can be flown, as in 'the radius of operation.' **d.** The status of a machine, establishment, or organization that is being used, or is being kept operative, as in 'the base is in operation,' or 'the C-54 is in operation.' **C. 5.** In the plural, *operations*, as used in *specif.* senses. **a.** Combat action, including attack, defense, maneuver, liaison, supply, observation, and transport. **b.** Flying activity. **c.** Usually *capitalized.* A major subdivision of certain headquarters, headed by a deputy or assistant chief of staff responsible for advising the commander on his overall operation (sense 1) or for monitoring or supervising the details of those activities that contribute to the overall operation; the staff that works in this subdivision. **d.** Usually *capitalized.* An activity that controls and coordinates the flying and associated activities at an air base, usually centered about the control tower; the place occupied by this activity.

In sense 1, as distinguished from sense 2, the operation

is related directly to the overall function. See **function, *n.***, sense 2. That is, each unit's operation in this sense is defined in terms of its own overall function, not in terms of subordinate or coordinate functions. A group's operation is not the operation of one of its parts. Thus, the function of a fighter group, for example, is to fight; its operation is the planning and sending of air missions into the air or the carrying out of air attacks upon designated targets. That the fighter group also has problems of administration and logistic support, for which certain persons are responsible, is irrelevant to the purpose of the group as a whole. The group's operation remains that of fighting. On the other hand, the operation of the administrative staff, as defined by its own function, *is* that of administration; and the operation of a maintenance unit *is* that of logistic support. Likewise, the operation of an orderly room is that of keeping the morning report, scheduling work details, etc. An operation in this sense is an adjunct of function. See **function, *n.*, operational mission.**

operational, *a.* (op) **1.** Of an organization: **a.** Activated or organized to carry out an operation delegated by a superior headquarters, as in 'the Air Command and Staff School is an operational unit of the Air University.' **b.** Actively carrying out an operation, as in 'his outfit was sent forward and became operational.' **c.** Activated or organized, and ready to carry out an operation, as in 'they were assigned personnel and made operational.' **2.** Of an installation: **a.** Actually operating, as in 'two bases were operational, one was not.' **b.** Suitable for use in an operation, as in 'every one of the bases were sufficiently operational to permit landings.' **3.** Of equipment: **a.** Used in activities connected with the operation of an organization, as in 'the bombardment group's operational B-29's were used in place of its nonoperational aircraft to carry passengers.' **b.** Fit or ready for use in an operation, as in 'two aircraft had been damaged, but three remained operational.' **4.** Of persons or actions: **a.** Engaged in, or carried out, in connection with the operation of an organization. **b.** *Restrictive.* Engaged, or performed, in a combat operation, as in 'he was an operational pilot.' **5.** Of weather: Suitable for flying operations.

See **operating,** *a.*, and **operation,** *n.*, note.

operational aircraft. Also *collective.* **1.** Aircraft ready for use or in usable condition. **2.** In specific senses. **a.** Aircraft other than administrative aircraft. **b.** In the Military Air Transport Service, as used in inventory procedure: See note.

Sense 2b includes all aircraft assigned the reporting organization, including those out of commission for field or organizational maintenance, but excluding those aircraft awaiting or undergoing depot overhaul and repair, and also those in storage, on loan, or awaiting disposition as a result of salvage and survey action.

operational air doctrine. Doctrine on how to use air power in particular operations. See **doctrine,** *n.*, sense 2.

operational altitude. 1. Any altitude at which an aircraft can operate efficiently and effectively. **2.** The altitude at which an aircraft flies in carrying out a particular operation; any specified altitude at which a barrage balloon is fixed. **3.** The operational ceiling of an aircraft.

operational analysis. Operations analysis.

operational attrition. Attrition sustained by an organization in carrying out its operation. Applied to personnel and equipment.

See **attrition,** *n.*, note, **operation,** *n.*, sense 1 and note.

operational ceiling. The highest altitude at which an aircraft or piece of aircraft equipment can operate efficiently and effectively. See **combat ceiling, operational altitude.**

operational characteristic. A characteristic that a piece of equipment exhibits in its operation. See **characteristic,** *n.*

operational clearance. A kind of aircraft clearance used esp. by Military Air Transport Service, allowing a flight to take off from a number of intermediate bases during a trip without obtaining an aircraft clearance from each of those bases.

operational control. 1. The control exercised by a commander or other constituted authority over persons or units that gives him the power to compose his forces according to his own judgment, to assign tasks, to designate objectives, and to give directions through subordinate commanders for the conduct of operations. **2.** The control exercised by a commander over the use of equipment or real property.

This term in sense 1 is often used in contexts where units or persons are attached, in order to distinguish such control from administrative control or logistic support. In such contexts, it denotes authority to use the persons or units to forward the commander's own operation. This is without reference to any responsibility for administrative control, and without reference to provision for logistic support. These latter responsibilities may or may not also be assumed. In a normal situation, a commander employing assigned units has both operational and administrative control and is responsible for a part of logistic support. See **command jurisdiction, control,** *n.*, note.

In regard to aircraft, 'operational control' is defined by the Military Air Transport Service to mean the authorized control exercised over aircraft in respect to initiating, continuing, diverting, or terminating their flights.

operational doctrine. Doctrine on how to do something. See **doctrine,** *n.*, sense 2.

operational evaluation. The evaluation of materiel or equipment to determine its operational suitability.

operational fatigue. Flying fatigue or combat fatigue.

operational flight. A flight performed on an operational mission; *specif.*, a flight on a combat mission. Cf. **administrative flight.**

operational flying. Flying that directly furthers an operation, or is performed in connection with an operation.

operational flying hour. A flying hour spent in activity directly connected with the operation of the organization or unit.

In a bombing unit, a flying hour on a bombing mission is an operational flying hour; in a training unit, a flying hour spent in training is operational; etc.

operational function. The function of any organization, activity, or piece of equipment from the standpoint of the operation for which it is established or used.

operational headquarters. The headquarters of an operating unit or agency, esp. one set up to forward a particular operation.

operational height. Operational altitude.

operational hour. *Specif.* An operational flying hour.

operational immediate. A designation given important messages concerning and affecting tactical operations in progress, or messages concerning the immediate movement of aircraft, ships, or ground forces in a tactical situation.

operational intelligence. Intelligence used in conducting operations.

Operational intelligence may be, but is not necessarily, combat intelligence.

operational level. 1. A level within the military structure where operations are carried out, as distinguished from a staff level or administrative level. See **level,** *n.*, sense 3. **2.** An operating level of supply.

operational light. 1. Any daylight providing visibility for air operations. **2.** *Specif.* Civil twilight of such intensity as to illuminate one-half of the sky and to enable the sighting and identifying of a medium-size aircraft at a distance of two miles or more.

operational limit. *Specif.* Any factor, such as weather conditions or an aircraft limitation, that limits air operations.

operational loss. 1. *Specif.* Any loss of aircraft or other equipment caused by carrying out operations. **2.** In supply usage, a loss of property which, although listed on a stock record account, cannot be found by physical check and is actually missing, or is entered under the wrong description, or is undiscoverable for some other reason.

operational mission. 1. The primary mission of an organization or activity, for which the organization or activity has been activated or organized; a statement of this mission. **2.** *Specif.* **a.** A mission, esp. an air mission, that directly contributes to the accomplishment of a unit's operation. **b.** *Restrictive.* An air mission that forwards a combat operation.

An operational mission is always in terms of the organization's function. For instance, a bombardment group's function is to bomb; hence, bombing missions in such a group are operational. But such a group also has other kinds of missions, those connected, for example, with local testing of equipment or administrative activity. These latter are nonoperational missions. It is, however, not always possible to draw a sharp line between operational and nonoperational missions, particularly in those instances where functions have not been clearly defined or understood. In general, however, an operational mission of a transport unit would be a transport mission; of a fighter unit, an intercept or fighter-bomber mission; of a training unit, a training mission; etc. See **operation,** *n.*, sense 1.

operational planning chart. An aeronautical planning chart used for aeronautical operational planning purposes, such as route planning.

operational range. Operating range.

operational readiness. 1. The condition or state of a person's or unit's being ready, in terms of the concept or plan of a particular operation, to carry out the operation required by the mission of that person or unit, either combat or noncombat. **2.** Also the condition or state of a piece of equipment that makes it ready and available for use.

Like many intangible terms, 'operational readiness' in sense 1 is subject to different interpretations. Because of this, the user must rely largely upon context to bring out the particular meaning he assigns to it. For instance, it may involve psychological readiness as well as the readiness arising from being trained, indoctrinated, equipped, supplied, etc.

Operational readiness is always in terms of the concept. See **concept,** *n.*, sense 2. If the concept proves unsound or inadequate to cope with the situation for which conceived, this reflects not upon the operational readiness of the persons and units, but upon the concept itself, for readiness can be planned and assessed only in terms of the concept or plan. But if the concept is sound and adequate, operational readiness makes for combat effectiveness. See **combat effectiveness.**

operational readiness test. (ORT) *Specif.* A test and inspection to determine or prove the extent of the overall operational readiness of an organization.

Such a test involves a simulated operational situation.

operational resources. Resources available for the performance of an operational mission.

Operational resources for a particular air mission would include aircraft, aircrews, supporting personnel, and airfield and route facilities.

operational suitability. The suitability of materiel or equipment for employment in operations.

operational suitability test. A test of materiel or equipment under simulated or actual operational conditions to determine or prove its operational suitability. See **service test.**

This type of test includes, besides evaluation, whatever recommendations are deemed required for AF standardization, for improved operational tactics and techniques, and for developing support and training requirements—all in terms of the capabilities and limitations of the materiel or equipment being tested. Hence, **operational suitability testing.**

operational support. The support given to one organization by another that participates in the operation. Cf. **operational control.**

operational support aircraft. Aircraft used for administrative and special operational missions, esp. for combat readiness training.

operational test. An operational suitability test or an operational readiness test.

operational training. Training, esp. flying training, that prepares a person or group of persons for actual combat or other operations.

operation bootstrap. A popular name given an educational program conducted within the AF for airmen and officers. Often *capitalized*.

Under this program, an airman or officer may attend civilian institutions or take courses under USAFI to fill out his education on high school, college, or graduate level. The USAF shares the major cost of such education.

operation map. A map showing the location and strength of friendly forces, and sometimes the predicted movement and location of enemy forces.

operation order. (opord) A formal statement or order issued by a commander in connection with a combat operation or maneuver, setting forth information on the situation, the command mission, communications, etc., and assigning specific tasks to subordinate units. Also called 'operations order.' See **combat order, fragmentary operation order.**

operation plan. (OPlan) A plan for a military operation or series of operations, issued as a directive by a high echelon of command in order to permit subordinate echelons to prepare their supporting plans or orders.

An operation plan, when put into effect, becomes an operation order.

operations analysis. The systematic examination, evaluation, and interpretation of military operations, esp. air operations, with the purpose of improving equipment, weapons, methods, tactics, and strategy; (*capitalized*) an activity engaged in this work.

operations attrition. Operational attrition.

operations office. *Specif.* An office at an air base from which flying operations are directed.

operations order. (opord) An operation order.

operations tower. A control tower.

operator, *n.* (op) **1.** A person who operates, runs, or helps to operate or run, a piece of equipment or a system; *specif.*, a pilot. **2.** As specially defined in the Military Air Transport Service: A person, organization, or enterprise engaged in, or offering to engage in, an aircraft operation. **3.** A person with a knack for getting things done, or, opprobriously, a person who works assiduously at advancing himself. *Colloq.*

operator's indorsement. In communications usage, an indorsement to a message by the sending or receiving operator, consisting of the operator's identifying sign, or concerning routing instructions, time of sending or receipt of the message, radio frequency used, or similar information.

OPL (*abbr*). 'Outpost line.'

OPlan (*auth abbr*). 'Operation plan.'

OPLR (*auth abbr*). 'Outpost line of resistance.'

opn (*abbr*). 'Operation.'

OpNav (*auth abbr*). 'Office of the Chief of Naval Operations.'

opnl (*abbr*). 'Operational.'

opord (*auth abbr*). 'Operations order.'

opp (*auth abbr*). 'Opposite.'

oppor (*auth abbr*). 'Opportunity.'

opportunity target. A target of opportunity.

opposed engine. An internal-combustion, reciprocating aircraft engine having one or more cylinders on each side of the crankshaft with the piston strokes on each side working in a direction opposite to the direction of the strokes on the other side.

opposite depot. A term sometimes applied to a zonal or master depot, provided that such depot is not serving as a prime depot, having, however, a prime depot as its counterpart in the other zone of the Air Materiel Command.

opposite number. A person in one military service or establishment having an assignment corresponding to that of a person in another service or establishment. Each of these persons is said to be an opposite number of the other.

Examples of opposite numbers of the Chief of Staff, USAF, are the Chief of Staff, USA, the Chief of Naval Operations, USN, and the Chief of the Air Staff, Royal Air Force.

opposition, *n.* **1.** The hostile resistance of one force to another; *specif.*, air opposition. **2.** The personnel and equipment that offer this resistance.

opr (*abbr*). 'Operate' or 'operator.'

opro (*abbr*).' Operations order.' See **opord** (*auth abbr*).

ops (*abbr*). 'Operations.' Sometimes *capitalized*. Often pronounced as a word.

opt (*auth abbr*). 'Optical.'

optical, *a.* (opt) **1.** Pertaining to instruments having specially ground lenses and used with the eye, as in *optical bombsight, optical range finder, optical sight.* **2.** Pertaining to actions in which optical instruments are used, as in *optical bombing.*

optical center. *Aerial photog.* **1.** The center point of a photograph. See **center point. 2.** The center of a lens, through which the camera axis passes.

OpW (*abbr*). 'Operating weight.'

OQ (*code*). 'Aerial target—non-man carrying.'
Attrib., as in *OQ range*, a ground-to-air gunnery range for firing at OQ targets.

OQMG (*abbr*). 'Office Quartermaster General.' Now *hist.* in the AF.

OQR (*auth abbr*). 'Officer's Qualification Record.'

OR (*auth abbr*). 'Overseas replacement.'

orbit, *n.* **1.** The circle or path flown by an orbiting aircraft. **2.** The action of orbiting. Attrib. with *point.*

orbit, *v.* **1.** *tr.* To fly in a circle around a given *point* on the surface. **2.** *intr.* To fly about in a circle. Sometimes with *over* or *about.*

ORC (*abbr*). **1.** 'Officer's Reserve Corps.' *Hist.* **2.** *auth.* 'Organized Reserve Corps.'

ORD (*abbr*). 'Overseas replacement depot.' *Hist.*

ord (*auth abbr*). 'Ordnance.'

OrdC (*abbr*). 'Ordnance Corps.'

ordcan (*auth abbr*). 'Orders cancelled.'

ordconcan (*auth abbr*). 'Orders considered cancelled.'

ordcor (*auth abbr*). 'Orders are hereby corrected.'

order, *n.* **1.** A communication, written, oral, or by signal, in which a superior enjoins or commands a subordinate to do or accomplish something. **2.** Any of several publications, or single issues thereof, issued by order or command of a competent authority, as *General Orders, Special Orders,* etc.: See note. **3.** *Under orders* (adj.), required by an order or orders to do something, as 'he is under orders to strike'; by the authority of an order, as 'they travel under orders.'

An order has two aspects. It not only directly enjoins or commands the person to whom addressed, it also enjoins others, by implication, to do whatever is required so that the direct enjoinder can be carried out. In other words, it is both a command and an authorization. For example, a travel order that directly enjoins a person to travel, indirectly enjoins others, such as a transportation officer, to make the travel possible. In the case of *invitational order* (which see, sense 1), the term has reference only to the indirect enjoinder.

In sense 2, 'order' is used to reflect the fact that the publications are issued *by* an order or command, although such publications also serve as authorizations. Many of them are simple announcements or instructions.

Former practice distinguished between publications issued by commanding generals by designating them 'by command of,' whereas those issued by other commanding officers were 'by order of.'

order, *v. To order arms,* to rest the rifle butt on the ground, against the right foot, with barrel leaning slightly to the rear and held in a prescribed manner, standing at a position of attention.

orderly, *n.* **1.** An enlisted man in personal attendance on one or more officers. **2.** A person assigned to a specific task to keep things in order, as a latrine orderly or medical orderly.

orderly room. An office or building where the commander of a squadron and his assistants conduct the administrative affairs of the squadron; a squadron headquarters.

order of battle. The method or manner in which a military force is trained, equipped, organized and disposed; *specif.,* an air order of battle.

order of precedence. *Specif.* The order in which decorations and medals precede one another. See **decoration,** *n.*

order time. In supply usage. **1.** The interval of time required to make up a requisition for stock replenishment between initial action and submitting of the requisition. **2.** The interval of time between requisition and shipment by the supplying activity.

ordinary leave. The usual kind of leave, as distinguished from sick leave, emergency leave, or other special kinds of leave. See **leave,** *n.,* note.

ordmod (*auth abbr*). 'Orders hereby modified.'

ordnance, *n.* (ord) **1.** Military weapons, ammunition, explosives, combat vehicles, and battle materiel collectively, together with the necessary maintenance tools and equipment. **2.** *Capitalized.* An organization or activity that stores, issues, or maintains such materiel.

In AF usage, the word 'ordnance' is commonly applied to aircraft cannon and machine guns, ammunition, bombs, rockets, rocket launchers, and explosives, together with the appropriate repair tools and equipment. Chemical warfare weapons and the like, although falling within the broad meaning of 'ordnance,' are usually not considered as such. In some AF literature the word 'armaments' is commonly employed, rather than 'ordnance.' See **armament,** *n.*

The word has many attrib. uses, as in *ordnance depot, detachment, officer, supplies,* etc.

ordnance area. An air base area set aside for the storage of ammunition or other explosives.

ordy (*auth abbr*). 'Ordinary.'

org (*auth abbr*). 'Organize,' 'organization,' or 'organizational.'

organic, *a.* Built into, or specially adapted to, the structure of a given military organization, as in 'the maintenance function is organic to the wing organization,' or 'the army unit had no organic air transport.' See following entries.

organic aviation. That aviation (which see, sense 2) which is set up and employed in, and controlled by, an organization in order to serve its own special needs. Used with special reference to Army or Marine aviation.

organic equipment. That nonexpendable, expendable-recoverable, or expendable-limited-recoverable equipment issued, or authorized to be issued, to an organization, without which the organization or its members cannot carry out the assigned mission.

Organic equipment is prescribed by the master equipment allowance list (MEAL). The unit authorization list (UAL) is the medium for authorizing the equipment.

Organic equipment may include both organizational and individual equipment.

organization, *n.* (org) **1.** *Specif.* Any group of

people organized as an entity, with a commander or director at its head, having more or less permanent status and charged with specified administrative responsibilities toward itself. **2.** In less exact usage, any group of people that are so organized as to constitute an entity. Cf. **organizational unit. 3.** In supply usage, any unit, activity, or establishment that draws its supplies direct from an AF base or subbase. **4.** The structural relationships within an organized group, that is, the relationships between one function and another, or between one position and another, as in 'this unit has an excellent functional organization.' **5.** The manner in which a thing is organized, as in 'manpower and organization.'

In sense 1, a unit provided for by a general order to which personnel are authorized by a unit manning document is an organization, but likewise an air command, air force, or air division is an organization. See **unit,** *n.* On the other hand, the payroll section of a finance office would not be considered an organization because it has no administration of its own. Also, a team or detail set up to accomplish a special task is not an organization because it lacks permanent status and has no administration of its own. Likewise, a task force, if brought together for a limited time and without any internal administrative problems, would not be considered an organization, but if kept together for some time with administrative problems accruing to it, it would soon take on the characteristics of an organization.

In AF accounting parlance, an organization (sense 1) is considered to be a group of people so organized as to be able to assume responsibility for incurring and providing information on costs connected with the performance of its own functions. See **function,** *n.*, sense 3.

organizational chart. A chart showing in diagram form the structure of an organization.

An organizational chart may be either functional, administrative, or both. See **administrative chart, functional chart.**

organizational equipment. That equipment issued to an organization which is retained by the organization as a whole in order to carry out its mission. Cf. **individual equipment.**

organizational equipment list. (OEL) A list of the organizational equipment for a particular organization, used for inventory and automatic requisition. *Hist.*

The OEL has been replaced by the unit property record and equipment list (UPREL) and the unit authorization list (UAL).

organizational flag. A flag of specific size (3′ × 4′) used by an organization. Formerly called a 'standard.' See **color,** *n.*, note.

organizational level. 1. The level occupied by a given organization in the military structure. **2.** The level at which a subordinate organization functions, as distinguished from the level of a higher headquarters.

organizational maintenance. That maintenance which a using organization performs on its own equipment.

Organizational maintenance includes inspection, cleaning, servicing, preservation, lubrication, adjustment, minor repair not requiring detailed disassembly, and replacement of minor parts not requiring high technical skill. This type of maintenance was formerly divided into two parts, known as 'first-echelon maintenance' and 'second-echelon maintenance.'

In combination, as *organizational-maintenance squadron.*

organizational structure. The arrangement of the elements or components of an organization; the method of this arrangement.

organizational unit. Any part of an organization that in itself is not an organization (sense 1) but is an entity requiring recognition for management or accounting purposes, as a detachment, or a branch, section, or unit in a headquarters.

organize, *v.* (org) In specific senses. *tr.* **1.** To bring a *specialized unit*, a *detachment*, or a non-T/O *flight* into existence. See **activate,** *v.*, note; **discontinue,** *v.*, sense 1. **2.** To give an orderly and functional structure to an activated *standard unit*, to a *specialized unit*, or a *detachment.*

Organized Air Reserve. (OAR) That part of the active AF Reserve consisting of AF Reserve units and the personnel assigned to them, together with persons who hold mobilization assignments with Regular AF units.

Members of the OAR are distinguished from other active reservists maintaining their proficiency through tours of active duty, correspondence courses, etc.

organized reserve. That part of the reserves of the armed forces that is organized; *specif.*, the Organized Air Reserve.

organized unit. A standard unit or specialized unit that has been organized. See **organize,** *v.*, sense 2.

ORI (*auth abbr*). 'Operational readiness inspection.'

orient, *v. tr.* **1.** To relate a *thing* to something else: See note. **2.** To acquaint or familiarize a *person* with something. **3.** To get one's bearings. Used reflexively.

In sense 1, an aerial photograph is oriented by putting it with another or others so as to form a mosaic; or a photographic print is oriented by being placed so that the direction of light represented on the photograph is the same as it was when the photograph was taken; a map is oriented by being turned or placed so that its directions correspond with actual directions.

orientation, *n.* The act or process of orienting or of being oriented.

Attrib., as in *orientation lecture, orientation photo, orientation visit*, etc.

orientation flight. A flight given to a person to familiarize him with aircraft and the problems and peculiarities of flying the aircraft.

orifice, *n.* **1.** Any opening through which something passes, as in a hydraulic piston for the passage of fluid. **2.** *Electronics.* An opening in a wave guide through which energy is transmitted.

orig (*auth abbr*). 'Origin,' 'original,' or 'originator.'

origin, *n.* (orig) **1.** The ultimate source from which something began. **2.** In a coordinate system, the point at which coordinate axes intersect. **3.** In gunnery, the point considered to be the source of the projectile.

In gunnery, the origin may be considered the center of the muzzle, or the point of intersection of the axes about which the gun or gunsight rotates. In an airplane, the origin of a gun's projectile or of a bomb may be the point above the earth fixed at the moment of fire or release, or a point on the gun or airplane, depending upon the coordinate system used. Cf. **fixed coordinate system.**

originate, *v. tr.* In specific AF usage: To prepare and send forth a written *communication* or *message.* Cf. **initiate,** *v.*

originating station. *Specif.* The base from which one or more aircraft begin a mission or flight.

Orlando Air Force Base. An AF base at Orlando, Florida, named for the city.

Orly Airfield. A large metropolitan airport near Paris, France, at which space is provided for a MATS terminal.

ornithopter, *n.* An aircraft designed to fly or to propel itself through the air by means of flapping wings.

While some successful small-scale models of ornithopters have been made, no successful man-carrying ornithopter has yet been developed.

ORT (*auth abbr*). 'Operational readiness test.'

orthicon, *n.* Also **orthiconoscope.** A more complex development of the iconoscope, having improved light sensitivity. Attrib., as in *orthicon tube.*

ortho (*auth abbr*). 'Orthopedic.'

orthographic projection. A map projection made so that features of the globe are presented as they actually would appear if viewed from a point in space.

An orthographic projection is made with the point of vision at a great distance (mathematical infinity), so that light rays coming from the globe could be considered parallel. A *polar orthographic projection* is a type of orthographic projection of the globe with the North or South Pole at the center, the parallels being presented as a series of concentric circles, getting closer together toward the circumference of the projection, and with the meridians being shown as straight lines radiating from the pole, with distances greatly compressed along them near the equator. Because of this crowding of parallels and compression of meridians, distortion increases toward the circumference of the orthographic projection, but true perspective is maintained.

OS (*auth abbr*). 'Oversea' or 'overseas.'

OS2U. A single-engine, low-wing, Naval airplane developed by Vought-Sikorsky, fitted either with floats or wheels, and used by both the US and Britain during WW II for observation and scouting. Popularly called the 'Kingfisher.'

The OS2U was designated *OS2 U-1, OS2 U-2,* and *OS2 U-3* in various modifications. It was later manufactured both by Chance-Vought and the Naval Aircraft Factory, being designated the *OS2N* in the latter instance.

OSA (*auth abbr*). 'Office of the Secretary of the Army.'

OSAF (*auth abbr*). 'Office of the Secretary of the Air Force.'

Osan-ni Air Base. An air base at Osan-ni, Korea, named for the city.

Oscar, *n.* A popular Allied name for the Japanese Nakajima Ki 43.

Oscar (*code*). An authorized word for the letter 'O.' See **Alfa** (*code*).

oscillation, *n.* **1.** A periodic moving or swinging from one extreme position or attitude to another, each time passing a mean or median position or attitude, esp. (a) any such swinging back and forth by an aircraft about one of its axes, as in pitching up and down, or (b) any such movement in an elastic surface, as in flutter. **2.** A single swing in this movement from one extreme position to the other. **3.** *Electricity.* **a.** A recurring periodic disturbance in the flow of electricity. **b.** An alternating current.

In sense 1, see **lateral oscillation, longitudinal oscillation, phugoid oscillation, stable oscillation.**

oscillator, *n. Electricity.* Any device for producing oscillations, such as a nonrotating device, normally incorporating a vacuum tube, that converts direct current into alternating current, or a device that sets up and maintains oscillation in a current.

An oscillator may be used to produce audio-frequency current or radio-frequency current.

oscillogram, *n.* A record of the readings from an oscilloscope.

oscillograph, *n.* An oscilloscope, esp. one used to detect and display audio frequencies, or for the study of the wave shapes of variable voltages and currents.

oscilloscope, *n.* An electronic or mechanical-electrical device for detecting and portraying visually the changes occurring in an electric voltage or current. Sometimes called an 'oscillograph' (which see).

The mechanical-electric type of oscilloscope utilizes electromagnets, filaments carrying the current to be observed, and mirrors to portray the wave form of the current. The usual type of oscilloscope, however, utilizes a cathode-ray tube, one of its chief uses being that of an indicator in a radar set.

OSD (*auth abbr*). **1.** 'Office of the Secretary of Defense.' **2.** 'Ordnance Supply Depot.'

OS/D (*auth abbr*). 'Over, short and damaged report.'

OSI (*auth abbr*). 'Office of Special Investigation.'

OSN (*abbr*). 'Office of the Secretary of the Navy.'

OSR (*auth abbr*). 'Overseas returnee.'

OSRD (*abbr*). 'Office of Scientific Research and Development.' Now *hist.*

OSS (*abbr*). 'Office of Strategic Services.' *Hist.*

OSSN (*abbr*). 'Other Specialty Serial Numbers.'

OSW (*abbr*). 'Office of the Secretary of War.' *Hist.*

OT (*auth abbr*). 'Observer-target.'

OTC (*auth abbr*). 'Officer in tactical command.'

Otis Air Force Base. An AF base at Falmouth, Massachusetts, named for Lieutenant Frank J. Otis, killed in 1937.

OTS (*abbr*). 'Officer training school.'

O/TSC (*abbr*). 'Other than special consultants.'

OTSG (*auth abbr*). 'Office of the Surgeon General.'

OTT (*auth abbr*). 'One time tape.'

Otto-cycle engine. [After Dr. Nikolaus A. *Otto* (1832–1891), Ger. inventor.] A four-stroke cycle engine. See separate entry.

OTU (*auth abbr*). 'Operational training unit.'

out, *adv.* Used as a code word in radio communications to signify that the speaker is breaking communication, as in 'Wilco, out.' Cf. **over,** *adv.*, and **over and out.**

outage, *n.* **1.** The amount of a liquid or other bulk commodity lost in transportation or storage; also the amount of fuel used up in a fuel tank. **2.** *Electricity.* Circuit outage.

outboard, *a.* or *adv.* Of aircraft components: Out toward an airfoil tip; away from the fuselage or hull. Distinguished from inboard (which see).

outboard engine. On an airplane having four or more engines, an engine farthest from the fuselage or hull.

outboard stabilizing float. On a flying boat or certain other seaplanes or on certain amphibians, a float supported from the wing and placed relatively far out along the wing, used for stabilizing the airplane in water.

outboard wing. That part of a wing that lies outside the inboard wing.

outbound, *a.* Going out, as in 'outbound personnel.'

OUTC (*abbr*). 'Ordnance unit training center.'

outer liner. The outer casing of a combustion chamber in a turbojet engine.

outer marker. Short for next.

outer marker beacon. A fan marker beacon in an instrument landing system, located approximately four and one-half miles from the end of the runway to enable a pilot or navigator to determine distance from the runway. See **fan marker beacon.**

outer plane. In certain aircraft, that part of the wing that is attached to a stubwing.

outer space. 1. Space beyond the earth's atmosphere. **2.** Space beyond the solar system.

outer wing. That part of a long airplane wing that lies outside the inner wing, or outside the stubwing. See **wing,** *n.*, sense 3, note.

The outer wings of a B-47 support the single-engine nacelles near the tips, and are distinguished from the inner wings which support the two-engine nacelles. The outer wings of a D.H. 106 Comet are distinguished from the stubwings.

outfit, *n.* **1.** A collection of special equipment needed by a person to perform his special duty, as a *mechanic's outfit*, *pilot's outfit*, etc. **2.** Any organization, esp. a unit. *Colloq.*

outfit, *v. tr.* To provide a *person* or *unit* with equipment.

outline plan. A written preliminary plan, stated in broad terms, of a proposed or projected operation.

An outline plan normally contains a statement of the mission and the strategic concept, and describes the basic undertakings, forces to be employed, general administrative procedures and requirements, etc.

Outline Planning Chart. An aeronautical planning chart, scale 1:5,000,000, that serves as a work sheet for preliminary planning of an air operation.

outlying base. A permanent-type base located outside the continental limits of the US, and designed to serve as a base of operations, esp. in the initial stages of a war.

outmaneuver, *v. tr.* In air combat, to gain an advantage over an *opponent* by flying or maneuvering in a superior manner.

outpatient, *n.* A patient who is not hospitalized. Attrib., as in *outpatient clinic.*

outpost, *n.* **1.** A military post, base, station, or other installation located at a remote place from its national homeland, having the primary responsibility of guarding the nation against surprise attack or protecting a territory or possession. **2.** A detachment of guards or sentries posted around a main body of men to protect it against surprise by the enemy when the main body is not moving.

outprocessing, *n.* A term sometimes applied to processing a person out of a place or unit into which he has previously been processed, or to processing a person for discharge from the military service.

output, *n. Specif.* **1.** The quantity of something that is generated, esp. the power or energy delivered by any energy-producing device. See **power output. 2.** *Electricity.* The electric power, current, or voltage delivered by any form of electrical device or circuit, as a battery, radio transmitter, receiver, etc.

outrank, *v. tr.* To be senior over *another* or *others* by virtue of higher rank or length of time in grade.

Sometimes shortened to 'rank.'

outrigger, *n.* A frame, boom, or the like projecting away from the central body of an aircraft, to which a component is attached, as a stabilizer, an engine on an airship, etc.; a tail boom.

outrigger, *a.* or *attrib.* **1.** Of an aircraft component, as an engine, landing gear, etc.: Located away from the fuselage of the aircraft; outboard. **2.** Attached to an outrigger.

outside air temperature. The ambient temperature outside a flying aircraft.

OAT is either predicted, indicated, or corrected.

outside loop. 1. A loop (which see) in which the maneuver is executed with the pilot's canopy on the outside of the circle traced. **2.** *Specif.* A loop in which the airplane, starting from a normal upright flying position, first goes into a backward-curving dive, then through inverted flight, then climbs back to its original altitude, having completed a circle, with the pilot remaining at all times on the outside of the circle. Cf. **inverted outside loop.**

outside roll. A roll (which see, sense 2) in which the airplane begins and ends flying on its back.

outside spin. An inverted spin viewed from the standpoint of the pilot, who is on the outside of the spiral.

outside turn. A kind of turn in an aircraft in which the upper surface of the wings are inclined toward the outside of the turn.

outstanding, *a.* Easily distinguished for its excellence or superiority. **1.** Of a performance rating given a Civil Service employee: Superior in every respect; not deficient nor less than excellent in any matter whatever. **2.** Of an action or performance: That is clearly superior and distinguishable from other actions or performances; clearly set apart and above other actions or performances. Often used in citations and awards.

In sense 1, 'outstanding' signifies a rating that is above 'satisfactory,' given only after official review and approval by a board that acts upon recommendations by a rating official. Outstanding ratings are held to a minimum.

Outstanding Unit Award. An award for a unit, not normally larger than a wing, that has distinguished itself by 'exceptionally meritorious achievement or meritorious service.' In full, 'Air Force Outstanding Unit Award.'

This award is for support of military operations (heroism may be involved but is not essential), or for 'service of great national or international significance not involving combat operations against an enemy.' Cf. **Distinguished Unit Citation.**

over, *n.* A bomb or shell hit beyond or past the target.

over, *adv.* Used as a code word in radio communications to signify that the speaker will temporarily cease speaking and that he expects a reply or confirmation, as in 'May I land? Over.' Cf. **out,** *adv.*, **over and out.**

overall, *a.* All-inclusive; entire; pre-eminent; encompassing a broad scope.

In combinations, as *overall command, overall objective, overall situation, overall strategy.* 'Overall' is often vague, and is sometimes used when more precise modification or description is warranted.

overall efficiency. The efficiency of a jet engine, rocket engine, or rocket motor in converting the total heat energy of its fuel first into available energy for the engine, then into effective driving energy. See note.

Overall efficiency is expressed as a percentage of the total heat energy of the fuel. It is a product of thermal efficiency and propulsive efficiency.

overall length. The entire length of an aircraft, measured between its fore and aft extremities.

over and out. 1. A code phrase used in radio communication to signify that the speaker will break communication provided the other party has nothing more to say. **2.** Misused for 'out.' Cf. **out,** *adv.*, **over,** *adv.*

overapplication, *n.* The excessive application of effort or force, as occurs, for example, in overcontrol.

overcast, *n.* **1.** *Meteorology.* A cloud or clouds covering all, or almost all, of the visible sky; *specif.*, a cloud or clouds covering more than nine-tenths of the sky. **2.** In flying, a cloud cover that is overhead, as distinguished from one below. See **undercast,** *n.*

overcast bombing. The bombing of a target through an overcast above the target, using radar or other equipment to aid in sighting through the overcast. Cf. **blind bombing;** see **BTO** (*abbr*), sense 1.

This action is also called 'undercast bombing.' Use of one term or the other signifies a point of view. See **undercast,** *n.*

overcontrol, *n.* An act or instance of overcontrolling.

overcontrol, *v.* **1.** *tr.* To move an aircraft's *control* or *controls* too far in one direction, then to attempt to compensate by a greater movement in the opposite direction, resulting in erratic flight; to control an *aircraft* in this manner. **2.** *intr.* Of a pilot: To exercise control in this fashion.

overcorrect, *v. intr.* To attempt to compensate or correct for too much movement of a control surface or surfaces in one direction by too great an opposing movement. See prec.

overfly, *v. tr.* **1.** To pass over a *place* in an aircraft, as in 'permission was granted to overfly the area.' **2.** To overshoot a *place* or *object.*

overhang, *n.* **1.** On a biplane, triplane, or other multiplane, an extension of a wing beyond that of another in a spanwise direction; the amount of this extension, equal to one-half the difference in the spans of the wings from tip to tip. **2.** That part of a wing that extends beyond an outer strut attachment, as with a high-wing monoplane; the

amount by which the wing extends from this point.

In sense 1, the overhang is considered positive when the upper wing has the greater span. Cf. **stagger, *n.***

overhaul, *n.* (ovhl) The rebuilding, or the extensive repairing and reconditioning, of a piece of equipment, as an aircraft, truck, or the like, or of a component part thereof, which has deteriorated esp. through fair wear and tear.

An overhaul normally involves dismantling, cleaning, inspecting, replacing or repairing of parts, reassembling, and testing. Overhaul is a function of depot maintenance, and is always a large undertaking, although the word is sometimes qualified to indicate the scope of the job done, as in 'major overhaul,' 'minor overhaul,' 'complete overhaul,' etc.

overhaul pipeline. 1. The steps followed by a piece of equipment which is removed from service for overhaul, then subjected to overhaul, then returned for service. **2.** The elapsed interval of time taken in this process.

overhead, *a.* Short for 'overhead approach,' or 'overhead cost.'

overhead approach. An approach for a landing during which the airplane describes an approach pattern partly over the runway.

A *360-degree overhead approach*, one in which the airplane, at one end of the runway and headed in the direction of the runway, turns right or left and flies a circle around the runway, constantly losing altitude and returning to its original heading at the finish, after which it makes its landing; a *180-degree overhead approach*, one in which the airplane changes direction by 180 degrees between the beginning of the approach and the landing, describing an approach pattern shaped roughly like a rectangle.

overhead cost. In cost accounting, that cost other than the materials and labor used in the manufacture of a product, or in the carrying out of an operation. Usually called 'overhead.'

Overhead costs are usually considered indirect costs. For example, in printing a book, the paper, ink, glue, thread, etc. used in the book, plus the labor of the composers, layout men, pressmen, etc., would be considered direct costs, but the heat, electricity, management costs, etc. would be considered indirect or overhead costs.

overhit, *v. tr.* To hit a *target* with more destructive force than necessary to accomplish the desired amount of damage. Hence, **overhitting,** *n.*

overlap, *n. Aerial photog.* That part of a photograph in a reconnaissance strip that covers the same area as that covered by the photograph just before it. Cf. **endlap,** *n.*, **sidelap,** *n.*

overlap telling. The relaying, from one air defense sector or subsector to another, of information regarding the movement of aircraft from the one sector or subsector to the other.

overlay, *n.* A transparent sheet with special information or features to be placed over a map, diagram, or the like.

For example, an overlay for a map may show obstacles, enemy concentrations, navigational hazards, or landing areas, all in their correct locations when the overlay is placed over the proper map.

overload, *n.* **1.** That part of an aircraft's payload or useful load, either of cargo, fuel, bombs, etc., that is in excess of the maximum amount prescribed for the aircraft. **2.** *Electricity.* An amount of power flowing in an electrical device or circuit over and above that for which the device or circuit was designed.

overman, *v. tr. Specif.* To assign to a *unit* more personnel than the number authorized or required for that unit.

overpressure, *n.* That pressure resulting from the explosion of an atomic bomb, in excess of atmospheric pressure.

overprime, *v. tr.* To introduce an excess of fuel into an *engine* during the process of priming.

Overpriming often causes loss of compression through washing the lubricating oil from the cylinder walls.

overprint, *n.* Any new material printed or stamped on an existing map or chart.

override, *v. tr.* To supplant or cancel out the influence of an automatic or robotic *control* by a manually operated control.

overrun, *n.* **1.** A clear zone. See separate entry. **2.** An act or instance of overrunning.

overrun, *v. tr.* To run or roll beyond the end of a *runway, landing strip,* or the like on takeoff or landing. Also used *intr.* of aircraft or persons within the aircraft.

overseas, *n.* (os) A place of service outside the continental limits of the United States.

overseas, *a.* Also **oversea.** (os) In AF usage: Of or pertaining to service outside the continental limits of the US. See **continental,** *a.*, and cf. **foreign,** *a.*

In official AF contexts, 'oversea' appears to be preferred to 'overseas' as an attributive adjective, while 'overseas' predominates in other usage. Strictly speaking, service in Canada or Alaska is not 'overseas,' but for purposes of the record it is so regarded.

overseas, *adv.* (os) In AF usage: Beyond, away from, or outside of, the continental limits of the US, as in 'he went overseas,' 'he is flying overseas.'

overseas bar. A strip of cloth worn on the sleeve for each full six months of overseas duty between 7 Dec 1941 and 2 Sep 1946. Popularly called a 'hershey bar.'

The overseas bar was not authorized for overseas service in the Korean War.

overseas cap. A limp fabric cap sometimes worn with the service uniform. Often called a 'flight cap' in the AF.

overseas chevron. A small chevron worn on the sleeve for each full six months of overseas duty in a theater of operations during WW I.

overseas pay. Foreign duty pay. *Popular.*

overseas records depot. An intermediate records depository in an overseas command at which

noncurrent records of the command are kept pending destruction or transfer. See **intermediate records depository.**

overseas replacement depot. A depot within the US for assembling and processing personnel for replacement overseas and for certain personnel returning from overseas. *Hist.*

This term was used esp. during WW II and for a time thereafter. See **personnel processing center** and cf. **replacement depot.**

overseas shipment. As defined in specific context, any shipment overseas, or a shipment from overseas to a water or aerial port of embarkation in the continental limits of the US.

overseas stripe. An overseas bar. *Popular.*

overshoot, *v.* **1.** *tr.* To fly beyond, over, or past a specific *place, spot, boundary, object,* or the like, as in 'the patrolling plane overshot the limits of his sector.' **2.** To fly beyond or to bring an airplane down beyond an *airfield, runway,* or the like, or beyond a designated *mark* or *spot* thereupon, while attempting to land at that airfield or place. **3.** In bombing, to fly beyond the *target;* hence, to drop a bomb or bombs on the far side of the *target.* **4.** In air combat, to fly over another *airplane* when following through in an attack. **5.** To shoot a projectile over or beyond a *target.* **6.** *intr.* To carry out any of the actions as indicated in the senses above.

overspeed, *v.* **1.** *tr.* To run an *engine, propeller, vehicle,* or the like at a speed in excess of that determined to be safe or economical. **2.** *intr.* Of an engine, propeller, etc.: To run at such an excessive speed.

overspeed computer. A computer in a vector gunsight that compensates for the speed of the aircraft and permits the gunner to aim as based upon the speed of the target and gravity drop.

overt, *a.* Open, not secret. Used esp. in reference to intelligence sources or to operations.

over-the-top, *a.* Of flying or flying activities: Above an overcast, as in 'over-the-top flight,' 'over-the-top navigation,' etc.

overt propaganda. Propaganda, the source of which is unconcealed and entirely known.

overwater, *a.* Across or above a body of water; occurring above water; used in operations above water.

In combinations, as in *overwater bombing mission, overwater corridor, overwater patrol,* etc. See following entries.

overwater emergency equipment. Special survival equipment issued for overwater flight, including such items as life rafts, radio equipment, fluorescein, etc.

overwater flight. A flight above or across an expanse of water.

In some contexts, an overwater flight is restricted to a flight of twenty-five miles or more from land; in others, it is defined as a flight over water during which the aircraft goes so far from the nearest land or ice mass as to exceed the power-off gliding distance in which a crash landing or bailout would be possible over the land or ice mass.

overweather, *a.* Of flying or flying activities: Above some meteorological phenomenon, such as an overcast or storm.

ovhl (*auth abbr*). 'Overhaul.'

ovpd (*auth abbr*). 'Overpaid.'

OWI (*abbr*). 'Office of War Information.' *Hist.*

Owl, *n.* A popular name for the O-52.

OX-5. 1. An eight-cylinder, V-type aircraft engine, developed by Glenn Curtiss and used esp. in the JN-4D. **2.** *transf.* An airplane using an OX-5 engine.

oxidizer, *n.* In a rocket propellant, a substance, such as liquid oxygen, nitric acid, or the like, that furnishes the oxygen for burning the fuel.

oximeter, *n.* A photoelectric instrument for measuring the oxygen content of the blood.

The oximeter is used in research and experiment, and has also been incorporated in aircraft hypoxia-warning systems.

Oxnard Air Force Base. An AF base at Oxnard, California.

oxy (*auth abbr*). 'Oxygen.'

oxygen, *n.* (oxy) **1.** A chemical element, occurring free in the atmosphere as an odorless, colorless, tasteless gas, and also in combination in other substances. It is essential to respiration. **2.** *Specif.* Sealed or contained oxygen, as used for breathing by aircrew members at high altitude.

The symbol for oxygen is O; its atomic number is 8 and its atomic weight is 16.0000. It can be compressed to a liquid state.

Attrib. (in sense 2), as in *oxygen delivery system, oxygen flow, oxygen line, oxygen outlet, oxygen regulator, oxygen system, oxygen tank,* etc.

oxygen bottle. A metal bottle designed to hold oxygen for breathing at high altitudes.

See **bailout oxygen bottle, carry-around oxygen bottle.**

oxygen-breathing, *a.* Of an engine or motor: That operates only so long as atmospheric oxygen is available to it.

oxygen cylinder. An oxygen bottle or other cylindrical container for oxygen.

oxygen equipment. Equipment, including tanks, masks, regulators, connections, lines, and fittings, for use in the supply of oxygen to a person or persons in aircraft at high altitudes.

See **constant-flow oxygen equipment, demand oxygen equipment, high-pressure oxygen equipment, low-pressure oxygen equipment, pressure-demand oxygen equipment.**

oxygen lack. A condition of scarcity or absence of oxygen in the atmosphere, as at high altitudes, or in a confined space unsupplied by oxygen; a deficiency of oxygen in the body of a person brought on by exposure to this condition.

oxygen mask. A mask that covers the mouth, nose, and lower face, used in inhaling oxygen from a tank or bottle, or through the oxygen-supply system of an aircraft, and through which the expired gas escapes.

An oxygen mask is equipped with a nonreturn valve to separate the expired gas from that entering. The mask for aircrew members usually contains a built-in microphone for intercommunication.

For example, at sea level under standard conditions, the oxygen partial pressure would be 20.95 percent of 760 mm of mercury. Oxygen tension (which see) is proportionate to oxygen partial pressure.

oxygen partial pressure. The proportionate pressure exerted by oxygen in a given mixture of gases at a given pressure, measured by proportionate volume.

oxygen station. A place or point in an aircraft where an oxygen mask can be attached to the oxygen-supply system.

oxygen tension. *Medicine.* The faculty or capacity of oxygen at a given pressure and in a given amount to extend itself into the cells of the lungs, or into the blood or tissues of the body. Said of oxygen in the atmosphere, in the lungs, blood, etc. See **oxygen partial pressure.**

At high altitudes the oxygen tension of the atmosphere is less than at low altitudes.

ozone, *n.* An allotropic form of oxygen, faintly blue in color, and having a characteristic odor.

Ozone becomes a factor in some ignition systems, since it forms about discharging electricity in the air, and eats into insulating materials. Cf. **pressurize,** *v.*, sense 2.

ozonosphere, *n.* A region in the stratosphere having a relatively high concentration of ozone, occurring at a height of approximately between 15 and 22 miles, and important chiefly for its absorption of solar radiation. Sometimes called the 'ozone layer' or 'ozone stratum.'

P

P (*letter*). See **Papa** (*code*). Used as a code meaning 'straggler' in symbols only.

P (*abbr*). **1.** 'Priority,' as applied to a message. **2.** *auth.* 'Port,' in combination only, as in 'NYPE' (which see). **3.** 'Production.' **4.** 'Pursuit,' in airplane designations. Now *hist.* See note. **5.** 'Patrol,' in designations of US Navy aircraft. See **V** (*letter*), sense 2, note, **VP** (*code*). **6.** 'Propulsion,' in Navy designations of guided missiles used as test vehicles. **7.** 'Photographic version,' in designations of Navy aircraft modified for the purpose. **8.** 'Piasecki Helicopter Corporation,' in designations of Navy aircraft. **9.** 'Pamphlet' in combinations only, as in 'AFP.' **10.** 'Project' as in 'P443 funds.'

In sense 4, since WW II, the letter 'F' has been substituted for 'P.' Fighters remaining in service at the time of the change were redesignated. Thus 'P-51' became 'F-51,' etc.

P-1. A single-engine, single-seated pursuit biplane developed in the 1920's by Curtiss.

P2V. A twin-engine patrol bomber with a wheel-type landing gear, developed by Lockheed for the US Navy, but also used by the RAF and RAAF. Popularly called the 'Neptune.'

Different versions of the P2V are the *P2V-1*, *P2V-2*, *P2V-3*, etc.

P4M-1. A midwing, long-range, high-altitude US Navy patrol bomber and search plane, powered by two radial reciprocating engines and two turbojet engines, developed by Martin and popularly known as the 'Mercator.'

P5M-1. A twin-engine, gull-wing, patrol and electronic reconnaissance Navy flying boat, developed by Martin primarily for antisubmarine operations. Popularly called the 'Marlin.'

P-6. A single-engine fighter biplane developed by Curtiss-Wright, in use chiefly in the 1930's.

The P-6 was one of the 'Hawk' series. See **Hawk**, *n.*

P-12. A single-seat, single-bay biplane fighter, in use by the Air Corps in the 1930's, developed by Boeing.

P-36. A low-wing, single-engined, single-seated fighter developed by Curtiss-Wright. Popularly called the 'Mohawk.'

The P-36 was used as a trainer in WW II, and as a fighter, esp. by the French, in the early days of the war. It was also a lend-lease item.

P-38. A twin-engine fighter aircraft with a twin-tail boom, developed by Lockheed and used in WW II. Popularly called the 'Lightning.'

P-39. An early WW II fighter aircraft built to accommodate a cannon in the nose, with a single in-line engine mounted behind the cockpit, developed by Bell, and popularly called the 'Airacobra.'

P-40. A single-engine fighter developed by Curtiss-Wright and widely used early in WW II.

Different model series of this aircraft were called, esp. by the British, by such names as 'Kittyhawk,' 'Tomahawk,' and 'Warhawk.'

P-43. A single radial-engined fighter aircraft, developed by Republic but superseded by the P-47 before use in combat. Popularly called the 'Lancer.'

P-47. A single radial-engined fighter aircraft developed by Republic and used in WW II as a fighter and fighter-bomber. Popularly known as the 'Thunderbolt.' Also called the 'Jug.'

P-51. An earlier designation for the F-51.

P-59. An earlier designation for the F-59.

P-61. An earlier designation for the F-61.

P-63. A single-engine, low-wing fighter developed from the P-39 by Bell. Popularly called the 'Kingcobra.'

The P-63 was a more powerful aircraft than the P-39, but had the appearance of the latter except for its rudder. The majority of the P-63 airplanes were delivered to Russia during WW II.

P-70. The all-weather fighter version of the A-20.

P-80. An earlier designation for the F-80.

P-82. An earlier designation for the F-82.

P-84. An earlier designation for the F-84.

P-400. The P-39C with certain modifications, as exported to France and England.

The P-400 was also used for training, as well as for combat at Guadalcanal in WW II by AAF pilots.

PA (*abbr*). **1.** *auth.* 'Pending availability.' **2.** 'Port agency,' in symbol only. **3.** 'Point of aim.' **4.** 'Pursuit-air-cooled,' as formerly used (*circa* 1920) in the designation of US Army aircraft. **5.** 'Public address,' as in PA system.

PAC (*auth abbr*). 'Pursuant to authority contained in.'

Pac (*auth abbr*). 'Pacific.'

PacD (*abbr*). 'Pacific Division,' as used in the

Military Air Transport Service. Used attrib., as in *PacD activities, PacD flight, PacD route.*

pace, *v. tr.* To fly along some distance from a *drone* and control its speed and direction of flight, as in 'the control plane in the relative safety of high altitude paced three drones into the target.'

Pacific standard time. (PST) The standard mean time of the Pacific standard time zone, i.e., between approximately 112.5 degrees and 127.5 degrees west longitude.

pack, *n.* (pk) **1.** Any bundle of associated things, esp. to be carried on the back. **2.** *Specif.* A parachute pack. **3.** A number of submarines working together.

package, *n.* (pkg) **1.** Anything that is wrapped up or put in a carton for easy handling and identification. **2.** Also applied to any other thing put into an easily manageable form and neatly ready for use: **a.** A self-contained unit, such as a robot pilot, a bombsight, a guided missile, or the like. **b.** A plan or recommendation that appears to be simple and practicable. **c.** A military force tailored to the performance of a particular mission.

packaged, *a.* (pkg) Brought together into a single unit or package, ready for installation, use, or operation.

Said of such things as *fire* in reference to an incendiary bomb, an *airport* in reference to its prefabricated and ready-to-assemble construction materials, or a *course* of study that can be taken by use of phonograph records, training aids, etc.

packaging, *n.* (pkg) The process of wrapping, cushioning, or putting a thing or things into individual containers, and of completely identifying them separately by a tag or label, esp. with reference to objects shipped together in a large shipping container.

Packaging is concerned with the individual items packed, not with the overall shipping container. Cf. **packing,** *n.*

Packet, *n.* A popular name for the C-82 or the C-119.

packing, *n. Specif.* **1.** The process of putting packages into a large shipping container, together with necessary bracing, weather-proofing, and the like, as well as the marking of the outside container. **2.** The process of folding a parachute into its pack.

packplane, *n.* An airplane that incorporates a detachable main cargo compartment that may be replaced by another.

The Fairchild XC-120 is a packplane. See **pod,** *n.*

packup, *n.* Anything or any assembly of things, that can be packed up and carried away as a unit. Applied to an aircraft engine, to a set of tools together with portable equipment, to **a** kit, etc.

PAD (*abbr*). 'Port of aerial debarkation.'

P.A.D. (*abbr*). 'Passive air defense.' *British.*

padding, *n. Specif.* In cryptography, any inserted words or phrases that are unrelated to the text of the message.

paddlefoot, *n.* Any AF person without an aeronautical rating. *Jocular* or *disparaging.*

paddle prop. A propeller with a broad, straight-line tip.

PADoc (*auth abbr*). 'Pay adjustment document.'

PAE (*abbr*). 'Port of aerial embarkation.'

PAF (*auth abbr*). 'Pacific Air Force.'

PAFS (*auth abbr*). 'Primary Air Force Specialty.'

pahel (*auth abbr*). 'Pay record and health record.'

Paine Air Force Base. An AF base at Everett, Washington, named for Lieutenant Topliff O. Paine, killed while engaged in mapping air mail routes in 1922.

paint, *n.* The image on a radarscope. *Slang.*

paint, *v. tr.* To show an *image* on a radarscope. Said of radar equipment.

painted bullet. A bullet coated with paint used in target practice.

The bullet's paint mark on the target is used to identify the gunner who fired it.

pair of pairs. A formation of four airplanes with gliders in tow, all flying at the same altitude and echeloned to the right or left of the lead airplane, and in such position that upon release of the gliders, two planes may peel off to the left, the other two to the right, leaving the gliders clear for landing.

PAL (*abbr*). 'Personnel augmentation list.'

palcru (*auth abbr*). 'Pay and allowances accrue from.'

pallet, *n.* A platform or shallow open box, commonly four feet square, for holding supplies or material segregated as a unit and making for convenient storage or handling, as in a warehouse. See **box pallet.**

pallet drop. A parachute supply drop in which the units dropped are pallets with their loads securely strapped or bound to them.

palletize, *v. tr.* To store *supplies* on pallets.

pallet storage. Storage by the use of pallets.

This storage may follow any convenient pattern, but a common method is to place the pallets in double rows back-to-back, with aisles between the double rows. Box pallets and pallets with certain kinds of supplies on them can be stacked. Handling in such storage is often done by fork lift.

Palm Beach Air Force Base. An AF base at West Palm Beach, Florida, named for the city.

palm tree. Used in the phrase, *infuriated palm tree,* a helicopter. *Slang* or *figurative.*

Slang such as this is limited and local, but illustrates a type of language that crops up among service people.

PAM (*abbr*). **1.** 'Personnel actions memorandum.' **2.** 'Pulse amplitude modulation.'

pam (*auth abbr*). 'Pamphlet.'

PAMO (*auth abbr*). 'Port Air Materiel Office.'

pamphlet raid. A leaflet raid. See separate entry.

panacea target. An opprobrious term applied in Europe during WW II to any of those places recommended for bombing because of their alleged keystone character in the industrial or military structure of the enemy.

The ball-bearing factories, for example, were 'panacea targets' to those who minimized their importance.

pancake, *n.* **1.** A pancake landing. **2.** A circular slice of airspace above or near an airport used by an aircraft to circle in before descending to a similar slice of airspace or before landing. **3.** A flat circular container made of rubber, and used in airdrops for gas, water, or other fluids.

pancake, *v.* **1.** *tr.* To put an *airplane* into a pancake landing. **2.** *intr.* Of an airplane: To make a pancake landing.

pancake landing. A landing in which the airplane is leveled off ten feet or more above the surface and then permitted to stall and settle to the surface.

P&EML (*abbr*). 'Personnel and equipment modification list.'

pandl (*auth abbr*). 'Pay and allowances.'

panel, *n.* **1.** A mount of instruments or control devices in an aircraft's cockpit. Often used with a designating attributive, as in 'control panel,' 'instrument panel,' etc. **2. a.** A section of an airplane wing, esp. a section manufactured separately. **b.** Also applied to either wing, right or left. **3.** A strip of cloth in a parachute gore. **4.** An identification panel or a marking panel. **5.** A small group of persons who discuss a topic or problem in public. **6.** A board selected for the review of a particular problem, or for making recommendations.

panel aircraft. A large aircraft, as the C-124, B-29, or B-36, having a separate instrument panel for the flight engineer.

panel code. A prearranged code for visual communication with the use of marking panels or identification panels. See **identification panel code, marking panel.**

panel operator. *Specif.* A flight engineer on a panel aircraft.

panic button. A control button or switch for use in some emergency. *Figurative.* See **hit,** *v.*, sense 2d.

panic rack. An ejection seat. *Jocular.*

panoramic, *a.* Of a radarscope: That displays simultaneously all of the signals received at different frequencies.

Panther, *n.* A popular name for the F9F.

panting, *n.* Oilcanning (which see). *British.*

pantobase aircraft. An aircraft capable of operating on or off any surface, such as ice, snow, water, sand, mud or pavement.

Panto is of Greek origin meaning 'all.' The SA-16A is an example of a pantobase aircraft.

pantosurface aircraft. An aircraft provided with landing gear and a fuselage surface that permits it to land on, or take off from, any surface, but in the case of its using a water surface for landing or takeoff it must maintain momentum while on the water, and move from it to a hard surface immediately after landing.

panzer, *n.* [German.] A German tank or other armored vehicle. Used in the *plural* in sense: A German mechanized armored force. Attrib., as in *panzer division.*

PAP (*abbr*). 'Pierced aluminum plank.'

Papa (*code*). An authorized word for the letter 'P.' See **Alfa** (*code*).

paper, *n.* Used attributively in sense: Set up or planned by some written order or statement, but not actually existent, as in *paper commitment, paper organization, paper reserve, paper strength.*

paper work. Work that involves writing or the review of writing, esp. that work required in keeping records, writing letters, etc.

PAR (*abbr*). 'Precision approach radar.'

par (*abbr*). 'Paragraph.'

para (*abbr*). **1.** 'Parachute' or 'parachuting.' Used only as a prefix in combinations: See note. **2.** *auth.* 'Paragraph.'

In sense 1, *parabay,* a bay in an aircraft from which parachuting is done; *parabomb,* a bomb designed to be dropped by parachute; *parabundle,* a bundle designed for a paradrop. Other common words formed with this prefix are *paracan, parafragmentation bomb, pararaft,* etc. See **prcht** (*auth abbr*).

parabola, *n.* A conic section made by a plane intersecting a cone parallel to its side.

parabolic reflector. A paraboloid reflector; a reflector that employs a cylindrical surface that has a cross section shaped like a parabola.

paraboloid antenna. A radar antenna with a paraboloid reflector. Also called 'dish antenna.'

paraboloid reflector. A hollow reflector having an inner surface shaped as if by the rotation of a parabola about its axis.

The paraboloid reflector is so shaped that all rays emanating from a single point on the axis, the *focus,* will be reflected in a direction parallel to the axis.

parachute, *n.* (prcht) **1.** A contrivance that opens out somewhat like an umbrella and catches the air so as to retard or slow down the movement of a body attached to the contrivance. **2.** The canopy of this contrivance. **3.** The parachute

pack or assembly. **4.** A mode of descent, esp. in the phrase, *by parachute*.

The parachute (sense 1), anticipated by Leonardo da Vinci, but first successfully used in 1783 in a descent from a building, has been adapted for use in dropping supplies or other objects from airborne aircraft, in parachute jumping, and in slowing down the speed of certain aircraft esp. in landing. Parachutes are opened either by static line, esp. in supply dropping and paratroop jumping, or by rip cord. The free-fall parachute, with a rip cord, normally consists of the canopy (usually made of light fabric), the shrouds, the harness, and a pilot parachute.

This word appears in many attrib. uses: **a.** Designating parts of a parachute, as in *parachute canopy, parachute ring*, etc. **b.** Designating places where parachutes are made, repaired, stored, rigged, or tested, as in *parachute department, parachute hut, parachute loft, parachute shop, parachute tower*. **c.** Designating actions taken to make or keep a parachute functional, as in *parachute maintenance, parachute rigging, parachute test*. **d.** Designating objects dropped to the surface by parachute, as in *parachute bomb, parachute flare, parachute mine, parachute supplies*. **e.** Designating objects used in connection with landing an aircraft by use of a deceleration parachute, as in *parachute release*. **f.** Designating equipment on an aircraft used in parachute dropping or jumping, as in *parachute door, parachute exit*. **g.** Designating persons, units, or forces that carry out an operation by parachuting, as in *parachute battalion, parachute division, parachute jumper, parachute trooper*. **h.** Designating actions or operations carried out by use of parachutes or by parachute forces, as in *parachute assault, parachute descent, parachute drop, parachute duty, parachute invasion, parachute tactics*.

parachute, *v.* **1.** *intr.* Of a person: To jump or cast off from an aircraft and descend to the earth by parachute. **2.** *tr.* To drop *something* to the surface by parachute.

The verb 'to parachute' was used throughout the ballooning era, the O.E.D. citing it as early as 1807. It continues to be used in the era of the airplane, but the verb 'to bail out' has tended to displace it in intransitive contexts that suggest escape from, or abandonment of, an aircraft. The action of 'to parachute' refers to the manner of descent; 'bail out' to the particular process of escape from an aircraft when circumstances require it. 'Bail out' is not used in reference to normal parachute action by parachute troops. See **parachuting,** *n.*

parachute assembly. The complete parachute assembled together or ready for wear, consisting of the canopy folded and placed in the parachute pack (sense 1), and the harness.

parachute brake. A deceleration parachute.

parachute canopy. That part of a parachute that opens up and is deployed to catch the air, consisting usually of silk or nylon fabric.

parachute drag. A deceleration parachute.

parachute fragmentation bomb. A fragmentation bomb adapted for drop by parachute.

Parachute fragmentation bombs are used in low-level bombing to give the bombing plane time to escape damage from the bomb explosion.

parachute harness. That part of a parachute that fits about the body and to which the parachute canopy is attached.

The suspension lines may be considered not a part of the harness.

parachute jump. An act or instance of one or more persons casting away from an airborne aircraft and falling with a parachute or parachutes. Often shortened to 'jump.'

parachute-opening shock. The shock or jolt exerted on a suspended parachute load when the parachute fully catches the air.

parachute pack. 1. The envelope that incloses a folded parachute. **2.** This envelope with the folded canopy inclosed. **3.** The parachute assembly ready for use in an emergency or in a routine jump.

Parachute packs are of three principal types: the back pack, the chest pack, and the seat pack. See **back-pack parachute,** etc.

parachuter, *n.* A parachutist.

parachute radiosonde. A radiosonde borne aloft either by a sounding balloon or by aircraft and lowered to the earth by parachute. See **radiosonde parachute.**

parachute rigger. A person who packs, repairs, and inspects parachutes, and fits and adjusts parachute harness.

parachute rip cord. The cord or cable which, when pulled, opens the parachute pack in a free fall and causes the pilot parachute to open.

parachute serial. One of a series of aircraft formations carrying paratroopers or paradrop supplies.

parachute troops. Troops organized and trained to be carried into battle by transport aircraft and dropped by parachute, as distinguished esp. from airborne infantry. Also called 'paratroopers' or 'paratroops.'

parachute vent. A distensible opening in the apex of the canopy of a parachute designed to relieve excess pressure and to stabilize the parachute in descent.

parachuting, *n.* The action of the verb 'parachute.'

Parachuting during the ballooning era was an activity of the professional exhibitionist or stunt man. This continued to be the case for several years after parachuting was done from airplanes. The first jump from an airplane is credited to Capt Bert Berry, made 1 March 1912 over Jefferson Barracks, Missouri. In WW I, successful parachute descents were occasionally executed, but very few airmen carried parachutes. It was not until 1918 that a reliable parachute for saving an airman's life was produced.

parachutist, *n.* (prchst) One who parachutes, esp. one practiced in the art of jumping from an airborne aircraft; a paratrooper. Also called a 'chutist.'

parade, *n.* A ceremonial procession of marching personnel, sometimes interspersed with vehicular equipment. Attrib., as in *parade formation, parade ground*, etc.

paradoctor, *n.* A medical officer trained to reach injured or sick persons by parachute.

paradoxical effect. *Medicine.* A transitory relapse in a patient who has suffered from lack of oxygen

even though adequate oxygen is again being breathed by him.

paradrop, *n.* An airdrop by parachute. Attrib., as in *paradrop delivery, paradrop mission.*

paradrop, *v. tr.* To drop *something* by parachute.

parafrag, *n.* Short for 'parachute fragmentation bomb.' Attrib., as in *parafrag cluster, parafrag mission.*

parallax, *n.* The apparent displacement of an object, or the apparent difference in its direction of motion, if viewed first from one standpoint, then from another.

Parallax occurs, for example, in viewing a target from the position of the gun, then from the position of the sight. In air navigation, the parallax of a celestial body is observed in the difference between its angular altitude above the bubble horizon and the angular altitude above the celestial horizon. For most celestial bodies, this is negligible, but for the moon and sun it is of such magnitude as to require corrections in the reading of sextant altitudes.

parallel, *n. Geography.* Any of the lines considered to run parallel to the equator on the earth's surface, marking latitude.

parallel, *a.* **1.** Of a unit or echelon: Having comparable status in one chain of command or service to that of another unit in another chain of command or service, as in 'a company in the Army is parallel to an AF squadron,' or 'the Air War College and Air Command and Staff College are parallel units in the Air University.' **2.** Of a chain of command: That runs to a source of command that is the same as that of another chain of command.

In sense 2, for example, the chain of command from Hq Fifth Air Force to FEAF Headquarters is parallel to that of Hq Twentieth Air Force to FEAF Headquarters.

parallel circuit. *Electricity.* An arrangement in which all the positive poles, electrodes, terminals, etc. are connected to one conductor, and all the negative components to another conductor.

parallel staff. A staff made up from different services or nations, in which one person from each service or nation is appointed to each position. Cf. **integrated staff.**

In this staff, more than one person normally occupies a position.

paramedic, *n.* A medical service person qualified to participate in parachute activities, esp. those involving rescue. See **pararescue,** *n.*

parameter, *n.* **1.** A constant having a series of particular and arbitrary values, each value characterizing a member in a system or family of expressions, curves, surfaces, functions, or the like. **2.** *transf.* In psychological use, a criterion that has shifting values.

In sense 1, for example, if one should draw a cross section of an airfoil with a chord of an arbitrary length, then by using the same chord extended, should draw a series of cross sections of additional airfoils, each determined in its proportions by the particular length of the chord used, the chord would be a parameter. Similarly, in a diagram of several circles, all centered upon the same point, the radii of these circles considered as a single radius having different values would be a parameter. Again, if a certain speed of an aircraft causes a certain wing flutter, and if a pattern of wing flutter can be ascertained by means of differences in speeds, then speed becomes a parameter.

parapack, *n.* **1.** A package or bundle with a parachute attached for dropping from an aircraft. **2.** Such a package or bundle without its parachute. Attrib., as in *parapack parachute.*

paraphrase, *v. tr. Specif.* To change the phraseology of a *message* without changing its meaning.

pararescue, *n.* (parsq) Rescue by persons parachuted to the distressed person or persons; *specif.*, an operational procedure of the Air Rescue Service: See note. Attrib., as in *pararescue school, pararescue team.*

Pararescue by the Air Rescue Service is designed esp. for areas inaccessible to other modes of rescue. It involves air survey of the rescue sites, accurate parachute landings, emergency medical care, use of survival procedures, and evacuation either by air or surface.

parasite airplane. An airplane designed to be carried by, and launched from, a carrier aircraft in flight, and, in some instances, to be picked up again by the carrier aircraft in flight.

parasite drag. That part of the total drag caused by the skin friction and shape of the nonlifting surfaces of an aircraft, as those of the fuselage, nacelles, cooling ducts, antennas, etc.

Parasite drag is the total drag minus the induced drag and the profile drag. It is sometimes called 'structural drag.' See **profile drag.**

parasite fighter. A parasite airplane that serves as a fighter; esp. such an airplane carried by a bomber.

parasite resistance. Resistance to movement in an airplane caused by nonlifting components; parasite drag.

parasitic, *a.* Of structural parts or weights of an aircraft: That do not contribute to the lift or thrust.

parasol, *n.* **1.** Air cover consisting of airplanes actually in the air. **2.** The type of wing on a parasol monoplane. Attrib., as in *parasol construction, parasol wing.*

parasol monoplane. A monoplane having the wing mounted above the fuselage. See **high-wing monoplane,** esp. note.

paratroop, *n.* Used attrib. in sense: Of or pertaining to a paratrooper or paratroopers, as in *paratroop battalion, paratroop carrier, paratroop capacity* (in an aircraft), *paratroop drop,* etc.

paratrooper, *n.* A person in the parachute troops.

parec (*auth abbr*). 'Pay record.'

paren (*auth abbr*). 'Parenthesis.'

parent, *n. attrib.* **1.** Of a unit or other organization: **a.** From which a unit or persons are placed on detached service, as in *parent organization.*

b. From which cadre personnel are drawn, as in *parent wing*. **2.** Of an installation: That is responsible for certain logistic support of other installations in the same area.

parent base. 1. A base designated to furnish specified supplies to one or more subbases or organizations through the appropriate subbase supply officer. **2.** The main base for an auxiliary base.

parent command. The command from which a tenant unit or any other unit has been taken for detached service.

For example, the parent command of an air rescue squadron receiving logistic support from another command is the Military Air Transport Service. See **tenant, *n.***

parent unit. 1. The military organization or unit (which see, sense 1) to which an activated or organized subordinate unit is assigned: See note. **2.** The unit from which a person or detachment is withdrawn for detached duty.

In sense 1, the parent unit may be considered the next higher unit to the subordinate unit, as in 'the parent unit of the Air Rescue Squadron was the 7 Air Rescue Group,' or it may be considered to be the overall establishment, as in 'the parent unit of the tenant squadron was MATS.' In contexts requiring differentiation, the word 'direct' may be used, as in 'its direct parent unit was the 7 Air Rescue Group.'

paresthesia, *n. Medicine.* A condition of swelling, rash, cold or hot sensations, etc., brought on by the formation of gas bubbles in the tissues, esp. those tissues directly beneath the skin.

park, *n.* **1.** Short for 'air park' (which see). **2.** A place where motor transportation is provided, esp. in the phrase 'car park.' Chiefly *British*.

park, *v.* **1.** *tr.* To bring an *airplane* or other *vehicle* to a stop and leave it standing for a time usually without pilot or driver, esp. in an area set aside for such a vehicle when not in use or not being repaired. **2.** To assemble *vehicles* into a designated area and to leave them without pilots or drivers. **3.** *intr.* To stop a vehicle and leave it standing, as in 'he parked in the woods.'

Hence, **parked,** *a.* A parked aircraft is distinguished from a standing aircraft. See **standing, *a.***

parka, *n.* A long upper garment with a hood attached, worn in very cold climates, as in the arctic.

The parka may be tailored of skins, esp. as worn by the Eskimos, but they are also made of fabric or quilting.

Parkerize, *v. tr.* To impart a dull, relatively rough finish to a *firearm* by use of powdered iron and phosphoric acid. Hence, **Parkerization,** *n.*, **Parkerized,** *a.*

Parkerization is a patented process of the Parker Rust Proof Company, Detroit, Michigan.

parking apron. An apron (which see) used for parking.

parking ramp. A parking apron, esp. in front of a hangar. *Loose* usage. See **apron, *n.***

Parks Air Force Base. An AF base at Pleasanton, California, a former Navy base, named for Rear Admiral Charles W. Parks, who died in 1930.

Park trainer. A device used in aerial photographic training, invented by S. S. Park, formerly of the Lowry photographic school.

parsq (*auth abbr*). 'Pararescue.'

part, *n. Specif.* A piece or member of a gadget or machine, esp. such a member provided as a spare, or one that is salvageable.

In the plural, this word applies to all such members available through supply for maintenance. Attrib., as in *parts catalog, parts number*.

part (*abbr*). **1.** *auth.* 'Participate.' **2.** 'Partial.'

partial crit. Something less than a critical mass of fissionable material, esp. as related to the critical mass of the Trinity or Alamogordo bomb of 16 July 1945, as in 'a partial crit of eight-tenths.'

partial mobilization. Mobilization that falls short of total mobilization.

participate, *v.* (part) *intr.* Of a person, unit, or command: To take a part in an action or operation; to share in the responsibility. Hence, **participation,** *n.* Cf. **coordination, *n.***

partisan, *n.* A member of an organized group of civilians who, in devoted adherence to a cause, work singly or in unison to sabotage or undermine an enemy's hold on the country in which they live.

PAS (*abbr*). 'Professor of Air Science.'

pas (*auth abbr*). 'Passage.'

Pascal's law. [After Blaise *Pascal* (1623–62), French mathematician and philosopher.] The principle that a fluid exerts pressure equally in all directions, or that a fluid not acted upon by external forces has an internal pressure the same at all points.

Hydraulic systems in an airplane, for example, are constructed so as to utilize this principle.

pasep (*auth abbr*). 'Being passed separately.'

pass, *n.* **1.** A short tactical movement, usually in a dive, by a fighter aircraft, calculated to give opportunity for firing at a target, either air or ground. **2.** A sweep by an aircraft through or within firing range of an enemy air formation or antiaircraft artillery. **3.** A bomb run, esp. one that proves abortive or has to be repeated. **4.** An unsuccessful run for landing an aircraft. **5.** An instance of any such movement, sweep, or run, as in 'he made two passes.' **6.** A liberty pass. **7.** A card or certificate issued to a person to permit him to pass through a gate, door, or other place requiring control.

pass, *v.* **1.** *tr. To pass over*, to omit favorable action on a *person* eligible for a particular assignment or promotion, as in 'he was passed over and

had to retire.' **2.** *To pass in review*, to march in formation before a commander or reviewing dignitaries. Also used as a command. **3.** *To pass through the sound barrier*, to go from subsonic to supersonic speed.

passenger, *n.* (pax) *Specif.* **1.** Any person other than a member of the aircrew who rides on an aircraft. **2.** In commercial aviation, any such person, but esp. one who pays for his ride.

Attrib., as in *passenger aircraft, passenger billeting, passenger capacity, passenger carrier, passenger pilot*, etc.

passenger mile. One mile per each mile flown by each passenger.

On a given airplane trip, the passenger miles flown are the number of miles flown multiplied by the number of passengers carried on the trip.

passing light. On certain aircraft, a steady red light on the left wing at the outer leading edge.

An aircraft, in meeting or overtaking another aircraft, turns to the right so that its clearance is to the left.

passive air defense. That aspect of air defense concerned with noncombatant measures taken to resist, nullify, or reduce the effectiveness of an enemy attack on an air defense area by aircraft or guided missiles. Distinguished from active air defense (which see).

Passive air defense includes cover, concealment, dispersion, bomb disposal, and medical services. It does not include the use of balloon barrages.

passive defense. 1. In generic use, any or all noncombatant measures undertaken to defend an area or installation against a ground or air attack or airborne assault, including the use of cover, concealment, dispersion, etc. **2.** Short for 'passive air defense.'

passive detection. The detection of a target or other object by means that do not reveal the position of the detecting instrument or detector.

Instruments sensitive to noise or infrared light provide means of passive detection; likewise instruments for detecting radar broadcasts.

passive homing. Homing by use of a passive detection device. See **homing,** *n.*, note.

PAST (*abbr*). 'Professor of air science and tactics.' Now *hist.* See **PAS** (*abbr*).

PAT (*abbr*). 'Personnel authorization table.'

pat (*auth abbr*). 'Patrol' used in combination only.

patch, *n.* **1.** A cloth emblem worn on the sleeve of a uniform near the shoulder. **2.** A reinforcing piece of fabric cemented or attached to another fabric at a point of wear or tension.

In sense 1, see **shoulder emblem.**

path, *n. Specif.* The line or way connecting the continuous positions occupied, or to be occupied, by an object moving through the air. Cf. **flight path.**

The path of an airplane is the hypothetical hole it bores through the atmosphere, whatever vertical or horizontal direction it may go. Cf. **course,** *n.*, sense 1, **track,** *n.*, sense 1; see **flight path.**

pathfinder, *n.* (pfdr) **1.** An experienced aircrew member, or an aircrew as a whole, which seeks out a target, drop zone, or release point, and marks it for attack or use, as by dropping flares or beacons. Usually *pl.* when applied to the aircrew. **2.** A member of a parachute team dropped, or to be dropped, in an area to set up signal devices for guiding aircraft into a drop or landing zone. **3.** An airplane used in the operation of pathfinding, esp. as called for in sense 1 above. **4.** A particular radar device installed in an airplane for navigating or homing.

Attrib., as in *pathfinder aircraft* (esp. in sense 1), *pathfinder crew* (sense 3), *pathfinder beacon* (sense 1 or 2), *pathfinder force* (sense 1 or 2), etc.

pathfinding, *n.* The actions or operations of a pathfinder.

pathol (*auth abbr*). 'Pathologist.'

patient, *n.* (pnt) A sick or injured person under the care of a physician or nurse, esp. such a person in, being evacuated to, or being transferred to, a hospital.

Patrick Air Force Base. An AF base at Cocoa, Florida, once known as the Long Range Proving Ground Air Force Base, renamed for Major General Mason M. Patrick, who died in 1942.

patrol, *n.* **1.** *Specif.* **a.** The action of flying over or about a specified area or airspace to insure against surprise attack, or to assure ready offensive action if needed, as in 'he was sent on patrol.' See **reconnaissance patrol. b.** An instance of such action, as in 'he had a bitterly cold patrol,' or 'his patrol was an exacting one.' **2.** The airplane or airplanes together with the aircrew or aircrews that engage in this action, as in 'he sent a patrol into the air.' **3.** An action on the ground in which a guard checks security points; the guard that performs this action.

Attrib. in sense 1, as in *patrol airplane, patrol duty, patrol mission*, etc. Attrib. in sense 2, as in *patrol formation, patrol leader*, etc.

patrol, *v.* **1.** *intr.* To fly in patrol, as in 'he was ordered to patrol over Manila.' **2.** *tr.* To fly a patrol over an *area* or within an *airspace*, as in 'fighter-bombers patrolled the assault area; fighters patrolled the skies.'

patrol bomber. 1. A bomber used for patrol. **2.** A bomber specially suited to patrol duty; *specif.* in the Navy, a bomber that strikes at targets of opportunity in the area being patrolled.

In sense 2, the patrol bomber of WW II was usually amphibious, like the PBY Catalina; the patrol bomber of the postwar period, like the P2V, is not necessarily amphibious, but it is equipped with electronic equipment for detection and attack. These patrol bombers usually fly singly.

PATS (*abbr*). 'Preacademic training student.'

pattern, *n.* **1.** Any configuration, usually conceived of visually, that gives a certain unity to a

group of markings, formations, events, or other constituents, by providing a scheme of characteristic internal relationships between the constituents. **a.** Such a configuration that merely portrays. **b.** Such a configuration that guides or controls something. Attrib., as in *pattern fire, pattern search.* **2.** Short for 'landing pattern' or 'traffic pattern.' Attrib., as in *pattern altitude, pattern clearance, pattern flying.*

In a bombfall pattern, the pattern consists of a design made by the physical bomb craters on the ground. In a traffic or an air-route pattern, the pattern is that of a series of postulated lines representing the flight paths laid out for aircraft to follow. In the first instance, the pattern is visualized after the event and interprets succinctly what happened; in the other, the pattern is conceived first, and becomes a guiding factor to events.

pattern bombing. A method of bombing in which the bombs are made to strike the target in a certain pattern.

Pattern bombing is done by a formation of planes acting as a single unit. The lead plane of a formation does the sighting for the entire formation, and the formation tries to release its bombs as simultaneously as possible. Pattern bombing, properly done, insures an efficient distribution of bombs.

pattern harmonization. The adjusting of a fighter's fixed guns so that they will produce the largest uniform pattern of lethal density possible at a given range. See **harmonize,** *v.*

pattern work. In flying training or practice, the work involved in practicing takeoff, flying a landing pattern, approaching, and landing.

See **airwork,** *n.*, and **work,** *n.*, sense 2.

PAV (*auth abbr*). 'Personnel allotment voucher.'

pax (*auth abbr*). 'Passenger' or 'passengers.'

pay, *n.* **1.** That which is paid a person for his services, esp. in money or in something convertible into money. In the case of service personnel, pay may include base pay, incentive pay, foreign duty pay, and monetary allowances. Cf. **salary,** *n.* **2.** *Restrictive.* **a.** Base pay. **b.** Base pay plus all other specific monetary pay implicit in context, except allowances. See **pay and allowances. 3. a.** That which is revenue producing, esp. in combination, as in *pay passenger* or *pay cargo.* **b.** That which is delivered, or deliverable at the end of an aircraft flight or mission, esp. in combination, as in *payload* (which see).

Attrib. in sense 1 or 2, as in *pay clerk, pay data card, pay record, pay roll,* etc.

pay and allowances. The total pay of a military or civilian person, including base pay, incentive pay, etc., and all authorized allowances.

In this phrase, the word 'pay' has the meaning of **pay,** *n.*, sense 2b.

pay grade. The grade of an airman or officer reevaluated by consideration of his cumulative years of service, used as a basis for ascertaining base pay.

An airman, first class, for example, in the grade of E-4, with more than 18 years of service, receives, under current regulations, more base pay than does a staff sergeant (E-5) with less than 14 years' service. In this case, the airman is in a higher pay grade than is the staff sergeant.

payload, *n.* Also **pay load. 1.** In commercial aircraft, that part of the load carried that produces revenue, i.e., the passengers with their baggage, or the air cargo, or both. **2.** In military aircraft, including pilotless aircraft, that part of the load that is expendable, deliverable, or ready for use in direct accomplishment of the special purpose of the air mission: See note. **3.** In a guided missile, rocket, or other explosive missile, the warhead compartment and that which is carried in it. **4.** The weight of any such loads.

In sense 2, the payload is expressed normally in terms of weight, and is over and above the weight of the crew, the weight of the usual operating equipment, and the weight of the fuel and oil being used in the operation of the aircraft. For a transport, the payload consists of the passengers and air cargo; for a bomber, of the bombs or other offensive projectiles, but not of machine-gun or other defensive ammunition; for a fighter, of machine-gun and cannon ammunition and of rockets; for a reconnaissance plane, of cameras, flares, or the like; for a pilotless aircraft or rocket vehicle, of whatever is used for the purpose involved, as research and test equipment, animals, bombs, leaflets, etc.

PB (*abbr*). 'Patrol bombing' or 'patrol bomber,' as used in the designation of certain Navy aircraft.

PB2Y. A Navy four-engine flying boat developed by Consolidated and used in WW II for patrol, ambulance, and transport service. Popularly called the 'Coronado.'

PB4Y-2. A four-engine bomber and reconnaissance monoplane developed by Consolidated Vultee during WW II for the US Navy. Popularly called the 'Privateer.'

The PB4Y-2, developed from the B-24, had a single fin and rudder.

P band. A designation formerly given to a band of radio frequencies between 225 and 390 megacycles.

Use of this designation is no longer authorized in the Air Force.

PBJ. The Navy designation for the B-25.

Various modifications were designated *PBJ-1C, PBJ-1D,* etc.

PBM. A twin-engine, patrol-bomber flying boat, developed by Martin for the US Navy, used before, during, and after WW II. Popularly called the 'Mariner.'

Different production versions of the PBM were the *PBM-1, PBM-3, PBM-5,* and *PBM-5A.*

PBO. The Navy designation for the A-29.

PBR (*auth abbr*). 'Precision bombing range.'

PBS (*abbr*). 'Prefabricated bituminous surface.'

PBX (*abbr*). 'Private branch exchange.'

PBY. A twin-engine, parasol-wing, patrol-bomber flying boat, developed by Consolidated esp. for the US Navy, used before, during, and after

WW II. Popularly called the 'Catalina,' or 'Cat.'

Different versions of the PBY include the *PBY-5*, *PBY-5A*, etc., some versions being amphibian. See **OA-10.**

PC (*auth abbr*). 'Port call.'

PCA (*auth abbr*). 'Permanent change of assignment.'

pclk (*auth abbr*). 'Pay clerk.'

PCS (*abbr*). **1.** *auth.* 'Permanent change of station.' **2.** 'Post, camp, or station.'

pct (*auth abbr*). 'Percent.'

PD (*abbr*). 'Port of debarkation.'

pd (*auth abbr*). **1.** 'Paid.' **2.** 'Period.'

P-day, *n.* The earliest day on which the rate of production for any given item equals or exceeds the rate at which the item is required by the armed forces.

This day may be reckoned as the earliest day after either M-day or D-day. 'P-day' is sometimes considered to be the earliest day on which deliveries are adequate with respect to location and quantity to meet mobilization materiel requirements.

PDI (*abbr*). 'Pilot's direction indicator.'

pdn (*auth abbr*). 'Production.'

PDR (*auth abbr*). 'Philippine Defense Ribbon.'

PE (*auth abbr*). 'Port of embarkation,' when used in combinations.

Pe (*abbr*). A designation for a Russian aircraft designed or developed by Vladimir Petliakov (1891–1944), as the *Pe-2*, a twin-engine bomber of WW II, and the *Pe-8*, a redesigned four-engine bomber, originally called the 'TB-7.' See **Buck,** *n.*

peace, *n.* **1. a.** A condition or situation in which the nations of the world are on friendly commercial and diplomatic terms with one another. **b.** Such a condition as applied between two nations or among several nations, as in 'there is peace between the US and Brazil.' **2.** A condition free of actual military hostilities, even though marked by diplomatic conflict and cold war activities. **3.** The condition that exists after a war has come to an end, or after an armistice has brought an end to military hostilities.

This term is a fluid term with many connotations. It is employed in propaganda with double-edged meanings. Cf. **conflict,** *n.*

peacetime, *n.* A time when a nation is not at war. Attrib., as in *peacetime aircraft, peacetime air force, peacetime intelligence,* etc.

peashooter, *n.* A fighter pilot or a fighter plane. *Jocular.*

pea soup. Any heavy fog, but esp. the local fog occurring in and near the city of London. *Fig.*

peculiar item. An item of supply used only by a particular service or organization.

pecuniary, *a.* Consisting of, or entailing, money, as in *pecuniary liability, pecuniary responsibility.*

pedal, *n. Specif.* A cockpit control operated by the foot, esp. one of the rudder pedals.

pedestal sight. *Gunnery.* In an aircraft gunnery system, a sight mounted on a pedestal for remote control of the guns.

peel, *v. intr. To peel off,* to leave a formation of airplanes by turning away sideward, upward, or downward.

The outside plane or planes of a formation are the first to peel off.

peeloff, *n.* The maneuver of peeling off from a formation.

peep sight. A rear gunsight having a small hole in which the front sight is centered in aiming. Distinguished from an open sight.

Pelican, *n. Specif.* A homing radar glide bomb developed by the Navy.

Pénaud machine. Any of several air machines made either in prototype or in model by Alphonse Pénaud.

Alphonse Pénaud (1850–1880) was one of the pioneers of French aeronautics. In 1870 he constructed a helicopter model; in 1871 he made a model airplane, the 'planophore,' which had fore and aft stability; in 1876 he patented a full-size man-carrying monoplane, considered practical except for its power plant.

pencil beam. A radar beam nearly round about its axis, and equally sharp in all planes that pass through its axis.

penetrate, *v.* (pent) *Specif.* **1.** *tr.* **a.** To fly into enemy or foreign *territory;* to break through a *defense.* **b.** To climb into hitherto unattained *airspace,* as in 'Captain Orvil Anderson and Captain A. W. Stevens penetrated the stratosphere.' **2.** To force a way into a *target* or other *substance.* Said of a shell, bomb, or other projectile; also of rays and radioactive dust. **3.** *intr.* To enter into a territory or substance. Often with *into.*

Hence, **penetrating,** *a.,* as in *penetrating enemy airplane, penetrating bomb, penetrating power, penetrating ray.*

penetration, *n.* (pent) **1.** The action or process of the verb 'penetrate.' **2.** The depth to which something penetrates, as in 'the Eighth Air Force increased its penetration.'

Attrib. in sense 1, as in *penetration command, penetration escort, penetration mission, penetration route, penetration speed chart,* etc.

penetration ballistics. A branch of terminal ballistics concerned with the motion and behavior of a missile after penetrating a target.

penetration fighter. A long-range fighter designed primarily to penetrate deep into enemy territory against air or ground targets. Attrib., as in *penetration fighter unit.*

penetration tactics. The tactics involved or used in penetrating enemy territory.

penetrative ability. 1. A capability peculiar to an air force or aircraft to proceed to a point above

any geographical location without regard to natural or artificial surface barriers. **2.** This capability considered as a power to influence people at any point on the globe.

Penetrative ability comes to an aircraft or air force by virtue of speed and the use of a three-dimensional medium of operations. Cf. **two-ocean navy.**

penetrator, *n.* An aircraft used to penetrate enemy territory, esp. a fighter or a fighter-bomber.

penguin, *n.* A person entitled to wear wings but not on flying status. *Jocular.*

pent (*auth abbr*). 'Penetrate' or 'penetration.'

Pentagon, *n.* Usually written 'The Pentagon.' **1.** A relatively low, massive, five-sided building on the Virginia side of the Potomac, in which are located the principal executive offices of the Department of Defense, including those for the military departments of the USAF, the Army, and the Navy. Also called the 'National Defense Building.' **2.** The seat of authority in matters of the AF, the Army, and the Navy. Often personified, as in 'The Pentagon says,' or 'The Pentagon ordered.'

In sense 1, the Pentagon was completed on 15 January 1943. It contains over 17 miles of corridors, and has provided space for as many as 32,000 workers. Strictly speaking, it is located outside the District of Columbia, but has an address of Washington 25, D.C.

Pentagon English. A version of English used, or reputedly used, by people who work in the Pentagon.

For the most part, Pentagon English is the same as the mother tongue, but characterized by a high percentage of military terms, which, by some users, are used in contexts not necessarily military. Likewise, it is considered to have its share of pseudotechnical jargon, new-word formations, and hackneyed phrasing that many critics find in any bureaucratic environment, in or out of government.

The term is sometimes used opprobriously, referring to such usage as *adverse weather conditions* (bad weather), *to initiate* (to begin), *to quantitate* (to express in quantitative terms), *to reliable-ize* (to make reliable), *to optimize* (to obtain an optimum result), *to folderize* (to file away in a folder), *to doctrinize* (to make into doctrine).

Pepperrell Air Force Base. An AF base at St. Johns, Newfoundland, formerly known as Fort Pepperrell, named for Sir William Pepperrell (1696–1759), an American general noted for his political and commercial career in colonial New England.

peptizer, *n.* A substance added to another substance, as to napalm, to bring it into colloidal solution. Used in cold weather.

per (*auth abbr*). 'Permission.'

PerAM (*auth abbr*). 'Personnel action memorandum.'

percentile score. A score expressed in terms of a percentage. Cf. **standard score.**

perceptual motor learning. The learning of a motor skill with special reliance upon sensory discrimination.

Perceptual learning is involved, for example, in tightrope walking or in billiards, where the sense of sight is used to discriminate or judge a distance or an angle.

percussion primer. A primer that responds to percussion.

per diem. 1. 'By the day.' **2.** An allowance or amount of so much a day either for extraordinary expenses at a station or for temporary duty away from the permanent duty station.

Attrib., as in *per diem allowance, per diem voucher,* etc. Usage sanctions pronouncing the first syllable of *diem* as a rime of *me.* It is also, however, pronounced as a rime of *sky.*

peref (*auth abbr*). 'Personal effects.'

perf (*auth abbr*). 'Perform' or 'performance.'

performance, *n.* (perf) **1.** The act or action of doing something, as in 'during the performance of his duties, he discovered the error.' **2.** The manner in which a thing actually operates, esp. as measured by a standard; the degree of effectiveness that results from the way a thing works, or reacts to human control, as in 'the Mig's performance was not up to that of the F-86.' Often modified, as in *high performance.* **3.** The degree of effectiveness that results from the way a person or organization carries out its duties or activities.

In sense 2, the performance of an aircraft depends upon its features, characteristics and capabilities.

Attrib. in sense 1, as in *performance bond* for a contractor, *performance capability,* etc. Attrib. in sense 2, as in *high-performance aircraft, performance chart, high-performance gasoline, performance parameter, performance test,* etc. Attrib. in sense 3, as in *officer performance factors.*

performance characteristic. A characteristic that appears during the use of something, or during its operation. See **characteristic,** *n.*

performance data. Data on the manner in which a given substance or piece of equipment performs during actual use.

performance number. A number which, when applied to a given substance or thing, indicates its performance rating by reference to an arbitrary standard. Applied esp. to fuels.

Thus, the number 100/130, when applied to an aviation gasoline, indicates that the lean-mixture power performance of the gasoline is the same as that of 100 octane gasoline, and that its rich-mixture power performance is 1.3 times that of 100 octane gasoline.

performance rating. 1. A rating given a person, substance, or thing that relates its performance to some accepted standard. **2.** The performance number that represents this rating.

performance report. An official report made on an airman covering his attention to duty, knowledge of job, etc. Cf. **effectiveness report.**

performance standard. An arbitrary standard accepted for the rating of a particular performance.

Performance standards vary according to the nature

of the performance being measured. For example, the performance of 100 octane gasoline is taken as a performance standard for measuring the performance of other fuels.

performance-type glider. A sailplane or other glider with good soaring and control characteristics. Cf. **primary-type glider.**

PERG (*auth abbr*). 'Production equipment redistribution group.'

peri (*auth abbr*). 'Perimeter.'

perimeter, *n.* (peri) **1.** The whole outer edge of something, as of an air base or geometric figure. **2.** A place near the outer edge of something; *specif.* a place immediately within or across the outer edge of an airfield, sometimes improved for a parking area or a taxiing way. Attrib., as in *perimeter parking, perimeter road, perimeter track.*

perimeter defense. A defense without an exposed flank, consisting of forces deployed along the perimeter of the defended area.

periodic dock. A dock for the periodic inspection or overhaul of an aircraft or engine.

periodic inspection. An inspection repeated either at regular intervals of calendar time or, in reference to certain equipment, after a thing has been used for a given number of hours.

The periodic inspection of aircraft is on a basis of flying hours flown, the number of which varies according to the type aircraft, except that a calendar periodic inspection is made every 90 days when the aircraft does not accumulate the hours specified. Because each periodic inspection is thorough and searching, the procedure of the intermediate and major inspections has been replaced. Each periodic inspection includes a preflight and postflight inspection. See **preflight inspection,** sense 2.

periodic report. 1. Any one of a series of reports issued one after another with a regular time interval between each issue, as a weekly or monthly report. **2.** The name applied to the class to which such reports belong.

peripheral locality. A locality contiguous to and within the outer limits of a country; a locality in the outer reaches of a defense system.

A peripheral locality is distinguished from the heartland or interior.

peripheral war. A contained war fought in the periphery of a defense system.

periphery, *n.* The outer reaches of an area or region, as distinguished from its interior. Said esp. of a country, or a continent, or a defense system.

periscopic sextant. A sextant fitted with a periscope through the top of an airplane to permit observations in celestial navigation.

perm (*auth abbr*). 'Permanent.'

permafrost, *n.* [*Permanent frost.*] In arctic regions, a mixture of earth and water solidly frozen together and not subject to seasonal thawing; also ground unmixed with water that remains at a temperature below freezing.

The permafrost stratum is nearly always below the ground surface. Above the permafrost is the active layer.

permafrost island. An area of permafrost surrounded by unfrozen earth.

permafrost table. The irregular surface of a permafrost layer or stratum.

permanent, *a.* (perm) **1.** Of a building, air base, runway, or other installation: Built or prepared for indefinite use or occupancy. **2.** Of rank or grade: Recognized as stable and certain: See note. **3.** Of records: **a.** Put into writing or recorded on tape, as in 'he made a permanent record of our conversation.' **b.** Considered not particularly active, but requiring preservation at least for a time, as in 'your active and permanent files should be kept separate.' **c.** Preserved indefinitely, as in a records depository or archives.

In sense 1, 'permanent' does not necessarily refer to soundness of construction; it refers to the expectation of continued use. Because of this, permanent installations are allowed certain types of structures not allowed temporary installations.

In sense 2, 'permanent' indicates that an officer or airman having a permanent rank or grade in a particular component of the AF will not, except under disciplinary action, be reduced below such rank or grade in the component concerned. That is, the term applies to the status in a particular component, and does not necessarily apply to the status held in another component. See **permanent grade.** Used, as in 'Brig Gen Jones was reduced to his permanent colonelcy,' or 'Lt Col Dillon was promoted to the permanent rank of major.' Also attrib. with title names, as in *permanent master sergeant.*

permanent appointment. In the Civil Service, a career appointment. *Popular.*

permanent change of assignment. (PCA) A change in assignment affecting a person, group of persons, or unit that involves a transfer of jurisdictional control from one commander to another.

A PCA may, or may not, involve a concurrent permanent change of station.

permanent change of station. (PCS) A physical transfer of a person, group of persons, or unit from one station to another, made without plan or expectation of return to the station of first instance.

This term includes the change from one's home to one's first station upon entry into service, and the change from last station to home upon retirement or separation from active duty. A PCS may, or may not, involve a change of assignment.

permanent echo. An electronic echo received by ground-based radar as a result of radar beams striking mountains, cliffs, bridges, buildings or similar fixed objects.

permanent employee. Under Civil Service, an employee who has competitive status.

permanent grade. (PG) That grade of an officer or airman below which he cannot be reduced,

except for cause, during service within the AF component that authorized such grade to him.

An officer in the permanent grade of colonel in the AF Reserve may, for example, come on extended active duty in the temporary grade of lieutenant colonel, but he is not obliged to serve in the AFRes in a grade below that of colonel. In many cases, a person is in a temporary grade higher than his permanent grade. See **component, *n.***, sense 2, and **permanent, *a.***, sense 2.

permanent loss. A loss in personnel or equipment that can never be restored, or that cannot be restored within such time as to be useful in a given operation or action.

A person killed is a permanent loss, also a wounded person who is permanently disabled or who cannot reasonably be expected to recover until the need for him has passed. A destroyed aircraft is a permanent loss, also a damaged aircraft that cannot be repaired in time for further use in the operation.

Like a loss, a permanent loss is not cancelled out by a replacement.

permanent magnet. A magnet that remains magnetic without application of a magnetomotive force.

permanent party. A person, or persons, with continuing duty at an air base or other station, distinguished from personnel being processed or on duty for a special purpose. Hence, *permanent-party personnel* (PP). See **pipeline personnel.**

permanent promotion. Promotion to a permanent grade.

permanent station. The station to which a unit or a person is considered permanently assigned for duty. In full, **permanent duty station.**

Normally, if the orders of duty assignment do not provide for termination of assignment at a designated station, the station is considered a permanent station.

permanent status. A misnomer for 'competitive status' under Civil Service.

permr (*auth abbr*). 'Permanent residence.'

pernogra (*auth abbr*). 'Permission not granted.'

perp (*auth abbr*). 'Personnel processing.'

Perrin Air Force Base. An AF base at Sherman, Texas, named for Lieutenant Colonel Elmer D. Perrin, test pilot, killed in 1941.

pers (*auth abbr*). 'Personnel.'

perscon (*auth abbr*). 'Personnel control.'

per second per second. Of a rate of acceleration: Changing by so much per second every second.

For example, an object accelerating from rest at the rate of 20 feet per second per second would travel 20 feet in the first second, 40 feet in the second, 60 feet in the third, etc. At the end of 3 seconds, it would have travelled 120 feet.

persexp (*auth abbr*). 'Personal expense money.'

persistent, *a.* **1.** That is not blown away at once or dissipated. Said of gas, radioactive dust, etc. **2.** Continuing. Said of an air attack.

A chemical agent is considered persistent if it remains for ten minutes in the discharge area in sufficient concentration to require human protection from it.

personal affairs. Those affairs of an officer or airman of a personal nature, yet considered to have such relevance to matters as morale and personal adjustment as to warrant the interest of the AF.

Attrib., as in *personal affairs officer, personal affairs program*, etc. These affairs cover such items as insurance, financial aid, Red Cross assistance, etc.

personal conference period. A period of time set aside for personnel to present grievances, ask questions, and make suggestions.

personal equipment. *Specif.* Flying equipment for use of authorized persons, as an oxygen mask, heated clothing, hack watch, jacket, life raft, B-4 bag, sextant, parachute, etc.

Personal equipment, as defined, is a special class of individual equipment.

personal equipment officer. The officer assigned to store, care, and issue personal equipment.

The personal equipment officer also generally conducts lectures in the care and use of personal equipment.

personal property. 1. Property or estate, exclusive of real property, consisting of things that are temporary and movable and subject to personal use or ownership. **2.** Short for 'public personal property.'

personal records file. A file kept personally by each officer, including various matters pertaining to himself, as orders, letters, medical records, or decorations.

Often called a 'two-o-one file' for its similarity to the former official file called by that name.

personal staff. A group of staff officers that attend the personal needs or particular interests of a commander.

Membership on a personal staff varies with the commander or with the type of staff organization. In a general staff type, for example, the commander's aide, the inspector, and the officer of information services are normally on this staff; in a three-directorate type, the executive officer, the inspector, the budget and fiscal officer, the statistical control officer, and the officer of information services are usually on this staff.

person chart. An organization chart that shows the names of persons occupying various positions. Also called a 'name chart.'

personnel, *n.* (pers) **1.** The body of people employed in, or associated with, an organization. **a.** Regarded impersonally as the source of manpower. **b.** Regarded as human beings who have different abilities, temperaments, and needs. **2.** The members of this body, as in 'personnel were trained in the use of this device.' **3.** *Capitalized.* A headquarters department, division, or section set up to advise the commander or to serve as his monitor on personnel matters. **4.** In loose usage, the plural of 'person,' as in '200,000 personnel heard his address.'

In sense 1, 'personnel' may be construed as a singular, as in 'personnel offers a particular problem,' but because of the influence of sense 2 it is often construed as a plural.

Attrib. uses in sense 1 show that subsenses **a** and **b** sometimes exclude one another, but usually connotations of both are present in a given combination. Subsense **a** is foremost in such combinations as *personnel allotment*,

personnel assembly station, personnel attrition, personnel augmentation list, personnel space, personnel strength, personnel transport, etc. Subsense **b** is foremost in *personnel assignment, personnel classification, personnel utilization*, etc. Both subsenses are equally present in *personnel administration, personnel division, personnel management, personnel officer*, etc.

personnel allotment voucher. (PAV) An obsolete accounting instrument replaced by the manpower authorization voucher.

personnel and equipment modification list. A list of changes by addition, deletion, or substitution, to a table of organization and equipment, affecting either personnel or equipment, or both. Now *hist.*

personnel attrition. The process of permanently losing personnel, esp. in reference to personnel losses suffered by a given command or other unit. See **permanent loss.**

In a broad sense, personnel attrition includes permanent losses from whatever cause—from death, injury (either combat or accidental), disease, desertion, reassignment, or retirement. But the term is sometimes used restrictively to include those permanent losses that are: **a.** Due only to death or injury in combat. **b.** Due only to death, injury, and disease.

personnel attrition rate. A rate that expresses, in terms of a given personnel strength, the permanent personnel losses sustained by an organization due to specified causes in a given period of time. See **permanent loss.**

This term, like aircraft attrition rate, must be arbitrarily used in the same way by reporting agencies, if the term is to be useful in statistical control. The factors involved are the *strength*, the *losses*, and the period of *time* covered by the reporting.

Strictly speaking, the strength, however defined for reporting purposes, changes with each loss or replacement. For example, if the initial strength is 100, the first person lost represents an attrition of 1 to 100; if no replacement has been made, the second person lost represents an attrition rate of 1 to 99 or 1.01 to 100; if the strength is augmented to 110, the third person lost represents an attrition rate of 1 to 110 or .909 to 100; and so on. For the time covered, the attrition rate is the sum of the separate fractional rates.

Losses may be arbitrarily defined, depending upon the commander's purpose: See **personnel attrition.** The period of time is also a matter for the commander to determine.

personnel authorization table. Any document, as a table of distribution or a table of organization, that authorizes personnel.

personnel authorization voucher. A personnel allotment voucher.

personnel management. 1. The art or skill of employing personnel in such a way as to afford an adequate measure of manpower for each operation or activity in terms of functions (see **function,** *n.*, sense 3), and at the same time to provide for individual differences in ability and temperament in the assignment of tasks or responsibility. **2.** The field of endeavor in which such art or skill is practiced.

personnel modification list. A list that amends a personnel authorization table.

personnel order. *Specif.* An order that pertains to flying personnel and grants aeronautical ratings to particular persons, or authorizes changes in flying status.

personnel processing center. A center either in the US or overseas for receiving and processing personnel, esp. AF personnel, going overseas or returning from overseas.

A personnel processing center combines the functions formerly performed by an overseas replacement depot and a replacement depot.

personnel processing group. A group having the basic mission of processing AF personnel, such as reservists recalled to active duty, personnel bound to or from an overseas destination, etc.

personnel relations. 1. Those relations that affect, or arise from, the physical and psychological reactions of people who work together or carry out an operation together. **2.** That aspect of personnel management that deals with such relations, as in 'he was skilled in personnel relations.'

personnel services. 1. Those services provided for the special benefit of people's welfare or morale. **2.** Often *capitalized.* A branch of personnel administration that provides such special services.

Personnel services include such matters as the program of information and education, awards and decorations, casualty reporting, character guidance, etc.

personnel utilization. 1. That aspect of personnel management concerned with classification and assignment of personnel. **2.** The manner in which personnel are utilized.

Perspex, *n.* [A trade name.] Often written **perspex. 1.** A British plastic similar to Plexiglas. **2.** A window or windshield made of this material.

persuasion, *n.* **1.** The action of influencing a person or persons, esp. those in control of a force or nation, to adopt certain courses of action or certain policies in response to a clarification of issues and facts, esp. in response to a demonstration of military power. **2.** This action considered as a military objective, as in the use of a strategic air force through the mere fact of its existence, to persuade a potentially hostile nation to refrain from committing acts of war. **3.** A broad capability that resides in an air force by virtue of the power that inheres in the air force.

pert (*auth abbr*). 'Pertain' or 'pertinent.'

Peter (*code*). A word formerly authorized for the letter 'P.' See **Able** (*code*).

Peterson Field. An Air National Guard installation near Colorado Springs, Colorado, named in December 1942 for First Lieutenant Edward

J. Peterson, who was killed at the field in August 1942.

This field was an Army air base during WW II.

petrl (*auth abbr*). 'Petroleum.'

petrol, *n.* Gasoline, esp. aviation gasoline. *British.*

Attrib., as in *petrol cork, petrol tank,* etc.

petrol bomb. A napalm bomb.

petroleum, *n.* (petrl) **1.** The oily, flammable liquid found in the earth and used as a source of jet fuel, gasoline, and lubricating oils. **2.** Short for 'petroleum products,' esp. in attrib. uses, as in *petroleum supplies.* Cf. **POL** (*auth abbr*).

PF (*abbr*). **1.** *auth.* 'Preflight.' **2.** *auth.* 'Pneumatic float.' **3.** 'Proximity fuze.'

PFBrg (*auth abbr*). 'Pneumatic float bridge.'

P.F.B.S. (*abbr*). 'Prefabricated bituminized surfacing.' *British.* Also called 'tarred canvas.'

pfc or **PFC** (*auth abbr*). 'Private first class.' Sometimes used as a title. *Hist.* in the AF.

PFD (*auth abbr*). 'Present for duty.'

pfdr (*auth abbr*). 'Pathfinder.'

PFF (*abbr*). 'Pathfinder force.' Attrib., as in *PFF attack.*

pfs (*abbr*). 'Preflight school.'

PG (*abbr*). **1.** *auth.* 'Permanent grade.' **2.** 'Pursuit–ground attack,' as formerly used (*circa* 1920) in designating certain US Army aircraft. **3.** *auth.* 'Post graduate.' **4.** *auth.* 'Proving Ground.'

PGC (*abbr*). 'Proving Ground Command,' as used in the AAF.

pgn (*auth abbr*). 'Pigeon.'

pgnd (*auth abbr*). 'Propaganda.'

PH (*auth abbr*). 'Purple Heart.'

ph (*auth abbr*). 'Phase.'

Phalsbourg Air Base. An air base at Phalsbourg, France, named for the town.

Phantom, *n.* A popular name for the FH–1.

pharm (*auth abbr*). 'Pharmacy' or 'pharmacist.'

pharyngeal pressure maneuver. *Medicine.* An exercise designed to open or assist in opening the Eustachian tube. Cf. **Valsalva maneuver.**

The exercise is accomplished by contracting the muscles of the floor of the mouth and tensing the cheek muscles while keeping the glottis and mouth closed and holding the nose closed.

phase, *n.* (ph) **1.** A stage in the planned development of an action, program, or operation considered in respect both to (a) the nature of the tasks undertaken and (b) the timing: See note. **2.** In periodic changes of any magnitude, as of circular movements, sound vibrations, or electrical currents, a point or stage in the period of cycle measured from a standard position. **3.** *To be in phase* (said of two or more waves), to pass through their maximum and minimum values at the same instant.

In sense 1, the word is appropriate esp. to actions that take place in an appreciable period of time. In a large action, as that of preparing for and waging war, the period of peace provides opportunity for concentrating upon research and development. This research and development is a phase in the overall action planned and carried out by the military man. Then as a crisis approaches, the phase of research and development narrows or weakens, and is overlapped by another phase, that of committing industry to mass production of equipment developed in the earlier phase. This is followed by other phases, some overlapping, some beginning sharply as others leave off—all, however, leading to a final phase, that of decisive action.

In WW II, it was customary to regard tactical air operations as divided into three phases. The first was that of counterair action; the second was that of interdiction; the third was that of close air support. These phases were, from the airman's standpoint, not necessarily to be considered as following one another, but were inherent tasks in a continuing situation, often overlapping. The word 'phase' in this context, however, was misleading, since it could be, and was, interpreted as suggesting that the third phase was not to begin until the first and second phases had been ended. Because of this, the word is now avoided by many AF persons speaking in this context. Instead, they speak of the *three basic tasks* of tactical or theater air forces.

Individual actions, undertakings, ideas, or even personal qualities are said to be *in phase* or *out of phase* as they accord, or do not accord, with the phase in which they are performed, conceived, or possessed. For example, bravery is considered *out of phase* during research and development, but *in phase* when the fighting begins.

phase, *v.* **1.** *tr.* To plan an *action, operation,* or *program* in such a way as to separate it into phases and thus allow for coordination with another action, operation, or program. **2.** To time a *requirement* in such a way that when it comes around, means for meeting it will be ready; to time one *action* with another. **3.** *To phase in.* **a.** To develop a *program* so that its phases are timed to meet the requirements of another program. **b.** To bring in *equipment* or *reinforcements* according to the phase involved. **4.** *To phase out.* **a.** To make a *contract* for providing certain goods or services according to phases when needed. **b.** *intr.* Of a contract: To meet requirements as phased (sense 2), as in 'the contract will phase out to meet your requirements.'

In illustration of use in sense 1, a training program is said to be phased, for example, if a class of pilots is brought along so that they are ready for action at that moment when a phased production of aircraft provides them with the aircraft needed.

phase lag. *Radio* or *electricity.* A delay, expressed in degrees, in which one wave reaches its maximum and minimum values later than another reaches its maximum and minimum values.

phase localizer. A runway localizing beacon in which the left and right signals are differentiated by a difference in phase, and the degree of departure is indicated by an amplitude difference.

phase modulation. *Electricity* or *radio.* A modulation of a wave's phase by changing its frequency.

phase shift. A change by displacement in the

phase relationship of two or more periodic quantities without, necessarily, a change in modulation.

phase-shift omnidirectional radio range. A kind of omnidirectional radio range used to indicate the azimuthal position of an aircraft by use of two carrier waves or signals, one of which is subject to a continuous phase shift, and is in phase with the other only along a reference line (usually north). See **omnidirectional radio range,** esp. note.

phase training. Specialized training taken subsequent to a regular course and coordinated with a phased requirement. See **phase,** *v.,* sense 2.

phenomenon, *n.* In positivistic usage, any real entity, as an object, event, development, or set of dynamic relationships, that shows itself as an instance of the operation of some natural law, and is actually or theoretically subject to analysis and explanation.

To regard a thing as a phenomenon is to regard it in a particular manner, that is, as a manifestation of some inner law or principle. The attention is upon the thing not as something merely to be outwardly observed and recognized, but as something to be explained and related. In observing it, the mind is occupied in formulating a concept of it. For example, when we say, 'The airplane has become an instrument of national policy,' we are thinking of the airplane as a phenomenon, relating it as a symbol of air power to principles that may be employed in developing national policy. But when we say, 'Four airplanes landed,' we are not considering the airplanes as phenomena, rather, in this instance, the event of their landing is the phenomenon. That the phenomenon has existence apart from man's concept of it is indicated by the fact that the concept we have may be true or false. Many things dealt with in the Air Force are looked upon as phenomena. These include air power, compressibility, flight, radioactivity, etc. See **concept,** *n.,* sense 1. For example of use, see **air power,** sense 1, note.

phgrt (*abbr*). 'Photogrammetrist.'

Philippine Ribbon. Any one of three decorations awarded by the Philippine Commonwealth Government to US military personnel who participated in the defense or liberation of the Philippine Islands.

The Philippine Defense Ribbon, for participation in the defense of the PI between 8 Dec 1941 and 15 Jun 1942; the Philippine Liberation Ribbon, for participation in the liberation of the PI from 17 Oct 1944 to 3 Sep 1945; the Philippine Independence Ribbon for duty in the Philippine territories or waters on 4 Jul 1946, or for duty qualifying a person for either of the two other decorations.

Phillips screw. A holding screw having a special head with two slots which cross one another and are deeper at the center than at the ends. Hence, **Phillips screwdriver.**

See **truncated screwdriver.**

philosophy, *n.* In military usage, a body of beliefs or principles that give a certain bias to the person who entertains them for doing certain things and not doing others, or for doing something in a particular way.

For example, a bias for defensive action rather than offensive action rests upon a philosophy. Likewise, the particular way in which the Korean War was fought rested upon a certain philosophy. The philosophy of a commander often influences the character of his pragmatic concepts.

This term is difficult to define in anything other than general terms. Its use in context is often vague.

phlgr (*abbr*). 'Photolithographer.'

phonetic alphabet. *Specif.* An alphabet code: See note. See **Alfa** (*code*).

In this sense, the term is a misnomer, although sanctioned. In its traditional sense, it applies to a written alphabet by which each sound in a given language is indicated by its own character or symbol.

phoney war. A condition of declared hostilities between nations, but marked by the absence of any armed conflict. *Popular.*

Applied in WW II to the months between September 1939 and April 1940.

phosgene, *n.* A poisonous gas (carbonyl chloride) harmful to the lungs.

Phosgene is colorless, extremely heavy, nonpersistent, and smells like new cut hay or corn.

phosphor, *n.* A substance applied to the inner face of a cathode-ray tube which fluoresces during bombardment by electrons, and phosphoresces after bombardment.

phosphorous bomb. An incendiary bomb filled with phosphorus, esp. white phosphorus.

phot (*auth abbr*). 'Photographer.'

photo, *n.* and *a.* Short for 'photograph,' 'aerial photograph,' 'photographic,' and certain other combinations: See note.

This word appears mainly in combinations, and in some instances becomes a combining form, as in *photoalbum, photoflash, photogrammetry,* etc., where it is used in its noun sense, or in *photoreconnaissance, photorecorder,* etc., where it is used in its adjectival sense. In these formations, the word is not to be considered as an extension of the earlier combining form, which meant 'light,' represented in such words as *photochemistry, photoelectric, photograph,* etc. As an element in the new formations, the word lends itself to ready use as a short for the new combinations, as *photo bomb* for 'photoflash bomb.'

photo (*auth abbr*). 'Photograph.'

photo base. In stereophotography, a projection of the air base to the photographs. See **air base,** sense 2.

This consists of a line from the center point of a photograph to the transposed center point of the overlapped photograph.

photo bomb. A photoflash bomb.

photo cover. Short for 'photographic coverage.'

photoelectric, *a.* Of or pertaining to (a) the emission of electrons by certain substances when struck by light of suitable wave lengths, or (b) the change in electrical current of certain devices when exposed to light of certain wave lengths.

photoflash bomb. A bomb-like apparatus dropped from aircraft to emit a high-intensity light of brief duration for taking aerial photo-

graphs at night. Often called a 'flash bomb' or 'photo bomb.'

photog. (*abbr*). 'Photography,' as used in this dictionary. See **photo** (*auth abbr*).

photogrammetry, *n.* The art, science, or process of making maps and scale drawings from photographs, esp. of making maps from aerial photographs; the process of making precise measurements by the use of photography.

photograph, *n.* (photo) **1.** A photographic print, i.e., a picture or image obtained by photography; *specif.*, short for 'aerial photograph.' **2.** *To take a photograph,* to record on a sensitized plate, film, or film emulsion the image of an object.

In sense 2, the photograph is something other than the photographic print, since the development of the plate or film and the making of prints have not yet been accomplished.

photographic, *n.* (photo) Of or pertaining to photography or to photographs, esp. aerial photography or photographs.

photographic coverage. Coverage by photographs or photography, esp. aerial photographs or photography; also, the photographs providing or making up such coverage. Often called 'cover' or 'photo cover.'

photographic interpretation. The interpretation of photographs, esp. aerial photographs; the activity involved in this interpretation. See **interpret,** *v.*, sense 2.

photographic mission. An air mission sent out to obtain an aerial photograph or photographs.

photographic print. A picture made on sensitized paper by exposing the paper to light shone through a plate or film on which an image of something has been fixed.

photographic reconnaissance. Full for 'photoreconnaissance.'

In combinations, as *photographic reconnaissance flight, plane, squadron,* etc.

photographic strip. A photographic film on which a series of exposures have been made; *specif.*, a reconnaissance strip.

photo index. A map or chart having outlines that indicate the areas covered by a set of aerial photographs, annotated with pertinent information and used primarily to facilitate reference to the photographs. Also called an 'index map.'

photo intelligence. Evaluated and interpreted information obtained from photo interpretation.

In combinations, as in *photo-intelligence detachment, photo-intelligence officer,* etc.

photo interpretation. Short for 'photographic interpretation.'

photo Joe. The pilot of a single-place, high-altitude, high-speed photographic airplane. *Slang.*

photomap, *n.* A map produced from a vertical photograph, a composite aerial photograph, or a mosaic, and upon which grid lines, place names, etc. have been added. Hence, **photomapping,** *n.*

photo mission. Short for 'photographic mission.'

photon, *n. Physics.* A quantum of radiant energy.

The photon is a unit of radiant energy which, by the quantum theory, represents the amount emitted or absorbed in each step. See **quantum theory.**

photo reading. A process in photographic interpretation by which photographic images are identified or described.

photo recce. A written form for 'photo recon.' Also written 'photo reccy.'

photo recon. Short for 'photoreconnaissance.'

photoreconnaissance, *n.* Aerial reconnaissance during which information is gathered by taking aerial photographs. Also called 'photographic reconnaissance.'

photorecorder, *n.* A photographic device for recording the readings of instruments, esp. of flight-test instruments or of instruments sent to high altitudes in rockets.

photo scale. The relation of actual distance on the ground to the corresponding distance on an aerial photograph.

Photo scale may be expressed either as a fraction or as a ratio, e.g., $\frac{1}{20,000}$ or 1:20,000. The *photo-scale reciprocal* is the fraction inverted.

photoscope reconnaissance. A kind of photographic reconnaissance in which radarscope photography is used. Cf. **electronic-countermeasure reconnaissance,** and see **radar reconnaissance.**

photosphere, *n.* The outermost luminous layer of the sun's gaseous body.

Photostat, *n.* **1.** A trade name applied to a photographic device for the rapid photographing of records, maps, instruments, or the like, directly upon a sensitized paper with the image unreversed, but with the blacks and whites reversed. **2.** *Not capitalized.* A copy made by this device.

phototheodolite, *n.* A photographic device used in surveying and map making, consisting of two cameras designed to take pictures of the same object from the same plane.

From the differences between two photographs taken simultaneously with the phototheodolite, measurements of the photographed region in all dimensions may be obtained.

photripart (*auth abbr*). 'Photo triangulation party.'

P-hour, *n.* In a given paratroop operation, the time at which an initial drop of parachutists is made.

PHS (*abbr*). 'Prepared hessian surfacing.'

phugoid curve. A curve that shows the motion

of an aircraft's center of mass during a phugoid oscillation.

phugoid oscillation. A slow or long-period longitudinal oscillation of an aircraft. See **longitudinal oscillation.**

phys (*auth abbr*). 'Physical.'

physexam (*auth abbr*). 'Physical examination.'

physical, *n.* (phys) Short for 'physical examination.'

physical examination. (physexam) An examination given a person to determine his physical fitness or condition.

physical inventory. An inventory of property on hand based on an actual count.

physical security. That kind of security which results from the physical measures (i.e., tangible and material measures) taken to safeguard restricted areas or classified material, equipment, and documents from unauthorized access or observation.

physical security equipment. Equipment, such as fencing, safes, warning systems, etc., that provides, or helps provide, physical security.

physiological atmosphere. The ecosphere.

physiological training. Training designed to acquaint flying personnel with the physiological problems of flight and to instruct them in methods of meeting and solving these problems.

PI (*abbr*). **1.** *auth.* 'Photo interpreter' or 'photo interpretation.' **2.** 'Public information,' as in *PI officer*. See **PIO** (*auth abbr*). **3.** 'Personal identity.' **4.** *auth.* 'Philippines.'

Piaggio 108B. An Italian four-engine bomber used in WW II.

Piasecki, *n.* [*Piasecki* Helicopter Corporation.] Used in the names of helicopters, as in *Piasecki Retriever*, *Piasecki Transporter*, etc.

PIB (*auth abbr*). 'Publishing Information Bulletin.'

pibal, *n.* [*Pi*lot + *bal*loon.] A pilot balloon.

PIC (*auth abbr*). **1.** 'Pursuant to instructions contained in.' **2.** 'Photo interpretation center.'

pic (*auth abbr*). 'Picture.'

PICAO (*abbr*). 'Provisional International Civil Aviation Organization.'

Piccolo (*code*). A code name for a kind of jammer using a series of high-power magnetrons.

pick, *v. To pick up.* **a.** To take *something* into an aircraft, either by air pickup or snatch pickup. **b.** To receive light waves of a *subject* into a television camera. **c.** To receive *signals* from a radar or radio beacon, as in 'the transponder picks up the waves of an interrogator.'

pickaback plane. A piggyback plane.

picket, *n.* **1.** A detached person or group of persons serving to guard others from surprise attack. **2.** A radar beacon set up in a peripheral area. See **radar picket. 3.** An airplane or ship that patrols an outer defense point to obtain early radar warning.

picket, *v. tr. Specif.* To moor an *airplane* in an open area. *British.*

picket ship. A ship used as a radar picket to supplement early-warning radar; also an aircraft serving the same function. See **radar picket.**

pickle, *n.* An aerial torpedo (sense 1). *Fig.*

pickle, *v. tr.* **1.** To coat *equipment* with anticorrosion fluid. **2.** *To pickle an engine*, to coat the cylinder walls of an engine with anticorrosion fluid and seal the inlets and outlets of the engine to prevent air from entering.

Hence, **pickling,** *n.*

picklebarrel bombing. The bombing of a very small target; highly accurate bombing. *Fig.*

pickup, *n.* In specific senses. **1.** Short for 'snatch pickup' or 'air pickup.' **2.** The adhering of one metal to the surface of another, as bronze to steel, where the two metals come together under pressure or friction; the metal particles or coating that thus adheres to another metal. **3.** *Electricity.* **a.** An electrical-magnetic device sensitive to vibration, used in detecting and measuring engine vibration. **b.** A potentiometer in an automatic pilot, which detects the motion of the airplane around the gyro, causing the autopilot to make corrective adjustments.

Attrib. (in sense 1), as in *pickup device*, *pickup load*, *pickup route*, etc.

picture receiver. A term sometimes applied to a receiver that displays televised scenes, images, or the like without accompanying sound. See **television receiver.**

PID (*abbr*). **1.** *auth.* 'Public information division.' **2.** 'Photo-interpretation department.'

pie chart. A circular diagram divided by radii into slices, each slice representing the portion of something proportionate to the whole.

pierced plank. Oblong metal strips pierced with numerous holes, used for surfacing a temporary airstrip or the like.

Pierced plank is either *pierced aluminum plank* (PAP) or *pierced steel plank* (PSP).

PIF (*auth abbr*). 'Pilots' Information File.'

pig, *n.* A barrage balloon. *Slang.*

piggyback, *adv. To sit or ride piggyback*, to sit or ride together in close quarters, as, for instance, when two people sit or ride in a one-place airplane.

piggyback plane. A parasite airplane carried on top of another airplane. Also called a 'pickaback plane.'

pigmented dope. Dope to which a color pigment has been added.

pigtail, *n. Electricity.* **1.** A short, coiled connecting wire, or a short bundle of connecting wires, such as an igniter connector for rockets. **2.** A short, flexible connecting wire between two parts having slight relative motion.

pile, *n.* Short for 'atomic pile' or 'nuclear pile,' i.e., a nuclear reactor.

In combinations, as in *plutonium pile* or *uranium pile*, where the designating word shows the type of material used in the pile.

pile, *v. To pile up*, to crash or wreck an *airplane*, esp. in taking off or landing. Also *intr.*

pillbox, *n.* A small fortification housing a machine gun, antitank cannon, or the like.

pilot, *n.* (plt) **1.** A person who handles the controls of an airplane or other aircraft, and in doing so guides it in three dimensional flight; esp. such a person who pilots a heavier-than-air aircraft. **2.** In the AF, such a person holding the aeronautical rating of pilot, senior pilot, or command pilot. **3.** *Specif.* A first pilot (which see). Also cf. **copilot,** *n.* **4.** Short for 'automatic pilot.' **5. a.** The aeronautical rating of a person who has taken primary, basic, and advanced flying training, and has been officially recognized as having the skills, knowledge, and judgment required to fly an airplane, but who has not yet obtained the experience required for the aeronautical rating of a senior pilot or of a command pilot. **b.** In less exact usage, the aeronautical rating of a senior pilot or command pilot. **6.** Something that leads or shows the way, esp. in such attributive uses as *pilot model*, *pilot parachute*, or *pilot plant.*

Attrib. (in sense 1 or 2), as in *pilot attrition*, *pilot efficiency*, *pilot fatigue*, *pilot instruction*, etc.

In some combinations, usage of the possessive form of 'pilot' is preferred to the attrib., e.g., *pilot's wings* is preferred to *pilot wings*. In other cases, a real distinction exists between combinations using the different forms, e.g., *pilot instruction* is different from *pilot's instruction*.

In the early history of flying, the pilot (sense 1) was variously called 'aeronaut' (when he flew an aerostat), 'aviator,' 'driver,' and 'flyer.' Each of these words survive, but now have different connotations. See separate entries.

See **balloon pilot, glider pilot, service pilot;** also **command pilot, senior pilot.**

Etymological note. The word 'pilot' is of Italian origin, and was borrowed into English from the French in the early 16th century, used in the sense of 'one who directs the course of a ship, esp. one qualified to steer ships into or out of a harbor.' In 1848, it was being applied to an aeronaut (as shown in the O.E.D. Supplement). Whether or not this application was influenced by French usage is not clear. But in the years around 1900, when the word came to be used in aviation, French usage points to the possibility of a new borrowing into English rather than a development from earlier English usage. In those years, the aviation community was small but international. The Americans, the British, and the French all were throwing in their verbal contributions. Several French words were quickly adopted, like *aviation* (instead of *aerial navigation*), *nacelle*, *empennage*, *fuselage*, and *aileron*. The word *pilot* may have been another. See **remous,** *n.*, for a French word that did not catch on in English.

pilot, *v.* **1.** *tr.* To operate, control, or guide an *aircraft* from within the aircraft so as to rise, descend, take off, land, or move through the air or the region above the earth; to fly an *aircraft.* **2.** *intr.* To engage in this activity, as in 'he piloted for a time before I took over.'

pilotage, *n.* Navigation by reference to check points; *specif.*, air navigation by reference to check points or other features on the earth's surface, often with the aid of a map or chart; the method by which this is done. See **electronic pilotage, radar pilotage.**

Pilotage Chart. Any one of several charts, with a scale of 1:500,000 designed for pilotage, esp. for flights of short duration, showing a large number of hydrographic and cultural features. See **USAF** (*auth abbr*), note.

pilot balloon. *Meteorology.* A small free balloon sent aloft and observed with a theodolite to determine the direction and speed of the wind by the movements of the balloon. Also called a 'pibal.'

pilot cadet. An aviation cadet undergoing training as a pilot. Cf. **pilot trainee.**

pilot chute. Short for 'pilot parachute.'

piloted aircraft. An aircraft flown, or designed to be flown, by a human pilot.

This term is used esp. in contexts where a distinction is being made between piloted aircraft and pilotless aircraft.

pilot-ejection seat. An ejection seat designed for a pilot. See **ejection seat.**

pilot error. An error on the part of a pilot or copilot, resulting in a mishap or accident.

piloting, *n. Specif.* **1.** Pilotage. **2.** The action of the verb 'pilot.'

pilotless aircraft. 1. An aircraft (sense 2), esp. an airplane, designed or adapted to control by or through a preset, self-reacting, or radio-controlled unit without benefit of a human pilot. **2.** By extension, an object otherwise called a 'guided missile' in certain contexts, which object is being considered as an air vehicle.

A pilotless aircraft, like a piloted aircraft, is a vehicle or a simulated vehicle (as in the case of a drone or target aircraft). In sense 1, it carries, is designed to carry, or simulates carrying, that equipment or those materials required to perform its particular function—cameras for photographic reconnaissance, bombs for bombing, rockets, guns, or ammunition for air defense or escort, radar for patrolling, etc. In sense 2, the object that normally is thought of as a missile may be regarded as a vehicle, and as such may be called a 'pilotless aircraft.' However, 'pilotless aircraft' is not officially used when the object is clearly being considered as a missile. See **guided missile, missile,** *n.*

pilotless airplane. A pilotless aircraft (sense 1) having wings. See **airplane,** *n.*

pilotless bomber. 1. A pilotless aircraft that carries bombs. **2.** A winged guided missile, such as the TM-61. See **guided missile.**

pilotless missile. A popular term for a guided missile or ballistic missile.

Since missiles are normally 'pilotless,' this term is tautological and misleading unless used in context where distinction is being made between an ordinary guided missile or ballistic missile and a 'kamikaze' type of missile.

pilot model. A production model or other model of an article or piece of equipment that is used for experimental and testing purposes, and serves as a guide in future production.

pilot officer. A commissioned rank or person in the RAF or RCAF, corresponding to second lieutenant in the USAF.

pilot parachute. A small parachute attached to the apex of the main parachute canopy, which pulls the main parachute out of the pack when the pack is opened.

The pilot parachute incorporates a spring-operated, quick-opening device for quicker and safer operation.

pilot pickup. A special air pickup made by a pilot.

pilot's direction indicator. An indicator to the pilot that shows the direction to fly in a bomb run.

The PDI is electrically connected to the bombsight, and as the bombardier sets his sight, the PDI needle is activated.

pilot's handbook. Usually *capitalized.* **1.** Any joint USAF–USN handbook containing approach and airfield information for various airfields, designed primarily for use by pilots during flight operations in an approach zone; *specif.*, such a handbook for pilots of propeller-driven aircraft. **2.** *Pilot's handbook—jet*, such a handbook for pilots of jet-driven aircraft.

Pilots' Information File. (PIF) A group of related publications prepared and maintained primarily for the use of pilots, consisting of applicable base flying regulations and AF regulations pertaining to flying safety and flying operations, to applicable aircraft and airborne equipment, to technical order handbooks, and to other pertinent directives and publications.

Pilots' Information Files are maintained in the offices of operations officers and at other convenient locations, and on occasion parts of them are issued as individual equipment to individuals.

pilot's trace. A cover trace made by a pilot. See **cover trace.**

pilot's wings. An aviation badge for a pilot, distinguished by the Federal shield at the center.

This emblem is worn over the upper left pocket of the coat, or over the left shirt pocket when the shirt is worn as an outer garment. A senior pilot's wings has a star above the center design; a command pilot's wings has this star wreathed in laurel. See **aviation badge.**

pilot trainee. A person undergoing training as a pilot.

This is a broad term, applied to a pilot cadet or to an officer or civilian undergoing pilot training.

pilot training. In the AF, the training and instruction given to certain aviation cadets, to other pilot trainees, or to pilots in the art or skill of piloting heavier-than-air aircraft.

Pilot training is a species of flying training. Pilot training is usually divided into two or more stages, which often vary from time to time, depending upon different concepts or methods of conducting the pilot training program. Pilot training ordinarily consists of primary, basic, and advanced pilot training. See separate entries. See also **preflight training.**

pilot transition training. The transition training given a pilot. See **transition training.**

Pinecastle Air Force Base. An AF base at Orlando, Florida, named for a nearby locality.

Pinetree line. A chain of radar stations built as a joint undertaking by Canada and the US along the Canadian-American border. Cf. **mid-Canada line.**

pinks, *n.* Army officers' clothing, esp. trousers, of a pinkish hue. *Hist.* in the AF.

pinpoint, *n.* **1.** A precisely identified point, esp. on the ground, that locates a very small target, a reference point for rendezvous or for other purposes; the coordinates that define this point. **2.** A target or other installation or place on the ground considered as a pinpoint; a pinpoint target.

pinpoint, *v. tr.* **1.** To determine, identify, or locate accurately a *position*, esp. of an *aircraft* or *formation* of aircraft. **2.** To take a close sight on a *target;* to bomb a small *target.*

Examples of use: In sense 1, as in 'the navigator can pinpoint our position'; 'I pinpointed my position with a radio transmitter'; 'enemy radar pinpointed the formation.' In sense 2, as in 'the bombardier pinpointed his objective and released the bombs'; 'the bombers pinpointed targets close by but did not hit us.'

pinpoint bombing. Precision bombing (in sense 1 or sense 2).

pinpoint navigation. Highly accurate air navigation, esp. under conditions where pilotage or reference to check points is impossible, as on an overwater flight.

pinpoint photograph. A vertical aerial photograph that includes a pinpoint target. Distinguished esp. from a reconnaissance strip.

pinpoint target. A small or precisely defined target. See **pinpoint,** *n.*, sense 2.

PIO (*auth abbr*). 'Public information officer' or 'public information office.'

pion (*abbr*). 'Pioneer.'

pioneer reconnaissance. The initial photographic coverage and reconnaissance of an area.

pip, *n.* **1.** A blip. **2.** An artificial signal on a radarscope, similar to a blip, used for reference. **3.** *Gunnery.* A pipper (which see).

pipe, *n.* A jet aircraft, esp. a single-engine jet aircraft. Attrib., as in *pipe jockey. Slang.*

pipeline, *n.* (PL) **1.** A line of pipe through which gasoline, oil, or other substance is conveyed.

2. By extension, any carrier used to convey a supply of something, as a fleet of cars or a caravan of camels. **3. a.** Any line of movement along which persons or things are considered to be moving: See note. **b.** The status of things or persons moving along this line. **4.** *Elliptical usage.* **a.** Pipeline time, as in 'the pipeline was forty days.' **b.** The amount of something in a pipeline, as in 'the computed pipeline would afford a two-week supply.' **c.** Pipeline personnel, as in 'quarters will be provided for both permanent party and pipeline.' Also used *adverbially*, as in 'he was assigned pipeline to the training center.'

In sense 3a, the pipeline may be a supply line, esp. the channel between the agency upon which a requisition is made and the using organization, or between the acceptance agency and the using organization, as in 'our pipeline was the longest in military history.' Likewise in this sense, the pipeline may refer to the requisition channel from and to the using organization; or it may refer to the route taken by a piece of equipment from the time it is picked up for repair to the time it is returned, as in 'the damaged engine went into pipeline.' In sense 3b, the pipeline may refer to the status of persons being processed, as in a replacement center, or of students in a school, or of patients in a hospital.

pipeline, *attrib.* or *a.* **1.** Of personnel or supplies: Who or which are in a pipeline. **2.** Of detachments or units: Made up of personnel being moved through a pipeline.

pipeline aircraft. Aircraft moving through, or in, a pipeline, including those moving on requisition, and those that are being repaired, overhauled, or modified.

pipeline personnel. 1. Personnel in the process of being moved to a permanent assignment. **2.** Personnel passing through a school, hospital, replacement center, or the like.

See **permanent party.**

pipeline status. The status of a person, item of supply, or piece of equipment that is in, or moving through, a pipeline.

pipeline time. 1. The length of time spent in a pipeline. **2.** *Specif.* The length of time between the time of requisition and the time received.

Piper, *n.* [The *Piper* Aircraft Corporation.] Used in the names of aircraft, as in *Piper Cub*, *Piper L-21*, *Piper Twin-Stinson*, etc.

pipper, *n.* A small hole in the reticle of an optical sight or computing sight; a pipper image.

pipper image. A spot of light projected through the pipper in an optical or computing sight, used in aiming. See **reticle image.**

pique, *v.* [Pronounced 'peek'; from French *piquer* 'to spur.'] *intr.* To move, or come in, fast. Used in WW I, sometimes as a verbal noun, as in 'half a dozen of us in Spads would . . . practise piquing down as if in an attack' (Rickenbacker).

PIR (*auth abbr*). 'Philippine Independence Ribbon.' See **Philippine Ribbon.**

pirep, *n.* Short for 'pilot's report.'

pirouette movement. *Aviation medicine.* A whirling movement of a person about the head-to-foot axis.

pistol, *n.* **1.** In popular usage, any firearm, usually short-barreled, designed to be held and fired in one hand. **2.** More precisely, such a firearm in which the chamber is an integral part of the barrel, esp. a self-loading pistol, as distinguished from a revolver. **3.** A machine pistol (which see, sense 2 and note).

Sense 1 covers such firearms as automatics (self-loaders), revolvers, repeaters, single-shot pistols, flare pistols, etc.

piston displacement. The volume displaced by any or all of the pistons of a reciprocating engine during a specified number of strokes, usually one stroke per piston.

piston engine. A reciprocating engine, esp. an internal-combustion reciprocating engine.

Hence, **piston-engined,** *a.*

pitch, *n.* **1.** The blade angle of a propeller or rotor blade. **2.** Geometric pitch (which see). **3.** The movement of an aircraft about its lateral axis; the extent of this movement, measured in degrees.

See **effective pitch, zero-thrust pitch.**

pitch angle. The angle of pitch. See separate entry.

pitch control. 1. A mechanism for controlling the pitch of a propeller or rotor; the control exercised through this mechanism. **2.** *ellipt.* A lever for working a pitch control, as in 'I pulled up the pitch control.'

See **collective pitch control, cyclic pitch control.**

pitching, *n. Specif.* The angular movement of an aircraft about its lateral axis.

Attrib., as in *pitching moment.*

pitchout, *n.* **1.** The action of making an abrupt turn or break from a straight line of flight, esp. from formation in order to enter a landing pattern. **2.** The point at which this turn or break is made.

pitch ratio. The ratio of the geometric pitch or other specified pitch of a propeller to the diameter of the propeller.

pitch speed. The speed with which a propeller would advance forward at a given rpm and at a given mean blade angle if there were no slipping.

'Pitch speed' may be otherwise stated as the product of the mean geometric pitch and the rpm.

pitch stick. In a helicopter, a lever for changing the pitch of the rotor blades.

pitch-under, *n.* A marked tendency in an aircraft to pitch downward.

Pitch-under and pitch-up (which see) are characteristics esp. of certain modern airplanes moving at high speed.

pitch-up, *n.* A marked tendency in an aircraft to pitch upward. See prec., note.

pitot head. A pitot tube or pitot-static tube, considered as the head of a pitot system.

pitot pressure. Impact pressure as exerted inside a pitot tube. See **dynamic pressure.**

pitot-static tube. A tube arrangement, which when inserted into a moving fluid, such as water or air, with an open end pointed upstream, measures impact pressure and static pressure. Also called 'pitot tube.'

This tube consists essentially of two tubes, one commonly inside the other or one parallel to the other. One of these (the pitot tube) points into the fluid flow and measures impact pressure (including static pressure). The other is a static tube, which measures static pressure. The difference between the two pressures is called the pressure difference. See **static tube.**

The pitot-static tube is used in conjunction with an airspeed indicator, the pressure difference causing the indicator to register airspeed.

pitot tube. [After Henri *Pitot* (1695–1771), French physicist and engineer.] *Hydraulics* and *aeronautics.* **1.** A tube that measures the impact pressure of a moving fluid; *specif.*, that part of a pitot-static tube that measures impact pressure. See prec. **2.** Short for 'pitot-static tube.'

pitot-venturi tube. A combination pitot tube and venturi tube, once used on aircraft in determining airspeed.

pk (*abbr*). 'Pack.'

pkbd (*auth abbr*). 'Packboard.'

pkdom (*auth abbr*). 'Pack for domestic use.'

pkg (*auth abbr*). 'Package.'

pkmr (*auth abbr*). 'Packmaster.'

pkr (*auth abbr*). 'Packer.'

pksea (*auth abbr*). 'Pack for overseas.'

PL (*auth abbr*). **1.** 'Public Law.' **2.** 'Phase line.' **3.** 'Pipeline.'

place, *n.* A seat or cockpit for a single person. Used attrib., as in 'the L-21 is a two-place airplane.'

This word is commonly used in reference to smaller airplanes, i.e., liaison planes, fighters, etc.; it is not applied to most bombers, to transport planes, or the like.

plain component. That component of a cipher alphabet containing the letters and characters of plain text. Cf. **cipher component.**

plaindress, *n.* An encrypted message having the address contained in the heading in plain text. Cf. **codress,** *n.*

plain flap. A flap hinged to a wing and comprising a part of the trailing edge. See **flap,** *n.*, sense 1.

plain text. 1. A message text that conveys an intelligible intended meaning in the language in which it is written, having no hidden meaning. **2.** The intelligible text derived from a cryptogram. Also called 'clear text.'

plan, *n.* **1.** The design, method, or scheme for accomplishing a mission or reaching an objective or objectives. See **mission,** *n.*, sense 2a, **objective,** *n.*, sense 1. **2. a.** A written statement or graphic representation of a plan (sense 1). **b.** A detailed print or drawing of a building, piece of machinery or equipment, or other object, used in constructing or fabricating the object; *specif.*, such a plan showing the top view. See **plan view. 3.** *pl.* and *capitalized.* An activity that devises, formulates, or advises on plans (in sense 1), used esp. in phrases, as in *Plans and Operations*, a staff section responsible to the commander for planning and operations. Usually referred to as 'Operations.' See **operation,** *n.*, sense 5c, and see also **A** (*abbr*), sense 6. **4.** *Plan 62*, a term used in the Military Air Transport Service to designate a specific communication system for transmitting messages regarding the movement of aircraft.

PlanAt (*auth abbr*). 'North Atlantic Treaty Regional Planning Group (London) and North Atlantic Treaty Regional Planning Sub-Group (Paris).'

plane, *n.* **1.** Short for 'airplane,' esp. in sense 2a or sense 4. **2.** A wing of an aircraft. See note. **3.** *Physics.* A two-dimensional extent or surface; an extent which for practical purposes is two dimensional. See **atmospheric plane, horizontal plane, vertical plane.**

Attrib. (in sense 1), as in *plane balance, plane crew, plane formation, plane production.* In some combinations, euphony or custom sanctions the use of 'plane' in the possessive, rather than in the attributive, as in 'plane's ability' or 'plane's pilot.'

Usage in sense 2 is becoming archaic, but is still extensively used in such terms as 'biplane,' 'monoplane,' etc.

plane, *v. intr.* **1.** To glide or soar. **2.** Of a seaplane: To move through the water at a speed where support is derived chiefly or entirely from hydrodynamic and aerodynamic forces rather than from hydrostatic forces.

plane cell. A cellule.

plane mile. A statistical term meaning 'one mile flown by one airplane.' Cf. **passenger mile.**

plane of rotation. *Specif.* A hypothetical reference plane described or occupied by the rotating rotor blades of a helicopter or autogiro, assuming the blades to remain at all times perpendicular to their axis of rotation.

plane of rotor disc. A plane of rotation.

plane of symmetry. A vertical plane containing the longitudinal axis of a symmetrical object, as that of an aircraft, winged bomb, or the like, and on either side of which both halves of the object are symmetrical.

The vertical plane is taken when the object is in its assumed upright position.

planform, *n.* The form or shape of an object, as of an airfoil, as seen in plan view. See **plan view.**

planimetric map. A map representing features

in plan view only, i.e., relief is not indicated. Also called a 'line map.'

planning factor. An element in planning, which with other elements contributes to a result, often expressed in, or reduced to, a mathematical formula.

planning yardstick. A formula or planning factor used in the development of a plan.

planophore, *n.* [Latin *plano* 'plane,' combined with the Greek *phoros* 'bearing.'] A name given by Alphonse Pénaud (1850–1880) to his elastic-driven model airplane (some 20 inches long), designed and built in 1871.

In naming this model, Pénaud may have considered *plano* derived from the Greek *planos* 'roaming.'

plan-position indicator. (PPI) A cathode-ray indicator with a circular screen on which the range of a target or signal is represented by its radial distance from a point representing the location of the transmitter, and on which azimuth is determined by the angle between a fixed reference line and a radial line passing through the target or signal.

The PPI is also used to reproduce a map of the area beneath or around it. The PPI may be airborne or on the ground. See **off-center PPI.**

plan view. The view or appearance of an object as it appears from above.

plastic deformation. The permanent deformation of a structure or other object beyond its elastic limits, as results esp. from an explosion.

plasticizer, *n. Specif.* An agent added to certain propellants to hold the ingredients in an elastic bond. Cf. **opacifier,** *n.*

plat (*auth abbr*). 'Platoon.'

plate, *n. Specif.* The anode in a vacuum tube.

plateau, *n. Specif.* A level on which little or no change takes place; a representation of this on a graph. Used esp. of trends, materiel requirements, learning processes, etc.

plate circuit. The complete electrical circuit connecting the cathode and anode of a vacuum tube.

platform, *n.* Anything that lends a solid base from which to do something, as in 'the airplane is a platform from which to launch the rocket.'

Plattsburg Air Force Base. An AF base at Plattsburg, New York.

plb (*auth abbr*). 'Plumber' or 'plumbing.'

plcy (*auth abbr*). 'Policy.'

plenum chamber. An air chamber opening into the compressor chamber on certain turbojet or turboprop engines, and in which air is collected for the compressor.

Plexiglas, *n.* Often spelled, incorrectly, **plexiglass.** A trade name for a clear, glasslike plastic made of acrylic resin.

In the AF, Plexiglas is used esp. in aircraft turrets, windows, and canopies.

PLF (*abbr*). 'Parachute landing fall.'

PLM (*abbr*). 'Production-line maintenance.'

PLOP (*abbr*). 'Pressure line of position.'

plot, *n.* A graphic representation of something by means of a map, a chart, an assembly of aerial photographs, a diagram, or the like; *specif.*, a graphic record of the track or tracks of one or more aircraft. See **radar plot.**

plot, *v. tr.* **1.** To display the movement of one or more *aircraft*, of a *mission*, or the like on a map, board, etc. **2.** To display any *information* graphically by means of a plot. **3. a.** To bring an *aerial photograph* together with another or others so as to make a map or plot; to arrange *aerial photographs* so as to show the route of the photographing plane. **b.** To mark the outline of an *aerial photograph* on a map so as to indicate the area covered by the photograph. **4.** To locate and mark a *point* on an aerial photograph, map, grid, or the like. **5. a.** *To plot a course*, to lay out a course. **b.** *To plot a fix* or *position*, to determine a fix or position.

plot map. A map so marked as to indicate the area covered by aerial photographs.

plotter, *n.* **1.** In air navigation, an instrument or device with scales calibrated in linear measure and in degrees, used in drawing and measuring courses and in measuring distances on aeronautical charts. **2.** A person who plots; *specif.*, a person in an air defense control center, anti-aircraft operations center, or the like who plots the movement of airborne aircraft on a map or board.

plotting template. A pattern or form representing the area covered by an aerial photograph, used to mark the photographic coverage on a plot map.

PLR (*auth abbr*). 'Philippine Liberation Ribbon.'

plt (*auth abbr*). 'Pilot.'

pltc (*abbr*). 'Political.'

Plt. Off. (*abbr*). 'Pilot officer.' *British.*

plumbing, *n.* (plb) **1.** On an aircraft: The lines, valves, fittings, etc. used in a fuel system, hydraulic system, or the like. **2.** *Communications-electronics.* A term applied to coaxial lines, wave guides, and accessory equipment for radio and radar transmission.

plumb line. A straight line connecting any point with the center of the earth.

plumb point. *Aerial photog.* A point on the ground perpendicularly below the optical center of the lens of an aerial camera; the projection of this point on an aerial photograph. Also called the 'nadir point' or 'vertical point.'

Pluto (*code*). A code word for 'pipeline under the ocean.'

Pluto was laid at the bottom of the English Channel during WW II for the supply of petroleum products.

plutonium, *n.* A radioactive element formed by the decay of certain isotopes of neptunium and also found in minute amounts in pitchblende.

The symbol for plutonium is Pu; it has an atomic number of 94, and an atomic weight of 239. The element was discovered in 1940.

Attrib., as in *plutonium bomb*, an atomic bomb using plutonium.

PM (*auth abbr*). 'Provost marshal.'

P.M.O. (*abbr*). 'Principal medical officer.' *British.*

PMOS (*auth abbr*). 'Primary military occupational specialty.'

PMP (*abbr*). 'Protective mobilization plan.'

PMST (*auth abbr*). 'Professor of Military Science and Tactics.' Cf. **Professor of Air Science.**

pmt (*auth abbr*). 'Payment.'

PMW (*auth abbr*). 'Prompt mobilization designation withdrawn.'

PN (*abbr*). 'Pursuit–night work,' as formerly used (*circa* 1920) in designations of US Army aircraft.

pndg (*auth abbr*). 'Pending.'

pneostenosis, *n. Medicine.* A condition resulting from any obstruction of the normal flow of air into and out of the respiratory passages.

pneudraulic, *a.* [*Pneu*matic + hy*draulic.*] Of or pertaining to mechanisms or devices that work by both pneumatic and hydraulic action, as in *pneudraulic shock strut.*

pneumatic, *a.* **1. a.** Designating mechanisms, devices, or tools worked by compressed air or other gas, as in *pneumatic bomb-bay door, pneumatic deicer, pneumatic shock strut,* etc. **b.** Designating associated devices, as in *pneumatic compressor.* **2.** Designating things designed to hold compressed air, or inflated with air, as in *pneumatic tire.*

'Pneumatic' is sometimes applied to devices that work by, or are inflated with, a gas other than air, as in *pneumatic life vest,* i.e., a life vest inflated with carbon dioxide gas. See **pneumatic gun charger.**

pneumatic balance resuscitator. A special type of intermittent-pressure breathing device that supplies high pressure during inspiration, and a lower pressure, only slightly above the ambient pressure, during expiration. See **intermittent-pressure breathing.**

pneumatic gun charger. A gun charger that operates by compressed air or gas. See **gun charger.**

pneumoedema, *n. Medicine.* A condition in which abnormally large amounts of fluid are found in the intercellular tissue spaces of the lungs.

pneumofibrosis, *n. Medicine.* A condition in which the air sacs of the lungs are thickened by fibrotic tissue.

pneumohyperoxia, *n. Medicine.* Hyperoxia of the lungs.

pneumohyperoxypathy, *n. Medicine.* A condition in which pathological changes occur in lung tissues, associated with, or as a result of, prolonged hyperoxia.

pneumohyphymenia, *n. Medicine.* A condition in which the total surface area available for gas diffusion through the gas-blood barrier in the lungs is reduced.

pneumohypoxia, *n. Medicine.* Hypoxia of the lungs.

pneumonectasis, *n. Medicine.* A condition of swelling caused by the presence of air in the intra-alveolar tissue of the lungs.

pneumopachymenia, *n. Medicine.* A condition characterized by a thickening of the membrane in the gas-blood barrier sufficient to interfere with gas diffusion.

PNFD (*auth abbr*). 'Present not for duty.'

pnl (*auth abbr*). 'Panel.'

PnlBrg (*abbr*). 'Panel bridge.'

PNMO (*auth abbr*). 'Provided no military objection exists.'

PNS (*auth abbr*). 'Professor of Naval Science.'

pnt (*abbr*). **1.** *auth.* 'Patient.' **2.** 'Point' (decimal). See **pt** (*auth abbr*).

PO (*auth abbr*). **1.** 'Post office.' **2.** 'Petty Officer.' *Navy.* **3.** 'Previous orders.' **4.** 'Portugal.' Nationality Condensation Code.

P/O (*abbr*). 'Pilot officer.' *RCAF* or *RAF.*

PO-1W. The former designation for the WV-1.

PO-2W. The former designation for the WV-2.

Po (*abbr*). 'Polikarpov,' a designation for Russian aircraft designed by Nikolai N. Polikarpov, as in *Po-2,* a single-engine, two-seat biplane used as a trainer, air ambulance, and carrier of light bombs.

POA (*auth abbr*). 'Pacific Ocean Area.'

POAE (*abbr*). 'Port of aerial embarkation.'

POC (*auth abbr*). 'Privately owned conveyance.'

POD (*auth abbr*). 'Port of debarkation.'

pod, *n.* **1.** A streamlined housing for something carried externally on an airplane: **a.** A streamlined nacelle holding one or more jet engines slung beneath the wing of an airplane. **b.** A housing for a machine gun. Hence, *pod gun.* **2.** A self-contained, detachable cargo compartment on an airplane: See note.

In sense 2, the pod is strictly experimental, intended to be an aerodynamically-designed body, as on the Fairchild XC-120, forming a part of the fuselage until detached on the ground. Cf. **drop-pod,** *n.,* **packplane,** *n.*

pod nacelle. An engine nacelle slung beneath a wing. Cf. **integral nacelle, wing pod.**

POE (*auth abbr*). 'Port of embarkation.'

Pogo, *n.* A popular name for the Convair XFY-1.
Named for its vertical takeoff after the manner of a Pogo stilt.

POI (*auth abbr*). 'Programs of instruction.'

point defense. The defense of a particular location or spot, as of a city. Distinguished from area defense or line defense.

point fuze. A fuze at the forward end, or point, of a cannon shell. Cf. **nose fuze.**

point harmonization. The adjusting of a fighter's fixed guns so that they converge upon a point at a given range. See **harmonize,** *v.*

point in space. A point in the atmosphere or a point in outer space. See **space,** *n.*, sense 6.

pointmail (*auth abbr*). 'Letter appointment in mail.'

point of aim. The aiming point (which see).

point of impact. The point at which a bullet, shell, bomb, or the like strikes.
Cf. **center of impact,** and see **mean point of impact.**

point of no return. A critical point reached on a flight course when an aircraft with no possibility of landing at an intermediate base, can no longer return to its own or some other associated base on its own fuel supply.

point of safe return. The farthest point along a course from which an aircraft may safely return to its own or another associated base.

point target. A precise target of small dimensions. Distinguished from an area target.

POL (*auth abbr*). 'Petroleum, oil, and lubricants.'
Attrib., as in *POL dump, POL requirement, POL storage area,* etc.
'POL,' pronounced by letter, is applied to fuels, oils, and lubricants for whatever use—for motor vehicles as well as for aircraft.

polar, *a. Specif.* Of or pertaining to either of the earth's poles, esp. the North Pole, as it relates to military actions, operations, concepts, or the like, as in *polar frontier, polar route, polar war.* See **polar concept.**

polar air. *Specif.* The air in an air mass having its origin in a subpolar anticyclone and in regions somewhat south of the regions in which arctic air originates. See **arctic air,** sense 2 and note.
Polar air is divided and classified into two types: polar continental air and polar maritime air. See separate entries.

polar air navigation. Air navigation in the region of the North or South Pole.
Polar air navigation presents special problems due to convergence of the meridians, erratic behavior of magnetic compasses, unreliability of radio performance and scarcity of radio stations, inaccurate or inadequate charts, etc.

polar concept. A concept of the world in which air movement, strategy, and planning are considered in the knowledge that the region of either pole offers a shorter practical route between certain points than that offered by lower latitudes.

polar continental air. Polar air that originates over a continent and remains relatively stable and dry as it moves over a continental area.

polar distance. In celestial navigation, the angular distance of a given celestial body from a celestial pole, measured along the hour circle of the body. Also called the 'co-declination.'

polar front. A front or frontal surface between polar air masses and warmer air masses to the south.

polar grid. A special kind of grid used with an aeronautical chart in polar air navigation set up in accordance with a G-system (which see).

polarity, *n. Electricity.* A characteristic or quality of points or poles in an electric or magnetic circuit or field with respect to the flow of electrons or of magnetic lines of force; the quality of having opposite charges, one positive and one negative, or of having opposing magnetic poles.
Positive polarity, the characteristic of a point toward which negative particles flow; *negative polarity,* the characteristic of a point away from which the flow occurs.

polarization, *n.* **1.** *Physics.* The act or process of affecting light waves or electromagnetic waves so that they are made to vibrate in a certain given direction. **2.** *Electricity.* The formation or accumulation of gas or some other substance on the electrodes of an electric cell as a result of the passage of current; the condition arising from such formation or accumulation.

polarized glasses. Spectacles having lenses specially made so that light waves passing through them will be vibrated at right angles to one another, used esp. in viewing vectographs for three-dimensional effect.

polar maritime air. Polar air that moves south over an ocean area, acquiring a relatively high moisture content and becoming unstable.

polar navigation. Short for 'polar air navigation.'

polar navigation chart. Any aeronautical chart designed to be used with the special dead-reckoning technique developed to meet the special problems imposed by air navigation in the arctic.

polar plotter. A special kind of plotter (which see, sense 1) for use in polar air navigation.

polar trough. *Meteorology.* A trough (which see) associated with a polar front, which extends from high latitudes down to the middle and lower latitudes.

police, *v.* Sometimes *to police up. tr.* To clean up and put in order an *area, building,* or the like by picking or sweeping up refuse, polishing, etc.

police action. *Specif.* A relatively small-scale and localized military action or campaign, normally taken without a formal declaration of war, against guerrillas, bandits, insurgents, or the

like, or sometimes against aggressor national forces.

policy, *n.* (plcy) An accepted or settled way for approaching a problem, for doing a thing, or for deciding what things to do and in what order, each dictated either by principle or by expediency, and determined by appropriate authority at the level where the way is settled upon.

Overall policy or policies of the AF are the function of the Secretary of the Air Force, working under general policies established by the Secretary of Defense. Policies are formulated at any level, usually by way of implementing larger policies. Some deal with important matters, some do not. Policies may exist without explicit statement, esp. if they are kept flexible, but they are often reduced to writing in the form of regulations or other directives. They are implemented by orders, regulations, acts, words, deeds, or attitudes. Examples: 'It is the policy of this headquarters not to use abbreviations,' or 'the use of air power against civilians leads to a policy of reprisal.'

polit (*auth abbr*). 'Political.'

political instrument. *Specif.* An instrument of government that may be used to help resolve conflict, consisting of those influences that arise from the forms and activities of political bodies, expressed through administrative, legislative, judicial, and diplomatic practices.

Cf. **military instrument.**

politico-military, *a.* Of or pertaining to international politics and military affairs, esp. as used in connection with advising government officials and military commanders in conferences with foreign-power representatives.

polyconic projection. A kind of map projection in which a part of the earth is projected on a cone, that part of the cone surface tangent to the sphere being cut and unrolled, and fitted with other like projections; a map of the earth made by this method.

polyethylene, *n.* A light, tough, flexible, resinous plastic.

Attrib., as in *polyethylene target*, a tow target made of polyethylene. The chief advantages of this target are that it may be towed at high speeds, and it shows clean, well-defined bullet holes.

POM (*auth abbr*). 'Preparation for oversea movement.'

Used attrib., as in *POM inspector*, *POM order*.

POMAR (*abbr*). 'Position operational meteorological aircraft report.' Pronounced as a word.

The POMAR is a periodic in-flight report made by an aircraft during an overwater flight on its position and the prevailing weather conditions. It is usually made on the half-hour.

pompholyhemia, *n.* A condition in which bubbles are present in the blood.

pom-pom, *n.* **1.** A rack of antiaircraft cannon, usually mounted in fours, as on the deck of a ship. **2.** An automatic cannon.

'Pom-pom' was first applied to an automatic cannon used by the Boers in the Boer War (1899–1902). This cannon, of the one-pounder automatic type, sounded like the beating of drums.

pon (*auth abbr*). 'Pontoon.'

PonBrg (*abbr*). 'Pontoon bridge.'

pontoon, *n.* (pon) *Specif.* A float (which see).

pool, *n.* **1.** A number or quantity of personnel, supplies, or equipment assembled together for assignment or issue to using organizations. **2.** Any collection of personnel or materiel brought together to serve a common use. **3.** The place where any such collection or assembly is located.

pool, *v. tr.* To gather *personnel* or *materiel* together into a pool.

poop, *n.* Information. *Slang.*

poop sheet. A bulletin, memorandum, or the like containing information or instructions. *Slang.*

Pope Air Force Base. An AF base at Fort Bragg, North Carolina, named for Lieutenant Harley H. Pope, killed in 1919.

POPI (*abbr*). 'Post office position indicator,' a kind of British radio-navigation aid.

population, *n.* As used restrictively by persons dealing with measuring standards: Those people served in some way by an organization or installation.

The population served by a base, for example, might include certain dependents left behind by persons assigned elsewhere, certain retired persons, etc.

POR (*auth abbr*). 'Preparation for oversea movement of individual replacements.'

PorDir (*auth abbr*). 'Port Director.'

porep (*abbr*). 'Position report.'

porpoise, *v. intr.* **1.** Of an airplane: To follow an undulatory flight path about a median line of flight, often the result of short-period longitudinal oscillations. **2.** Of a seaplane, esp. of a flying boat: To skip, rise, and plunge repeatedly while moving across the water.

Hence, **porpoising,** *n.*, in both senses.

port, *n.* **1.** A harbor, together with its facilities and installations, at which ships discharge and receive passengers and cargo. **2.** Short for 'airport.' **3.** A hole or aperture in an aircraft for a gun, camera, or the like. **4.** The left-hand side of an aircraft. See **left,** *a.* **5.** In special uses: See note.

Port of aerial debarkation (PAD), an AF installation, including an airfield, serving as a clearing point either in the US or overseas, at which personnel, equipment, and supplies are unloaded after airlift from a place foreign to the port of aerial debarkation. *Port of aerial embarkation* (PAE), an AF installation, including an airfield, serving as a clearing point either in the US or overseas, at which personnel, equipment, and supplies are loaded for airlift to a place foreign to the port of aerial embarkation. A port of aerial debarkation can be, and usually is, a port of aerial embarkation, and vice versa. *Port of embarkation* (POE), an installation, either in the US or overseas, comprising the harbor, docks, and related facilities, such as personnel centers, storage areas, etc., at which personnel, supplies, and equipment are loaded aboard ships for

movement overseas. A port of embarkation may also be used as a port of debarkation, and referred to as such.

Attrib. in sense 4, as in *port engine, port float, port tank, port wing*, etc.

Senses 3 and 4 are from naval usage. Cf. **left,** *n.*

portable, *a.* (ptbl) That can be carried, or that can be readily moved or transported.

This word is ordinarily applied to equipment such as heaters, generators, radar beacons, and the like. It is also sometimes used where 'mobile' would be more appropriate, as in 'portable weather station.' See **mobile,** *a.*

port call. (PC) A notice to proceed to a port of embarkation or port of aerial embarkation.

port capacity. The estimated capacity of the facilities of a port (piers, wharves, quays, jetties, moles, beaches, etc.) to unload the dry cargo from ships and lighters, usually expressed in weight tons (long or short tons) or measurement tons per day.

The physical facilities of a port together with the sheltered anchorage determines the number and size of the vessels that may be unloaded and the method of discharge, upon which the evaluation of capacity is estimated. This estimate is based upon the evaluation of the port facilities without reference to clearance capacity (which see) or storage capacity.

port credit. A monetary credit established by Headquarters Air Materiel Command for an overseas command requisitioning Class IV supplies, i.e., fortification and construction materials, machinery and equipment.

porthole, *n.* A naval term sometimes applied to a circular window in an aircraft. Cf. **port,** *n.,* sense 3.

Portland International Airport. An airport at Portland, Oregon, at which certain space is provided AF units.

Portsmouth Air Force Base. An AF base at Portsmouth, New Hampshire.

posit (*auth abbr*). 'Position.'

position, *n.* (posit) **1.** The location of an aircraft or other object or of a person in relation to a specific reference point or points, as to certain geographical coordinates, to a city, or the like. See **fix,** *n.,* sense 2. **2.** The location of an aircraft, object, or person in a general sense. **3.** The space occupied by one aircraft in relation to the spaces occupied by others, as in 'the position in a formation.' **4.** The orientation or posture of an individual, as in 'a prone position.' **5.** The location of a unit, a battery, enemy emplacement, or the like, in reference to the area on the ground occupied by the unit, the battery, etc. **6.** A job, or the aggregate of duties and responsibilities associated with a given assignment.

position, *v. tr.* **1.** To guide or direct an *aircraft*, esp. from outside the aircraft, to a particular position, as in 'the controller positioned the aircraft over his target.' **2.** *reflex.* To fly *oneself* to a particular position.

position description. A job description.

position firing. A term applied to a method of defensive gunnery used by bombers, esp. during WW II, in which definite amounts of deflection are prescribed for firing at attacking fighter planes. See **deflection,** *n.,* sense 2.

position fix. A fix, sense 1 or 2.

position light. A navigation light. See separate entry.

position report. A report made by an airborne aircraft to a control tower, ground-control intercept station, or other air-control agency, giving the position of the aircraft and often other pertinent information such as altitude, groundspeed, heading, etc.

position title. The title a person has by virtue of a position held, as that of commander, director, or the like. Distinguished from a military title.

This title is not commonly used in direct address. See **superintendent,** *n.,* note.

positive, *a. Electricity.* **1.** Of a point or part in an electrical circuit, as a plate or pole: Having a higher electric pressure than that of another point or part taken as reference, and away from which the current flows. **2.** Having more protons than electrons. Said of electricity, of a particle, or of a charge. **3.** That causes a reaction in a direction considered to be up, forward, or to the right. Used esp. in reference to control surfaces, to angles made by control surfaces, or to aerodynamic forces. See **aileron angle, elevator angle, rudder angle.** **4.** Of an overhang: Occurring in an upper wing. See **overhang,** *n.,* note.

In sense 3, the word 'positive' is not always used as an attrib. when it is already implied, as in 'lift and negative lift' or 'thrust and negative thrust.'

positive acceleration. *Medicine.* Headward acceleration. *Obsolescent.*

This term has also been used in the sense 'footward acceleration.' See **negative acceleration,** note.

positive displacement. The displacement of a control surface that causes the airfoil either to rise or to move to the right.

To cause a wing to rise, the trailing edge of the aileron is moved downward; to cause a tail to move to the right, the trailing edge of the rudder is moved leftward.

positive-displacement compressor. An air compressor so constructed as to compress the air by displacing it mechanically, as with a piston or two gears acting as a gear pump.

See **reciprocating compressor, Roots supercharger.**

positive film. Exposed and developed film showing lights and shades as they appeared in the subject.

positive G. A G-force exerted upon the human body as a result of headward acceleration.

positron, *n.* [*Posi*tive + elec*tron.*] A positively charged particle having the same mass and ionizing power as an electron.

The positron was first discovered in 1932 in cosmic rays. Positrons are emitted also from radioactive substances, and are sometimes called 'positive electrons.' Cf. **electron,** *n.*

poss (*auth abbr*). 'Possession.'

possession, *n.* (poss) *Specif.* Any area, except the territories of Alaska and Hawaii, considered as a political or geographic entity and not forming a part of the Union, that belongs, or is perpetually leased, to the US.

This term, though often used in legal or semilegal contexts, has not been given full sanction by the courts. As construed, the term includes the Canal Zone as well as the territories of the US except Alaska and Hawaii; it excludes the trusteeship areas administered under the UN or under the Japanese peace treaty of 1951. See **territory,** *n.*

post, *n.* **1.** The spot, place, or position where a person performs a duty, as in 'the tail gunner was at his post'; the area for which a person is responsible, as in 'the guard patrolled his post.' **2.** The office or position to which a person is appointed or assigned, as in 'I took over my post on the staff.' **3.** Used generically in reference to any military installation at which military personnel are stationed, as an Air Force base, a depot, an Army camp, etc. **4.** *Rocketry.* A vertical rod fastening an aircraft rocket to the underside of a wing in a certain kind of launching device. See **aircraft rocket launcher,** esp. note.

In sense 1, cf. **station,** *n.*, sense 1.

post (*prefix*). A combining form meaning 'after': See note.

Examples of usage include *postflight, post-strike.* These combinations are used attrib., as in *postflight inspection, postflight report, post-strike reconnaissance, post-strike staging,* etc.

post exchange. (PX) A retail shop or store at an Army post or installation, operated under the supervision of the commander of the post or installation. See **base exchange, commissary,** *n.*, note, **PX** (*auth abbr*).

posthole, *v. tr.* and *intr.* To crater. *Slang.*

posture, *n.* The particular position of, or the attitude assumed by, an organized force or nation from which it can act or react immediately, as in 'a posture of offense,' or from which it may be unable to act or react, as in 'a posture of unawareness.'

pot, *n.* Short for 'potentiometer.'

pot (*auth abbr*). 'Potential' or 'potentiality.'

potential, *n.* (pot) **1.** That which can be developed, based upon considerations of current powers, facts, and trends of development; that which represents the ultimate capability if all resources are employed. Used esp. as a factor in military planning. **2.** *Electricity.* A degree of intensity as referred to some standard, such as that of a point in a circuit.

Context supplies the area in which a potential is considered, as in *military potential, war-making potential, offensive potential.*

potential, *a.* Possible or in the making, as in 'a potential aggressor' or 'a potential target.' Distinguished from actual or already existent.

potential instability. *Meteorology.* Convective instability. See separate entry.

potential temperature. *Meteorology.* The temperature which a particular parcel of air would have if it had a pressure of 1,000 millibars.

potentiometer, *n.* **1.** An electrical instrument or device for measuring electromotive force, or the potential between two points. **2.** An electrical device attached to a radar antenna, a directional gyro in an autopilot, or the like, which develops a voltage or current proportional to the motion of the antenna, gyro, etc., in order to determine angular movement.

Potez, *n.* [Aeroplanes Henry *Potez,* now amalgamated with Nord.] Used in the names of French airplanes of WW II and before, as in *Potez 63,* a three-seat, twin-engine fighter-bomber and reconnaissance monoplane.

pound, *n. Specif.* A unit of measurement for the power or force produced by a reaction engine, measured in terms of the static weight of the fluid flow in feet per second multiplied by its velocity relative to the body of the engine, as in 'the jet engine had a thrust of 5,000 pounds.' See **jet thrust,** note.

pour point. The temperature at which a lubricating oil begins to flow freely.

POW (*auth abbr*). 'Prisoner of war.' In plural, *POW's.* See **PW** (*abbr*), sense 3. Pronounced by letter.

In combinations, as *POW camp, POW fund.*

powder, *n.* A dry explosive or propellant, often in the form of numerous fine particles, but sometimes in the form of one or more large pieces. See **grain,** *n.*

power, *n.* **1.** The capacity of man to do or accomplish something, or to hold dominion over persons or natural forces, such capacity arising from his abilities, natural or acquired, and from the merging of circumstances with dynamic factors as those of time, advancing knowledge, development of techniques and skills. **2.** The mechanical or kinetic energy developed by one or more engines or motors in the transformation of atomic energy, electrical energy, or the chemical energy of fuel; *specif.*, (a) brake horsepower, or (b) thrust (which see, sense 1 or 2). **3.** The force or energy that inheres in an electric cur-

rent, in an atomic pile, or in a chemical fuel. **4.** A nation considered to have power (sense 1) in international affairs.

In sense 1, power is a contingent phenomenon, emerging or receding in accordance with man's adaptation. Air power and sea power are examples of it. See **air power,** sense 1.

In sense 2, 'power' is used attrib. in direct reference to the power of an aircraft engine or engines, as in *power capability, power chart, power failure,* etc., or in indirect reference as it affects the performance of the aircraft, as in *power climb, power glide, power landing, power spin, power stall, power turn.* See **power-on,** *a.* and *adv.*

power approach. A landing approach during all or part of which the airplane is under power from its engine or engines. Distinguished from an approach during which the airplane is gliding.

The power approach is used chiefly to provide more control of the airplane during the approach.

power dive. A dive in an airplane, esp. a steep dive, with the engine or engines delivering considerable or full power.

Hence, **power-dive,** *v. tr.* and *intr.*

power-driven, *a.* Of an aircraft component or piece of equipment: Moved, rotated, or operated by electrical or mechanical energy, as in 'power-driven fan' or 'power-driven turret.'

powered aircraft. An aircraft having one or more engines, as distinguished from a glider.

powered glider. A modified glider having one or more engines.

Usually, a powered glider performs as an ordinary powered airplane at certain loads less than maximum; with a maximum load, however, it cannot maintain air speed, and the engines serve merely to decrease its rate of descent.

power loading. The gross weight of an aircraft divided by the brake horsepower, military rated power, or some other specified horsepower of its engine or engines.

This term is not commonly applied to jet airplanes. Cf. **weight per horsepower.**

power-off, *a.* and *adv.* Without power being delivered from the engine or engines, as in 'power-off approach,' 'power-off stall,' or 'he landed power-off.'

power-on, *a.* and *adv.* With power being delivered from the engine or engines, as in 'power-on flight,' or 'he stalled power-on.' See **power,** *n.,* sense 2 and note.

power-operated, *a.* Power-driven (which see). Used esp. in reference to aircraft turrets.

power output. The output of energy by a generator or engine; *specif.,* the net power delivered by a power plant, esp. the brake horsepower of an internal-combustion reciprocating engine. Cf. **thrust output.**

power pack. A power package.

power package. A complete aircraft engine, its accessories, and cowling, designed as a single unit for quick installation or removal. Esp. applied to reciprocating engines.

power plant. *Specif.* **1.** The complete engine or engines in an aircraft, together with propeller or propellers (if any), accessories, fuel and oil tanks and lines, etc. **2.** *Restrictive.* **a.** An engine only, without accessories, tanks, etc. **b.** One engine installation only; a power-plant unit.

power-plant unit. One of the units making up the complete power plant (sense 1) of an airplane; a power package.

power setting. A setting of the throttle, fuel-air mixture, and rpm controls of an airplane so as to obtain a desired power.

power test. A test of a new model or modified aircraft engine to determine its thrust or horsepower output.

Such a test involves the use of a dynamometer, spring scales, strain gauges, etc.

power turret. A power-driven turret.

See **power-driven,** *a.,* **power-operated,** *a.*

power unit. An aircraft engine, its propeller (if any), and its accessories, as installed in an aircraft. Cf. **power package.**

PP (*auth abbr*). **1.** 'Private property.' **2.** 'Permanent-party.' **3.** 'Parcel Post.'

P/P (*abbr*). 'Partial pay' or 'partial payment.'

PPG (*auth abbr*). 'Personnel processing group.'

PPI (*auth abbr*). 'Plan-position indicator.'

In combinations, as *PPI operator, PPI photo, PPI scan, PPI scope,* etc.

PPO (*auth abbr*). 'Publications and printing office.'

PPR (*auth abbr*). 'Permanent pay record.'

ppr (*abbr*). 'Present participle.'

PPS (*abbr*). 'Pulses per second.'

PPSq (*auth abbr*). 'Personnel Processing Squadron.'

PR (*abbr*). **1.** *auth.* 'Procurement regulations.' **2.** *auth.* 'Parachute rigger.' **3.** *auth.* 'Puerto Rico.' **4.** 'Position report.' **5.** 'Photoreconnaissance.'

P/R (*abbr*). **1.** *auth.* 'Pay roll.' **2.** 'Photoreconnaissance.'

pr (*abbr*). 'Pair.'

practice bomb. A bomb used in practice or training, either uncharged or charged with a burster and a marking material, and having the ballistic characteristics of the service bomb it simulates.

practice grenade. A grenade containing a small charge of black powder to give an indicating puff after being thrown, used in practice or training. Cf. **training grenade.**

practice rocket. A rocket used in practice or training, having either an uncharged head, or a head containing a spotting charge, but having

the same kind of motor as the corresponding service rocket.

prang, *n.* A collision or crash. *Slang.*

prang, *v.* [Echoic.] *Slang.* **1.** *tr.* and *intr.* To crash or crash-land. **2.** *tr.* By extension, to hit, blast, or smash a *target.*

Pratt & Whitney. [US manufacturers of aircraft engines, a division of United Aircraft Corp.] **1.** A designation given certain aircraft engines. **2.** Used in the names of aircraft engines, as in *Pratt & Whitney Wasp*, *Pratt & Whitney J-48 Turbojet*, etc.

Pratt truss. A fuselage or airfoil framework with crossing diagonal braces of wire or rods between bays, as between two vertical members.

prchst (*auth abbr*). 'Parachutist.'

PrchstBad (*auth abbr*). 'Parachutist Badge.'

prcht (*auth abbr*). 'Parachute.'

prcs (*abbr*). 'Process' or 'processing.'

pre (*prefix*). A combining form meaning 'before': See note.

Examples of usage include *prelanding, presolo, prestrike, pretakeoff.*

These combinations are used attrib., as in *prelanding bombing, presolo student, prestrike staging*, etc.

prebriefed mission. 1. In strategic bombardment usage: A mission for which a crew has been briefed some time in the past and only awaits an order to begin the mission. **2.** In tactical usage: A mission for which the pilot has been briefed previous to takeoff, instead of being briefed by the controller while in the air.

Prebriefing differs from briefing in that the interval between prebriefing and the beginning of the mission is greater than between briefing and the beginning of the mission.

prec (*auth abbr*). 'Precedence' or 'precision.'

precautionary landing. A landing, either on land or water, made as a precaution when in the judgment of responsible persons a hazard exists in continued flight. Cf. **forced landing.**

precession, *n.* **1.** A phenomenon in mechanics in which a line of force applied to the wheel of a gyroscope, or to a gyroscopic body, is displaced by ninety degrees ahead in the direction of rotation. Sometimes called 'true precession' to distinguish it from sense 3. **2.** The effect of this phenomenon, i.e., a movement about an axis of precession. See note. **3.** Apparent precession. **4.** The effects of precession (either in sense 1 or sense 3) upon an instrument or device using a gyroscope, as in 'the precession of the autopilot made it difficult to stay on course.'

The effect of precession on a freely rotating body is to cause its spinning axis to swing about a line which connects the spinning axis with the point at which the original force was applied.

precession rate. The rate at which precession (sense 2) or apparent precession occurs, measured in degrees per unit of time.

precipitation, *n. Meteorology.* **1.** The act or process by which moisture in the air condenses and falls. **2.** *transf.* The condensed droplets or particles of moisture that fall on the earth's surface.

Precipitation (sense 2) includes rain, sleet, snow, hail, and mist. Dew, fog, frost, and other forms of moisture that do not fall to the earth are not ordinarily considered precipitation, although moisture struck by an aircraft in flight is sometimes so considered. Cf. **precipitation static.**

precipitation number. A number indicating the amount of water and solids carried in suspension in a sample of lubricating oil, expressed as a percentage.

The precipitation number is determined by precipitating the water and solids in the sample by centrifugal force.

precipitation static. *Radio.* Static resulting from the precipitation of snow, rain, or the like, from the impact of dust particles on a receiving antenna, or from particles in the atmosphere striking the surfaces of a flying aircraft.

precision approach radar. A radar set on the ground, used in ground-controlled approach to display continuous information regarding the distance, azimuth, and elevation of an airplane moving along the approach path; an approach system using such a set.

Precision approach radar enables monitoring of the airplane during the final approach. PAR and airport surveillance radar together constitute a GCA system.

precision bombing. 1. In a restricted sense, horizontal bombing done with the appropriate precision instruments and equipment so as to strike a target of comparatively small bulk or area. **2.** In a general sense, any type of bombing against a small or restricted target. *Rare.*

In sense 1, precision bombing is usually a strategic operation, and is done either to achieve destruction of a target with a minimum expenditure of force, or to hit a target near other areas or installations not considered desirable to hit. When the term is used in sense 2, it is usually applied to tactical attacks by dive bombers or fighter-bombers against tanks. etc. Cf. **area bombing.**

precision dead reckoning. A type of dead reckoning (which see) involving the use of an earlier known position, elapsed time, the true heading-true airspeed vector, and wind velocity.

Precision dead reckoning differs from basic dead reckoning in that the wind velocity is known.

precision spin. A spin done as a flight maneuver in which recovery is made with the airplane in a proper attitude and headed in a desired direction.

precision turn. In flying training, a term sometimes applied to a 90-degree or 180-degree practice turn executed with coordination and smoothness.

precomm (*auth abbr*). 'Precommissioning.'

predicted barrage. *Specif.* A more precise term for an antiaircraft barrage (sense 1).

pref (*auth abbr*). 'Preference.'

prefab, *n.* Short for 'prefabricated building,' 'prefabricated hut,' etc. See next.

prefabricated, *a.* Of a hut or other structure: Assembled from ready-made sections. Also applied to the unassembled components.

prefabricated bituminous surface. A ready-made surfacing of tarred canvas or hessian, used esp. in WW II for airstrips, storage areas, and taxiways.

This material, when made of hessian, is sometimes called 'prepared hessian surfacing' (PHS). The British term is 'pre-fabricated bituminized surfacing' (P.F.B.S.).

preflight, *n.* (PF) **1.** An act or instance of preflighting. Attrib., as in *preflight procedure.* See **preflight,** *a.* **2.** Preflight training.

preflight, *v. tr.* To check, test, and prepare for use an *aircraft, aircraft engine, bombsight, machine gun,* or other piece of equipment previous to a flight.

preflight, *a.* (PF) Previous to flight.

In combinations, as *preflight action, preflight analysis, preflight check, preflight inspection, preflight instruction,* etc. In some of these combinations, 'preflight' may be regarded either as an adjective or as a noun used attrib. See **preflight,** *n.*

preflight aeronautics. That branch of aeronautics pursued by a student previous to studies involving actual flight.

preflight inspection. 1. A regular procedure followed by a ground crew each time or each day before a particular aircraft is to be flown, consisting of a visual and operational check of controls, instruments, etc., except for those items checked by the flight crew with the engines operating. **2.** A regular part of the periodic inspection made before the aircraft is given a flight test.

In sense 1, the preflight inspection is made to determine maladjustments, failures, and defects that, if not corrected at this time, would cause either aircraft accidents or aborted missions. The inspection, however, involves no disassembly.

preflight school. A school at which preflight training is carried out. See next.

preflight training. The initial training given to an aviation cadet prior to primary flying training, to provide him with the fundamental training generally required for all AF officers.

Preflight training is given to all aviation cadets, whether training for pilot or aircraft observer. It includes military and physical training, and instruction and training in AF organization and administration, leadership, military law, management, supply and logistics, air warfare, etc.

prefrontal thunderstorm. A squall-line thunderstorm.

preheater, *n.* A device for warming up something before use, esp. an aircraft engine prior to starting. See **Herman Nelson heater.**

preignition, *n.* The spontaneous and premature ignition of the mixture in the combustion chamber of a reciprocating engine, caused by an overheated part or spot in the chamber.

prej (*auth abbr*). 'Prejudice.'

prelim (*auth abbr*). 'Preliminary.'

prem (*auth abbr*). 'Premium.'

prep (*auth abbr*). 'Prepare.'

preparation fire. Fire delivered on a target in preparation for a ground or airborne assault.

Preparation fire may be delivered by air, ground, or naval forces.

preparation for overseas movement. (POM) The act or procedure of making a unit or units ready for shipment overseas.

Preparation for overseas movement includes planning, screening of personnel for foreign service, inspecting, issuing of orders, movement to ports of embarkation, and the performing of other attendant details.

prepare, *v.* (prep) *tr.* To make *something* ready. Said of a letter, report, printer's copy, etc.

This term connotes particular attention to the purpose involved, with the exercise of care, foresight, judgment, and deliberation. To prepare a letter is not only to write it, but to take pains that it is written so as to serve its purpose. To prepare a report is to write or assemble a report with an eye upon its clarity, economical arrangement, and usefulness. To prepare copy for a printer is to mark copy ready for the printer to set type.

preplanned mission. A mission, esp. a close air support mission, planned considerably in advance of its execution. Cf. **prebriefed mission.**

preproduction period. The time between beginning work in preparation for production and completion of the first article.

pres (*abbr*). **1.** *auth.* 'President.' **2.** 'Present.'

prescribed, *a.* Of a channel, action, or the like: To be followed or carried out as given in a directive or order, esp. in a written directive or order.

present, *v. To present arms,* to bring the rifle to a vertical position in front of the body, with the muzzle up, the trigger side forward, and the rifle butt off the ground.

presentation, *n.* The image formed on a cathode-ray screen by the echo impulses.

present position. A technical term indicating the position of a moving target the instant it is fired at.

present range. The range between a gun and the present position of its target. See prec.

preset guidance. A type of guidance for guided aircraft rockets or other guided missiles in which the path of the missile is determined by controls set before launching. Cf. **inertial guidance.**

The mechanism for this type of guidance usually consists of gyros, integrating accelerometers, and related devices.

Presidential Award. An award made to an employee of the United States government for

service of such high value as to warrant recognition by the President.

This is the highest honorary award provided for.

Presidential call. An order by the President that brings all or part of the Air National Guard (or National Guard) into the military service of the US.

Presidential salute. A ceremony accorded the President, or an ex-President, of the United States upon his arrival and departure from a military establishment.

In the AF, this ceremony is similar to those accorded other very important dignitaries, distinguished from the others by the number of airmen in the honor flight, additional flights, the particular music played, and the colors displayed. In lieu of gun salutes, honors are reflected in the size of the honor flight. Both the President and an ex-President, as well as the head or monarch of a foreign state, are accorded an honor flight of 21 airmen.

Presidential Unit Citation. (PUC) **1.** A US Navy unit citation, corresponding to the Distinguished Unit Citation. **2.** A misnomer for the Distinguished Unit Citation. **3.** Either of two foreign unit citations, i.e., the Philippine Republic Presidential Unit Citation or the Republic of Korea Presidential Unit Citation.

President's Air Policy Commission. A temporary commission appointed by the President, 18 July 1947, 'to make an objective inquiry into national aviation policies and problems, and to assist . . . [the President] in formulating an integrated national aviation policy' (President's letter appointing the Commission). *Hist.*

Presque Isle Air Force Base. An AF base at Presque Isle, Maine.

pressure, *n.* **1.** A condition that exists when force is applied to, or distributed over, a surface, measured as force per unit area. **2.** A condition existent when a military, political, economic, or psychosocial force is exerted upon a person or group of persons.

In sense 1, see **air pressure, atmospheric pressure, dynamic pressure, impact pressure, static pressure.**

pressure altimeter. An altimeter that measures and indicates altitude by means of differences in atmospheric pressure.

A pressure altimeter uses an aneroid (which see) as its sensing and actuating element. Cf. **absolute altimeter.**

pressure altitude. 1. Generically, altitude above the standard datum plane, as determined by applying the standard pressure lapse rate to the atmospheric pressure at altitude. **2.** Either indicated pressure altitude or calibrated pressure altitude. **3.** A simulated pressure altitude (sense 1) inside a low-pressure chamber.

Pressure altitude (sense 1) is the same as true altitude only when the pressure lapse rate is standard. See **pressure anomaly, true altitude.**

pressure altitude variation. The difference in feet between the standard datum plane (29.92 inches of mercury) and the datum plane above which altitude is measured.

For example, if the altimeter setting is 30.03 inches, the datum plane for measurement is 110 feet below the standard datum plane (using the scale of 1 inch to each 1,000 feet); hence, the pressure altitude variation is 110 feet.

pressure anomaly. The difference between the actual pressure lapse rate and the arbitrary standard pressure lapse rate for which an altimeter is designed. See **standard atmosphere,** esp. note.

pressure baffle. A kind of baffle designed to create a pressure differential so as to conduct a flow of cooling air more efficiently around an engine cylinder.

pressure breathing. The breathing of oxygen or other suitable gases through a special system or apparatus at a pressure in excess of the ambient atmospheric pressure.

See **continuous-pressure breathing, intermittent-pressure breathing, pneumatic balance resuscitator.**

pressure cabin. A pressurized cabin. See **pressurized,** *a.*

pressure center. *Meteorology.* The center of a high-pressure area or low-pressure area. Cf. **center of pressure.**

pressure-demand oxygen equipment. A kind of low-pressure oxygen equipment that functions either as demand oxygen equipment or as continuous-pressure breathing equipment. See **oxygen equipment.**

pressure difference. *Specif.* In determining the pressure of air on an aircraft due to movement alone: The difference between impact pressure and static pressure. See **pitot-static tube.**

pressure front. Another name for 'shock front.'

pressure gas. In a liquid-fuel rocket, a gas fed under pressure into the fuel tanks to force the fuel into the combustion chamber.

pressure gauge. A gauge or instrument that measures pressure, or is actuated by pressure.

A pressure gauge may incorporate either a diaphragm or a Bourdon tube. The term is ordinarily applied to an engine instrument, such as a manifold-pressure gauge or an oil-pressure gauge, but is sometimes applied to a pressure-actuated flight instrument, such as an altimeter or rate-of-climb indicator.

pressure gradient. *Meteorology.* The rate of pressure increase or decrease on any atmospheric plane, usually a horizontal plane, for any given distance. See **barometric pressure gradient.**

pressure-height, *a.* Of or pertaining to the relationship of atmospheric pressure to height or altitude.

pressure jump. *Meteorology.* An abrupt change in atmospheric pressure across a narrow zone.

pressure line of position. In pressure-pattern flying, a line of position parallel to the proposed

line of flight of an aircraft, and along which the aircraft is moving, having been displaced from its proposed line of flight by the pressure or force of a geostrophic wind.

A PLOP may be utilized in the same manner as an ordinary LOP in determining a fix.

pressure pattern. In air navigation, the pattern or arrangement of atmospheric pressures above certain latitudes. See next.

Attrib., as in *pressure-pattern navigation*, *pressure-pattern technique*, etc.

pressure-pattern flying. The art or practice of flying and navigating through a pressure pattern so as to take advantage of favorable winds.

Pressure-pattern flying depends on the calculable effects of the geostrophic wind; therefore pressure-pattern techniques are not applicable in latitudes less than 20 degrees above or below the equator. See **geostrophic wind.**

pressure principle. 1. *Aviation medicine.* The principle of using air or another gas under pressure to counteract the effects of lowered atmospheric pressure at high altitudes. See note. **2.** The principle of maintaining the shape of a nonrigid, pressure-rigid, or semirigid airship by means of internal pressure.

In sense 1, 'pressure principle' occurs in such phrases as (1) *pressure principle with full counterpressure*, the principle of completely surrounding the body with pressure higher than the ambient atmospheric pressure, as with a pressure suit, pressurized cabin, or the like; (2) *pressure principle with no counterpressure*, the principle of using pressure in a pressure-breathing system, but without applying pressure to the exterior of the body; and (3) *pressure principle with regional counterpressure*, the principle of pressure breathing with pressure also applied to certain exterior places on the body.

pressure ratio. A ratio between two pressures, as the ratio between the inlet and outlet pressure in a compressor, or between chamber pressure and nozzle pressure in a rocket.

pressure-rigid airship. An airship combining the principles of both a rigid airship and a nonrigid airship to maintain its shape.

The experimental aluminum-clad airship, ZMC-2, delivered to the US Navy in 1929, was sometimes considered a pressure-rigid airship, as it depended upon both pressure and transverse frames to hold its shape.

pressure suit. A garment designed to provide pressure upon the body so that respiratory and circulatory functions may continue normally, or nearly so, under low-pressure conditions, such as occur at high altitudes without benefit of a pressurized cabin.

In some contexts, a pressure suit is distinguished from a pressurized suit in that the former is not itself inflated, although it may be fitted with inflating parts that tighten the garment as ambient pressure is decreased. Cf. **G-suit.**

pressure switch. A switch activated by a given ambient pressure, as with a barometric switch.

pressuretrol, *n.* [*Pressure control.*] An automatic unit in an aircraft's manifold-pressure regulating system which measures carburetor air-inlet pressure and acts to maintain the selected pressure regardless of changes in the outside atmospheric pressure.

pressurization, *n.* The process or action of the verb 'pressurize.'

pressurize, *v. tr.* **1.** To produce and maintain in a *cockpit*, *cabin*, or *compartment* of an *aircraft*, or in a special *garment*, an air pressure higher than the ambient atmospheric pressure, in order to compensate for the lowered pressure at high altitudes; to create a higher pressure in the *air* within a cockpit, cabin, etc. by the introduction of additional air. **2.** To subject a *transmission line*, *piece of equipment*, or the like to a pressure higher than the ambient pressure.

In sense 1, a cockpit, cabin, or compartment is pressurized by air bled from a turbosupercharger or compressor.

Sense 2 is used esp. in reference to electrical parts, wires, and equipment, which are pressurized with inert gases to prevent corrosion and breakdown. See **ozone,** *n.*

pressurized, *a.* Subjected to pressurization; containing air pressure higher than the ambient atmospheric pressure; done under conditions of pressurization.

In combinations, as *pressurized cabin*, *pressurized capsule*, *pressurized flight*, etc.

pressurized suit. A suit or garment designed to be inflated to provide pressure upon the body so that respiratory and circulatory functions will not be impaired under low-pressure conditions.

This garment is not considered satisfactory. See **pressure suit,** note.

Prestwick Airport. An airport at Ayr, near Glasgow, Scotland, under the British Ministry of Transport and Civil Aviation (MTCA), at which certain facilities are made available to USAF units. Also called 'Prestwick MTCA Station.'

prev (*auth abbr*). 'Previous.'

preventive maintenance. The day-to-day maintenance that is performed to keep equipment in good working order and to prevent breakdown due to neglect.

preventive war. A conceptual term used in reference to a war which would be launched, when future warfare is considered inevitable, in order to prevent a hostile nation from initiating the war at a time and place propitious to itself.

PRF (*auth abbr*). 'Pulse recurrence frequency' or 'pulse repetition frequency.' See **pulse rate.**

pri (*abbr*). 'Priority.'

prim (*auth abbr*). 'Primary.'

primary, *n.* (prim) Short for 'primary flying training,' 'primary target,' etc., as in 'he completed primary,' or 'he bombed the primary.'

primary AFS. (PAFS) The recorded AFS in which a person is considered best qualified to perform duty. See **Air Force Specialty.**

primary bomb damage. Physical bomb damage. See **bomb damage,** sense 1.

primary coil. The input coil or winding of a transformer.

primary control. The main responsibility for the control exercised in an airborne remote-controlled gunnery system.

For purposes of coordination, efficiency, and safety, the control over such a system is divided into 'primary control' and 'secondary control' with the responsibility for each control assigned to different crew members.

primary evidence. In research, evidence directly relevant through a process of reasoning to the discovery or testing of a fact or principle.

Primary evidence for one purpose may not be primary evidence for another. For example, a newspaper story on the life of George Washington is not evidence at all on the life of Washington, but it may provide primary evidence on how a reporter writes, or on how he thinks.

primary flying training. 1. The initial stage of flying training in any given aircrew specialty. **2.** *Restrictive.* Primary pilot training.

primary frequency. In communications, a radio frequency assigned a particular station for normal use.

primary mission. 1. A mission assigned to an organization, group of people, or person, deemed to be the principal, but not the only mission assigned. Cf. **basic mission. 2.** An air mission that forwards this mission.

In sense 1, two or more primary missions may be assigned an organization or to persons when an operation is in phases that call for a change in objectives. In such case, they run consecutively.

primary-mission group. The group in an AF wing that carries out the primary mission of the wing, as distinguished from the supporting groups.

A primary-mission group may be combat, training, transport, or service, depending on the mission of the particular wing.

primary pilot training. The initial stage of pilot training, following preflight training and providing academic and military training and training in the fundamental principles of visual and instrument flying. See **pilot training,** note.

primary target. (ptgt) A target having the highest priority for attack.

primary trainer. A term formerly applied to an airplane used in primary training. *Hist.*

Airplanes used in primary training, although no longer called 'primary trainers,' are two-place, single-engine, elementary-type airplanes, having fewer instruments, controls, etc., than other training planes. The designation 'trainer' (T) has now replaced all other designations of training planes.

primary training. Short for 'primary flying training' or 'primary pilot training.'

primary-type glider. A glider marked more for its rugged characteristics than for its aerodynamic performance. Cf. **performance-type glider.**

prime, *v. tr.* To introduce fuel into the induction system of an *engine* preparatory to starting the engine.

prime contractor. A contractor whose contract is directly with the government. Distinguished from a subcontractor, and often called the 'contractor' for short.

prime depot. A zonal or master depot with the additional and special responsibilities of monitoring the world-wide distribution of certain property classes and of expediting contracts.

prime meridian. A meridian from which longitude is measured.

In English-speaking countries and in many other countries, the Greenwich meridian is used as the prime meridian.

prime mover. In a contrivance of two or more moving parts, that unit considered to be the source, or principal source, of energy for movement, as with a tractor pulling a trailer truck.

primer, *n.* **1.** A sensitive explosive device that responds to percussion, friction, electric impulse, or some other disturbance to set off a propellant or an explosive; an initiator (which see). Also cf. **igniter,** *n.* **2.** A primer pump.

In sense 1, primers are used in fuzes, small-arms ammunition, and the like. Also in this sense, the word 'primer' is sometimes qualified by an adjective or by a noun used as an attrib. designating the type or kind of primer, as in 'artillery primer,' 'electric primer,' 'fuze primer,' 'percussion primer,' etc.

The first syllable of 'primer' rimes with 'rime.'

primer cup. A small cup holding a primer mixture and other components, used in small-arms cartridges and certain other ammunition.

primer detonator. An element in a bomb explosive train, consisting of a primer and detonator combined, and often incorporating a delaying element. See **detonator,** *n.*, sense 1.

primer line. A line of tubing in an aircraft's fuel system that carries fuel to prime the engine.

primer mixture. A mixture containing a sensitive explosive and other ingredients, used in a primer (sense 1).

primer pump. A manually-operated or electrically-driven pump for pumping fuel to prime the engine. Sometimes called a 'primer.'

The wobble pump is a species of primer pump.

primer setback. The backward movement of a primer cup in a cartridge or shell case upon explosion of the propellant, as occurs when the base of the cup is not properly supported by the bolt face or breechblock.

Attempts have been made to utilize primer setback for opening the locked-breech mechanisms of certain automatic firearms.

prin (*auth abbr*). 'Principal.'

Prince of Wales. A cherry-blossom maneuver. *British* and *colloq.*

principal distance. *Aerial photog.* **1.** A standard

by which a photographic print is measured in terms of the focal length of the camera used at the time of film exposure, and said to be of the same length as the focal length. **2.** Such a standard applied to an enlarged, reduced, or shrunken photographic print, determined by the ratio of the enlargement, or reduction. See **effective focal length.**

principal line. *Aerial photog.* The line of intersection of the principal plane with the plane of a tilted or oblique photographic plate or film.

principal plane. *Aerial photog.* A vertical plane containing the optical axis of a camera and an imaginary plumb line dropped from the center of the camera lens.

The principal plane is of significance only in regard to oblique or tilted photographs. See prec.

principal point. *Aerial photog.* The center point or the optical center.

principle, *n.* **1.** As used in the phrase, 'principles of war': A truth or basic law inherent in certain situations or relationships. **2.** A settled rule of action that governs conduct.

In sense 1, 'principle' differs from 'rule' in that the principle is inherent and is discerned or discovered, whereas a rule is man-made, although often based upon man's understanding of the inherent principle.

principle of war. One of those principles or axioms considered fundamental for carrying on successful war.

These principles are variously stated, as by Clausewitz, Douhet, and other writers on the subject, but they usually embrace the following: Objective, offensive, surprise, mass or concentration, economy of force, security, movement or mobility, cooperation, and simplicity (see separate entries). Some analysts subdivide these principles, call them by different names, or conceive them in fewer or greater numbers. The principles are interdependent.

printed communication. *Specif.* A communication that is automatically printed by a machine at the receiving end of a circuit, as in a teletype communication system.

priority, *n.* **1. a.** The status of something that gives it precedence over something else, as in 'this theater, or this target, has priority.' **b.** *transf.* The thing given such a status, as in 'the priorities were bombed during the night.' **2.** The relative position assigned something in terms of an arbitrary order of precedence, as in 'its priority was not commensurate with its importance.'

In sense 2, the relative position is often referred to as a matter of degree, or it may be indicated by a number or by a designating adjective, as in 'priority 3' or 'top priority.' See **air priority.**

Attrib., as in *priority cargo* (cargo having priority over other cargo), *priority handling, priority list, priority message, priority radio* (a radio used for messages having priority), *priority system,* etc. Ambiguity inheres in some attrib. uses: See **priority target.**

priority requisition. A requisition having some degree of precedence over other requisitions.

priority target. A target having some degree of priority, or one having the highest priority.

pris (*auth abbr*). 'Prison' or 'prisoner.'

prismatic compass. A compass equipped with sighting devices and a prism for reading the scale while sighting. Used in measuring angles.

prisoner of war. (POW) In accordance with the Geneva Convention of 1949, any person who falls into the hands of the enemy in time of war and who is a member of an armed force or a member of certain other forces or civilian categories as established by the Convention.

Prisoners of war of nations signatory to the 1949 Convention are subject to certain disciplines and guaranteed certain rights and privileges as set forth in the articles of the Convention.

private, *n.* (pvt) **1. a.** In the US Army, the lowest enlisted rank in either of two classes, the lower class of private corresponding to basic airman in the AF, and the higher class corresponding to airman 3rd class. **b.** In the Marine Corps, the lowest enlisted rank, immediately below private first class, and corresponding to basic airman in the AF. **2.** In the AF, a word formerly used for a basic airman. **3.** A person holding the rank of private; a title applied to such a person.

private, *a.* **1.** Of property: Belonging to an individual person, as in *private airplane.* **2.** Performed with, or in, personally owned equipment, as in *private aviation, private flying.* **3.** Characterized by being in private aviation, as in *private pilot.*

private aviation. Aviation that is carried out by individuals who own or rent aircraft for personal use; the airplanes used in this activity. Distinguished from commercial aviation or military aviation.

Privateer, *n.* A popular name for the PB4Y-2.

private first class. (pfc) **1. a.** In the US Army, an enlisted rank immediately below that of corporal, corresponding to airman 2nd class in the AF. **b.** In the Marine Corps, an enlisted rank immediately above private, corresponding to airman 3rd class in the AF. **2.** In the AF, a term formerly used for 'airman 3rd class.' **3.** A person holding the rank of private first class.

PRO (*auth abbr*). 'Public Relations Officer.' *Hist.* in the AF.

pro (*abbr*). **1.** *auth.* 'Proceed' or 'procedure.' **2.** 'Procure' or 'procurement.' **3.** 'Prophylactic.' Pronounced as a word.

probable, *n.* An instance in which a hostile aircraft is probably destroyed; the hostile aircraft so designated. Cf. **certain,** *n.*

probable bombing error. That part of a bomb-fall which may be expected to miss the desired mean point of impact because of aiming errors or of errors arising from ballistic factors. See

circular probable error, error, *n.*, sense 2, **gross bombing error.**

probable error. 1. In artillery usage, an error resulting in hits to one side or the other of a target, expected in a given number of shots. **2.** An Army term for a circular probable error (in sense 3).

probational appointment. A Civil Service appointment resulting from eligibility obtained in an open competitive examination announced by the Civil Service Commission, and providing for a period of probationary service prior to acquiring competitive status.

probationary officer. A regular or nonregular commissioned or warrant officer who has completed less than three years of continuous active service since acceptance of his current appointment.

probe, *n.* A projecting pipelike device installed on the receiving aircraft in a certain system of air refueling, which makes connection with the drogue (which see) to receive fuel from a tanker aircraft.

probe-drogue system. A system used in air refueling in which the drogue and the probe are fitted together.

Cf. **flying boom, rigid coupling system.**

probout (*auth abbr*). 'Proceed on or about.'

proc (*auth abbr*). 'Procure.'

procedure turn. A turn in an aircraft made in accordance with a specified procedure, in which the aircraft reverses its heading along a radio beam.

process, *n.* A series of actions or operations leading toward an end.

process, *v. tr.* To submit *persons* or *things*, individually or collectively, to a process.

This word is used with special reference to the processes of (1) inducting, assigning, reassigning, or transferring personnel; (2) classifying, assigning, disposing of, or testing equipment; (3) handling records, documents, messages, correspondence, etc.; (4) evaluating intelligence information; and (5) developing and printing film.

processing, *n.* The action of the verb 'process.'

Attrib., as in *processing center, processing station*, etc. See **personnel processing center.**

procurement, *n.* (proc) **1.** In a broad sense, the complete action or process of acquiring or obtaining personnel, materiel, services, or property from outside a military service by means authorized in pertinent directives: See note and cf. **requisition,** *n.* **2.** More specifically, the action or process of acquiring or obtaining materiel, property, or services at the operational level, i.e., purchasing, contracting, and negotiating directly with the source of supply.

In its broad meaning, 'procurement' includes functions or actions of designing, determining of standards, writing of specifications, selecting supplies, financing, administering of contracts, and the like; but in specific usage, it may have reference only to acquiring a particular thing, such as materiel.

Procurement has usually been the responsibility of each military service, but cross-procurement is common, as in the case of the AF procuring aircraft for the Army.

procurement lead time. The time elapsing between the initiation of procurement action and the receipt into the AF supply system of the materiel procured.

prod (*auth abbr*). 'Product.'

produce, *v. tr.* To bring *something* into existence or into a new form, as in producing wheat, minerals, or manufactured articles; to cause to accrue; to yield.

product inspection. The inspection activity as applied to a manufactured article or articles. See **inspection,** *n.*, esp. note.

production, *n.* (pdn) **1.** The act or process of producing, esp. of gathering and fabricating raw materials into finished articles. See note. **2.** In a restricted sense, the act or process of manufacturing finished articles. See **production period. 3.** That which is produced. **4.** In intelligence usage, the entire activity or process of providing intelligence materials, including evaluating, analyzing, interpreting, and preparing for dissemination.

In sense 1, administrative actions or processes, such as scheduling, inspection, and inventory control, concomitant with the actual producing, are considered a part of production.

production-line maintenance. A system of maintenance wherein inspection and repairs are performed at a series of stations as a reparable item moves from one station to the other.

Applied esp. to aircraft or aircraft engines.

production-loss appraisal. An estimate or appraisal of the loss resulting from damage done to a production facility, esp. by a hostile attack, in terms of the quantity of finished items that will be denied until full production is resumed.

production method change. Any change in the method of producing an article or item which does not alter the physical characteristics of the end product.

production model. A finished airplane or other object, produced under particular production techniques. Cf. **prototype,** *n.*, sense 1.

This term is applied esp. to the first object to be turned out by a particular method of production, which serves as an example of the objects that will follow it. It differs from a prototype in that the latter is not necessarily, and usually is not, made by the same methods as those used in producing the objects that follow it.

production period. A period of time spent in production: See note.

Two production periods are recognized: *Initial production period*, the time between completion of the first article and the attainment of the peak rate of production; *peak-rate production period*, the period of time between the time the peak rate is reached and the time at which

production is slowed down or discontinued. See **preproduction period.**

production prototype. The airplane or other article or piece of equipment of a specific model which is used to aid in setting up facilities and methods for production of that particular model.

produtas (*auth abbr*). 'Proceed on duty assigned.'

prof (*auth abbr*). 'Professor' or 'profession.'

professional education. 1. The action or process by which a person develops an understanding of the principal facts connected with an art, science, or field of knowledge, together with an understanding of those general principles that determine, or account for, the nature or character of such facts, to the end that such understanding can be used in applying the facts to particular situations, in advancing knowledge, and in the discovery and formulation of new principles. **2.** The totality of information and personal qualities acquired by a person who has experienced this process, as in 'he has a professional education.'

Professor of Air Science. A title given the commander of an AFROTC unit. Formerly called 'Professor of Air Science and Tactics.'

proficiency check. A proficiency test, esp. one involving a check flight.

proficiency flight. 1. A flight made by a pilot or another aircrew member or members to improve proficiency. **2.** A check flight. *Loose* usage.

proficiency test. A test, often of a practical nature, designed to determine or prove one's ability or proficiency in a certain activity.

profile burn. A burn having sharply-defined limits due to the shielding effects of clothing, goggles, jewelry, or the like.

profile drag. That part of the airfoil drag that results from the skin friction and the shape of the airfoil as indicated by the airfoil profile.

The profile drag, strictly speaking, does not include the parasite drag resulting from objects attached to the wing, but is sometimes interpreted to include such drag. See **drag,** *n.*, **induced drag.**

profile thickness. The maximum thickness of an airfoil profile.

program, *n.* (prog) **1.** That which lends form and regularity to the activity of a person, group of persons, or institution, being that which relates one action to another in terms of objectives. **2.** A plan for scheduling future accomplishments so as to meet projected requirements.

program, *v. tr.* **1.** To establish an *undertaking* on such basis as to relate it to expressed objectives, and to provide means by which the undertaking can be carried out in accordance with a schedule. **2.** To set a sequence of operations into a *computer.*

Hence, **programming,** *n.*, in both senses.

program analysis. 1. The detailed examination of a program to determine its requirements and its feasibility as indicated by available resources. **2.** *Capitalized.* An activity that performs such analysis.

program budget. The budget for a particular program.

programmed aircraft. Aircraft scheduled for delivery on a given date, or at a time related to an event.

program objective. An objective provided for by a program.

A program may have one or more objectives.

progress analysis. The detailed examination of actual accomplishment to compare it with that required by a program, or required to attain a specific objective.

prohibited material. A term used in the Military Air Transport Service to designate material considered dangerous for air transport, and requiring special approval for its transport.

proj (*auth abbr*). 'Project' or 'projectile.'

project, *n.* (proj) A planned undertaking or assignment to accomplish something specific.

A project is always distinct, and requires special personnel, resources, and effort. A project may be set up, for example, to develop a new type of weapon, to explore a field of knowledge, to write a dictionary, etc. The word 'project' sometimes appears in specific names, as in 'Project Beetle,' 'Project Rand,' etc.

projected propeller area. The projected propeller-blade area multiplied by the number of blades. See next.

projected propeller-blade area. The area of a propeller blade face projected on a plane perpendicular to the axis of rotation. See **propeller-blade area.**

projected workload. An amount of work proposed or anticipated to meet the requirements of a program, project, or the like.

projectile, *n.* (proj) **1.** An object, esp. a missile, projected by an applied exterior force and continuing in motion by virtue of its own inertia, as a bullet, bomb, shell, or grenade. **2.** Also applied to rockets, esp. rocket missiles, and to guided missiles. See **rocket projectile.**

The extension of meaning in sense 2 has been gradual and unobserved by many writers. In the process, the term has lost sharpness, for certain guided missiles, esp. those of the winged variety, are not projected by an exterior force, and their continuing motion is by virtue of a fuel carried by the missile itself. Cf. **trajectory,** *n.*

projectile line. *Specif.* In aerial gunnery, a straight line indicating the direction a projectile would take if it followed its line of departure. See **line of departure,** sense 1 and note.

projection, *n.* *Cartography.* **1.** Any of various methods for representing the surface of the earth or the celestial sphere upon a plane sur-

face. **2.** A map or chart made by any one of such methods.

Different types of projections include the conformal projection, the equidistant azimuthal projection, the orthographic projection, the polyconic projection, the stereographic projection, etc. See separate entries.

projector, *n.* A device for projecting a beam of light, picture, or the like, as in 'searchlight projector' or 'motion-picture projector.'

Project Rand. An AF project the research for which is conducted by Rand Corporation through contract.

Project Rand is a broad background research project concerned with the development of strategies, tactics, techniques, and instrumentalities for future air warfare.

ProLT (*auth abbr*). 'Procurement lead time.'

prom (*auth abbr*). 'Promote' or 'promotion.'

promI (*auth abbr*). 'Promulgate.'

promote, *v. tr.* (prom) **1.** To elevate a *person* to higher rank. **2.** To appoint a *person* to a more important position, esp. one leading to or entailing an elevation in rank.

promotion, *n.* (prom) An act or instance of promoting, or the state of being promoted.

promotion list. *Specif.* A list of all commissioned regular officers in the AF, indicating the order in which they are to be considered for permanent promotion.

prompt neutron. A neutron released almost immediately by an atomic explosion. Cf. **delayed neutron.**

pro-oxygenation, *n.* The procedure of breathing pure oxygen in order to lower the amount of nitrogen in the body; a form of denitrogenation (which see).

prop, *v. tr.* To start an *engine* by turning the propeller over by hand. *Colloq.*

prop (*auth abbr*). **1.** 'Propeller.' Used as a common noun. **2.** 'Property.'

propaganda, *n.* **1.** The dissemination of selected facts, falsehoods, doctrines, or ideas to influence the thoughts and actions of a person or group of persons. **2.** The facts, doctrines, ideas, etc. so disseminated.

In intelligence usage, several different types of propaganda are recognized and categorized according to source and according to the audience at which directed. In the former category are *overt*, or *white*, propaganda, which is officially issued from a known source; *covert*, or *black*, propaganda, issued from a falsified or concealed source; and *gray* propaganda, which avoids identification as to origin. In the other category are *strategic* propaganda, directed at an enemy force or population in its entirety with long-range effects in mind; *tactical*, or *combat*, propaganda, used in direct support of combat operations; *occupation* propaganda, directed toward the inhabitants of an occupied area by the occupying power; and *counterpropaganda*, which refutes enemy propaganda. A certain amount of overlapping exists among these types and categories.

propaganda balloon. A small free balloon that carries propaganda materials, incorporating a device to release these materials onto the ground below when the balloon drifts to a desired position.

propaganda raid. A raid by aircraft in which propaganda materials are dropped.

propagandize, *v.* **1.** *tr.* To subject *people*, a *country*, a *group*, or the like to propaganda; to disseminate *ideas*, *doctrine*, or the like. **2.** *intr.* To engage in propaganda.

propagandized, *a.* Designating a person or persons subjected to propaganda, whether influenced by it or not.

propagation, *n. Physics.* The traveling of a radio wave, pressure wave, electric current, or the like through or along a medium; the act of sending such waves or forces through or along a medium.

propellant, *n.* That which provides the energy for propelling something; *specif.*, an explosive powder charge for propelling a bullet, shell, or the like; also a fuel, either powder or liquid, for propelling a rocket or the like.

Attrib., as in *propellant consumption rate*, *propellant variation*, etc. See next.

propellent, *a.* Propelling, or tending to propel. See prec., note. Said of a force or substance, as in 'a propellent gas.'

propeller, *n.* (prop) **1.** A power-driven, rotating device having a hub and two or more helical shaped arms or blades, mounted on certain aircraft or ships and used to propel or pull the aircraft forward through the air by the action of the blades eating into the air or other fluid; *specif.*, such a device mounted on an airplane. **2.** *ellip.* A propeller disk, as in 'the guns fired through the propeller.'

'Propeller' is sometimes, though rarely, applied to the rotor of a helicopter.

Different types of propellers include the adjustable-pitch propeller, the automatic propeller, the constant-speed propeller, the controllable-pitch propeller, the fixed-pitch propeller, the full-feathering propeller, the single-blade propeller, and the variable-pitch propeller. See separate entries.

propeller arc. An arc of the circle described by a rotating propeller.

propeller area. The total propeller-blade area of a propeller.

propeller blade. Any one of the arms of an aircraft propeller; *specif.*, that part of the arm which serves to bite the air, i.e., the part from the shank outward.

propeller-blade angle. The acute angle between the chord of a specified section of a propeller and a plane perpendicular to the axis of rotation. Also called 'pitch' (which see).

The propeller-blade angle varies from root to tip, but the angle at two-thirds or three-quarters radius is normally used for reference to characterize the blade angle of the entire propeller.

propeller-blade area. The developed area of the

blade face of a given propeller taking into account its slightly curved surfaces as well as its flat surfaces.

This area is exclusive of the blade shank, which gives negligible thrust.

propeller cuff. A streamlined fairing fitted around the shank of a propeller.

The propeller cuff is used to increase the airfoil area of the propeller arm, thereby increasing the flow of air around engine cylinders or improving propeller efficiency.

propeller diameter. The diameter of the circle described by a rotating propeller.

propeller disc. The space occupied or covered by a rotating propeller.

In combination, as *propeller-disc area.*

propeller-driven, *a.* Of aircraft: Driven by an engine-propeller combination.

propeller efficiency. The efficiency with which a propeller converts power input into thrust under specified conditions.

Propeller efficiency is dependent upon the speed at which the airplane is moving, density of the air, etc.

propeller governor. A governor that regulates the pitch of a constant-speed propeller.

propeller ground clearance. The distance between the ground and the propeller disk of an airplane in a level attitude on the ground.

propeller hub. The central part of a propeller from which the arms radiate and by which the propeller is mounted on the drive shaft.

propeller interference. Interference of the backwash from a propeller by an aircraft component within the backwash, such as an engine cowling, wing, etc.

Propeller interference modifies the torque and the thrust of the propeller. See **interference,** *n.*, sense 1.

propeller pitch. The pitch of a propeller, as distinguished from any other pitch. See **pitch,** *n.*, sense 1.

propeller radius. The radius of a propeller disk, i.e., the distance of a propeller tip from the axis of rotation. Also called 'tip radius.'

propeller rake. The backward slant of a propeller blade; *technical*, 'the mean angle which a line joining the centroids of the sections of a propeller blade makes with a plane perpendicular to the axis' (NACA).

propeller section. A blade section of a propeller blade. See **blade section.**

propeller speed. The rpm of a propeller.

propeller thrust. 1. The thrust developed by a rotating propeller. See **thrust,** *n.*, sense 1 and note. **2.** *Technical.* 'The component of the total air force on a propeller which is parallel to the direction of advance' (NACA). See **air force,** sense 5.

propeller tip. The outermost end or tip of a propeller blade.

propeller tipping. A protective metal shielding sometimes placed on wooden propeller blades, covering the tip and part of the blade edge.

propeller wash. The backwash caused by a propeller. Cf. **jet wash.**

proper employment of aircraft. The employment of aircraft, in terms of their capabilities, so as to forward the mission with the greatest economy of effort. See **employment,** *n.*

proper station. The permanent station from which a person or unit has been withdrawn for temporary duty, as in 'after temporary duty, he will return to proper station.'

property, *n.* (prop) *Specif.* **1.** Any or all objects, possessions, and interests owned by, or belonging to, the AF. See **real property. 2.** Any or all AF supplies and equipment.

property account. A formal record of property and property transactions.

property accounting. The establishing and maintaining of property accounts and the checking of the recorded accountability of custodians; the procedures involved in this.

Property accounting includes inventory accounting.

property addition. In fiscal usage, the cost of an addition or improvement to, or a replacement of, real property.

property retirement. In fiscal usage, the cost of property dismantled, discarded, or destroyed.

propjet, *n.* A turboprop engine.

prop pitch. 1. Propeller pitch. *Colloq.* **2.** A hypothetical liquid sometimes figuring in practical jokes. *Jocular.*

propulsion unit. *Specif.* A power unit.

propulsive efficiency. The efficiency with which an aircraft's power unit converts the energy available for propulsion into thrust. See **overall efficiency, thermal efficiency.**

With a jet engine, propulsive efficiency is measured by the ratio of the aircraft's forward airspeed to the jet velocity.

propulsive force. A force that drives or impels.

The propulsive force of a gun results from the energy released by burning the powder charge; that of an airplane, from the energy of its fuel.

prop wash. 1. Propeller wash. *Colloq.* **2.** Gossip; nonsense. *Slang.*

Protekt, *n.* A type of German airborne jammer of WW II.

protocol, *n. Specif.* The rules and forms prescribing the formal courtesies and etiquette for military ceremonies, receptions, etc.; the observance of these rules and forms. Hence, **protocol officer.**

proton, *n.* The positively charged nucleus of the atom of the light isotope of hydrogen, considered to be a nuclear constituent of all atoms. See **electron,** *n.*

prototype, *n.* **1.** The first complete and working

member of a class, esp. applied to the first aircraft made of a given model or model series, or the first specimen of a class of weapons or any other piece of equipment, such member or specimen serving, or intended to serve, as the pattern or guide for subsequently produced members of the same class. See **production model, production prototype.** **2.** *Built or produced in prototype only*, limited in production to a single specimen, i.e., to the prototype itself. **3.** Also used in the sense of 'precursor,' as in 'the V-2 was the prototype for the weapons of the future.'

prov (*auth abbr*). 'Provide,' 'provision,' or 'provisional.'

proving ground. **1.** An area or location where equipment or weapons are tested. **2.** *Capitalized.* Short for 'Air Proving Ground.' **3.** Used figuratively in sense 1, as in 'commercial aviation is a good proving ground for airplanes.'

Proving Ground Command. A field command of the AAF, organized early in 1942. See **Air Proving Ground Command.**

This command became a part of the AAF Center in June 1945.

proving stand. A test stand (sense 2).

provisional unit. A unit organized with personnel on detached service from one or more T/O or non-T/O units, for a limited period of time and for a specific mission.

provmain (*auth abbr*). 'All other provisions of basic orders remain in effect.'

provost marshal. (PM) **1.** A staff officer at command or subordinate level who advises on, and exercises supervision and inspection over, the maintenance of discipline, enforcement of security, and the confinement of prisoners. Sometimes capitalized when specific reference is intended. **2.** *Capitalized.* Short for 'Air Provost Marshal' (which see, sense 1).

Provost Marshal General. In the US Army, the opposite number of the Air Provost Marshal.

proximity fuze. A fuze designed to function under the influence of a target when close to or at the target. Also called an 'influence fuze.'

Proximity fuzes may incorporate photoelectric cells, radar devices, or other devices as activating elements. The variable-time fuze is one type of proximity fuze.

prpln (*auth abbr*). 'Propulsion.'

PRS (*auth abbr*). 'Physically restricted status.'

prsmn (*abbr*). 'Pressman.'

PRT (*auth abbr*). 'Personnel research test.'

prtg (*auth abbr*). 'Printing.'

PRU (*abbr*). 'Photoreconnaissance unit.'

PS (*abbr*). 'Passenger aircraft' (*Passazhirskii samolyot*), used in the names of Russian aircraft from 1925 to 1945, as in *PS-84*.

PSandT (*auth abbr*). 'Pay subsistence and transportation.'

PSDS (*auth abbr*). 'Permanently separated from duty station.'

PSEA (*abbr*). 'Physical Security Equipment Agency.'

pseudoadiabat, *n.* A diagonal line on a pseudoadiabatic chart showing graphically the cooling which theoretically takes place when a moisture-saturated parcel of air rises vertically, or the heating which theoretically takes place when such a parcel of air descends vertically.

The mean slope of a pseudoadiabat is approximately 1.77° C per 1,000 feet as compared with that of 3.4° C per 1,000 feet of an adiabat.

pseudoadiabatic chart. A chart containing a series of diagonal lines, called 'pseudoadiabats,' showing graphically the cooling or heating which theoretically takes place in a series of ascending or descending parcels of moisture-saturated air.

Moisture in saturated air condenses as it cools, thereby releasing heat.

pseudoadiabatic diagram. A pseudoadiabatic chart.

PSF ratio (*abbr*). 'Payload-structure-fuel (weight) ratio.' Applied esp. to rockets.

psgr (*abbr*). 'Passenger.' See **pax** (*auth abbr*).

psi (*abbr*). 'Pounds per square inch.'

psn (*abbr*). 'Position.' See **posit** (*auth abbr*).

PSP (*abbr*). 'Pierced steel plank.'

PSSN (*abbr*). 'Primary SSN.'

PST (*abbr*). 'Pacific Standard Time.'

pstl (*auth abbr*). 'Postal.'

psy (*abbr*). 'Psychological.' See next.

psych (*auth abbr*). 'Psychology' or 'psychological.'

psychological warfare. (psywar) A struggle or conflict between nations or other contestants, in which each contestant strives to impose his will, or to reach his objective, by psychological means rather than by arms.

The methods employed in psychological warfare may be directed toward appealing to the reason, disseminating knowledge so that sound judgments may be made, influencing events so as to relieve tensions, etc., or it may be directed toward appealing to the passions and sentiments, undermining the basis of judgment by deliberate falsification or innuendo, creating stresses and strains, making a show of military power, etc.

Psychological warfare, although itself distinguished from armed warfare, is often advanced by the use of armed events as evidence of strength or weakness. Thus, psychological warfare may complement armed warfare and be pursued concurrently, or it may be phased to exploit armed events before or after they occur.

psychomotor test. In aviation medicine, any one of certain tests designed to measure an individual's psychological and motor reactions under normal and abnormal conditions.

These tests establish data on steadiness, reaction time, recuperability, etc.

psychosocial instrument. *Specif.* An instrument of government that may be used to help resolve

conflict, consisting of such influences as those that arise from the personal qualities of a leader, from expressions of a national enthusiasm, from adherence to a moral code or custom, etc.
Cf. **military instrument.**

psychrometer, *n.* A kind of hygrometer (which see) that measures humidity by a differential temperature reading between two thermometers, one of which is moistened.
If the air has a heavy humidity, the thermometers will register the same temperature; if the air is relatively dry, however, the moistened thermometer will indicate a lower temperature than the other. Humidity is then determined by reference to prepared tables.

psych warfare. Short for 'psychological warfare.'

psywar (*auth abbr*). 'Psychological warfare.'

PT (*abbr*). **1.** 'Physical training.' **2.** 'Primary trainer.' *Hist.*

PT-13. An early WW II biplane primary trainer developed by Stearman.
The PT-17, PT-18, and PT-27 were modifications of the PT-13. All were popularly called the 'Caydet.' The PT-13 was a development of an earlier model, the PT-9. See **primary trainer,** esp. note.

PT-19. An early WW II low-wing primary trainer, developed by Fairchild.
The PT-23 and PT-26 were modifications of the PT-19. All were popularly called the 'Cornell.' See **primary trainer,** esp. note.

PT-21. An early WW II low-wing primary trainer developed by Ryan.
The PT-22 was a modification of the PT-21. Both were popularly called the 'Recruit.' See **primary trainer.**

pt (*auth abbr*). 'Point.'

Ptarmigan flight. A term used to designate any one of the regular weather reconnaissance flights from Alaska to the North Pole and return.

ptbl (*auth abbr*). 'Portable.'

ptgt (*auth abbr*). 'Primary target.'

ptl (*abbr*). 'Patrol.' See **pat** (*auth abbr*).

PTM (*abbr*). 'Pulse-time modulation.'

PTO (*auth abbr*). 'Port transportation officer.'

pt/pt (*abbr*). 'Point-to-point.'

pty (*auth abbr*). 'Party.'

pub (*auth abbr*). 'Publish,' 'public,' 'publication,' or 'publicity.'

publication, *n.* (pub) **1.** Any regulation, letter, manual, pamphlet, memorandum, bulletin, circular, order, periodical, brochure, table, form, index, catalog, list, chart, report, graphic training aid, poster, or other like material, issued in such form as to be readily examined by different persons either authorized or required to do so. **2.** The action of issuing such material.
Routine letters and indorsements are not regarded as publications.

public information office. (PIO) An office formerly within the staff organization of a commander, in which all matters affecting or involving the relations of the command with the public (as in press releases or cooperation with local communities) were examined, appraised, and correlated in order to advise and assist the commander on a proper course of action or attitude in terms of public interest. Hence, **public information officer** (PIO).
The functions of the PIO were placed under the office of information services (OIS) in 1953.

public personal property. In supply usage, all personal property (which see) acquired by the Air Force.

published minimums. The published weather minimums for given runways or landing fields.

PUC (*auth abbr*). **1.** 'Presidential Unit Citation.' **2.** 'Provided you concur.'

puck, *n.* A brake puck (which see).

PUG (*abbr*). 'Partially underground.'

Pulitzer Prize Race. An international air race about a closed course in which the contestants competed for a trophy donated by Ralph Pulitzer (1879–1939), an American newspaper publisher.
The race was held annually from 1920 to 1925.

pull, *v.* **1.** *To pull G's*: See **G,** *n.*, sense 4. **2.** *To pull out.* **a.** To recover from a dive. **b.** To break off or discontinue a landing approach. **3.** *To pull up,* to bring the nose of an airplane up sharply, esp. from a level attitude.

puller propeller. A tractor propeller.

pullout, *n.* An act or instance of pulling out. See **pull,** *v.*, sense 2.

pullup, *n.* An act or instance of pulling up; a pullout. See **pull,** *v.*, sense 3.

pulmonary, *a. Medicine.* Of or pertaining to the lungs.

pulsating current. Pulsating direct current.

pulsating direct current. A direct current periodically interrupted or changed in intensity.

pulse, *n.* A brief surge or flow of energy, propagated either as an electric current or electromagnetic wave.

pulsed altimeter. A radar altimeter that emits pulses of radio-frequency energy.

pulse duration. The duration in time of a pulse, esp. of an electromagnetic wave.
The pulse duration of a radar wave or the like is measured between points of zero value, or some other specified points.

pulsejet, *n.* Short for 'pulsejet engine.'

pulsejet engine. A kind of jet engine of the athodyd group, having neither compressor nor turbine, but equipped with vanes in the front end which open and shut, taking in air to create power in rapid periodic bursts rather than continuously. Cf. **ramjet engine.**
Air is taken in by the pulsejet engine in two ways: by the forward motion of the engine as it moves through the air, and by suction caused by the creation of low pressure in the engine after each explosion.

pulse length. The pulse duration of an electromagnetic wave.

Pulse length is usually measured in microseconds, or expressed in terms of the linear distance it represents on a radar screen. See **pulse duration.**

pulse-length error. An error caused by pulse length, which makes certain targets appear longer or thicker than they actually are in the direction of the radar beam.

pulse modulation. The frequency modulation or amplitude modulation of a carrier wave so as to produce signal pulses.

pulse rate. The frequency with which pulses occur per unit of time.

Also called the 'pulse recurrence frequency,' 'pulse recurrence rate,' 'pulse repetition frequency,' etc.

pulse width. Pulse length.

pulsojet, *n.* A pulsejet engine.

pundit, *n.* A kind of flashing light beacon, set up esp. along a coast line.

punitive admonition. An admonition given as punishment under the Uniform Code of Military Justice.

The same formalities are observed in imposing and recording a punitive admonition as in those of a punitive reprimand. The admonition, however, is not considered so severe.

punitive reprimand. A reprimand given as punishment under the Uniform Code of Military Justice.

An offender is consulted as to whether or not he will accept a punitive reprimand in lieu of trial by a court-martial; if he accepts it, the reprimand becomes a part of the individual's record. See **reprimand,** *n.*

pup tent. A small sleeping tent used by two persons. *Slang.*

pur (*auth abbr*). 'Pursuit,' 'purchase,' or 'pursuant.'

purchase-hire employee. A temporary employee hired to do emergency work on something other than real property. Cf. **force-account employee.**

purp (*abbr*). 'Purpose.'

Purple Heart. (PH) A US decoration awarded to members of the Armed Forces and to civilians serving with the Armed Forces who are wounded in action against an enemy of the US. See **decoration,** *n.*

The Purple Heart was established by Gen George Washington in 1782. It originally consisted of a heart-shaped piece of purple cloth edged with lace, and was given for meritorious service. The decoration later fell into disuse but was reestablished in 1932 as a bronze, enameled medal. See **wound chevron.**

purpose classification. In fiscal usage, the classification of an obligation or expenditure in terms of the purpose (i.e., function, activity, project, etc.) for which it is incurred or laid out.

pursuit, *n.* (pur) **1.** The act of pursuing something, esp. to attack it or engage it in combat. **2.** Short for 'pursuit airplane' or 'pursuit aviation.' Attrib., as in *pursuit pilot, pursuit squadron,* etc. See **P** (*abbr*), sense 4.

In sense 2, the term is a collective for 'pursuit airplanes,' esp. in such locutions as 'enemy pursuit' or 'Allied pursuit.' See **fighter,** *n.*, note.

pursuit airplane. A fighter airplane designed primarily for pursuit of, and attack on, enemy aircraft; any fighter airplane.

This term is no longer officially used except as a general term. See **fighter airplane.**

pursuit aviation. Pursuit airplanes; the art or practice of operating such airplanes, esp. in a combat situation. *Hist.*

pursuit curve. The flight path flown by a fighter airplane when directing continuous fire at a moving target from any direction except head-on or dead astern.

With a fighter attacking a bomber from the side, for example, the fighter, in order to keep a continuous stream of fire directed at the bomber, must turn its nose to follow the movement of the bomber. The resulting flight path of the fighter is a pursuit curve.

Pusan Air Base. An AF base at Pusan, Korea, named for the city.

Pusan East Air Base. An AF base near Pusan, Korea, named for the city.

push, *v. To push over,* to push the control stick or column of an airplane forward; hence, to go down.

push-button, *a.* Of or pertaining to actions carried out by automatic, remote-controlled, or robotic mechanisms or weapons, as in *push-button era, push-button warfare,* etc. *Popular.*

pusher, *n.* Short for 'pusher airplane' or 'pusher propeller.'

pusher airplane. An airplane propelled by a pusher propeller or pusher propellers.

Types of pusher airplanes include the Wright A Flyer, the FE-2, the B-36.

pusher propeller. An airplane propeller so mounted as to push the airplane through the air; a propeller mounted aft of its engine.

The pusher propeller on an airplane is normally mounted behind the trailing edge of a wing; it is always behind the lateral axis or center of gravity. Cf. **tractor propeller.**

push-pull amplifier. An amplifier employing two vacuum tubes working in opposite phase to one another.

put-put, *n.* [Echoic.] **1.** A small gasoline engine that makes a 'put-put' sound, such as a small auxiliary engine aboard a large aircraft. **2.** Anything propelled by a small engine. Applied to a small airplane, a motor scooter, etc.

'Put-put' rimes with 'mut.'

PV-1. The Navy designation for the B-34.

pvnt (*auth abbr*). 'Prevent' or 'preventive.'

pvt (*auth abbr*). 'Private.'

pW (*abbr*). **1.** *auth.* 'Public works.' **2.** 'Pulse width.' **3.** 'Prisoner of war.' See **POW** (*auth*

abbr). **4.** 'Pursuit–water-cooled,' as formerly used (*circa* 1920) in designating US Army aircraft.

PWCen (*auth abbr*). 'Public works center.'

PWE (*abbr*). 'Prisoner of war enclosure.'

PX (*auth abbr*). 'Army Exchange.'

This abbreviation, originally standing for 'post exchange,' is commonly used by AF persons in reference to a base exchange.

pylon, *n.* **1.** A post, tower, or the like on an airplane race course marking a turn or the end of the course; such an object used as a reference point in aerial maneuvers. **2.** A rigid structure that protrudes from a wing, fuselage or other surface of an aircraft to support a float, engine, drop tank, or the like.

pylon drop tank. A drop tank held under a wing by a pylon.

pylon eight. An eight on pylons. See **eight,** *n.*

Pyote Air Force Base. An AF base at Pyote, Texas, named for the city.

pyramidal tent. A large tent, box-shaped at the bottom and having a high, pyramidal roof.

pyrotechnics, *n.* **1.** In military usage, a collective term embracing all, or any group of, flame-producing or smoke-producing devices used for signaling, illuminating, screening, or igniting. **2.** The using of such devices.

Pyrotechnics include signal rockets, flares, signal cartridges, smoke bombs, rocket igniters, etc. See **ammunition,** *n.*, sense 1 and note.

Q

Q (*letter*). See **Quebec** (*code*). **1.** Used as a designation for AF aircraft modified for use as targets or drones. **2.** Used as a code or symbol for: **a.** 'Fairchild Engine and Airplane Corporation,' in designations of US Navy aircraft. **b.** 'Countermeasures version' in designations of US Navy aircraft.

Q (*abbr*). **1.** 'Quartermaster.' See **QM** (*auth abbr*). **2.** 'Quartermaster general supply, USMC.' **3.** 'Quarters are required,' as used in the VIP code.

Q clearance. A security clearance granted by the Atomic Energy Commission, based upon an investigation conducted by the Federal Bureau of Investigation.

A Q clearance is required by the AEC for those AF military, civilian, and contractor personnel who are required by their duties to obtain access to restricted data either directly from a contractor or as a licensee of the AEC.

Q factor. In bombing, a factor representing the ratio of the velocity of the differential ballistic wind to the velocity of the wind at release altitude. See **differential ballistic wind.**

QM (*auth abbr*). 'Quartermaster.'

QM (*code*). A code or symbol for 'Decca navigation system.'

QMC (*auth abbr*). 'Quartermaster Corps.'

QMG (*abbr*). 'Quartermaster General.'

qrtg (*abbr*). 'Quartering.'

Q-signal, *n.* In communication usage, a code signal beginning with the letter 'Q' and standing for any one of several commonly used statements or questions.

Examples are *QDL*, used to ask for a series of bearings; *QDM*, used to request a magnetic heading toward a radio station with wind effect disregarded; *QTE*, used to request a true bearing in relation to the radio station; etc.

qstnr (*abbr*). 'Questionnaire.'

qtr (*auth abbr*). 'Quarter' or 'quarterly.'

qty (*auth abbr*). 'Quantity.'

quad (*auth abbr*). 'Quadruplicate.'

quadrant, *n.* **1.** An instrument similar to a sextant, but constructed with its arc graduated in degrees for a fourth of a circle. Often called a 'sextant.' **2.** An instrument with a scale graduated in ninety degrees, used in laying a gun or mortar for elevation; a clinometer. **3.** The fourth part of something, as a quadrant in a radio range. See **Adcock radio range,** note.

quadrantal deviation. That part of the compass deviation transiently induced in an aircraft along lines that bisect the angles between the lateral and longitudinal axes.

This deviation is induced by the placement of various loads or equipment, such as bombs, radar, or loran, in positions throughout the aircraft so that magnetic fields are created along lines other than the lateral and longitudinal axes. This deviation changes sign as the airplane turns from one quadrant to another, and shows its maximum effect on quadrantal headings, i.e., NE, SE, SW, and NW. Coefficient D represents this deviation when it is appreciable; coefficient E, when negligible.

quadrantal error. An error in a radio-compass reading caused by reradiated fields around the metal body of the airplane; an error in a magnetic compass reading that results from the same causes.

This error is at a maximum when the incoming radio waves must cross the wings or stabilizer of the aircraft, i.e., when the relative bearing between the aircraft and the station is 45°, 135°, 225°, or 315°.

quadrantal heading. A heading to the northeast, southeast, southwest, or northwest.

quadrantal point. A direction that is to the northeast, southeast, southwest, or northwest. Cf. **cardinal point.**

quadricycle landing gear. A landing gear consisting of four separate wheel units, as on the XC-120.

qual (*auth abbr*). 'Qualify' or 'qualification.'

qualification card. A card or form maintained on an enlisted person setting forth his name, birthplace, and other vital statistics, and listing briefly his skills, hobbies, occupation, record of current service, test scores, arms qualification, and the like.

The qualification card is maintained in conjunction with a service record. Cf. next.

qualification record. A record or form maintained on an officer or warrant officer, giving his name, citizenship status, and other vital statistics, and setting forth a record of education, occupational specialty, source of commission, promotions, foreign service data, etc.

The qualification record for officers is more complete than the qualification card for enlisted persons, since the qualification record serves also as a service record.

qualification test. A test of an item of materiel to determine its suitability or qualifications for service use.

This test is normally conducted prior to the awarding

of a contract and at the request of a manufacturer seeking to establish his concern as an approved source for supply of the item.

qualified, *a.* Fitted by training or experience for performing a certain duty, or filling a certain position; competent.

This term sometimes has the additional connotation of 'authorized,' as in 'a qualified inspector must be present.'

qualified aircraft observer. A person qualified to perform the duties of aircraft observer; *specif.*, such a person on flying status but not having a currently effective aeronautical rating.

qualified product. *Specif.* A product suited for procurement, as revealed by tests.

qualitative requirement. A requirement expressed or regarded in terms of kinds or quality of the required materials or services, rather than in terms of quantity.

quality control. The exercise of such influence as to assure that a service or product measures up to a desired quality.

quantitative requirement. A requirement expressed or regarded in terms of the quantity of the required materiel or services, rather than in terms of quality.

quantity-distance table. A table giving the minimum distances in feet required to be maintained between specified quantities of stored ammunition and explosives and the nearest inhabited building, public highway, magazine, etc.

quantum theory. *Physics.* A theory that atoms or molecules emit or absorb energy by a process that takes place in a series of steps, each step being the emission or absorption of an amount of energy called the 'quantum.'

quar (*auth abbr*). 'Quarantine.'

quartermaster, *n.* (QM) Sometimes *capitalized. Army.* A staff officer of an Army unit or post who is responsible for furnishing food, clothing, and certain other supplies and services. See **supply officer.**

The word 'quartermaster' continues to persist in AF usage in reference to supply, esp. in attrib. uses, as in *quartermaster activity*, i.e., supply activity.

Quartermaster Corps. (QMC) An Army corps providing certain supplies and services, and consisting of the Quartermaster General, his deputies, assistants, and such other members of the Army as may be assigned.

quarters, *n.* (qtr) Lodgings or accommodations for one or more military persons, or for a military person or persons and dependents; the structure or shelter affording such lodgings or accommodations, or the place where they are located. Always construed as a plural.

quarters allowance. A basic allowance for quarters. See separate entry.

Quebec (*code*). An authorized word for the letter 'Q.' See **Alfa** (*code*).

Queen (*code*). A word formerly authorized for the letter 'Q.' See **Able** (*code*).

Queen Bee. A popular or code name for a radio-controlled target biplane developed by the British (*circa* 1934).

ques (*auth abbr*). 'Question.'

questionable aircraft. In air defense usage, an aircraft of uncertain identity. See **track,** *n.*, note.

quick-change unit. A power package.

quick-disconnect fitting. A pipe or electrical fitting in an aircraft, designed for ready disconnection and connection.

quick-release harness. A kind of parachute harness that can be almost instantly removed by the parachutist upon alighting.

quick-release parachute. A parachute assembly incorporating a quick-release harness.

quick time. A marching cadence of 120 steps per minute, each step 30 inches in length; the command to march at this cadence.

quin (*auth abbr*). 'Quintuplicate.'

Quonset, *n.* Also **Quonset hut.** A half-cylindrical, prefabricated structure of metal used to house personnel, to provide a warehouse, or used for other purposes.

The Quonset hut is a modification of the Nissen hut. See **Nissen hut.**

R

R (*letter*). See **Romeo** (*code*). In the US Navy: **1.** A symbol for 'transport' or 'support transport version.' See **V** (*letter*), sense 2, note. **2.** A code letter for 'Interstate Aircraft and Engineering Corporation.'

R (*abbr*). **1.** *auth.* 'Reconnaissance,' in designations of USAF aircraft. **2.** *auth.* 'Regulate,' in combinations only. **3.** *auth.* 'Rifle,' in combinations only. **4.** 'Expendable-recoverable,' in supply usage. **5.** 'Research,' as used in Navy designations of certain rockets and guided missiles. **6.** 'Right' (or starboard). **7.** 'Radial,' in designations of aircraft engines, as in 'R-3350 engine.' **8.** 'Rotary wing,' as used in aircraft designations. Now *hist.* See **H** (*abbr*), sense 2. **9.** 'Racer,' as formerly used (*circa* 1920) in designating certain US Army aircraft. **10.** 'Ryan Aeronautical Company' or 'Radioplane Company,' when used in the designations of certain US Navy aircraft. **11.** 'Rigid,' when used in the names of certain airships, as in *ZR-1*, *R.S.1*, *R-34*, etc. **12.** 'Reconnaissance' (*Razvedchick*), used in the names of Russian aircraft from 1925 to 1945, as in *R-6*, *R-10*, etc.

R-4B. A two-place Sikorsky helicopter used by the AAF during WW II. Later called 'H-4B.'

R4D. The Navy designation for the C-47.

R4D-3. The Navy designation for the C-53.

R4Q. The Navy designation for the C-82 or the C-119.

R-5A. A two-place, tandem helicopter developed by Sikorsky for the AAF in WW II. Now called the 'H-5A.'

R5C. The Navy designation for the C-46.

R5D. The Navy designation for the C-54.

R5O. The Navy designation for the Lockheed Lodestar. See **C-56**.

Various modifications of the Lodestar for Navy use were designated *R5O-1*, *R5O-2*, etc.

R6D-1. The Navy designation for the C-118A.

R-34. A rigid airship built for the British Air Ministry, which made the first successful airship crossing of the Atlantic from Scotland to Long Island, in July 1919.

R-100. A rigid airship built for the British Air Ministry, scrapped by the Government after the fatal crash of the R-101 on 5 October 1930.

This airship displaced some 5,000,000 cubic feet. In July 1930, it crossed the Atlantic to Montreal in 79 hours, and returned to England in August in 57 hours.

R-101. A rigid airship built for the British Air Ministry, which crashed in a storm at Beauvais, France, on a trip to India, 5 October 1930.

RA (*code* or *abbr*). **1.** 'Full-power Adcock range.' See **Adcock radio range,** note. **2.** *auth.* 'Regular Army.' **3.** 'Right ascension.'

R/A (*abbr*). 'Radius of action.'

r/a (*abbr*). 'Radioactive.' See **rada** (*auth abbr*).

RAAF (*auth abbr*). 'Royal Australian Air Force.'

race, *v. To race an engine,* to run an engine at a high rpm while standing still, or when no thrust is being delivered.

race rotation. The rotation of a stream or body of air passing through, or influenced by, a rotating propeller.

rack, *n.* **1.** Short for 'bomb rack.' Attrib., as in *rack controls*, *rack switch*, etc. **2.** A frame holding two or more antiaircraft guns together to form a single weapon.

rack, *v. tr.* **1.** To put an *aircraft* into a sudden or tortuous turn or maneuver. **2.** *To rack someone back,* to discipline a person verbally. *Slang.* **3.** *To rack up,* to acquire a given number of *hours* at something; to make a certain *score. Slang.*

racon (*auth abbr*). 'Radar beacon.'

rad, *n.* **1.** On a ring sight, the space between two concentric circles, used to indicate both range of target and deflection of fire. See **radius,** *n.* **2.** Short for 'radiation,' as in 'rad detection.'

In sense 1, used in combination, as in *35-mil rad sight.* The rad on a standard optical ring sight is equal to a 35-mil angle.

rad (*abbr*). **1.** *auth.* 'Radio.' **2.** *Caps.* 'Reported for active duty.'

rada (*auth abbr*). 'Radioactive.'

RADAR (*auth abbr*). 'Radio detection and ranging.' Cf. **radio direction-finding,** sense 2, **reflection direction-finding.**

radar, *n.* [See prec.] **1.** Any of certain methods or systems of using beamed and reflected radio-frequency energy (radio waves) for detecting and locating objects, for measuring distance or altitude, or for certain other purposes, such as navigating, homing, or bombing. See note. **2.** The

electronic equipment, sets, or devices used in any such system; a radar set (which see).

In its original and principal application, 'radar' has reference to a method or system of detecting and finding the range of objects by means of beamed radio-frequency energy, the objects in the path of the beam reflecting part of the energy back to the source of transmission. The time interval between the transmission of the energy and the reception of the reflected energy establishes the range of any object in the beam's path, the reflected energy being displayed on a cathode-ray screen in such a manner as to indicate this information. In addition, many radar sets also display such information as azimuth, elevation, and direction of movement of the object. Radar functions irrespective of darkness or irrespective of most meteorological conditions.

The principal military use of radar is in the detection and location of airborne aircraft, but numerous other uses have arisen, e.g., in air navigation and air traffic control, in altitude measurement, in reconnaissance and mapping, in bombing and homing, in storm detection, etc. In some applications of radar, as in homing, radar beacons are used, which send out direct transmissions for reception and display on radar sets in the same manner as reflected energy. See **radar beacon.**

The basic principle of radar, i.e., the property of radio waves to be reflected like light waves, has been known since the last century, but practical application of this principle was not made until 1924, when radio waves were used to determine the height of the ionosphere. Modern radar was developed by about 1935 in different countries, chiefly in the US and Britain. The first important use of radar was early in WW II, during the Battle of Britain.

radar abort. A radar mission that air-aborts or ground-aborts. See **radar mission.**

radar aid. *Specif.* A radar navigational aid.

radar air navigation chart. A radar chart used in air navigation.

Data is also included on such a chart to permit its use in dead-reckoning and celestial navigation.

radar altimeter. An absolute altimeter that by measuring the time lapse between transmission and return of a pulse of radio energy establishes distance from the surface. Also called a 'radio altimeter.'

radar altitude. Absolute altitude as determined by a radar altimeter.

radar beacon. A radar transmitter, including its antenna and other associated equipment, that emits radar waves for pickup, the waves then being displayed or used to cause a responder to react. See **transponder,** *n.*

'Radar beacon,' often called 'racon,' is a generic term that includes the interrogator of an interrogator-responser, the transmitters used in an Oboe system, the responder beacon in a transponder, etc. See **Rebecca-Eureka system.**

radar beam. A beam of radio-frequency energy used in radar. Cf. **radio beam.**

radar bombardier. A person trained in radar bombing. See **aircraft observer,** note.

radar bombing. Any type of bombing in which radar is used to locate the target or aiming point, or to aid in positioning the bombing aircraft at the proper release point for bombing, esp. under conditions of poor visibility.

There are several different methods of radar bombing. In the most usual method, a radar set aboard the bombing aircraft is used to find the target, to aid in guiding the aircraft along the proper course to the target, and to find the proper dropping angle. Several variations of this basic method exist, all having been developed in the effort to achieve greater precision in hitting the target. In other methods, as in the Oboe system, for example, radar transmitters precisely located on the ground, in conjunction with the appropriate airborne equipment, are used to position the aircraft at the proper point in space for dropping the bombs. See **Oboe,** *n.*, **synchronous radar bombing.**

In combinations, as *radar-bombing equipment, radar-bombing mission,* etc.

radar bomb scoring. (RBS) A system or procedure in which ground-based radar and plotting equipment is used to aid in determining the theoretical point or points of impact in a simulated bombing mission.

Information obtained from the ground radar is used together with information regarding the ballistics of the bomb or bombs being used, and information transmitted from the aircraft regarding the wind, true heading, and true airspeed at the time of 'release.' The techniques used in RBS are also applicable to simulated aerial-mining missions.

radar bombsight. An airborne radar set used to sight the target, solve the bombing problem, and drop bombs, as in synchronous radar bombing. See **synchronous radar bombing.**

radar boresight. A boresight used in harmonizing a radar-controlled gun.

radar calibration. The process of determining the extent and accuracy of the radar coverage of a given radar installation, esp. of an aircraft-warning or tactical air control radar installation.

Radar calibration includes the making of computations to determine the theoretical coverage of the radar installation, the making of flights to check the coverage of the radar, the preparing of charts, diagrams, and overlays.

radar camera. A special camera for photographing images on a radarscope.

Radar cameras are either automatically operated or manually operated. Such cameras often contain special features, such as slots for cards containing written information to be recorded on photographs, watches for recording the time of exposure of each photograph, etc.

Radar Chart. One of a series of aeronautical charts, scale 1:1,000,000, suitable for training in radar pilotage and navigation.

A Radar Chart is printed in tones of black and gray. It shows principal airports and landing fields, towns, railroads, and bridges; likewise drainage and water areas.

radar check point. Any point on the surface which gives an outstanding return on an airborne radar screen, used in air navigation.

radar control. Guidance, direction, or employment exercised over an aircraft, guided missile, gun battery, or the like, by means of, or with the aid of, radar. See **close control.**

radar control area. The area or airspace in which radar control of aircraft (including guided missiles) is exercised.

radar controller. 1. *Specif.* A person who exercises radar control over aircraft or guided missiles.

See **aircraft controller. 2.** Any radar device used in radar control.

radar countermeasure. (RCM) Usually *pl.* Any electronic countermeasure against radar. See **electronic countermeasure,** and cf. **radio countermeasure,** esp. note.

radar coverage. The effective coverage of an area or airspace provided by a radar set or network.

radar cross section. An echo area considered as a cross section of the target.

radar deception. Deception of the enemy by electronic countermeasures against his radar. See **electronic deception.**

radar dome. A radome (which see).

radar drift. The drift of an aircraft as determined by a timed series of bearings taken on a fixed radar target.

radar echo. The radar pulse reflected back to the transmitter from the reflecting object.

radar fence. A network of radar warning stations surrounding a protected area. See **fence,** *n.* Cf. **Dew line, mid-Canada line.**

radar fire control. Fire control by means of radar. See **fire control.**

radar fix. A fix obtained by means of range, bearing, or range and bearing, on a radar target or targets.

radar gun-layer. A radar device which tracks a target and aims a gun or guns automatically.

radar homing. Homing on radar emanations. See **home,** *v.*, senses 1a and 1b.

In combinations, as *radar-homing bomb, radar-homing equipment,* etc.

radar intelligence. 1. In a general sense, intelligence concerning radar, or intelligence derived from the use of radar equipment. See note. **2.** An organization or activity that deals with such intelligence.

In sense 1, the term 'radar intelligence' has been used with several specific meanings. These are: **a.** That aspect of electronic intelligence that deals with radar. See **electronic intelligence. b.** Intelligence concerning the radar aspects of a radar mission, esp. a radar-bombing mission; radar target intelligence. See **radar target intelligence. c.** Intelligence derived from information procured by means of radar, particularly with regard to bomb damage assessment and bomb scoring.

radar lock-on. An act or instance of locking on with radar. See **lock,** *v.*

radar mission. An air mission that requires or uses radar to carry out the mission.

radar nautical mile. The time interval, approximately 12.367 microseconds, required for radio-frequency energy used in radar to travel one nautical mile and return.

radar navigation. Air navigation by means of radar equipment and radar aids.

There are several different methods of using radar for air navigation. See, for example, **electronic pilotage, Oboe,** *n.*, **shoran,** *n.*

radar navigational aid. Any radar device designed as an air-navigation aid. See **air-navigation aid.**

An example of a radar navigational aid is a radar altimeter. Cf. **radio navigational aid.**

radar navigation chart. Short for 'radar air navigation chart.'

radar navigator. A person trained in radar navigation. See **aircraft observer,** note.

radar net. A network of radar installations set up to detect aircraft entering defined airspace; the radar waves emanating from such installations.

radar observer. An aircraft observer trained in the use of airborne radar equipment.

The specific duties of the radar observer may vary with the type of aircraft, but he ordinarily operates radar equipment to obtain information relevant to navigation, interception, search, or bombing. See **aircraft observer,** esp. note.

radar operator. 1. A person who operates a radar set. **2.** *Specif.* An aircraft observer who operates radar equipment; a radar observer or radar bombardier.

radar photograph. A radarscope photograph. See separate entry.

radar picket. A ship or aircraft equipped with early-warning radar, that operates in a peripheral area so as to extend the range of radar detection.

radar pilotage. Pilotage in which check points on the ground are viewed on a radarscope.

radar plot. A plot, esp. of the track or tracks of one or more aircraft, obtained by means of radar.

radar prediction. A graphic representation of what may be expected to show on a radar screen when an actual radar scan is made; the act of making such a prediction.

A radar prediction is used to increase ease of recognition.

radar pulse. A pulse (which see) of radio-frequency energy used in radar.

radar range. The maximum distance at which a radar set is ordinarily effective in detecting objects; *specif.*, the distance at which a radar set can detect a specified object at least fifty percent of the time.

The radar range of a given set depends upon power, receiver sensitivity, the echo area of the target, and other factors. See **line-of-sight distance.**

In the case of radar beacons, good correlations between theory and experiment have been obtained by considering radar range to be that distance at which an experienced radar operator can detect a radar beacon three-fourths of the time.

radar range marker. A mark or line on the face of a radarscope, used to indicate the range to the object detected.

A radar range marker may be a line on a suitably scribed transparent sheet placed over the scope face, or it may be electronically drawn on the screen.

radar receiver. A device in a radar set that receives and amplifies radio or radar waves, and sends them on to the indicator.

radar reconnaissance. Reconnaissance by means of radar to determine the location, disposition, and strength of enemy forces and to determine the nature of terrain.

Radar reconnaissance includes photoscope reconnaissance, and is ordinarily distinguished from electronic-countermeasure reconnaissance.

radar reflector. A reflector (which see) that reflects or deflects radar waves.

radar relay. The process or system by which radar echoes and synchronization data are transmitted from a search radar installation to a receiver at a remote point.

radar repeat-back guidance. A guidance system for guided missiles using a search radar in the missile which transmits information to the point of control.

radar resolution. The resolution (which see) of a radar set or system.

radar scan. 1. The motion of a radar beam as it searches for an object of interest, or target. **2.** The path or pattern described by this motion. **3.** The process of directing a radar beam.

See **scan,** *n.*

radarscope, *n.* The cathode-ray oscilloscope or screen in a radar set.

radarscope display. The visual presentation or picture displayed on a radar screen.

radarscope photograph. A photograph of a radarscope display, esp. of a display on the scope of an airborne plan-position indicator.

Hence, **radarscope photography.**

radar screen. 1. A radar net. **2.** A cathode-ray screen in a radar set. See **cathode-ray screen.**

radar set. An assembly of radar equipment consisting essentially of a transmitter, antenna, receiver, and indicator, for transmitting, receiving, and displaying radar pulses.

radar shadow. An area behind a hill, cloud, or other obstruction in the path of a radar beam, within which radar waves are absent or weak; a blank area on a radar screen resulting from this phenomenon.

radar silence. A condition existing when radar operations are stopped; the period of time during which this condition prevails.

radar station. The place, position, or location from which, or at which, a radar set transmits or receives signals. See **beacon station.**

A radar station may be on the ground, in the air, or on the sea.

radar storm detection. The detection of certain storms or stormy conditions by means of radar.

In radar storm detection, liquid or frozen water drops within the storm reflect radar echoes. Storms not accompanied by precipitation are not ordinarily detectable.

radar synchronous bombing. Synchronous radar bombing. See separate entry.

radar target. 1. A specific object of interest, not necessarily an object of attack, being tracked or watched on a radar screen. **2.** *transf.* The echoes reflected back from such an object.

This term is not applied to a radar beacon because the signal on the radar screen produced by a radar beacon is directly received. See **background,** *n.*, **beacon presentation.**

radar target intelligence. Intelligence concerning the target of a radar-bombing mission, necessary to the planning and successful execution of the mission.

radar tracking. Tracking by means of radar. See **track,** *v.*, sense 1.

radar transmitter. A transmitter (which see) that develops and transmits radar waves.

radar warning net. A radar net used for warning.

radar wave. Either a transmitted or reflected radio wave used in radar. See **radio wave.**

radar wind. Wind of which the movement, speed, and direction is observed or determined by radar tracking of a balloon carrying a radiosonde, a radio transmitter, or a radar reflector. See **rawin,** *n.*, sense 1.

RADC (*auth abbr*). 'Rome Air Development Center.'

RADCM (*auth abbr*). 'Radar countermeasures and deception.'

radiac, *n.* [*Ra*diation *d*etection, *i*dentification, *a*nd *c*omputation.] **1.** The act or process of detecting, identifying, and measuring the intensity of nuclear radiation in an area. **2.** Short for 'radiac instrument.'

radiac instrument. An instrument, such as a dosimeter or Geiger-Mueller counter, used in radiac.

radial, *n.* **1.** Any one of a number of lines of position radiating from an azimuthal radio-navigation facility, as a VHF omnidirectional radio range, identified in terms of the bearing of all points along that line from the facility. **2.** Short for 'radial engine' or 'radial line.'

radial acceleration. Acceleration along a radius, esp. centrifugal acceleration, as encountered, for example, in pulling out of a dive in an airplane.

radial engine. 1. An aircraft engine with one or more stationary rows of cylinders arranged radially around a common crankshaft. Cf. **rotary engine. 2.** In a more general sense, any engine having the cylinders arranged radially around the crankshaft.

The radial engine in sense 1 is a very common type of engine in propeller-driven airplanes. Hence, **radial-engined,** *a.*

radial-flow compressor. A centrifugal compressor in which air is drawn into a rotating impeller axially, being discharged radially at the circumference of the impeller at high velocity into a diffuser, where velocity is reduced result-

ing in conversion of kinetic energy into pressure energy. Distinguished from an axial-flow compressor. See **compressor,** *n.*

radial G. A G-force resulting from radial acceleration.

radial heading. A heading along a radius from a given point.

radial hole. *Rocketry.* A hole bored through the wall of a tubular grain.

radial line. *Aerial photog.* A straight line drawn from the center of a vertical air photo to any other point.

radial line plot. *Photogrammetry.* A plot made by linking together a number of vertical aerial photographs by means of radial lines from their center points and transposed center points.

radiant energy. Energy that exists in radiation, as in nuclear radiation, electromagnetic radiation, light, etc.

radiation, *n.* **1.** The act or process of radiating or the state of being radiated; also, that which is radiated. **2.** The process by which energy is emitted from atoms and molecules owing to their change; *specif.*, nuclear radiation. **3.** The combined process of emission, transmission, and absorption of radiant energy. **4.** The propagation of radiant energy through a medium by wave motion, as by a radio wave.

In sense 2, see **alpha radiation, beta radiation, gamma radiation, thermal radiation.**

radiation aid. Any radio or radar device that facilitates air navigation, bombing, fire control, etc. See **air-navigation aid,** sense 2.

radiation fog. A kind of fog, usually a ground fog, occurring at night over a land surface, caused by the radiational cooling of the ground and of the air in the layers immediately above the surface.

radiation laboratory. A laboratory for both basic and applied research in either the field of electronics or the field of nuclear physics. *Capitalized* in specific names.

The Radiation Laboratory of the Massachusetts Institute of Technology, begun in Nov 1940 and discontinued in Dec 1945, was government-financed principally for the development of electronic equipment. The Berkeley Radiation Laboratory (abbreviated 'Radlab'), founded in 1936, has been supported by government money through the Atomic Energy Commission and the University of California. Both the cyclotron and the bevatron have been developed in this laboratory.

radiation shield. A shield or wall of some material, as lead, for blocking off nuclear radiation.

radiation sickness. Sickness caused by overexposure to ionizing radiation, esp. by overexposure to nuclear radiation.

The chief cause of radiation sickness is the loss of white blood cells in the lymphatic tissues of the body, resulting in increased susceptibility to bacterial infections.

radiator, *n.* **1.** A device for radiating the heat out of a substance, as water or oil, esp. such a device connected to an aircraft engine. See **heat exchanger,** sense 2, and **oil cooler. 2.** *Electronics.* **a.** A metallic device at the end of a transmission line for radio-frequency energy, which radiates electromagnetic waves either directly into space or against a reflector for focusing and directing. **b.** A transmitting antenna, esp. a transmitting radar antenna.

radio, *n.* (rad) **1.** The use of electromagnetic waves to transmit or receive electric impulses or signals without a connecting wire; the transmission or reception of such impulses or signals: See note. **2.** *Specif.* The use of these waves to transmit electric impulses excited by the voice or other sounds, or by nonauditory instruments at frequencies below those normally used in radar or television. See note. **3.** Any aggregate of electric and electronic equipment used for the wireless transmission or reception of electromagnetic waves, or both, esp. for transmitting and receiving sounds, activating remote-control mechanisms, etc.; a radio set. **4.** A manner or technique of doing something by means of, or with the aid of, radio (in sense 2), as communicating, navigating aircraft, controlling, etc., as in the phrases 'the units communicate by radio,' or 'the missile was guided by radio.' **5.** A message sent by radio. *Colloq.*

In sense 1, the word 'radio' is broad enough to include wireless television and radar, and is sometimes used in this broad meaning, esp. in combinations: See **radio countermeasure,** note, **radio spectrum, radio wave.** However, 'radio' is more often used, both by itself and in combinations, in sense 2, 'radar' being used in reference to a specific kind of radio operation. Cf., e.g., **radar transmitter, radio transmitter, radar control, radio control.**

The chief distinctions between radio (in sense 2) and radar lie in the method of transmission and reception of electromagnetic waves, their utilization, the purposes involved, and the frequencies normally used by each one. See **radar,** *n.*

Heinrich Rudolph Hertz (1857–94) first accomplished the transmission and reception of radio waves, with a simple, spark-producing transmitter and a loop antenna, in 1887; radio communication (radiotelegraphy) was achieved by Guglielmo Marconi (1874–1937) in 1896. The earliest instance of the use of radio in aeronautics appears to have been in 1908, when messages were sent from the ground to a radio-receiving set in a US Signal Corps free balloon. Successful one-way and two-way radio-communication experiments in the US between ground and airplane were carried out during the period 1910–11. Aircraft radio direction-finding and air-to-air radio communication were developed during WW I.

radio, *v. tr.* To transmit a *message* by radio; to communicate with a *person* by radio.

radioactive, *a.* (rada) Emitting nuclear radiations; possessing radioactivity.

radioactive contamination. The contamination resulting from the induction of radioactivity into a substance by a radioactive source; the contamination of a substance, place, area, article, or the

like by residual radioactivity from an atomic explosion.

radioactive decay. The disintegration occurring in a radioactive substance.

The rate of radioactive decay for a given substance is expressed in terms of the halflife of the substance.

radioactivity, *n.* The emission of nuclear radiation; the property of emitting nuclear radiation owing to the disintegration of atomic nuclei.

Radioactivity is naturally possessed by certain elements, such as uranium, radium, and plutonium. Artificial radioactivity is produced in other substances by nuclear bombardment.

radio aid. *Specif.* A radio navigational aid.

radio altimeter. A radar altimeter.

radio altitude. Radar altitude.

radio beacon. Any radio transmitter, including its antenna and other associated equipment, that provides navigational aid to aircraft; *specif.*, a homing beacon.

See **homing beacon, radio marker beacon, radio-range beacon, runway localizing beacon.**

radio beacon marker. A radio marker beacon. See separate entry.

radio beam. A stream of radio-frequency energy used in radio (sense 2 or 3); *specif.*, a radio-range beam.

A radio beam is distinguished from a radar beam principally by the use to which it is put, and by its range of frequencies. See **radio spectrum.**

radio bearing. A bearing taken by an aircraft in relation to a radio-transmitting station by means of a radio compass or by other means.

radiobiology, *n.* The science which treats of the effects of radiation upon living tissue. Also called 'bioradiology.'

radio bomb. A bomb provided with a radio bomb-fuze.

radio bomb-fuze. An electronic bomb fuze that works in reaction to radio (i.e., radar) waves reflected from the target.

This type fuze may be set to detonate at any desired distance from the ground by use of Doppler effect.

radio call sign. A call sign emitted by radio.

radio channel. A channel (which see, sense 3) for radio transmission.

radio circuit. A circuit (which see, sense 2) for radio communication.

radio code. A code used esp. in radio communication.

radio command channel. A command channel in a radio communication system. Usually shortened 'command channel' (which see, sense 2).

radio communication. Communication by means of radio waves; a message sent by this means.

Radio communication includes communication by radiotelegraph (or wireless), radiotelephone, radiotele-typewriter, and radiofacsimile.

radio compass. A radio-receiving set mounted in an aircraft, which, together with a directional antenna, displays on instruments the heading of the aircraft with respect to a radio transmitter. See **homing beacon,** sense 1.

There are three types of radio compasses for aircraft: the fixed loop, rotatable loop, and automatic loop types. See separate entries.

radio control. 1. The guidance and direction exercised over a pilotless aircraft, guided missile, or the like by means of radio-frequency energy activating certain mechanisms or apparatuses within the aircraft, missile, etc. **2.** Any aggregation of radio equipment and other equipment or devices for exercising this control. Hence, **radio-controlled,** *a.* **3.** The control exercised over aircraft by means of radio-communication devices linking the aircraft controller with the aircraft, as in air traffic control.

radio countermeasure. Usually *pl.* Any electronic countermeasure against radio. See **electronic countermeasure, radio deception.**

In some contexts, 'radio countermeasure' refers to an electronic countermeasure, i.e., any countermeasure against electronic equipment, including both radio and radar.

radio deception. A radio countermeasure consisting of any such activity as sending false dispatches, using deceptive message headings, employing enemy call signs, etc. Distinguished from radar deception.

radio detection and ranging. Unabbreviated form of 'radar.'

radio direction-finder. (RDF) A radio-receiving set, together with a directional antenna and any other associated equipment, for determining the direction from which a transmitted signal originates.

The term 'radio direction-finder' is applied to radio compasses, homing adapters, aural-type direction-indicating devices, or ground-based receiving stations in a radio direction-finding net. See **radio direction-finding,** note.

radio direction-finding. 1. The act or process of determining the direction from which a transmitted signal originates. Hence, a method for establishing the bearing or position of an aircraft. See note. **2.** An early British term for 'radio detection and ranging' (radar).

In one type of radio direction-finding (in sense 1), radio stations on the ground receive signals from an airplane's transmitter and establish its bearing relative to each of the ground stations (usually three); the bearings are plotted, a fix is established, and the resulting information is transmitted to the aircraft. In other types of radio direction-finding, radio compasses, homing adapters, or other directionally-sensitive devices in an aircraft are used to take bearings on transmitting stations.

In sense 2, cf. **radiolocation,** *n.*

radio direction-finding chart. An aeronautical chart designed for use in long-range radio navigation, giving essential radio data and showing the principal cities, towns, airports, and the like.

This chart is not suitable for landmark navigation. It is no longer published.

radio direction-finding net. A net of ground radio stations used in radio direction-finding. See **radio direction-finding,** note.

radio direction-finding station. A ground, ship, or airborne radio listening station employing a directional antenna, used in giving a fix to an aircraft or ship.

radio discipline. Circuit discipline as it applies to radio operations. See **circuit discipline.**

radio echo. A radar echo.

radio facility chart. A chart issued as a joint publication by the AF and Navy for use by aircrew personnel in flying operations, containing information in graphic and tabular form on radio aids to navigation and related data.

radiofacsimile, *n.* Facsimile communication by radio; a facsimile reproduced by radio. See **facsimile,** *n.*

radio fan marker beacon. A fan marker beacon. See separate entry.

radio fix. 1. The position or location of any radio transmitter, as determined by radio direction-finding. **2.** In navigation, the determination of one's position by use of radio navigational aids, esp. by information transmitted by a radio direction-finding station; the position so determined. See **loran fix.**

radio frequency. A frequency in the radio spectrum.

Radio frequencies are designated by the FCC as follows: *very low frequency,* 10–30 kilocycles; *low frequency,* 30–300 kilocycles; *medium frequency,* 300–3,000 kilocycles; *high frequency,* 3,000–30,000 kilocycles; *very high frequency,* 30–300 megacycles; *ultrahigh frequency,* 300–3,000 megacycles; *superhigh frequency,* 3,000-30,000 megacycles. See also **extremely high frequency.**

radio-frequency spectrum. The radio spectrum (in either sense).

radio fuze. A fuze activated by a radio device; *specif.,* a radio proximity fuze. See separate entry.

radio-guided bomb. A bomb, such as the azon, guided by radio control from outside the missile.

radio-gunner, *n.* Short for 'radio operator-gunner.'

radio homing beacon. A radio beacon on the ground that an aircraft uses for homing. See **homing beacon.**

radio intercept. 1. An act or instance of intercepting a radio message. **2.** An intercepted radio message. **3.** A service or agency that intercepts radio messages. See **intercept,** *v.,* sense 4.

radio interference. The interference of a radio signal or sound; the noise in a radio receiver resulting from this interference. See **interference,** *n.,* sense 2.

radioisotope, *n.* A radioactive isotope.

radio line of position. A line of position obtained by radio direction-finding.

radiolocation, *n.* **1.** The location of a radio-transmitting station by some method of radio direction-finding. **2.** A former British term for 'radar.' Hence, **radiolocator,** *n.*

radio log. A log of radio messages sent and received, together with any other pertinent information, maintained by all aircraft radio operators and by ground radio stations and operators where appropriate.

radiological, *a.* Of or pertaining to radiation, esp. nuclear radiation; of or pertaining to the study and use of radioactivity, radioactive substances, atomic weapons, or the like.

radiological defense. Defense against the effects of radioactivity from atomic weapons.

Radiological defense is a passive defense, and includes the detection and measurement of radioactivity, the protection of persons from radioactivity, decontamination of areas, places, or equipment, etc. See next.

radiological warfare. Warfare waged by the employment of, and defense against, weapons that produce radioactivity, such as atomic bombs or shells.

radio loop. A loop antenna. See separate entry.

radio magnetic indicator. An aircraft navigational instrument coupled with a gyro flux-gate compass or similar compass that indicates the direction of an omnirange station and bearing with respect to the station.

radioman, *n.* One who operates, or deals with, radio; *specif.,* the radio operator in an aircrew.

radio marker. Short for next.

radio marker beacon. Any of several kinds of surface-based, low-powered radio beacons used along an airway or in an instrument landing system to indicate position to aircraft.

See **fan marker beacon, Z marker beacon.** See also **radio beacon.**

radio mast. A pole or mast, esp. on an aircraft, to which an antenna wire is attached; a vertical antenna assembly, esp. on an aircraft.

radio meteorograph. A radiosonde (which see).

radio navigation. Air navigation by means of radio navigational aids or navigation systems using radio (in sense 2).

Radio navigation includes radio direction-finding, the use of radio ranges, radio compasses, radio homing beacons, loran, etc.

radio navigational aid. Any radio device, as a radio range, radio marker beacon, or other radio apparatus, device, or system designed as an air-navigation aid. Distinguished from a radar navigational aid. See **air-navigation aid.**

radio navigation guidance. The guidance or control of a guided missile in which the missile flies

along a course established by external radio transmitters. See **hyperbolic guidance.**

radio net. A net (which see) of radio stations set up for communication purposes.

radio observer. An aircraft observer who operates radio equipment. See **aircraft observer,** note.

radio operator. One who operates a radio, esp. a person in an aircrew who operates an aircraft's sending and receiving radio equipment. See **aircraft observer,** note.

radio-operator gunner. A term applied, esp. during WW II, to an aircrew member who served both as a radio operator and as a flexible gunner.

radiophone, *n.* Short for 'radiotelephone.'

radio propagation. The propagation (which see) of a radio wave or waves.

radio propagation prediction. Prediction as to the quality or nature of radio propagation, esp. as influenced by seasonal changes, sunspots, etc.

These predictions are published periodically by the Bureau of Standards.

radio proximity fuze. A proximity fuze that uses a radar antenna, the echoes triggering detonation at the right instant.

radio range. 1. The reach of a radio beam or the reach and scope of radio beams emitted by a given station for use as directional signals for airborne aircraft; the flight paths, course directions, and position signals provided by these beams. **2.** The station or installation that sends such directional beams out.

Radio ranges are classified by: **a.** The frequencies transmitted. These are low frequency (LF), medium frequency (MF), or very high frequency (VHF). **b.** The sensory organ used for receiving the signals. These are visual or aural, or a combination of the two. **c.** The number of directions in which on-course signals are sent. These are the two-course ranges, the four-course ranges, and the omnidirectional. **d.** The kind of antenna system used, such as the loop-type radio range.

See **Adcock radio range, omnidirectional radio range, VHF** (*auth abbr*).

radio-range beacon. Any radio beacon or radio marker beacon in a radio range, esp. the central or main radio transmitter, together with its associated equipment, that sends out directional signals. See **beacon,** *n.*

radio-range beam. A guiding beam in a radio range. See **beam,** *n.*, sense 1 and note.

radio-range leg. One of the courses or beams in a four-course radio range. Usually shortened to 'leg.'

radio-range station. A station or installation from which the directional signals are transmitted in a radio range.

Certain types of radio-range stations may be truck-mounted, as a VHF radio-range station.

radio receiver. An apparatus that receives radio waves, esp. those other than radar waves, and converts them into intelligible sounds or other perceptible signals. Also called a 'receiver' (which see) or 'receiving set,' or simply a 'radio.'

radio relay. The passing on of radio signals or messages from one receiving and transmitting point to another; a system of radio stations set up for this purpose, or any station located in such a system.

radio security. Transmission security as it applies to radio operations. See **transmission security.**

radio set. A radio receiver, radio transmitter, or a combined receiver and transmitter; *specif.*, a radio receiver. Often called 'radio.'

radio signal. A signal (which see, sense 2), transmitted by radio.

radio silence. A condition existing when radio transmissions are stopped on some or all frequencies; the period of time during which this condition prevails.

radio skip zone. A skip zone. See separate entry.

radiosonde, *n.* An airborne meteorograph that automatically transmits meteorological data by radio. See **dropsonde,** *n.*, **meteorograph,** *n.*

The radiosonde is normally borne aloft by a sounding balloon.

radiosonde balloon. A sounding balloon carrying a radiosonde.

radiosonde parachute. A small parachute attached to a radiosonde.

A radiosonde parachute may be used to lower the radiosonde to earth after its sounding balloon has burst, or it may be used in the dropsonde system. See **dropsonde,** *n.*

radio sonobuoy. A sonobuoy (which see).

radiosounde, *n.* Variant of 'radiosonde.' *Rare.*

radio spectrum. 1. That part of the electromagnetic spectrum lying above the spectrum of audible frequencies but below that of infrared frequencies. **2.** *Restrictive.* The range of useful radio frequencies in this spectrum.

In sense 2, the upper limit of the radio spectrum is fixed by the state of the art. The limits fixed by the Federal Communications Commission are about 10,000 cps to about 30,000 mc.

radio squadron mobile. A mobile squadron that collects intelligence information in the field by radio intercept, direction finding, and processing intercepted radio traffic.

radio station. The installation, place, or location from which, or at which, radio transmissions are sent, received, or both sent and received. Distinguished from a radar station.

A radio station may be ground-based, airborne, or shipborne.

Radio Technical Commission for Aeronautics. An independent organization founded in 1935 to promote the development, application, and use of telecommunications in aeronautical operations.

The executive committee members include military, naval, and industrial representatives.

radiotelegraphy, *n.* Telegraphy by means of radio; wireless.

radiotelephone, *n.* A combined radio transmitter and receiver, often of compact size, used for voice communication.

This term is used chiefly in British parlance; 'radio' is synonymous in American usage, as in 'to talk by radio.' See **radio,** *n.*, sense 3.

radio teletype. A teletype or teletypewriter actuated by radio impulses; a communication system employing this device.

radio transmitter. A transmitter (which see) that develops and transmits electromagnetic waves used in radio (in sense 2). Cf. **radar transmitter.**

radio wave. 1. An electromagnetic wave used in radio (which see, sense 1). See also **radar wave. 2.** *Specif.* Such a wave used in radio operations other than radar or television.

radio Z marker beacon. A Z marker beacon. See separate entry.

radium, *n.* A radioactive element found in pitchblende and other uranium minerals.

The symbol for radium is Ra; its atomic number is 88, and its atomic weight is 226.05.

radius, *n.* **1.** Short for 'radius of action' or for 'radius of turn.' **2.** Full for 'rad' (which see, sense 1), as in 'the plane is two radii off the center of the sight.'

radius of action. 1. The distance between an aircraft's takeoff point and the ultimate point of safe return, allowing for takeoff and return load, flight plan, and operating conditions; an aircraft capability for covering this distance. See **bombing radius, combat radius, point of safe return,** and **range,** *n.*, sense 2 and note. **2.** The maximum distance from the point of an explosion at which effective damage occurs. See **damage radius.**

In sense 1, 'radius of action' differs from 'range' (which see, senses 1 and 5) in that the aircraft is always considered to return to the point at which it takes off. It is like the radius of a circle, and represents the maximum distance at which a given airplane can operate, under given conditions, from the center of the circle and still return to the center. This distance, under combat conditions, is considerably less than one-half the distance that the aircraft can fly under noncombat conditions. 'Range' on the other hand, has no necessary connotation of the aircraft's returning. See **range,** *n.*, senses 1 and 2.

radius of operation. Radius of action (in sense 1).

radius of turn. 1. The radius of a circle having an arc coincident with the arc described by an aircraft in making a turn, or coincident with the shortest arc required by an aircraft to make a turn. **2.** A capability of an aircraft, stated in terms of the shortest arc required for it to make a turn, as in 'the C-124 has a wider radius of turn at cruising speed than the C-47.'

radl (*auth abbr*). 'Radiological.'

Radlab, *n.* An abbreviated name for the Berkeley Radiation Laboratory.

radlic (*auth abbr*). 'Radio link.'

radlo (*auth abbr*). 'Radiological defense officer.'

radlsafe (*auth abbr*). 'Radiological safety.'

radlwar (*auth abbr*). 'Radiological warfare.'

RAdm (*auth abbr*). 'Rear admiral.'

radnos, *n.* [Transposition of *'no radio'* plus *s.*] A particular radio fadeout, esp. in arctic regions, considered to be caused by solar explosion, sunspots, or aurora borealis.

radnote, *n.* [*Radio* + *note.*] A message or note sent by electrical means, esp. by radioteletype or landline teletype, and requiring no acknowledgment.

Originally the radnote was limited to radio communication, but the term was quickly broadened.

radome, *n.* [*Radar* + *dome.*] A protective dome or domelike covering for a radar antenna and, sometimes for other radar equipment, such covering being pervious to radio-frequency radiation.

RadPropCast (*auth abbr*). 'Radio propagation forecast.'

RadSO (*auth abbr*). 'Radiological survey officer.'

R.A.E. (*abbr*). 'Royal Aircraft Establishment.' *British.*

RAF (*auth abbr*). 'Royal Air Force.' Also written 'R.A.F.' esp. in *British* usage.

Often used in combinations, as *RAF Bomber Command, RAF crew, RAF Institute of Aviation Medicine, RAF liaison officer, RAF Transport Command,* etc.

RAF station. An airbase that serves the Royal Air Force.

raft, *n. Specif.* A liferaft (which see).

raid, *n.* **1.** *Specif.* **a.** An air raid. **b.** An intrusion by aircraft into enemy territory in which direct action is taken against the enemy, as in 'a propaganda raid.' **2.** In general, a sudden attack against the enemy, or an incursion into enemy territory, with the intention of inflicting damage, taking prisoners, etc., but without the intention of permanently capturing any enemy territory.

raider, *n.* **1.** A person or aircraft taking part in a raid. **2.** *Capitalized.* A popular name for the C-125.

railhead, *n.* (rhd) **1.** A point or place along a railroad line where supplies are unloaded for distribution or storage. **2.** The farthest point to which rails have been laid in a road under construction.

railing, *n.* The jamming of radar transmissions by transmitters at a pulse rate of 50 to 150 kc, causing images resembling fence railings to appear on radar screens.

rail interdiction. The interdiction of the enemy's railroad communications.

rain, *n. Specif.* Precipitation which reaches the

earth as liquid water droplets; also such precipitation that strikes an aircraft in flight.

rake, *v. tr.* To sweep a *target*, esp. a ship or a column of troops, with gun or cannon fire. Hence, **raking fire.** Cf. **strafe,** *v.*

RAI (*auth abbr*). 'Reenlistment allowance.'

rally point. A point at which, or over which, aircraft reassemble and re-form after making an attack. Cf. **rendezvous point.**

ram, *n.* **1.** The forward motion of an air scoop or air inlet through the air. **2.** A ram effect (which see). **3.** *Capitalized.* A popular or code name for a certain large aircraft rocket with a shaped charge.

ramark, *n.* [*Ra*dar *mark*er.] A kind of radar beacon that emits radar waves continuously to provide a bearing indication to radar-equipped ships and aircraft.

ram drag. A factor of thrust used in calculating the net thrust of a jet engine, equal to the thrust required to make inlet air velocity equal to airplane velocity. See **net jet thrust.**

ram effect. The increased air pressure in a jet engine or in the manifold of a piston engine, due to ram (which see, sense 1).

Ramey Air Force Base. An AF base at Aguadilla, Puerto Rico, formerly known as Borinquen Field, renamed for Brigadier General Howard K. Ramey, who died in a plane accident in 1943.

ramjet, *n.* Also **ram jet. 1.** A ramjet engine. **2.** An aircraft or missile using a ramjet engine.

Attrib. in sense 1, as in *ramjet fighter, ramjet propulsion;* attrib. in sense 2, as in *ramjet target.*

ramjet engine. A kind of jet engine consisting essentially of a tube open at both ends in which fuel is burned continuously to create a jet thrust, and having neither a compressor nor turbine, the air for oxidizing the fuel being rammed into the engine as the engine moves forward; an athodyd.

The terms 'ramjet' and 'ramjet engine' are commonly applied to the type of athodyd that is open in the front at all times, which burns fuel continuously, and which requires constant forward motion, or relative forward motion, for the introduction of air into the combustion chamber. The pulsejet engine, although regarded by some authorities as a kind of ramjet engine, can operate statically after an initial ramming action, and does not burn fuel continuously. See **pulsejet engine.**

ramming, *n.* **1.** In air combat, an act or instance of deliberately flying or crashing into an enemy aircraft, engaged in as a tactic of last resort. **2.** A ram effect.

Attrib. in sense 1, as in *ramming attack, ramming dive, ramming tactic,* etc.

RAMP (*abbr*). 'Recovered allied military personnel.' Sometimes used as a word.

ramp, *n.* **1.** An inclined surface, works, or structure used to facilitate movement between a lower level and a higher level: **a.** A sloping structure used to guide or launch a rocket missile or an aircraft. **b.** A sloping structure with one end in the water by which a float plane is brought out of, or put into, the water. **2.** In extensive but loose usage, an apron (which see, sense 1).

In sense 1, see **landing ramp, loading ramp.**

ram rocket. 1. A rocket motor mounted coaxially in the open front end of a ramjet, used to provide thrust at low speeds and to ignite the ramjet fuel. **2.** The entire unit or power plant consisting of the ramjet and such a rocket.

ramrod, *n.* A bomber strike with fighter escort.

Ramstein Air Base. An air base at Ramstein, Germany, named for the city.

Rand Corporation. [*R*esearch *and D*evelopment.] A nongovernmental, nonprofit organization dedicated to research for the welfare and national security of the US. Usually called 'Rand.'

Rand Corporation, although at first not called by that name, was first organized in 1946 to provide background research for the Air Force's Project Rand. In 1948, with a grant from the Ford Foundation, it was reorganized and called the 'Rand Corporation.' Its research is conducted with its own funds or with funds supplied by different government agencies. Members of its research staff work singly or in cooperation with each other, depending upon the project. Staffs are maintained both in Santa Monica, California, and in Washington, D.C.

R&D (*auth abbr*). 'Research and development.'

Randolph Air Force Base. An AF base at San Antonio, Texas, named for Captain William M. Randolph, a fighter pilot killed in 1928.

random noise. *Electronics.* Noise (which see) occurring in no particular pattern or time sequence, sometimes propagated deliberately as a jamming device.

R&R (*abbr*). **1.** 'Routing and record sheet.' **2.** 'Refueling and rearming.' **3.** 'Reporting and requisitioning.' **4.** 'Rest and recuperation.'

In combination in sense 3, as in *R&R deck,* a stack of IBM cards.

R&U (*abbr*). 'Repairs and utilities.'

In combinations, as *R&U project, R&U report.*

range, *n.* (rg) **1.** The capability of an aircraft that indicates how far it can fly under given operating conditions from the moment of takeoff to the time when its fuel supply is exhausted, as in 'the aircraft's range was 7,000 miles, enough to fly nonstop from San Francisco to London.' To avoid ambiguity with sense 2, this meaning is sometimes called 'flying range.' Context, however, is usually sufficient to distinguish the meaning. **2. a.** Also the capability of an aircraft to reach a given target under the conditions imposed by a particular operation: See note. Cf. **radius of action. b.** *transf.* The capability that attaches to an air base measured by the distance to which its airplanes can fly and operate effectively, as in 'enemy bombers came within the range of the island base.' Cf. **operating range,** sense 2. **3.** The capability of a rocket missile,

guided missile, or the like that indicates how far it can fly or be projected; also the capability of a gun, radar transmitter, etc., that indicates how far it can project a missile or radiate effective waves, or otherwise exert influence at a distance under given conditions; also *transf.* (like sense 2b above), the capability of a place measured by the distance to which a missile, radar wave, or the like can be projected from it, as in 'the range of a launching site.' **4.** A capability restricted to 'good range,' as in 'the new plane had both range and speed.' **5.** The maximum or effective distance that can be covered in the exercise of any such capability, esp. the maximum distance that an aircraft can fly under cruise control, or the maximum distance that a missile can travel, or the damage radius of an atomic bomb, etc. See **effective range, maximum range, radar range. 6.** The measured or estimated distance between one object and another, esp. as applied to the distance between a gun and its target, between a radar set and its object of interest, or between an aircraft and its base, as in 'we are now at a range of ten miles from base.' **7.** In bombing, the horizontal distance that a bomb travels after release to the moment of impact. Also called 'actual range.' See next sense. **8.** The factor of forward distance that a bomb or other missile travels after release, as distinguished from the factor of azimuth, as in 'the azon bomb is controlled in azimuth but not in range.' **9.** An area set up for bombing practice, gunnery practice, or harmonization, as in 'bombing range.' **10.** A radio range (which see, sense 1).

In sense 1, range may be assessed under cruise control or under any other specified condition. See **combat flying range, flying range.**

In sense 2, the meaning is closely related to that of 'radius of action' if the aircraft must return to its takeoff base, as in 'the intruder did not come within the range of the island-based fighter aircraft'; or related to that of 'range' in sense 1 if the aircraft is to be sacrificed or provided a landing base near the target. In the first instance, certain writers prefer to use the more precise term 'radius of action.' But in those operations where an aircraft lands at a base nearer the target than its takeoff base, use of the term 'radius of action' is inappropriate. This is illustrated in locutions such as 'with shuttle bombing the city came well within the range of the bombers.' In this instance the technique of the operation, rather than an increase in the distance that the aircraft can fly, is considered to have affected the capability of the aircraft. See **bombing range,** senses 2 and 3, **combat range, effective range.**

In sense 6, as applied to the distance between a gun and its target, 'range' has traditionally signified 'horizontal distance,' but in the AF it signifies line-of-sight distance, whether horizontal, slant, or vertical. If distinctions are required, specifying terms are used, as in 'horizontal range,' etc. This change in meaning reflects the methods of gun-aiming and the conditions of fighting introduced by the airplane.

'Range' in certain senses, as in 5 and 6 above, is normally defined in terms of distance, but the two terms have different connotations. 'Range' emphasizes the notion of reach, e.g., the range of a gun is measured by how far its shell can reach; 'distance' emphasizes space relationship.

range, *v. Gunnery* and *radar.* **1.** *tr.* To find the range of a *target;* to adjust a *gun* to the range of a target. **2.** *intr.* To perform this action. Hence, **ranging,** *n.*

range angle. A dropping angle. See separate entry.

range circle. A radar range marker in the form of a circle. See **radar range marker.**

range control. 1. Cruise control with respect to range and flight time. **2.** Control exercised over the range of a guided missile.

range finder. *Gunnery.* An instrument or device used to determine the range to a target.

A range finder may be either an optical instrument or a radar device.

range line. 1. In aerial gunnery practice against ground targets, a line on the ground over which firing at the targets may be commenced. Cf. **foul line. 2.** A radar range marker. See separate entry.

range mark. A radar range marker.

range probable error. The probable bombing error in range, expressed in terms of distance between two lines at right angles to the line of flight and equally distant from the desired mean point of impact, within which half of the bombs are expected to fall, gross errors excluded.

ranger, *n.* A soldier belonging to a specially selected group of soldiers in the US Army, trained esp. in raiding tactics.

The British equivalent of the ranger is the commando.

range rate. In gunnery, the rate of change in range per unit of time.

range resolution. The resolution (which see) of a radar or optical system with respect to range.

range station. A radio-range station.

rank, *n.* **1. a.** The status of a person as determined by the grade to which he belongs; also, the relative status of a person within a grade. **b.** The grade to which a person belongs. **2.** A line of persons side by side. **3.** *In the ranks,* in military service, esp. as an enlisted person. **4.** *To rise from the ranks,* to become an officer from service as an enlisted person.

'Rank' is often used instead of 'grade' (sense 1), but not vice versa. Certain clear-cut usages, however, exist, as in 'he is *in* the grade of captain, but he *has* or *holds* the rank of captain.'

rank, *v. tr.* To outrank.

Rankine scale. [After W. J. M. *Rankine* (1820–1872), Scottish physicist.] (°R) A temperature scale that uses Fahrenheit degrees, but makes the zero degree signify absolute zero.

In this scale, water freezes at 491.69 degrees, and boils at 671.69 degrees. Cf. **Kelvin scale.**

RaOb (*auth abbr*). 'Radiosonde observation.'

RApCon (*auth abbr*). 'Radar approach control center.'

rapid decompression. The decompression of a pressurized cabin, cockpit, or the like to the pressure of the ambient atmosphere at a very rapid rate, but not so rapid as to be explosive. Cf. **explosive decompression.**

rapid scanning. *Radar.* Scanning with a narrow beam at the rate of ten sweeps per second or more, used esp. in tracking fast-moving targets.

RAPP (*auth abbr*). 'Registered air parcel post.'

rarefaction, *n.* In an atomic bomb explosion, a condition existing at the center of the explosion, in which the pressure, after a rise induced by the explosion, drops below that which existed prior to the explosion.

rarefaction wave. A pressure wave or rush of air or water induced by rarefaction.

The rarefaction wave (also called a 'suction wave') travels in the opposite direction to that of the shock wave directly following the explosion.

rarefied atmosphere. Thin, tenuous atmosphere as encountered at high altitudes.

rarep, *n.* Short for 'radar weather report.'

RASC (*abbr*). 'Rome Air Service Command.' *Hist.*

rat (*auth abbr*). 'Rations,' 'rate,' or 'rating.'

rate, *n.* (rat) The measure of something in terms of a ratio, esp. applied to movement in terms of time, as in 'the rate of climb was 500 feet per minute.'

rated, *a.* **1. a.** Of a person: Holding a currently effective aeronautical rating. **b.** Requiring or specifying a currently effective aeronautical rating. Said of a job, job description, or the like, as in 'rated position.' **2.** Specified as the best or maximum for the safe and efficient performance of an aircraft or other piece of equipment. Said of airspeed, altitude, horsepower, etc. See following entries.

In combinations (in sense 1a), as in *rated officer, rated personnel, rated pilot,* etc. A rated person may or may not be on flying status.

rated altitude. The altitude specified for the optimum continuous performance of an aircraft or aircraft engine.

rated engine speed. The rotative speed of an engine specified as the maximum for continuous reliable performance.

rated horsepower. The normal rated power or military rated power of a reciprocating aircraft engine. See **military rated power, normal rated power.**

rated power. The power of an engine obtained by any of several power settings specified by the manufacturer or by the AF for a particular purpose: See **military rated power** and **normal rated power.**

rate gyro. A gyroscopic instrument (either spinning or vibratory) that measures rate of turn.

rate of climb. The vertical component of the airspeed of an aircraft in climbing, as shown by a rate-of-climb indicator. See next.

rate-of-climb indicator. A flight instrument that operates by differential pressure to show the rate of climb or descent of an aircraft.

A rate-of-climb indicator may be calibrated in feet per minute, meters per second, etc.

rate of closure. The speed with which two moving objects close the distance between them; *specif.*, the speed with which two airborne aircraft close with one another.

This term is used esp. in reference to aircraft approaching each other, in which case the rate of closure is the sum of the speeds of the two aircraft.

rate of descent. The vertical component of the airspeed of an aircraft in descending, as shown by a rate-of-climb indicator; the speed with which descent is made, as with a parachute.

rate of fire. The rapidity with which rounds are fired per minute from a weapon or group of weapons. Cf. **cyclic rate.**

rate-of-flow meter. An instrument that measures a rate of flow, as of fuel. See **fuel flowmeter.**

rate-of-turn indicator. A turn indicator.

rating, *n.* (rat) A recognized level of attainment; a grade; an aeronautical rating.

ration, *n.* [The 'a' is pronounced either long or short.] (rat) **1.** An allowance of provisions for one person for one day; a monetary equivalent of such an allowance. **2. a.** The provisions, esp. food, in the amount of this allowance. **b.** *pl.* Any provision issued in whatever amount, as in 'a can of rations.'

See **field ration, garrison ration.**

ration, *v.* **1.** *tr.* To supply one or more *persons* with rations. **2.** *intr.* With an adverb or adverbial phrase: To receive one's ration or rations, as in 'he rationed separately.'

rational horizon. A plane that passes through the center of the earth, perpendicular to the zenith-nadir axis of an observer; also, the circle on the celestial sphere made by the intersection of the sphere with this plane. Cf. **celestial horizon,** and note.

ration in kind. An issue in kind of a ration. See **issue in kind.**

RATO (*auth abbr*). 'Rocket assisted takeoff.'

rato, *n.* Also **Rato, RATO.** [**RATO** (*auth abbr*).] **1.** A takeoff assist by an auxiliary rocket unit or units. **2.** The auxiliary rocket unit or group of units used in such a takeoff.

'Rato' is preferred to 'jato' when applied to a takeoff assist by a rato unit.

rato bottle. A rocket motor used esp. to assist an

aircraft in takeoff, so-called because of its resemblance to a bottle.

rato unit. A rocket motor, or rocket motors built together as a unit, used esp. to assist an airplane in takeoff.

rat race. In *slang* usage. **1.** An aerial exercise in which aircraft fly in single file each performing the same maneuvers as the aircraft in front. **2.** An aerial situation or performance in which two or more planes pursue or race one another. **3.** A situation somewhat chaotic, exhausting to all participants.

RATSC (*abbr*). 'Rome Air Technical Service Command.' *Hist.*

Ratt (*auth abbr*). 'Radioteletypewriter.'

raunchy, *a.* Careless; sloppy; showing a lack of discipline. Said of a person, a performance, etc. *Slang.*

raw data. Any data or information which has not been analyzed or evaluated.

raw engine. An engine without accessories attached.

rawin, *n.* [*Ra*dar *win*d or *ra*dio *win*d; pronounced 'ray win.'] **1.** Wind tracked either by radar or radio direction-finding: See **radar wind. 2.** The action of determining the movement and velocity of winds. **3.** A radiosonde, radiosonde balloon, or other specially equipped balloon used for this purpose. **4.** Wind information gathered by means of radar tracking or radio direction-finding of a specially equipped balloon.

rawin (*auth abbr*). 'Radar wind sounding.'

rawin balloon. A radiosonde balloon or other specially equipped balloon used in determining the movement and velocity of winds.

rawind, *n.* Variant of 'rawin.' *Rare.*

rawinsonde, *n.* A radiosonde or radiosonde balloon used in rawin (sense 2); the act or procedure of obtaining weather and wind information by means of a radiosonde and receiving and tracking equipment.

rawinsonde (*auth abbr*). 'Radiosonde and radar wind sounding (combined).'

raw score. The score achieved in an intelligence test, aptitude test, subject-matter test, or the like, before being weighted or converted into a standard score.

razon, *n.* [*R*ange plus *azon* (which see).] A kind of bomb developed in WW II, having movable control surfaces in the tail adjusted by radio signals to control the bomb in range and in azimuth. Hence, *razon bomb.*

RB (*abbr*). **1.** *auth.* 'Road bend.' **2.** 'Relative bearing.' **3.** 'Reconnaissance bomber,' as in *RB-29, RB-36, RB-50* (reconnaissance versions of the B-29, B-36, and B-50).

RBS (*auth abbr*). 'Radar bomb scoring.'

RC (*auth abbr*). **1.** 'Reception center.' **2.** 'Red China.' Nationality Condensation Code.

RCAF (*auth abbr*). 'Royal Canadian Air Force.'
This abbreviation is sometimes written 'R.C.A.F.'

RCC (*auth abbr*). 'Rescue control center.'

RCD (*abbr*). 'Reinforcement control depot.'

rcd (*abbr*). 'Record' or 'received.' See **rec** (*auth abbr*).

rclm (*auth abbr*). 'Reclaim' or 'reclamation.'

RCM (*abbr*). **1.** *auth.* 'Radar countermeasures.' **2.** 'Radio countermeasure.' **3.** 'Radio-controlled mine.'

RCM reconnaissance. Electronic-countermeasure reconnaissance.

RCP (*auth abbr*). 'Rotation combat personnel.'

RCS (*auth abbr*). 'Reports control symbol.'

RCT (*auth abbr*). 'Regimental combat team.'

rct (*abbr*). 'Recruit.' See **cruit** (*auth abbr*).

rctmt (*abbr*). 'Recruitment.'

rctn (*abbr*). 'Recreation.' See **rec** (*auth abbr*).

RCTSR (*auth abbr*). 'Radio code test, speed of response.'

rcvr (*abbr*). 'Receiver.'

RD (*auth abbr*). 'Readiness date' or 'radarman.'

rd (*auth abbr*). 'Road.'

RDB (*abbr*). **1.** 'Research and Development Board.' **2.** 'Radar decoy balloon.'

RDF (*abbr*). **1.** *auth.* 'Radio direction-finder' or 'radio direction-finding.' **2.** 'Reflection direction-finding.' *British.*

RDFL (*abbr*). 'Reflection direction-finding, low angle.' *British.*

rdgl (abbr). 'Radiological.' See **radl** (*auth abbr*).

rdgy (*abbr*). 'Radiology.' See **radl** (*auth abbr*).

rdn (*abbr*). 'Reduction.'

RDP (*abbr*). 'Ration distributing point.'

rdsg (*abbr*). 'Redesignate.'

RDT (*auth abbr*). 'Reserve duty training.'

rdvu (*auth abbr*). 'Rendezvous.'

RDX. 1. Cyclonite. **2.** Any compound containing cyclonite.

rdy (*auth abbr*). 'Ready.'

R.E.8. [From '*R*econnaissance *E*xperimental.'] A British-built, two-place biplane of WW I, widely used for artillery spotting.

re (*auth abbr*). **1.** 'Regard.' **2.** *Caps.* 'Rifle expert.'

reactance, *n. Electricity.* That part of the resistance to current flow in an alternating-current circuit that is due to inductance, capacitance, or to both.
In combinations, as in *capacitive reactance, inductive reactance.*

reaction balance. A kind of dynamometer for measuring the thrust of a rocket.

reaction engine. An engine that derives thrust by

expelling its gases of combustion to the rear; *specif.*, such an engine that uses liquid fuel.

A reaction engine moves forward in accordance with the third of the laws of motion formulated by Sir Isaac Newton, i.e., every action produces an equal and opposite reaction. Jet engines and rocket engines are reaction engines.

reaction motor. 1. A rocket motor (sense 1). **2.** In less exact usage, a reaction engine.

reaction-propelled, *a.* Propelled by means of reaction to a jet of gas or fluid projected rearward, as by a jet engine or rocket engine.

reaction propulsion. Propulsion by means of reaction to a jet of gas or fluid projected rearward, as by a jet engine or rocket engine.

reactivate, *v. tr.* **1.** To make an inactivated *unit* once again active by taking it off the inactive list and assigning personnel to it. **2.** To make an inactivated *installation* operative again.

Hence, **reactivated,** *a.*, **reactivation,** *n.* See **activate,** *v.*, note, and **inactivate,** *v.*

reactor, *n.* **1.** A nuclear reactor (which see). **2.** A reaction engine or reaction motor.

READ (*abbr*). 'Reserve on extended active duty.'

read, *v. tr.* To understand or hear a *person* clearly. Used esp. in radio communication, as in 'I can't read you, Tower.'

readiness, *n.* **1.** The state of being ready. **2.** *Specif.* The state of preparedness of an individual, force, or organization for carrying out an operation, mission, task, or the like; combat readiness or operational readiness. Also said of equipment. See **operational readiness.**

readiness force. A force maintained in readiness for immediate offensive or defensive action.

readiness reserve. A reserve of supplies and equipment held in readiness to support a force or forces in-being for a specified period of time in the event of extended operations.

reading, *n.* **1.** The indication shown by an instrument. **2.** *To take a reading.* **a.** To observe the readings of one or more instruments. **b.** To listen to and appraise a proposal, plan, or argument; to examine a situation. *Slang.*

Ready Reserve. That part of the reserve components of the AF that may be immediately called to active duty in an emergency declared by the Congress, proclaimed by the President, or otherwise authorized by law.

The Ready Reserve consists of the members and units of the Air National Guard of the US and all members of the AF Reserve not assigned to either the Standby or Retired Reserve.

ready room. Any room where aircrew members await a call to fly.

real emergency. A serious emergency, as contrasted with one of lesser importance.

real property. In the AF, the fixed capital assets of the AF, consisting of land and interests therein, ground and structural facilities, certain utility systems, etc.

Real property includes, but is not limited to, runways, taxiways, aprons, roads, walks, railroads, towers, bridges, docks, structural or installed training aids and recreational facilities, housing facilities, buildings and structures, etc.

ream, *v. To ream out,* to reprimand a *person. Slang.*

reappropriation, *n.* The action of appropriating a second time public funds that would otherwise have lapsed.

reapt (*auth abbr*). 'Reappoint.'

rear, *n.* **1.** The back or end part of a military or naval force; the space or position occupied by this part of the force, as in 'they pulled up from the rear.' **2.** That part of an aircraft that lies at or near the tail.

rear, *a.* **1.** Located behind a forward or advanced force, installation, or place. See **forward,** *a.* **2. a.** Of aircraft components, equipment, or sections: Located toward, or at, the tail. **b.** Of a person: Stationed at the rear of an aircraft.

In combinations: In sense 1, as in *rear airfield, rear base, rear headquarters,* etc.; in sense 2, as in *rear bulkhead, rear cockpit, rear turret, rear gunner,* etc.

rear admiral. (RAdm) A commissioned rank or person in the US Navy, corresponding either to major general or brigadier general in the AF.

A rear admiral, U.H., is a rear admiral in the upper half; a rear admiral, L.H., is a rear admiral in the lower half. Determination as to which half a particular admiral is in is arithmetical according to date of rank.

rear area. An operational area immediately behind the forward area, containing administrative and service establishments, communications, etc.

The communications zone lies within this area. See **communications zone, forward area;** cf. **back area.**

rear cover. *Specif.* Cover provided by aircraft to the rear of the protected aircraft; the airplanes that give, or that are designated to give, this cover.

rear echelon. That echelon of a headquarters or of a unit that is located in a rear area or in a back area.

A rear echelon is not necessarily in an operational area. See **back area.**

rear fuselage. That part of an airplane's fuselage at or near the tail.

rear guard. Also **rearguard** when used attrib. A security or protective force or detachment, either in the air or on the ground, that protects the rear of a main body or force, or shelters its retreat. Attrib., as in *rearguard action.*

reassign, *v.* (rsg) *tr.* To assign a *person, unit, duty, responsibility,* etc. again, as in 'he was first assigned to the AMC and then reassigned to the ADC'; 'the 301st squadron was relieved of the mission, which was reassigned to the 302nd.' See **assign,** *v.*, in all senses.

Rebecca, *n.* An interrogator-responser used in a Rebecca-Eureka system. See next.

Rebecca-Eureka system. An aircraft radar homing system in which an airborne interrogator-responser (Rebecca) homes on a ground radar beacon (Eureka) that has been dropped or set up in advance.

This system also allows range measurement by the Rebecca radar to the Eureka beacon.

Rebecca H. A British H-system using a Rebecca radar modified to display two beacon responses simultaneously. See **H-system,** *n.*

rebreather system. 1. An oxygen system in which exhaled air is mixed with incoming oxygen in a bag attached to the mask, and breathed again. Used esp. for aircraft passengers. **2.** A system designed to permit breathing the same air over and over, used to bring on hypoxia for experimental purposes.

rec (*auth abbr*). 'Receive,' 'record,' 'recreation,' or 'receipt.'

recall, *v. tr.* To call a *person* in one of the reserve components to active duty.

RecAU (*auth abbr*). 'Receipt acknowledged and understood.'

recce, *n.* Short for 'reconnaissance,' 'reconnaissance aircraft,' or 'reconnaissance flight.' Also **recco,** *n.*, **reccy,** *n.*

receipt, *n.* (rec) **1.** In communication usage, a communication that a message or transmission has been received. **2.** In supply accounting, an acquisition of personal property; also a memorandum indicating such receipt. **3.** In fiscal usage, a sum of money received from any source.

receiver, *n.* **1.** Generally, any device or set of equipment for receiving electric current, radio waves, or the like, and converting the current or waves into some usable form. **2.** Short for 'radio receiver' or 'radar receiver.' **3.** A receiver aircraft. **4.** The basic unit of a firearm, esp. a small arm, to which the barrel and other components are attached.

receiver aircraft. In air refueling, the aircraft that receives fuel from the tanker aircraft.

receiving and classification unit. A special supply activity that receives, or that is specified to receive, supplies from designated activities for the verification or establishment of identity, count, and condition.

receiving officer. In supply usage, the officer who assumes responsibility for property received.

receiving set. A radio receiver.

reception center. A center where people are received and processed, esp. such a center for recruits and newly inducted or newly enlisted personnel.

reciprocal, *a.* (recp) *Specif.* Opposite in direction. Said of a bearing, course, vector, or the like.

A reciprocal bearing, for example, is the one taken plus or minus 180°.

reciprocating compressor. A positive-displacement compressor that employs the action of a piston to compress air or other fluid.

reciprocating engine. An engine in which power is delivered in a back-and-forth movement of a piston or pistons; *specif.*, a piston-driven, internal-combustion engine. Attrib., as in *reciprocating-engine aircraft.*

Distinguished esp. from a jet or rocket engine.

reciprocating job. An airplane having a reciprocating engine or engines. *Slang.*

reciprocating-type supercharger. A supercharger that compresses air by a reciprocating piston moving in a cylinder.

This type of supercharger is not ordinarily used on aircraft engines.

reclama, *n.* An action in contest of a decision by a panel, committee, Bureau of the Budget, or the like, to restore what has been taken away.

reclamation, *n.* (rclm) The act or process of recovering serviceable and economically repairable equipment, components, and other materiel out of damaged, unserviceable, and excess materiel.

Reclamation includes inspection, classification, disassembly, cleaning, handling, and shipping. It is not ordinarily construed to include repairing.

reclassification, *n.* The act or process of changing the classification or classifications of one or more persons or things.

reclassify, *v. tr.* **1.** To change the security classification of a *document, piece of equipment,* or the like. Cf. **declassify,** *v.* **2.** To change the grade and description of a Civil Service *position;* to change the grade of the *person* holding this position.

recm (*auth abbr*). 'Recommend.'

RECNO (*auth abbr*). 'This office has no record of.'

recog (*auth abbr*). 'Recognize.'

recognition, *n.* **1.** The act or process of becoming aware that something has been seen or otherwise sensed before. **2.** A process of placing a person or thing in a meaningful category; *specif.*, the identifying of a thing as either friendly or hostile. See **identification,** *n.*, sense 2.

recognition signal. A signal sent out, shown, or displayed by a person, body of troops, aircraft, etc. to enable recognition.

recoil, *n.* **1.** The backward movement of a gun or part thereof on firing, caused by the backward pressure of the propellent gases; the distance that a gun or part travels in this backward movement. **2.** The force of this movement as exerted against something else, as in 'the recoil of the gun was felt throughout the plane.'

recoil adapter. A device fastened between a gun

esp. an aircraft machine gun, and its mount to adapt the gun for mounting and to absorb the gun's recoil.

recoilless, *a.* Of a gun: Built so as to eliminate or cancel out recoil.

Most recoilless guns are designed to let part of the propellent gases escape to the rear to eliminate recoil.

recoilless ammunition. A special ammunition used with recoilless guns.

recoil-operated, *a.* Of an automatic or semiautomatic firearm: That utilizes recoil to throw back or unlock the bolt or slide and actuate the loading mechanism. Applied esp. to certain locked-breech firearms.

recommend, *v.* (recm) *tr.* To advise *consideration, approval,* or *acceptance* of something; to commend *something* for consideration, approval, or adoption.

The word connotes advising in matters that primarily affect the commander, and differs from 'request' in that the latter connotes advising in matters that primarily affect the requesting party. Cf. **concur,** *v.*

recomp (*auth abbr*). 'Recommend completion.'

recompression, *n.* The process by which a person, having experienced decompression, undergoes an increase in air pressure, as in returning from flight into high altitudes.

recon (*auth abbr*). 'Reconnaissance' or 'reconnoiter.' Used and pronounced as a word, esp. in attrib. contexts, as in *recon car, recon flight, recon mission, recon pilot, recon plane,* etc.

recond (*auth abbr*). 'Recondition.'

reconfiguration, *n.* A change in the contours, form, or outline of something, esp. by the redisposal of parts; the form or figure resulting from this change.

reconnaissance, *n.* (recon) **1.** An examination or observation of an area, territory, or airspace, now usually from the air, either visually or with the aid of photography or electronic devices, to secure information regarding the terrain, the strength and disposition of enemy troops, enemy resources or activities, the location and layout of targets or of enemy installations and strong points, the results of air operations or other operations, the disposition and condition of friendly troops, the weather, or any other information regarding the situation, usually in a combat area or in enemy territory; also applied in a general sense to the field of activity embracing this action, as in 'the planes are used for reconnaissance.' See **observation,** *n.,* note. **2.** *Specif.* Aerial reconnaissance (which see). **3.** Sometimes *capitalized.* An organization or activity that carries out such action. **4.** *Reconnaissance by fire,* a method of reconnaissance in which fire is placed upon a suspected enemy position to cause the enemy to reveal his presence by returning the fire.

Reconnaissance is a regular military activity undertaken, often openly, by undisguised military personnel, and is distinguished from espionage.

Attrib., as in *reconnaissance car, data, duty, flight, observation, photograph, sortie, unit,* etc.

There are different kinds of reconnaissance. Among these are armed reconnaissance, electronic-countermeasure reconnaissance, electronic reconnaissance, photoreconnaissance, photoscope reconnaissance, radar reconnaissance, strategic reconnaissance, tactical reconnaissance, and weather reconnaissance. See separate entries.

reconnaissance aircraft. An aircraft designed, modified, or used for aerial reconnaissance.

reconnaissance aviation. 1. The art or practice of carrying out aerial reconnaissance in heavier-than-air aircraft. **2.** The air units or airplanes that perform, or that are used to perform, this activity.

reconnaissance bomber. An aircraft designed, modified, or used for both bombing and reconnaissance; a bomber that carries out armed reconnaissance.

reconnaissance camera. A camera used in reconnaissance; *specif.,* an aerial camera designed for use in reconnaissance and certain other work.

Aerial cameras designed for reconnaissance are used to obtain reconnaissance strips, shots for mosaics, and vertical and oblique photographs. Such cameras are also used in intelligence work, bomb damage assessment, and limited charting work.

reconnaissance mission. A mission, esp. an air mission, for the purpose of reconnaissance.

reconnaissance patrol. A patrol or routine flight to perform reconnaissance.

reconnaissance strip. A series of overlapping aerial photographs taken along a single line of flight for reconnaissance purposes. See **strip mosaic.**

reconnaissance technical squadron. A squadron organized, trained, and equipped to process, reproduce, and interpret reconnaissance photographs, including reconnaissance radarscope photographs, to assist in the preparation of target materials, and to perform associated technical processes.

reconnoiter, *v.* Also, infrequently, **reconnoitre.** (recon) **1.** *tr.* To make a reconnaissance of an *area, place, airspace,* or the like. **2.** *intr.* To make a reconnaissance, or to do reconnaissance work.

Hence, **reconnoitering,** *n.,* **reconnoitring,** *n.*

reconst (*auth abbr*). 'Reconstruct.'

reconstitute, *v. tr.* To designate a disbanded unit and place it again on the inactive or active list of the Department of the AF. See **constitute,** *v.*

record, *n.* (rec) **1.** That which is written, printed, or inscribed to perpetuate knowledge or to serve as evidence; also, the paper or papers or other material upon which such inscription is made. **2.**

Anything that serves as evidence in support of an act, occurrence, or the like, as in 'geological strata are a record of prehistoric events'; a document. **3.** *Specif.* In public law: See note.

In sense 3, a book, paper, map, photograph, or other document is a record, 'regardless of physical form or characteristics, made or received by any agency of the United States Government in pursuance of Federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of data contained therein' (*Pub Law 115*, 78th Cong., 1943).

Recordak, *n.* A trade name for a certain type of microfilm equipment.

record firing. Practice firing of which a record of scores is kept.

recording camera. A camera designed or used to photograph radarscope displays, instrument readings, or the like for record purposes.

record jacket. A folder or envelope for containing a record, usually labeled with pertinent information concerning the record, as the file number, title, etc.

records center. A records depository.

records depository. A place where noncurrent records are processed and stored for varying periods of time.

See **intermediate records depository, overseas records depot, special records depository.**

records depot. A records depository.

records disposal. In arbitrary use: The destruction of records no longer needed, by burning, mutilation, or reuse of the materials on which the records were made.

records disposal standard. A standard governing the period of time specified types of records are to be retained until their disposal.

records disposition. The disposition made of records through elimination, retirement, transfer, or reduction by microphotography.

records disposition report. A semiannual report submitted by a major air command to Headquarters USAF concerning records disposition for the six-month period.

records disposition schedule. A schedule specifying the time and manner of disposition of specified groups of records acquired by an organization, headquarters, or office.

records management officer. An officer designated by the commander of a major air command to conduct the records administration program, as a principal duty for the major air command and its subordinate commands.

records officer. An officer designated by an organization below the level of a major subordinate command to supervise the maintenance and ultimate disposition of records by all organizations under the jurisdiction of his commander.

records retirement. The retirement of noncurrent records to a records depository.

records series. Groups of records maintained for a specific purpose, identified by a name or designation that gives a functional description of the records.

records transfer. *Specif.* A transfer of current records from the custody of one agency to another. Cf. **records retirement.**

recov (*auth abbr*). 'Recover' or 'recovery.'

recover, *v. intr.* To come back to a normal flight attitude after a spin, dive, etc. Said of an aircraft or person within an aircraft.

recovery time. *Radar.* The time required, after a radar pulse is transmitted, for the receiver to return to a value of sensitivity, usually half its maximum value, that will enable it to receive a return echo. Cf. **ringtime,** *n.*

recp (*auth abbr*). 'Reciprocal' or 'reciprocating.'

recruit, *n.* **1.** An enlisted person newly entered in military or naval service, esp. such a person who has voluntarily entered. **2.** *Capitalized.* A popular name for the PT-21 or PT-22.

recruit, *v.* **1.** *tr.* **a.** To strengthen or fill up a military or naval *organization* or *reserve component* with new personnel, esp. through voluntary enlistment. **b.** To induce a *person* to enter voluntarily into active military or naval service, or into a reserve component. Cf. **induct,** *v.* **2.** *intr.* To engage in such activity.

recruiting main station. A station which receives persons from a recruiting station and processes them for enlistment.

recruiting service. Sometimes *capitalized.* A joint service of the USAF and US Army which does recruiting for the two services. In full, 'United States Army and United States Air Force Recruiting Service.'

recruiting station. A station at which the applications of prospective recruits are received. See **recruiting main station.**

recruitment, *n.* The act or process of recruiting; an amount or number of persons recruited.

recsta (*auth abbr*). 'Receiving station.'

rectified airspeed. Calibrated airspeed corrected for altitude error. *British.*

rectifier, *n.* **1.** *Electricity.* A vacuum tube, gas tube, crystal, or other device for rectifying alternating current. **2.** *Aerial photog.* A special projector for rectifying tilted or oblique photographs.

rectify, *v. tr.* **1.** *Electricity.* To convert an *alternating current* into direct current. **2.** *Aerial photog.* To project a tilted or oblique *photograph* onto a horizontal plane so that points on the

photograph are in relationship as if shown on a vertical photograph.

Hence, in both senses, **rectification,** *n.*, **rectified,** *a.*

rectilinear, *a.* That describes or follows a straight line, as in *rectilinear course, rectilinear flight.*

recuperability, *n.* **1.** The ability of a nation or force to endure losses in warfare, yet manage to sustain its war effort with vigor. **2.** Target recuperability (which see).

recuperation, *n.* The act or process of recovering from damage, esp. bomb damage; the period of time required for an installation to be restored from such damage.

recuperative analysis. An analysis of a bombed or damaged enemy installation, usually by means of aerial photographs, to determine the extent or rate of recuperation.

recurrence rate. A pulse rate.

recurring report. Any one of a series of reports issued or prepared wholly or in part more than once by the same agency or organization, but not released at regular time intervals. Cf. **periodic report.**

red, *a.* Pertaining to the color used for certain marks on AF Form 1, indicating the status of an aircraft as to safety. See note.

Red cross, indicating that an aircraft is considered unsafe or unfit for flight; *red dash,* a horizontal dash indicating that a required inspection or test flight of an aircraft is due and not completed, and that a red cross condition may exist; *red diagonal,* indicating that an unsatisfactory condition of an aircraft exists, and that an exceptional release is required before flight.

red (*auth abbr*). 'Reduce.'

red alert. An alert that exists when attack by enemy aircraft is, or seems to be, imminent.

In the Air Defense Command, a red alert exists when identified hostile aircraft, or unidentified aircraft with hostile intent, are in the alerted air defense sector, or are in an adjacent sector with a high probability of entering the subject sector. Cf. **blue alert, white alert, yellow alert.**

redeploy, *v. tr.* To deploy again, or make a new arrangement of, *personnel, units, forces,* or *equipment* already deployed. See **deploy,** *v.*

Hence, **redeployment,** *n.*

redesignate, *v.* (redsg) *tr.* To change the designation of a *unit* or *thing.*

redistribution station. An Army installation at which military personnel returned from overseas are assembled for processing prior to assignment in the US or return to overseas duty. Now *hist.* in the AF.

red light. A red-colored navigation light at the left wingtip of an airplane.

redline, *n.* Also **red line,** esp. in sense 1. **1.** A red mark or line on the airspeed indicator in certain airplanes, indicating the safe maximum speed of the airplane; also a line on other indicators to indicate a danger point. Hence, *redline limit.* **2.** A designation given certain very important messages for prompt and special handling. Hence, *redline message.*

The Secretary of the AF, the Undersecretary of the AF, the Chief of Staff, USAF, and certain other persons as specified in AF regulations are the only ones authorized to originate and receive redline messages.

redline, *v. tr.* **1.** To cross out an *item* or *form* with a red mark; to cancel; to ground an *airplane.* **2.** To set a recommended limit on the airspeed of an *airplane.* Usually in passive, as in 'the C-47 is redlined at 150 knots.'

redout, *n.* Also **red-out.** A temporary or transient vision disturbance, sometimes accompanied by a loss of consciousness, occurring in certain airplane maneuvers or performances, during which a red screen appears before the eyes, or objects appear to be tinged with red.

Redout is believed to be caused by the engorgement of the retinal vessels with blood during footward acceleration. See **blackout,** *n.*

reduction, *n.* **1.** The action of lowering a person in grade. **2.** *Reduction in force* (RIF), the action of decreasing the size of an organization or force by the separation of military personnel, civilian personnel, or both.

Attrib. (in sense 1), as in *reduction board.*

reduction gear. A gear assembly between a powered shaft and another shaft, by which the latter shaft is driven at lower rpm than the powered shaft.

A reduction gear is normally used between the crankshaft of a helicopter piston engine and the shaft of the main rotor; it is also sometimes used between the crankshaft of an aircraft piston engine and the propeller shaft.

redundancy, *n.* The quality of a structure to resist damage or collapse from bombing when certain structural elements, not ordinarily designed or considered as supporting elements, are brought into play as supports.

redundant bombing. A term used in reference to the bombing of a target or targets which have already been made inoperative or useless by attacks on other targets upon which the former are dependent for their operation.

'Sometimes, of course, it would be redundant . . . if electric power has been greatly reduced . . . to attack chemical plants made inoperative by power shortages' (Possony, *Strategic Air Power* p 134).

Reed and Prince screwdriver. A trade name for a kind of screwdriver having a blunt tip and a cross-shaped cross section at the tip.

reef, *v.* **1.** *tr.* To constrain a *parachute* so as to delay or slow down its full deployment, allowing the falling body to fall long enough to slow down before complete opening. **2.** *To reef it in,* to change directions violently. *Slang.*

A parachute is reefed ordinarily by a metal ring around the shroud lines.

reefer, *n. Slang.* **1.** A refrigerator. **2.** A refrigerated aircraft, truck, railroad car, or the like.

reefer (*auth abbr*). 'Refrigerator.'

reenl (*auth abbr*). 'Reenlist.'

reenlist, *v.* (reenl) *intr.* To accept reenlistment.

reenlistment, *n. Specif.* The action on the part of an airman of re-entering for active duty in the Regular Air Force within 90 days after separation from a prior tour of active duty in the Regular Air Force.

reenlistment allowance. An enlistment allowance. See separate entry.

reenlistment bonus. A bonus paid an enlisted person who re-enlists in the Regular Air Force, the amount of the bonus being determined by the number of years the enlistment is for. Not to be confused with 'enlistment allowance.'

reenlmt (*abbr*). 'Reenlistment.' See **reenl** (*auth abbr*).

Reese Air Force Base. An AF base at Lubbock, Texas, formerly known as Lubbock Air Force Base, renamed for Lieutenant Augustus F. Reese, killed on a volunteer fighter mission over Sardinia in 1943.

ref (*auth abbr*). 'Refer' or 'refresher.'

refd (*auth abbr*). 'Refund.'

refeather, *v. tr.* To feather a *propeller* or *rotor* again, after it has been unfeathered.

reference angle. *Radar.* The acute angle between the center line of a radar beam striking a reflecting surface and a line perpendicular to the reflecting surface.

reference area. Any arbitrary area on a body taken as a coefficient in equations for determining an aerodynamic force acting upon the body.

An equivalent flat-plate area is an example of a reference area. See **equivalent flat-plate area.**

reference point. 1. Any point or place on the ground used for reference in navigating, in locating or aiming at a target, etc. **2.** A point on an aerial photograph, used for reference in fitting it with other aerial photographs in making up a map or mosaic.

reflected pressure. The pressure from an explosion, which is reflected back from a solid object or surface, rather than dissipated in the air. Said esp. of an airburst bomb.

reflected shock wave. A shock wave resulting from an explosion, esp. from the explosion of an airburst bomb, which is reflected from a surface or object.

reflected wave. *Electronics.* An electromagnetic wave, as a radio or radar wave, that is reflected from a surface or object.

reflecting target. *Radar.* A target that reflects radar waves.

reflection, *n. Radio.* The turning back of a radio or radar wave upon striking a surface or object.

reflection direction-finding. An early British term for radar.

reflection interval. *Radar.* The time interval between the transmission of a radar pulse or wave and the reception of the reflected wave at the point of transmission.

reflector, *n.* **1.** *Electronics.* A surface or object that reflects radio-frequency energy or a flow of electrons: **a.** A metallic device in a directional antenna system that reflects radio-frequency energy from a feed or radiator and directs it in a desired direction or directions. **b.** A metallic object placed near a radiator in an antenna assembly, used to block radiation in an undesired direction and reinforce it in a desired direction. **c.** A repeller (which see). **2.** *Gunnery* and *bombing.* Short for 'reflector plate.'

In sense 1, see **corner reflector, parabolic reflector, paraboloid reflector.**

reflector plate. *Gunnery* and *bombing.* A transparent mirror in a computing gunsight or in some types of optical gunsights and bombsights, that reflects the reticle image or images to the eye. See **combining glass.**

reflex klystron. A kind of klystron (which see) that employs a repeller electrode to produce oscillations.

reflex sight. An optical or computing sight that reflects a reticle image or images onto a reflector plate for superimposition on the target by the eye.

re-form, *v. intr.* Of aircraft: To come together again in a formation, esp. after making an attack.

refraction, *n.* **1.** In air navigation, the bending of light waves from a celestial body, caused by the atmosphere or by an astrodome. Hence, *atmospheric refraction, dome refraction.* **2.** *Radio.* The bending of a radio or radar wave, caused esp. by striking the ionosphere.

In sense 1, refraction is compensated for by applying corrections to the sextant altitude. Atmospheric refraction varies with altitude.

ReFrAD (*auth abbr*). 'Release from active duty.'

refresher course. A course which provides refresher training.

refresher training. Training, such as military training, given a person after he has been inactive for a considerable period of time, to refreshen his skills and knowledge and bring him up to date in any given field.

refrg (*auth abbr*). 'Refrigerate.'

refrig (*abbr*). 'Refrigeration.'

refuel, *v.* (rfl) **1.** *tr.* To put fuel into the tanks of an *aircraft* again, either during the course of a flight or air operation, or between hops or flights. **2.** *intr.* To take on fuel again.

refueling, *n.* The action of the verb 'refuel.'

Attrib., as in *refueling base, refueling flight, refueling point, refueling stop,* etc. See **air refueling.**

refueling boom. A hollow boom for refueling purposes; a flying boom.

refueling mission. Short for 'air-refueling mission.'

refueling unit. 1. A tank truck, together with pumping apparatus and associated equipment, used in refueling. **2.** A unit organized and equipped to carry out air refueling.

refugee, *n. Specif.* A person who has fled from the country of his origin or habitual residence for reasons of politics, religion, race, or the like.

reg (*auth abbr*). 'Regulate,' 'regulation,' or 'regular.' Often pronounced as a word, in the meaning of 'regulation.'

RegAF (*auth abbr*). 'Regular Air Force.'

regenerative engine. 1. A jet or rocket engine that utilizes the heat of combustion to preheat air or fuel entering the combustion chamber. **2.** Specifically applied to a type of rocket engine.

Reggiane, *n.* [An Italian aircraft-manufacturing concern, now defunct.] Used in the names of aircraft, as in *Reggiane 2001* and *Reggiane 2005*, single-seat, low-wing fighters of WW II.

Regia Aeronautica. ['Royal Aeronautics.'] The name of the Italian air force from 1923 through WW II.

regime, *n. Hydraulics* and *aeronautics*. The prevailing condition of a fluid flow, as of water or air, with respect to the rate of its flow.

regiment, *n.* (regt) **1.** In the Army and Marine Corps, an administrative and tactical unit larger than a battalion and smaller than a brigade. **2.** *Capitalized.* An integral part of the RAF, comprising rifle, armored, and light antiaircraft squadrons.

region, *n.* (rgn) **1.** A large part of a country or territory, defined for administrative reasons; a district. **2.** A part of the world (land, sea, or air), defined by reference to geographic features, climate, or the like, as in 'the arctic region,' 'the middle region of the air,' 'a region of lakes,' etc.

regional, *a.* Of or pertaining to a given region for which an office, activity, installation, or the like has been set up or for which the office, activity, etc. is responsible, as in *regional base, regional command, regional office, regional officer.*

regis (*auth abbr*). 'Register.'

registered document. Any document that has an assigned number by which accounting of it is made to the office of record.

registration number. A distinguishing number assigned to any of certain pieces of AF property, esp. to a vehicle, signifying its registration.

regt (*auth abbr*). 'Regiment.'

Regular Air Force. (RegAF) A component of the United States Air Force, 'which consists of persons whose continuous service on active duty in both peace and war is contemplated by law, and of persons who are retired members of the Regular Air Force' (*Air Force Organization Act of 1951*).

regular officer. *Specif.* An officer in the Regular Air Force.

regulated item. An item requiring special control in handling, distribution, and use because of its highly technical, costly, or hazardous nature, or because of some other specified concern.

regulating station. An Army station that regulates or controls certain specified Army and AF troop and supply movements within the US, as outlined in pertinent Army and AF regulations.

regulation, *n.* (reg) **1.** The act of governing, controlling, or directing, or the state of being governed, controlled, or directed. **2.** An official order issued by a military service or command setting forth or prescribing rules, procedures, policies, or the like considered general in application and permanent in nature; a publication promulgating such an order. **3.** *Specif.* and usually *capitalized.* An Air Force Regulation (which see).

regulator, *n. Specif.* A device that regulates the flow or pressure of a liquid or gas. See **demand regulator.**

regulatory matter. Any or all publications that promulgate regulations or directives.

regulatory media. The regulations, letters, and other publications by which the regulation of a military service or command is accomplished.

rehab (*auth abbr*). 'Rehabilitate.'

rehabilitate, *v.* (rehab) *tr.* **1. a.** To restore a *person* or the members of a *unit*, by rest, special treatment, and training, to a previous condition of morale and efficiency for future operations; to restore the strength of a *unit.* **b.** To discipline or reindoctrinate an *individual*, as a military *prisoner*, with the object of making him accept normal responsibilities and duties. **2.** To restore a *piece of equipment* or *real property* to a condition or state for use.

rehabilitation, *n.* (rehab) The process of rehabilitating a person, unit, piece of equipment, or real property. See prec.

Attrib., as in *rehabilitation center, leave, program,* etc.

reheating, *n.* The heating of gases between stages in certain types of turbines in a turbojet engine to increase the efficiency of the engine.

In reheating, the gases leave the combustion chamber and expand through a number of stages of the turbine then enter another combustion chamber, where fuel is again burned, raising the temperature of the gases, which expand through more turbine stages and then escape through the open exhaust nozzle.

Reheating is different from afterburning (which see) in that in the latter the gases do not pass through any additional turbine stages after the second combustion.

reimb (*auth abbr*). 'Reimburse.'

ReInCo (*auth abbr*). 'Report(ing) in compliance.'

reinf (*auth abbr*). 'Reinforce.'

reinforce, *v.* (reinf) *tr.* To strengthen a military *force, installation,* or the like by the addition of personnel or equipment.

rejn (*auth abbr*). 'Rejoin.'

rel (*auth abbr*). 'Relief,' 'relieve,' or 'relation.'

related personal property. In supply usage, public personal property related to the use of real property, i.e., any public personal property located on, and integrally necessary to the operations of, real property.

This category of property would include, for example, mobile machinery used in operating an installation. See **personal property.**

relative azimuth angle. *Specif.* An azimuth angle measured from the heading of a ship or aircraft.

relative bearing. 1. Bearing, esp. bearing measured from some reference point or line other than true or magnetic north. **2.** *Specif.* The bearing of an object or point measured from the heading of a ship or aircraft.

Cf. **bearing,** *n.*

relative humidity. The ratio of the amount of humidity present in any given volume of air to the greatest amount of humidity possible in that volume of air at the prevailing temperature and pressure.

relative motion. The motion that exists when one object or particle changes its position in respect to the position of another object or particle, even though one or the other may remain stationary with respect to a third object or particle.

An airplane in a wind tunnel, for example, is in relative motion with respect to the airstream, although the airplane may be held stationary with respect to the earth. A person sitting in a flying airplane is not in relative motion with respect to the airplane, but he is in relative motion with respect to the earth's surface and to the surrounding air particles.

relative target bearing. *Radar.* The bearing of a radar target expressed in terms of its relative azimuth angle, esp. its azimuth angle relative to the heading of a ship or aircraft.

relative velocity. 1. The velocity of relative motion, esp. in respect to an aircraft and the airstream. **2.** The velocity of one moving object as compared with that of another moving object, as in 'the relative velocity of the electron is several times that of sound.'

relative wind. Air that strikes an object by virtue of relative velocity between the two; *specif.,* the flow of the airstream into which an aircraft flies.

If a body travels in the same direction and at the same speed as that of a flow of air (the speed being measured by reference to the earth's surface), there is no relative wind between the air and body. For an aircraft in flight the relative wind is normally from a direction opposite to the direction of flight.

relaxation oscillator. *Electricity.* A type of oscillator that has its operating frequency controlled by the charge and discharge of an inductor or capacitor through a resistor, generally producing nonsinusoidal waves.

The blocking oscillator (which see) is a form of relaxation oscillator.

relay, *n.* **1.** An electrical device ordinarily incorporating an electromagnet and an armature to open or close electrical contacts. **2.** The process by which a signal, esp. an electronic signal, is passed on. Cf. **radar relay, radio relay.**

relay station. An intermediate station used in the relaying of electromagnetic signals from one station to another; *specif.,* a radio station that receives radio signals or messages from one station and passes them on to another. See **radio relay.**

RelBy (*auth abbr*). 'When relieved by.'

REle (*auth abbr*). 'Radio electrician.'

release, *n.* **1.** A device or mechanism for releasing something; *specif.,* a bomb release (which see, sense 1). **2.** The action of releasing; bomb release (which see, sense 2).

release, *v. To release fire,* to fire at a target; *release fire,* the command given.

release altitude. The altitude of an aircraft at the time of releasing something, as a bomb or a glider.

release line. A bomb-release line. See separate entry.

release point. A point at which an aircraft releases something; a bomb-release point. See **bomb-release point.**

releasing officer. An officer designated to authorize the sending of messages in the name of an originator.

reliability, *n.* The quality of being dependable, as in 'this aircraft, or this weapon, has reliability.'

relief, *n.* (rel) **1.** The act of relieving, or the condition of being relieved, as from a job, duty, or office. **2.** *Geography.* The differences in elevation on a land surface; the configurations made by these differences. **3.** *Cartography* and *photogrammetry.* A projection of the configuration of the earth's surface, or the projection of surface features or objects above other features or above a level; the features or objects making up such a configuration; the representation of such configuration or projection upon a map, chart, or aerial photograph.

Attrib., in sense 1, as in *relief crew, relief pilot;* in phrases, as in *relief from active duty.*

relief displacement. On a vertical or composite aerial photograph, the relief of the earth's surface shown upon the outer edges.

Relief increases radially from the center point.

relief map. A map that indicates relief on the earth's surface.

relief tube. On an aircraft, a tube having a funnel head and venting to the open, used for urinating.

relief valve. A safety valve in a pressure system, which opens to relieve pressure when the pressure reaches a certain amount.

relocate, *v. tr.* To move a *person* or *thing* to another location.

rels (*abbr*). 'Release.'

reluctance, *n. Electricity.* The opposition in a magnetic circuit to the passage of magnetic lines of force.

rem (*auth abbr*). 'Remit' or 'remission.'

remaining velocity. The velocity of a bullet or shell measured with respect to the origin at any given point along the trajectory.

For example, a bullet shot backward from a flying aircraft at a velocity of 2,000 feet per second relative to the gun will at the instant of fire have a remaining velocity, relative to the origin in a fixed coordinate system, of only 1,500 feet per second if the aircraft is flying at 500 feet per second. Its remaining velocity with respect to the gun is, for an instant, 2,000 feet per second.

REMCO (*abbr*). 'Rear echelon maintenance combined operation.' Pronounced as a word.

REMCO was a type of maintenance support operation developed in the Korean conflict.

remote control. A system or method of control in which control is directly exercised from a distance over an aircraft, gun, or other piece of equipment, esp. by means of electrical or electronic apparatus.

Attrib., as in *remote-control aircraft, remote-control cable, remote-control turret,* etc.

remote-controlled, *a.* Also **remotely-controlled.** Controlled from a distance, esp. by electrical or electronic means. Said of an aircraft, a gun, etc. See prec., note, for use of a noun attributive in same meaning.

remote-indicating, *a.* Designating an instrument, system, or the like in which the sensing element for gathering data is considerably removed from the indicator, the data for display upon the indicator being transmitted electrically or mechanically from the sensing element. See **distant-reading compass.**

remote mach number. The mach number of a moving object taken as a whole. Cf. **local mach number** and see next.

remote velocity. The velocity of an object taken as a whole, as distinguished from the local velocity of any of its parts.

In transonic flow, the remote velocity of an airplane may be less than mach 1, whereas the velocity of a local point on the airplane may be mach 1 or greater.

remous, *n.* [French.] As used in the early flying schools of England: **a.** Propeller wash. **b.** Any eddy, updraft, or downdraft of air.

ren (*abbr*). 'Rent' or 'rental.'

rendezvous, *n.* (rdvu) **1.** A prearranged meeting at a given time and place, from which to begin an action or phase of operation, or to which to return after an operation. Cf. **rally point.** Often used without an article, as in 'rendezvous with the bombers was at Midway Island.' **2.** A place, point, or spot in the air, on the sea, or on the ground, where such a meeting occurs, or is planned to occur; a rendezvous point.

rendezvous, *v. intr.* To assemble, meet, or arrive at a rendezvous; to meet *with* another or others in rendezvous.

rendezvous point. A point in the air, on the sea, or on the ground designated for rendezvous; a point on the ground over which aircraft rendezvous, or are to rendezvous, normally at a prearranged altitude.

rental allowance. A basic allowance for quarters. See separate entry.

renv (*auth abbr*). 'Renovate.'

renversement, *n.* [French.] Any airplane maneuver or performance in which the airplane is made to reverse direction, as in a chandelle, Immelmann turn, or wingover. Also called a 'reversement.' See **vertical reversement.**

reorder point. In supply usage, the point in a level of supply at which a replenishment requisition should be submitted in order to maintain the stock above an approved level.

reorg (*auth abbr*). 'Reorganize.'

reorganize, *v.* (reorg) In specific senses. *tr.* **1.** To change the authorized personnel, or personnel and equipment, of a standard or specialized *unit* in accordance with a published table. **2.** To rearrange the structure of an activated *standard unit, specialized unit, detachment,* or the like.

Hence, **reorganization,** *n.*, in both senses.

In sense 1, the reorganization of a standard unit requires the authority of the Secretary of the AF.

reorgn (*abbr*). 'Reorganization.'

ReOuRad (*abbr*). 'Reference our radio.'

ReOurLtr (*abbr*). 'Reference our letter.'

ReOurTel (*abbr*). 'Reference our telegram.'

ReOurTT (*abbr*). 'Reference our teletype.'

REP (*abbr*). 'Range probable error.'

rep (*auth abbr*). 'Repair' or 'represent.'

repair, *n.* (rep) **1.** The restoring of damaged, worn-out, or malfunctioning materiel to a serviceable, usable, or previous condition. **2.** The restoring of a plant, building, structure, ground facility, utility system, or the like to a condition substantially equivalent to its original or to its designed condition.

Repair includes replacement, overhaul, and reworking of constituent parts or materials.

Attrib. (in sense 1), as in *repair depot, repair shop,* etc.

repairable, *a.* [Accented on the second syllable.] Of something damaged or worn: Subject to being mended or repaired. Cf. **reparable,** *a.*, note.

repair requirement. A reparable item requiring repair to fill or help fill a stockage objective.

repairs and utilities. Those activities taken with respect to the repair, rehabilitation, and maintenance of buildings, structures, grounds, utility systems, and other real property.

Repairs and utilities include activities such as fire protection, the construction of alterations and additions to existing facilities, the operation of utility services and custodial services, and other associated activities.

reparable, *a.* [Accented on first syllable.] **1.** Of an item of equipment: Considered to be worth repairing if not damaged beyond a certain degree, rather than be treated as waste or for salvage. **2.** Of something damaged: Repairable, i.e., subject to being mended. **3.** Of a loss or injury: Subject to being remedied or made good.

'Reparable' in sense 2 has the same meaning as 'repairable,' but in sense 1 the word suggests a status in a logistic scheme, a reparable item being distinguished from an expendable item, or a salvageable item, or a serviceable item. In sense 3, 'reparable' is used where 'repairable' would not be used, as in 'the mischief done was transitory and reparable.'

reparable item. An item not so worn or damaged as to be beyond economical repair; an item marked for repair.

repat (*auth abbr*). 'Repatriate.'

repatriate, *v. tr.* **1.** To restore or return a *prisoner of war* to the jurisdiction of his native country, or to the jurisdiction of the country to which he owes allegiance. **2.** To return a *refugee* to his native locality. **3.** To return the *body* of a deceased person to his native country.

RepCAT (*auth abbr*). 'Report corrective action taken.'

RepDu (*auth abbr*). 'Reporting for duty.'

repeated travel order. Sometimes *pl.* A species of travel order allowing any number of separate round-trip journeys between designated points.

repeater, *n.* An indicator that shows whatever is shown on a master indicator. Also called 'repeater indicator.'

repeller, *n. Electronics.* An electrode in certain oscillators that reverses the flow of electrons in the oscillator tube.

repetition rate. *Communications* and *electronics.* The rate at which recurrent signals are transmitted; a pulse rate.

RepIN (*auth abbr*). 'Reply if negative.'

repl (*auth abbr*). 'Replace' or 'replacement.'

replace, *v.* (repl) *tr.* **1.** To supplant a *unit, person,* or *thing,* as in 'the 3rd Group replaced the 10th Group,' or 'we replaced Maj Doe with Maj Roe.' **2.** To make up for a *loss* by substitution.

replacement, *n.* (repl) **1.** The act of replacing, or the condition of being replaced. **2.** A person, unit, or thing that replaces. **3.** *Specif.* A person who fills a vacancy created by a loss, in order to bring, or help bring, an organization back to authorized strength. Cf. **filler,** *n.,* sense 1.

replacement aircraft. An aircraft that takes the place of another, esp. an aircraft that replaces an aircraft lost.

replacement center. Short for 'replacement training center.'

replacement depot. 1. In WW II and after, a depot located overseas for the assembling and processing of personnel before being assigned to units or before being returned to the zone of interior. Now *hist* in the AF. **2.** Short for 'overseas replacement depot.' *Hist.*

See **personnel processing center.**

replacement training center. A center for the training of replacements prior to being permanently assigned. Now *hist.* in the AF.

replenishment requisition. A requisition to maintain stores or stocks of supplies at an approved level.

Replenishment requisitions are to replace supplies lost or used up through specified causes.

repln (*auth abbr*). 'Replenish.'

reply, *n. Radar.* A radar pulse or combination of pulses sent out by a radar beacon in answer to an interrogation (which see, sense 3). Also called a 'response.'

repmn (*abbr*). 'Repairman.'

repmt (*auth abbr*). 'Repayment.'

report, *n.* (rept) An official account or statement of facts, esp. about some particular subject of inquiry.

A report is usually oral or written, but it may be tabular, graphic, in the form of a punch card, or in some other form. See **periodic report, recurring report.**

'Report' is often an element in descriptive titles, as in *Report of Audit, Report of Malfunctions and Accidents, Report of Officer Effectiveness* (see **effectiveness report**), *Report of Separation,* etc.

report, *v.* (rept) **1.** *intr.* To make a report. **2.** To present oneself or appear, as in 'to report for duty.' **3.** *tr.* To make a formal or official statement of *fact.*

reporting point. A geographic point or location in relation to which an aircraft reports, or is instructed to report, its position.

report of survey. An official report prepared on a standardized form, which records the circumstances concerning the loss, damage, or destruction of property, and which serves as, or supports, a voucher for dropping the property from property records.

The report of survey also serves in the determination of responsibility for the property concerned.

reports control symbol. A symbol that identifies a report as being authorized and approved in accordance with the reports control system.

reports control system. A system set up to police and supervise the operation of AF reporting,

assuring the conformance of reports with AF policy and procedures, and integrating new reports into the reporting system.

repple depple. A representing depot. *Slang.*

repr (*abbr*). 'Represent' or 'representation.' See **rep** (*auth abbr*).

representative, *n.* A person who represents the views of, or acts for, an organization or other person. See **Air Force representative.**

representative fraction. *Cartography* and *aerial photog.* A fraction representing the relation of distance on a map, chart, or aerial photograph to actual distance on the surface, e.g., $\frac{1}{40,000}$ (one inch equaling 40,000 inches on the surface).

reprimand, *n.* A reproof, either oral or written, more severe than an admonition, given to an officer or airman, and carrying a strong implication of official censure.

A reprimand is either administrative or punitive. See separate entries.

reprisal, *n.* **1.** In international law, a practice of resorting to force, short of war, to redress a grievance; an act or instance of such practice. **2.** In war, a retaliatory act, usually of a kind with that committed by the enemy, used to compel conformance with the customs or rules of war, or used simply to even a score.

repro (*auth abbr*). 'Reproduce.'

rept (*auth abbr*). 'Report.'

Republic, *n.* [The *Republic* Aviation Corp.] Used in the names of aircraft, as in *Republic P-47, Republic F-84, Republic Lancer,* etc.

req (*auth abbr*). 'Request.'

This abbreviation is combined with others, as in *reqad,* request advice to; *reqauron,* request authority to requisition; *reqcan,* request cancellation; *reqfolinfo,* request following information be forwarded this office; *reqnom,* request nomination; *reqrec,* request recommendation; *reqsi,* request shipping instructions; *reqtat,* request that; *reqtrac,* request tracer be initiated. All of these are authorized. They are often written in caps.

requirement, *n.* (rqr) **1.** A need or demand for personnel, equipment, supplies, facilities or services, expressed in specific quantities, for specific periods of time, or for specified times. **2.** *transf.* That which is required, as persons or equipment.

In AF usage, 'requirement' often has had the connotation of an established, authorized, funded, or approved requirement. This has led to misunderstanding. Clarity may be served by the use of limiting adjectives. See **established requirement.**

requirements contract. A contract obligating the government to order from the contractor a particular type or kind of supplies or articles that it may require, and fixing the price of such supplies or articles in case they are required and called for.

requisition, *n.* (rqn) **1.** An authorized request within the military establishment or within a single service, esp. for personnel, supplies, or services, authorized but not made available without specific request. Cf. **procurement,** *n.* **2.** A form upon which such a request is set forth. **3.** The act of requisitioning. **4.** *transf.* That which is requisitioned, or that for which a requisition is made.

In sense 1 or sense 2, 'requisition' is sometimes modified by a descriptive phrase, as in *Aircraft Out of Commission for Parts, Requisition* (AOCP Requisition), or *Navigational Aid Inoperative for Parts, Requisition* (NAIOP Requisition).

attrib. In sense 1, as in *requisition channel, requisition control section;* in sense 2, as in *requisition number.*

requisition, *v. tr.* **1.** To make a requisition for *personnel, supplies,* etc. **2.** To demand *services* or *supplies* from people in an invaded or conquered territory.

requisitioning cycle. The cycle, expressed in number of days, between consecutive routine stock replenishment requisitions for a particular property class.

requisitioning objective. A level of supply, expressed as an objective, consisting of the maximum quantities of supplies to be maintained on hand and on order to sustain current operations.

The requisitioning objective consists of the sum of those stocks in the operating level of supply and in the safety level of supply, and those stocks on requisition or being procured.

res (*auth abbr*). 'Reserve.'

resc (*auth abbr*). 'Rescind.'

rescind, *v.* (resc) *tr.* To vacate or terminate an *order, regulation,* or the like.

rescue control center. An alert and communication center maintained and operated by an air rescue squadron, which controls air rescue operations within a designated area.

rescue coordination center. A center established within an air defense control center to coordinate and control AF air rescue operations within an air defense area.

A rescue coordination center also works with Navy and Coast Guard rescue units upon occasion, according to working agreements between commanders.

rescue mission. An air mission for the purpose of carrying out air rescue, or for providing standby service, such as escorting aircraft in distress.

research, *n.* (rsch) **1.** A process by which something is sought out, esp. by systematic effort; a gathering and a close examination of data with a particular object of discovering something or of making something; a studious inquiry given direction by a purpose. **2.** The product of such a process or effort.

The term 'research' (sense 1) is a broad term. It embraces, in one instance, the activity involved in collecting hitherto unknown or undetected data by any method of investigation, as by running a series of experiments, by uncovering relics or records, or by making observations through reading written records; or it may embrace a second step in this activity, that of classifying collected data, analysing and evaluating it, or developing principles or hypotheses out of it. This activity is called 'basic re-

search,' because it deals with primary evidence and provides new knowledge and new understandings. See **basic research.**

In another instance, research may apply to the mental and physical activity involved in making something concrete to exemplify some principle or to put knowledge gained in basic research to some useful purpose, as in the research done to build an airplane. This research is called 'applied research.' Often basic research and applied research go hand in hand, applied research being used to test the validity of the basic research and in doing so becoming a part of the basic research process. See **applied research.**

In another instance, research may apply to the activity of a student who searches out from secondary sources those materials that he wishes to use for his own understanding or for a written paper. This research opens up no new facts or principles, but for the student it instructs in methodology and provides for systematic learning. It may be called 'inquisitive research.'

Thus, depending upon the purpose, research may be basic, applied, or inquisitive or self-educative. But this same research, whatever its purpose, may also be characterized by the places where it is performed, as in 'laboratory research,' 'library research,' or 'field research.' Or it may be characterized by reference to the people who do the research, as in 'student research' or 'professional research'; or characterized by the nature of the subject matter in which the research is done, as in 'electronic research,' 'technical research,' 'historical research,' 'literary research,' or 'atomic research.' See **scientific research.**

research aircraft. 1. An aircraft used to discover new data or to test new equipment or devices. **2.** An aircraft which in itself is a product of applied research.

Research and Development Board. A board established by the National Security Act of 1947 'to advise the Secretary of Defense as to the status of scientific research relative to the national security, and to assist him in assuring adequate provision for research and development on scientific problems relating to the national security' (*National Security Act of 1947*). Now *hist.*

The Research and Development Board was composed of a civilian chairman appointed by the President, and two representatives each from the Departments of the Army, Navy, and AF. This board was abolished in 1953 by the Reorganization Plan No. 6; its functions were taken over by an Assistant Secretary of Defense.

Research and Development Command. Short for 'Air Research and Development Command.'

research and development project. A project that involves basic research in some form or other, esp. directed at discovering new principles, methods, or facts, but one that is also directed at applying newly discovered or already known principles, facts, or methods to the production of some object, plan, or situation that will serve a practical purpose.

research project. A project that requires research of some kind, esp. research that is basic or applied. See **project,** *n.*

Research Studies Institute. A research organization at the Air University responsible through its separate divisions for the historical program of the USAF, for technical research in fields concerned with arctic, desert, and tropical problems, and for certain documentary research in support of the Air Force educational, training, and doctrinal programs. Abbreviated 'RSI.'

resection, *n.* A method of locating a point or position on a map, aerial photograph, or the like by sighting two or more known points.

reservation, *n.* **1.** An amount set aside from a fund or from an authorization by Congress for incurring obligations, for savings, or for other contingencies or purposes, and for which no legal liability exists. **2.** A military reservation.

reserve, *n.* (res) **1.** Often *pl.* A force or forces kept out of action until needed for some contingency. **2.** Often *pl.* Any accumulation of supplies or equipment in excess of immediate needs, kept on hand to meet demands that may arise. **3. a.** Sometimes *pl.* Any or all of those military or naval forces of a nation, in addition to the regular forces or other forces on active duty, maintained to provide units and individuals for active duty when needed and to meet other designated requirements. See **air reserve, reserve component, reserve force,** sense 2 and note. **b.** A member of such a force. **c.** *Specif.* and *capitalized.* Short for 'Air Force Reserve' (which see). **4.** In air operations, the fuel remaining, or specified to remain, in an aircraft's tank or tanks at the end of a flight or operation, kept to provide a margin of safety or to be used in the event of an emergency. **5.** *In reserve,* in abeyance for future employment, or possible future employment.

reserve component. 1. A component of a military or naval service or force held in reserve. See note. **2.** In the AF, the Air Force Reserve or the Air National Guard of the United States.

In sense 1, the reserve components of the United States Armed Forces include the National Guard of the United States, the Army Reserve, the Naval Reserve, the Marine Corps Reserve, the Air National Guard of the United States, the Air Force Reserve, and the Coast Guard Reserve.

In sense 2, the reserve components of the AF are differentiated chiefly by the way in which they are controlled. The AFRes is directly under the control of the USAF; the Air National Guard of the United States consists of Air National Guard units and personnel, for which the AF has certain responsibilities, but which, until actually in the service of the US, are controlled by the states, territories, or the District of Columbia.

reserved material. *Specif.* Nuclear-fissionable material, or material essential to the production of nuclear-fissionable material, such as uranium or thorium, reserved for certain specific purposes.

reserve enlisted member. 1. In the AF, an enlisted member of the AF Reserve or of the Air National Guard of the United States. **2.** An enlisted member on extended active duty, called from one of the reserve components.

reserve force. **1.** A force held in reserve. See **reserve,** *n.*, senses 1 and 3a. **2.** A force considered available for service in the USAF or in an auxiliary service. See note.

In sense 2, this term has been variously defined in different contexts. AFR 36–35 (1950) defines the term to mean any one of several organized entities, the Air Force Reserve, the Air National Guard of the United States, the AFROTC, the Civil Air Patrol, or the Air Explorers, B.S.A. AFR 36–51 (1952) uses it to mean any component of the AF other than the Regular AF. AFR 36–22 (1953) uses it to mean either a reserve component of the AF or any force made up of officers appointed to the AF without component.

reserve level. The level of supplies available for emergency or future use. See **minimum reserve level.**

reserve location. In supply usage, a location where supply reserves are stored or held.

reserve officer. **1.** In the AF, an officer in the Air Force Reserve or in the Air National Guard of the United States. **2.** An officer on extended active duty, called from one of the reserve components.

Reserve Officers Association. A voluntary association, members of which are reserve officers in the reserve forces of the United States.

The ROA was founded in 1922. Its full name is 'Reserve Officers Association of the United States.'

Reserve Officers Training Corps. (ROTC) A training corps with units established at civilian educational institutions to qualify students for appointment as reserve officers; *specif.*, short for 'Air Force Reserve Officers Training Corps.' See **Air Force ROTC.**

Former practice (prior to 1956) was to write the word "officers'" as a possessive with the apostrophe; current practice is to consider it a plural attributive.

Reserve Order. Short for 'Air Force Reserve Order' (which see).

reserve parachute. An extra or auxiliary parachute, normally a chest-pack parachute of slightly smaller diameter than an ordinary parachute, sometimes worn for use in the event of failure of the main parachute.

reserve pool. A pool of materiel or personnel held or maintained in reserve. See **pool,** *n.*, sense 1.

reservist, *n.* A person in a reserve component; *specif.*, a person in the AF Reserve or in the Air National Guard of the United States, whether or not on extended active duty. See **air reservist.**

reservoir, *n. Specif.* A name sometimes applied to an aircraft's fuel tank or the like.

resident unit. Any unit that occupies real property at a given base.

This term applies to assigned units at the base, units attached to the base for operational control, and tenant units.

residual deviation. That deviation remaining in a compass after compass compensation.

residual magnetism. The magnetism remaining in a substance after the magnetizing force to which it has been subjected has been withdrawn.

residual radiation. With an atomic explosion, the radiation that continues within an area or from a substance for a period of time after the explosion.

residue, *n.* In supply usage, the miscellaneous components and material left over after the reclamation or mutilation of something.

resig (*auth abbr*). 'Resignation.'

resistance, *n.* **1.** The act of resisting an attacking force; opposition. **2.** *Specif.* Air resistance. **3.** *Electricity.* The opposition to the flow of current in a conductor caused by the physical nature and condition of the conductor.

resistance derivative. *Aerodynamics.* One of various quantities that form the experimental basis of the theory of stability and express the variation of moments and forces due to the disturbance of steady motion of an aircraft.

Resistance derivatives are classified as *lateral, longitudinal, rotary,* and *translational,* treating of lateral, longitudinal, rotational, and translational motions, respectively.

resistor, *n. Electricity.* A circuit element having the characteristic of resistance. Used to oppose the flow of current.

resojet, *n.* [*Reso*nant *jet.*] A pulsejet engine. *Rare.*

resolution, *n.* **1.** The capability or property of a radar or optical system to distinguish between objects closely adjacent in either azimuth or range, and to display or present them as separate images; the capability of such a system to present well-defined objects. **2.** An act or instance that demonstrates any such capability.

In sense 1, the measuring unit of resolution is 'lines per millimeter.'

resolving power. The property or capability of a radar set or of photographic equipment to form distinguishable images.

resonance, *n.* **1.** *Electricity.* The condition existing in a circuit when inductive and capacitive reactance balance each other, leaving only circuit resistance to oppose current flow; the intensification of waves that results. **2.** *Physics.* The condition existing in a body when the period or frequency of an applied vibration equals the natural frequency of the body.

resonance curve. *Electricity.* A graphic representation showing the relation between frequency and current or voltage in a circuit, covering frequencies on both sides of resonance; a graphic representation showing the response of a tuned circuit to various frequencies in and near the resonant frequency. Also called a 'resonant curve' or 'resonance characteristic.'

resonant jet. A pulsejet engine, so-called because of the intensification of power under the rhythm

of explosions and compression waves within the engine. See **pulsejet engine.**

resource, *n. pl.* The means available to a person, an organization, a nation, etc., for the achievement of an end or for carrying out of a mission.

Resources may be tangible things, such as raw material, persons, property, materiel, or money; or they may be, or consist of, intangibles, such as industrial or economic capabilities, psychological qualities, educational potential, and the like.

resp (*auth abbr*). 'Responsible' or 'responsibility.'

responder, *n.* That part of a transponder that automatically transmits a reply to the interrogator-responser. Also called 'responder beacon' when its function as a beacon is emphasized.

responder beacon. The radar beacon that serves to emit the signals of the responder in a transponder.

respondor, *n.* Variant of 'responder.'

response, *n. Radar.* A reply (which see).

responser, *n.* That component of an interrogator-responser that receives and displays the reply from the responder beacon.

responsibility, *n.* (resp) **1.** The obligation placed upon, and assumed by, a person for the performance of a task or mission as in 'he accepted the responsibility to organize the group.' **2.** The status of a person, esp. a commander, for receiving either blame or credit for the way an operation is carried out. **3.** 'The obligation of an individual for the proper custody, care and safekeeping of property or funds entrusted to his possession or under his supervision' (JCS).

In sense 3, responsibility includes pecuniary liability for loss. It belongs to any person who has custody of property or funds even though he has not signed a custody receipt for such property or funds.

responsor, *n.* Variant of 'responser.'

rest (*auth abbr*). 'Restrict.'

rest camp. A camp for the rest and recuperation of persons suffering esp. from combat fatigue.

resting frequency. The initial frequency of a frequency-modulated carrier wave before modulation. Also called a 'center frequency.'

restitution, *n. Aerial photog.* **1.** The act or process of correcting a distorted aerial photograph to scale. **2.** The act or process of rectifying a photograph. See **rectify,** *v.*

restoring moment. A righting moment. See separate entry.

restrained, *a.* Of a person: Limited or restricted in movement or action pending disciplinary action, but not necessarily confined.

restrict, *v.* (rest) *tr.* To limit a *person* to a particular area, as in 'to be restricted to quarters' or 'everyone was restricted to the base until the epidemic had passed.' Hence, **restriction,** *n.*

Restriction in this sense is effected by the individual's respect for duty, not by enforced restraint.

restricted, *a.* (rest) Formerly used to designate classified information, material, or matter other than that classified top secret, secret, or confidential, which required some degree of security protection.

'Restricted' designated the least sensitive type of security material. Cf. **restricted data.**

restricted airspace. The airspace over a restricted area (sense 2).

restricted area. 1. Any area, or any building or installation, regarded as an area to which access is controlled for reasons of security, efficiency, or safety. **2.** In air defense parlance, a geographical area over which special rules apply for the routing of friendly aircraft and for the engagement of unidentified or hostile aircraft.

restricted cargo. In the Military Air Transport Service, cargo requiring precaution in packing and handling, but not highly dangerous under normal conditions. Cf. **prohibited material.**

restricted data. As defined in the Atomic Energy Act of 1946, 'all data concerning the manufacture or utilization of atomic weapons, the production of fissionable material, or the use of fissionable material in the production of power,' but not including 'any data which the [Atomic Energy] Commission from time to time determines may be published without adversely affecting the common defense and security.'

restricted war. A war in which the contestants impose upon themselves certain restraints in the choice and use of weapons. See **war,** *n.*

resultant, *n. Physics.* A force or vector that combines two or more forces acting on an object.

resup (*auth abbr*). 'Resupply.'

resupply, *n.* (resup) An act or instance of resupplying; the supplies so delivered.

resupply, *v. tr.* **1.** To furnish a *force, organization,* or the like with supplies after an initial supply action. **2.** *Specif.* To supply by air a *force, unit,* or the like that is cut off from its normal supply source.

resupply mission. An air mission that carries out resupply.

resuscitation, *n.* In aviation medicine, the restoration of spontaneous breathing to an asphyxiated person.

ret (*auth abbr*). 'Retire.'

retaliation, *n.* The action of returning an attack or injury with an attack or other measure considered necessary to right the injury. See **massive retaliation.**

Attrib., as in *retaliation mission, retaliation raid.*

retardation, *n. Specif.* The slowing down of enemy troop movements or lines of supply by interdiction (which see).

reticle, *n.* **1.** A part or component in an optical or computing sight, made up of, or showing, a system or pattern of lines, dots, cross hairs, or the like for aiming purposes; the system of lines or other marks contained in an optical or computing sight. **2.** A reticle image.

reticle image. A light image of the reticle in a computing gunsight or in certain types of optical gunsights and bombsights, cast on a reflector plate and superimposed on the target.

The reticle image is formed by light passing through a pierced reticle and projected on a reflector plate. It often consists of a ring-shaped light image surrounding the pipper image.

reticule, *n.* Variant of 'reticle.'

retire, *v.* (ret) *intr.* **1.** To withdraw *from* active military service in either a regular or reserve component in accordance with regulations. **2.** To remove oneself *from* flying duty, or *from* combat flying duty. **3.** To withdraw *from* combat for tactical reasons.

Hence, **retirement,** *n.*, in all senses.

retired list. Any one of several lists of persons who are retired from the Regular AF or from one of the reserve components of the USAF.

Included among these lists are the *Regular Air Force Retired List* and the *USAF Retired List.*

Retired Reserve. That part of the reserve forces of the AF consisting of those persons whose names are placed on the retired lists.

retractable, *a.* Of an aircraft component: Capable of being drawn into, or up against, the aircraft.

Said of a landing gear, ramp, skid, turret, etc.

retread, *n.* A person, esp. an officer, with prior military service who serves again after a period of interrupted service. *Slang.*

retreat, *n.* **1.** A withdrawal of forces to the rear under enemy pressure. **2.** A flag-lowering ceremony held at sunset at a military post. **3.** A bugle call or other music played at this ceremony.

retreating blade. A rotor blade as it moves 180 degrees from the upwind to the downwind position. Cf. **advancing blade.**

retro (*auth abbr*). 'Retroactive.'

retroactive agent. A biological agent which, if used against the enemy, might infect or react against the employing force due to inefficient methods of control or other reasons.

retrofit, *n.* [*Retro*active re*fit.*] A modification of an aircraft or other piece of equipment so as to incorporate changes made in later productions of a similar type.

Attrib., as in *retrofit kit, retrofit program.*

retrofit, *v. tr.* To make a retrofit of an *aircraft* or other *piece of equipment.*

return, *n.* (rtn) *Radar.* A radar echo appearing on a radar screen. See **background return.**

returnee, *n.* (rtn) One who returns, esp. one who returns to the US from foreign service. Cf. **escapee,** *n.*, note.

rev, *n. pl.* Short for 'revolutions per minute.'

rev, *v.* Usually *to rev up. tr.* To increase the rpm of the *engine* or *engines* on an *aircraft.* Also *intr.*

rev (*auth abbr*). 'Review' or 'revise.'

reveille, *n.* A signal, usually a bugle call or other music, for rousing persons at a military post at the start of the day; a formation held at this time of the day.

revenue, *n.* In fiscal usage, the gross income of an agency derived or accrued from taxes, customs, or other specified sources.

revenue traffic. Any traffic carried by government-owned aircraft for which reimbursement is received.

reverse-flow region. A place on a rotor disc where the flow through the disc is opposite to the normal direction of flow.

reverse gull wing. An inverted gull wing. See separate entry.

reverse jato. A jato unit or units mounted or turned backward so that their force can be opposed to the forward movement of the airplane, thereby acting as a brake. See **jato,** *n.*

reversement, *n.* A renversement (which see).

reverse pitch. Propeller pitch when the blades are at a negative angle of attack. See **reverse thrust.**

reverse-pitch propeller. A reversible-pitch propeller. See separate entry.

reverse thrust. The thrust of a propeller revolving in reverse pitch, acting in a direction opposite to the normal direction of thrust.

reverse turn. A flight maneuver, such as an Immelmann turn, in which the airplane reverses direction.

reversible-pitch propeller. A propeller that may be turned to reverse pitch so as to give reverse thrust, used to slow an aircraft down in flight or during the roll after landing.

reversible propeller. A reversible-pitch propeller. *Loose* usage.

revet, *v. tr.* To build a revetment around an *aircraft,* an *area,* etc.

Hence, **revetted,** *a.*

These words are pronounced with the accent on the second syllable.

revetment, *n. Specif.* A wall of earth, sandbags, or the like thrown up to protect aircraft, gun emplacements, storage areas, or the like, against bombing, shelling, or strafing attacks.

Attrib., as in *revetment area.*

review, *n.* (rev) **1.** A formal inspection of an organization, during which a formation of the members of the organization is held. **2.** A ceremony to honor a person or persons, or to honor an event.

reviewing authority. A person or group of persons who are required to review the findings made by a person, committee, board, court-martial, or the like, to ascertain the correctness, legality or practicability of the findings, and to affirm, repudiate, or modify the judgment of the originator or originating agency. The reviewing authority, from a practical standpoint, is also usually the approving authority.

revo (*auth abbr*). 'Revoke' or 'revocation.'

revoke, *v.* (revo) *tr.* To repeal or cancel an *order, directive,* or the like, with the intention of making it void and restoring the status that existed prior to its issuance.

revolution, *n.* **1.** In astronomy or navigation, the motion or the apparent motion of a celestial body in an orbit. Cf. **rotation,** *n.*, sense 2. **2.** Rotation (sense 2), as in 'revolutions per minute.'

revolve, *v. intr.* To move in a path about a center, as in 'the planets revolve about the sun'; also, to rotate.

revolver, *n.* A handgun having a rotating cylinder carrying several rounds of ammunition, each round being in a chamber that comes into line with the barrel before the round is fired.

In technical American parlance, a revolver is distinguished from a pistol (which see, sense 2).

revolving fund. A fund that is continuously restored by repayments to it arising from the operations financed by it.

In the AF, revolving funds are established pursuant to authority of specific provisions of law, with receipts and expenditures subject to audit. These funds include the Air Force Stock Fund, which provides accounting for the Aviation Fuel Division, the Medical-Dental Division, the Commissary Division, and the Clothing Division; likewise, the Air Force Industrial Fund, which provides for AF printing services and for laundry and dry cleaning. For example, in the case of the Aviation Fuel Division, whenever an airplane fills up with fuel, a charge is made against the command to which the airplane is assigned, and reimbursement to the amount of the charge is effected through a central office at Middletown Air Materiel Area.

rew (*auth abbr*). 'Reward.'

Reynolds number. [Named after Osborne *Reynolds* (1842–1912), a physicist and engineer of Northern Ireland and Manchester, England.] A correction factor applied to analysis of the fluid flow about scale models in wind-tunnel tests to determine the results to be expected of the flow about full-scale models.

The Reynolds number corrects for the scale effect resulting from the difference in size between the scale model and its full-scale prototype. It is expressed in a fraction, the numerator consisting of the density of the fluid, multiplied by its velocity and by a linear dimension of the body immersed in the fluid, the denominator consisting of the coefficient of viscosity. See **dynamic similarity.**

RF (*abbr*). **1.** 'Reconnaissance-fighter' in aircraft designations. **2.** 'Radio frequency.'

R/F (*abbr*). 'Reserve Forces.'

R.F.C. (*abbr*). 'Royal Flying Corps.' *Hist.*

RF head. A unit consisting of a radar transmitter and part of a radar receiver, the two contained in a package for ready installation and removal.

RFI (*auth abbr*). 'Ready for issue.'

rfl (*auth abbr*). 'Refuel.'

RFM (*abbr*). 'Refueling mission.'

rfty (*auth abbr*). 'Reformatory.'

RG (*auth abbr*). 'Reserve grade.'

rg (*auth abbr*). 'Range.'

rgn (*auth abbr*). 'Region' or 'regional.'

rgr (*auth abbr*). 'Rigger.'

RH (*auth abbr*). 'Relative humidity.'

rhd (*auth abbr*). 'Railhead.'

Rhein-Main Air Base. An air base at Frankfurt, Germany, named for the two rivers between which the base is located.

Rheintochter, *n.* [Ger. 'Daughter of the Rhine.'] A WW II nickname for a particular type of German antiaircraft rocket.

rheostat, *n. Electricity.* A variable resistor used to regulate the current in a circuit.

rhombic antenna. A directional antenna in the shape of a rhombus.

rhubarb, *n.* A small-scale, low-level harassing mission by fighters, fighter-bombers, or the like against targets of opportunity.

This term was used esp. in WW II and was originally an RAF code word or term of convenience.

rhumb line. 1. In air navigation, a line of constant direction that crosses successive meridians at the same oblique angle, appearing as a straight line on a Mercator projection. **2.** In loose usage, any line of constant direction, including meridians, parallels, and the equator.

In sense 1, cf. **great circle course.**

rib, *n.* A chordwise structural member in an airfoil, which gives the airfoil its form and transmits the load from the airfoil covering to the spars; *specif.*, a wing rib.

See **compression rib, false rib.**

ribbon, *n.* A distinctive strip of cloth forming a part of a decoration, medal, or the like, or a strip of cloth or a cloth-covered bar denoting an award. See **service ribbon, suspension ribbon.**

ribbon parachute. A type of parachute consisting of numbers of ribbons held in place by equally-spaced tapes, with spacing between the ribbons to give the required porosity.

The ribbon parachute was developed in Germany and used during WW II.

rich mixture. A fuel-air mixture containing a high percentage of fuel and a low percentage of air, as compared with a normal mixture or lean mixture.

Richthofen, *n.* [See note.] Used attrib. in phrases, as in *Richthofen circus, Richthofen squadron.* See **circus,** *n.*, sense 1, **flying circus,** sense 1.

Baron Manfred von Richthofen (1892–1918) was a

German squadron commander of WW I and an ace with eighty confirmed victories.

ricochet, *n.* An act or instance of ricocheting.

ricochet, *v. intr.* Of a bomb, bullet, or the like: To skip, bounce, or fly off at an angle after striking an object or surface.

ricochet bombing. Skip bombing. See separate entry.

ride, *v.* In special uses. **1.** *To ride piggyback:* See **piggyback,** *adv.* **2.** *To ride the beam,* to fly along a directional radio beam.

ridge, *n. Meteorology.* A raised extension of a high-pressure region.

RIF (*auth abbr*). 'Reduction in force.' See **reduction,** *n.,* sense 2.

rif, *v.* [From prec.] *tr.* To discharge or eliminate a *person* by action of a reduction in force. *Popular.*

riffle cloud. A cloud made up of wavy masses or riffles, occurring near a mountain over a leeward plain or valley, and paralleling a crest cloud.

rifle, *n.* **1.** A shoulder arm, as the Garand M1 or the M1 carbine, having a rifled barrel; *specif.,* a shoulder arm having a relatively long barrel as compared with a carbine. **2.** In a more general sense, any firearm or gun with a rifled barrel, as in 'the battleship had rifles of sixteen-inch caliber.'

rifled barrel. A gun barrel with rifling (which see, sense 2).

rifle grenade. A grenade specially designed or adapted to being fired or launched from the muzzle of a rifle or carbine.

rifle-grenade cartridge. A specially loaded blank cartridge for firing a grenade from a rifle or carbine. See **grenade,** *n.,* sense 1.

rifle-grenade launcher. A special device fitting over the muzzle of a rifle or carbine, holding a grenade in position for launching.

rifle salute. A salute (which see, sense 2) accomplished in a specified manner when carrying or holding a rifle at right shoulder arms or order arms position, by extending the left hand and arm across the body to touch the rifle.

rifling, *n.* **1.** The action of cutting spiral longitudinal grooves in the bore of a gun barrel. **2.** The spiral grooves cut in the bore of the barrels of certain types of firearms and cannon: See note.

The grooves and their corresponding lands in a rifled barrel are given a certain 'twist,' which amounts to a complete turn in a given number of inches or calibers. The lands formed by rifling engage the projectile as it passes through the bore and impart a spin to the projectile which helps its stability and increases velocity and range. In some contexts, both the lands and grooves are considered the 'rifling.' See **bore,** *n.,* **caliber,** *n.*

rig, *v. tr.* **1.** To assemble, adjust, and align the major components of an *aircraft; specif.,* to assemble and align the airfoils or other surfaces of an *aircraft.* **2.** To fit out an *aircraft* with control cables, bracing cables, pulleys, turnbuckles, and the like; to fit out a *balloon* with suspension ropes, restraining ropes, control lines, etc. **3.** To inspect, repair, and pack a *parachute,* or to fit and adjust a parachute *harness.*

rigger, *n.* (rgr) One who rigs an aircraft; a parachute rigger.

rigging, *n.* **1.** The action of the verb 'rig.' **2.** The system of bracing cables, control cables, lines, ropes, etc. with which an airplane, balloon, or other aircraft is rigged. **3.** The shroud lines attached to a parachute.

right, *n.* The right side of an aircraft. Also called 'starboard,' but 'right' appears to be the preferred term. See **left,** *n.*

right, *a.* Of aircraft components or movements: Situated on, or directed toward, the right-hand side of a person at the longitudinal center line of an aircraft, facing forward, as in *right aileron, right bank, right engine,* etc.

right ascension. In air navigation, the arc of the celestial equator, or the angle at the celestial pole, measured eastward from the hour circle of the vernal equinox (sense 1) to the hour circle of a given celestial body, either through 24 hours or 360 degrees.

right-hand engine. An internal-combustion, reciprocating engine in which the crankshaft rotates from left to right (clockwise) for an observer at the rear of the engine.

righting moment. A moment that tends to restore an aircraft to a previous position after an angular displacement about one of the axes. Also called a 'restoring moment.'

right rudder. 1. The cockpit control used to turn an aircraft's rudder to the right. **2.** The action of using this control, resulting in a rightward turning of the aircraft. **3.** The resultant position of the rudder after this action. Cf. **left rudder.**

rightward acceleration. Acceleration of the body toward the right.

rigid, *a.* **1.** Of lighter-than-air aircraft: Having an envelope supported from within by a framework, and not dependent upon internal pressure to maintain shape. **2.** Absol. for 'rigid airship.'

rigid airship. A dirigible having several gas bags or cells inclosed in an envelope supported by an interior framework. Distinguished esp. from nonrigid and semirigid airships.

rigid coupling system. A system used in air refueling in which the coupling between the tanker and the receiving aircraft is rigid.

Cf. **flying boom, probe-drogue system.**

rime, *n.* An opaque, granular, and rough deposit of ice. Cf. **clear ice.**

Rime is sometimes deposited on the surfaces of an aircraft passing through stratiform cloud or a thunder-

storm. It quickly changes airfoil characteristics and is more dangerous than clear ice.

rimfire, *a.* **1.** Of a cartridge: Having the primer in the rim of the head, or base. **2.** Of a firearm: Using rimfire cartridges.

The rimfire ignition system is now in military use only in certain kinds of 0.22 caliber ammunition and firearms. See **center-fire,** *a.*

ring cowl. A cowling that is ring-shaped.

ring cowling. Cowling that is ring-shaped, esp. about a radial engine; a ring cowl. Cf. **cowl ring.**

ring manifold. A manifold in the shape of a ring, as used on a radial engine. See **exhaust-collector ring.**

ring sight. A sight, esp. a gunsight, in the shape of a ring or concentric rings, through which aim is taken and range is estimated.

Ring sights include the iron type (a simple iron ring or set of rings inclosing a cross hair or the like) and the optical type, in which a system of lenses is used to show a series of concentric rings and the bead. Cf. **rad,** *n.,* sense 1.

ringtime, *n. Radar.* The time interval between the beginning of a radar pulse and the instant at which the energy reradiated from an echo box falls below the minimum required to produce an indication in a radar receiver. Cf. **recovery time.**

rip cord. 1. A parachute rip cord. See separate entry. **2.** A cord or rope attached to a rip panel for ripping the panel open. See next.

rip panel. A panel in a free or dirigible balloon, which when torn loose or opened causes immediate deflation.

riser, *n.* A lift web of a parachute. See **lift web.**

RIT (*auth abbr*). 'Radio Information Test.'

RJ (*auth abbr*). 'Road junction.'

rkt (*auth abbr*). 'Rocket.'

rktr (*abbr*). 'Rocketeer.'

RL (*abbr*). **1.** *auth.* 'Rocket launcher.' **2.** 'Full-power loop range.' See **loop-type radio range,** note.

RLTA (*auth abbr*). 'Reenlistment leave travel allowance.'

rltv (*auth abbr*). 'Relative.'

RM (*abbr*). **1.** *auth.* 'Radioman.' **2.** 'Receiver, mobile.'

RMI (*abbr*). 'Radio magnetic indicator.'

RMM (*auth abbr*). 'Rifle marksman.'

R.N.A.S. (*abbr*). **1.** 'Royal Naval Air Station.' **2.** 'Royal Naval Air Service.' *Hist.*

rnd (*auth abbr*). 'Round.'

rngt (*auth abbr*). 'Renegotiate.'

rngtn (*abbr*). 'Renegotiation.'

RNZAF (*abbr*). 'Royal New Zealand Air Force.'

RO (*abbr*). **1.** *auth.* 'Route order.' **2.** 'Radar observer.' **3.** 'Radio observer.' Also written **R/O. 4.** 'Range only.'

Ro.43. An Italian, two-seat, fighter-reconnaissance, float biplane of WW II.

ROA (*abbr*). **1.** *auth.* 'Radio operator's aptitude test.' **2.** 'Reserve Officers Association.'

roadable airplane. Any airplane, including helicopters and autogiros, designed to be readily converted to operate on the ground as an automobile. Cf. **convertiplane,** *n.*

Robert J. Collier Trophy. An aviation award founded by Robert Joseph Collier (1876–1918) in 1911 to promote safer flying and development of the airplane.

This trophy is awarded annually and was originally called the 'Aero Club of America Trophy.' The name was officially changed in 1944.

Robins Air Force Base. An AF base near Macon, Georgia, named for Brigadier General Augustine W. Robins, who died in 1940.

robomb, *n.* Short for 'robot bomb.' Applied esp. to the German V-1 of WW II.

robot, *n.* A mechanism, device, weapon, or the like that operates more or less automatically, esp. such a device that performs an action or series of actions ordinarily performed by man.

This term is properly applied to devices that are completely automatic in action; the term is somewhat less properly applied to remote-controlled devices. Attrib., as in *robot airplane, robot machine.*

robot aircraft. 1. An aircraft designed to fly and operate without a crew, which is either remote-controlled or completely automatic in action. **2.** A robot bomb.

Robot aircraft are, from a particular point of view, sometimes called 'pilotless aircraft.'

robot bomb. An explosive-carrying winged missile or rocket, such as the German V-1 or flying bomb, normally launched from the surface and directed in flight toward its target by an automatic pilot and other automatic devices. Cf. **rocket bomb,** sense 2.

robot pilot. An automatic pilot.

Roc, *n.* **1.** A guided bomb with ring-shaped airfoils, controlled by radio in both azimuth and range, and equipped with a television camera in the nose as an aid to guidance. See **guided bomb. 2.** A British, two-place, obsolete, low-wing fighter developed by Blackburn, and used as a carrier plane or seaplane.

In sense 1, the Roc was developed in the US during WW II, but not used operationally.

ROCCM (*auth abbr*). 'Controlled devices countermeasures and deception.'

rocket, *n.* (rkt) **1.** A missile or pyrotechnic device propelled by hot gases ejected rearward by a motor as defined in sense 2; also an air vehicle that utilizes this kind of propulsive force. See **aircraft rocket. 2.** An engine or motor that moves forward by ejecting a stream of hot gases to the rear, and which, carrying its own

oxidizer, is independent of the atmosphere in its operation. See **rocket engine, rocket motor,** and cf. **jet engine,** sense 1 and note.

rocket, *v. tr.* To fire rockets at a *target.*

rocket adapter. An adapter for launching rockets of different sizes. See **launcher adapter.**

rocket airplane. 1. An airplane using rocket propulsion for its main or only propulsive power. **2.** An airplane fitted out to carry and fire rocket ammunition.

rocket ammunition. Ammunition consisting of rockets, esp. of relatively small-size rockets as fired by aircraft, by rocket guns, or the like.

rocket assist. 1. An assist in thrust given an airplane by use of a rocket motor or motors during flight, or by a rato unit or units during takeoff. **2.** The unit that provides this assist.

rocket-assisted takeoff. (RATO) A takeoff assisted by a rato unit.

rocket bomb. 1. An aerial bomb equipped with a rocket to give it added velocity and penetrating power after being dropped from an aircraft. **2.** A guided missile, ballistic missile, or the like, using rocket propulsion, such as the V-2. *Popular.*

In sense 2, cf. **robot bomb.**

rocket booster. A booster that consists of a rocket motor, as in a rato unit.

rocket cable. An electrical cable between a rocket igniter and an airplane's electrical system.

rocketeer, *n.* One whose specialty is rocketry; a person who uses or operates rockets.

rocket engine. 1. A type of rocket propulsion device or engine consisting of an injector, a combustion chamber, an exhaust nozzle, the necessary pumps, valves, etc., and using a liquid fuel (with its own oxidizer) as a propellant. **2.** In less exact usage, any form or type of rocket propulsion device. See note.

In sense 2, the term 'rocket engine' is used to include both the basic types of rocket propulsion devices, i.e., those burning liquid fuel or those burning solid fuel. When the term is used in this sense, distinction between types is made by means of the phrases 'liquid-propellant rocket engine' and 'solid-propellant rocket engine.' The more complicated and generally larger-sized liquid-propellant unit as compared with the more simple and smaller solid-propellant type warrants the use of the word 'engine' with the former, 'motor' with the latter. See **rocket,** *n.,* sense 2, **rocket motor.**

Like the jet engine, the rocket engine is a species of the reaction engine.

rocket fuel. A fuel, either in liquid or solid form, developed for, or used by, a rocket.

This term sometimes includes the oxidizing substance. See **bipropellant, monopropellant.**

rocket gun. A rocket launcher for rocket ammunition, such as an aircraft rocket launcher or a bazooka. See **aircraft rocket launcher.**

rocket head. The ogive-shaped front part of a round of rocket ammunition, which carries the explosive or other payload. See **warhead,** *n.*

rocket igniter. An igniter (which see) for igniting the propellant in a rocket.

rocket launcher. A device for launching rockets; *specif.,* an aircraft rocket launcher (which see).

Rocket launchers utilize rails, posts, tubes, or other devices to carry and guide the rocket. Rocket launchers are wheel-mounted or motorized, or aircraft-mounted, or, in the case of the bazooka, designed to be carried about by a man.

rocket missile. A missile (which see) using rocket propulsion.

rocket motor. 1. A type of rocket propulsion device consisting essentially of a combustion chamber and nozzle and using a solid self-oxidizing fuel; an engine of this type. **2.** In less exact usage, any type of rocket propulsion device. See note.

Usage of the term 'rocket motor' in sense 2 makes no distinction between types of rocket propulsion devices. See **rocket engine,** note.

rocket plug. An electrical fitting by which a rocket cable is connected with an airplane's electrical system.

rocket pod. A pod containing rocket ammunition usually mounted on a wingtip or under a wing.

rocket-powered, *a.* Powered by one or more rocket engines or rocket motors. Cf. **jet-powered,** *a.,* esp. note.

rocket projectile. A projectile, esp. a missile, using rocket propulsion. See **projectile,** *n.*

rocket projector. A rocket launcher.

rocket-propelled, *a.* Propelled by one or more rocket engines or rocket motors. Cf. **jet-propelled,** *a.,* esp. note.

rocket propulsion. Propulsion by means of a rocket or rockets. A species of reaction propulsion (which see). See **rocket,** *n.,* sense 2.

rocket rail. A launching rail for rockets. See **launching rail,** and see also **aircraft rocket launcher,** note.

rocketry, *n.* **1.** The science or study of rockets, embracing theory, research, development, and experimentation. **2.** The art and science of using rockets, esp. rocket ammunition, either on the ground or in the air.

rocket ship. 1. An aircraft or other flying vehicle using rocket propulsion for its main or only source of motive power. **2.** A sea vessel equipped with rocket launchers and rocket ammunition.

In sense 1, the rocket ship may also receive guidance by the use of rocket jet streams.

rocket sled. A sled that operates on a rail, and is accelerated to high velocities by a rocket engine.

This sled is used for experimentation in determining G tolerances, and for developing crash survival techniques. Cf. **stapp,** *n.*

rocket thrust. The thrust of a rocket engine or rocket motor. See **jet thrust.**

rocket tube. 1. A launching tube for rockets. See **launching tube,** and see also **aircraft rocket**

launcher, note. **2.** A tube or nozzle through which rocket gases are ejected.

ROCP (*auth abbr*). 'Radar out of commission for parts.'

rodeo, *n.* As used in WW II, a fighter sweep over enemy territory without bombers.

The rodeo differs from the circus (which see, sense 1) in that no bombing action is used to induce enemy fighters to react.

roentgen, *n.* [After Wilhelm Konrad *Roentgen* (1845–1923), German physicist.] A unit of measurement of the quantity of radiation of X rays or gamma rays, being the amount of X or gamma radiation which produces one electrostatic unit in a cubic centimeter of dry air under standard conditions of temperature and pressure.

Roger (*code*). A word formerly authorized for the letter 'R.' See **Able** (*code*).

This word is still employed in radio communication for the letter 'R' in 'received.'

roger, *adv.* [From prec.] **1.** Originally, a code word used in communications meaning 'message received and understood.' **2.** Used as an expression of agreement or concurrence, generally equivalent to 'O.K.' or 'all right.'

Sense 2 is closely related to sense 1, but extension of meaning is evident in discourse unconnected with radio communications.

ROIC (*auth abbr*). 'Resident officer in charge.'

ROICC (*auth abbr*). 'Resident officer in charge of construction.'

ROK (*auth abbr*). 'Republic of Korea.'

This abbr. is often pronounced as a word. In the Korean War, it was used to refer to a South Korean soldier, air force, corps, division, or government.

ROKPUCE (*auth abbr*). 'Republic of Korea Presidential Unit Citation Emblem.'

roll, *n.* **1.** Any movement of an aircraft about its longitudinal axis. **2.** An aerial maneuver in which an airplane is made to effect a complete revolution about its longitudinal axis. **3.** The movement or travel of an airplane with a wheeled or tracked landing gear along the ground or other surface under its own power or momentum. See **landing roll** and cf. **run,** *n.*, sense 2.

Types of rolls in sense 2 include the aileron roll, the barrel roll, the half roll, the outside roll, the snap roll, etc. See separate entries.

In sense 3, 'roll' normally suggests the landing roll; 'run' is preferred in reference to takeoff.

roll, *v.* **1.** *tr.* To make an *airplane* move about its longitudinal axis. Also *intr.*, to put an airplane in a roll. **2.** *intr.* Of a wheel-geared airplane: To move on the ground. **3.** *tr.* To taxi an *airplane*. *Obs.*, but used as late as 1911.

roll angle. The angle of roll. See separate entry.

roll axis. That axis of an aircraft about which roll occurs, i.e., the longitudinal axis.

roll cumulus. Stratocumulus. *British.*

rolling eight. A flight performance in which an airplane flies two horizontal eights, going immediately from the first eight to the second, with the two eights lying side by side.

roll-off, *n.* The tendency of an airplane to lower one wing, esp. at high speeds; an act or instance that reveals this tendency.

roll-out, *n.* The action or occasion of giving the public its first view of a new prototype aircraft. *Colloq.*

This action often involves rolling the aircraft out from the plant in which it was built, or from a hangar in which it has been sheltered or tested.

Rolls-Royce, *n.* [*Rolls-Royce,* Ltd., British manufacturers.] Used in the names of aeroengines, as in *Rolls-Royce Griffon, Rolls-Royce Merlin, Rolls-Royce Nene,* etc.

Roma, *n.* An Italian-built semirigid airship purchased by the Air Service in 1920 and destroyed 21 February 1922 at Norfolk, Virginia.

The Roma was 410 feet in length and displaced 1,100,000 cubic feet.

Romeo (*code*). An authorized word for the letter 'R.' See **Alfa** (*code*).

Ron (*auth abbr*). **1.** *Caps.* 'Remain overnight.' **2.** 'Squadron,' in combinations only, as in 'TACRon.'

In combinations (in sense 1), as in *RON flight,* a flight in which the aircraft remains overnight from its home station; *RON hospital,* a hospital where patients stay overnight, esp. when in the process of being transported by air; *RON officer,* an officer at an RON hospital who aids an aircrew in handling patients.

roof, *n.* **1.** The cover at the top of an airplane's fuselage. **2.** *fig.* **a.** Aircraft in the air providing cover for forces beneath. **b.** The absolute ceiling of an aircraft. *Popular.*

root, *n.* The base of an airfoil, where it joins the body of an aircraft; *specif.*, short for 'wing root.'

Roots supercharger. A type of supercharger or compressor employing two rotating and meshing impellers mounted on parallel shafts and geared together so as to revolve in opposite directions.

This type of supercharger is now used chiefly on special automobile engines and special medium-sized stationary engines. It is a type of positive-displacement compressor, the lobes of its gears (or impellers) displacing the air or fuel-air between the gears and the casing. The air or fuel-air being displaced moves in the direction of the combustion chamber. See **compressor,** *n.*

ROPA (*abbr*). 'Reserve Officer Personnel Act.'

rope, *n. Collective.* A type of electromagnetic-wave reflector similar to chaff, but longer. See **confusion reflector.**

ropey, *a.* Unsatisfactory; defective. *British slang.*

rorg (*abbr*). 'Reorganize.'

ROS (*auth abbr*). 'Reduced operational status.'

Rosebud, *n.* A kind of airborne radar beacon (the AN/APN–19), used in radar control and IFF.

roster, *n.* A list of names of persons grouped together for some reason; *specif.*, a duty roster (which see).

rot (*auth abbr*). 'Rotary' or 'rotate.'

rotary engine. An early type of radial engine in which the crankshaft remains fixed in respect to the airframe while the cylinders revolve about the crankshaft.

This engine was developed in France about 1908 and remained in use until after WW I. Its chief advantages were light weight, efficient cooling, and slight vibration. The development of other types of engines, however, made this engine obsolete.

rotary wing. The rotating lifting surface of a helicopter or autogiro. See **rotary-wing aircraft.**

rotary-wing aircraft. An airplane, such as a helicopter or autogiro, having wings that rotate about an axis, esp. such an aircraft having wings that rotate about an approximately vertical axis.

In this type of airplane, a relative flow of air past the wings is created in addition to the flow derived from any movement of the craft as a whole. See **autogiro,** *n.*, **cyclogiro,** *n.*, **helicopter,** *n.*

rotatable-loop radio compass. A type of radio compass employing a loop antenna that is rotated manually to discover the relative bearing between an aircraft and a transmitter.

rotate, *v.* (rot) **1.** *tr.* To remove a *person, crew, unit,* or the like from service in an overseas area, from combat service or service in some hardship environment, and return such person, crew, or unit to service in the ZI or other less exacting environment. See note. **2.** *To rotate the courses,* to move all the courses of a four-course radio range an equal number of degrees in the same direction. **3.** *intr.* To turn about an axis either completely and repeatedly, or only to a limited extent as in the oscillating movement of an airplane about one of its axes. Cf. **revolve,** *v.*

In sense 1, a person, unit, or the like is ordinarily rotated as part of a regularly scheduled process. See **rotation,** *n.*

rotating band. A band of soft metal, as of copper or gilding metal, ordinarily fitted around a cannon shell, serving to engage the rifling in the gun barrel.

rotating beacon. Any light beacon, as an airway beacon or auxiliary airway beacon, that rotates about its axis.

rotation, *n.* **1.** A regulated process in which military personnel, crews, units, or the like perform duties in overseas areas, in combat, or in hardship environments with interim periods of less exacting service in the ZI or elsewhere. **2.** The turning of a body about its axis; *specif.* in astronomy and navigation, the turning of a celestial body about its axis.

rotational scissors. A set of torque arms between the rotor of a helicopter and some other part. See **torque arms.**

rotational speed. The speed at which a propeller, rotor, or other rotating part rotates, measured in revolutions per minute.

rotator, *n.* Anything that rotates.

ROTC (*auth abbr*). 'Reserve Officers Training Corps.' Sometimes pronounced as a word, 'roatsy.' See **Air Force ROTC,** note.

rotocraft, *n.* Variant of 'rotorcraft.'

rotor, *n.* [Short for 'rotator.'] **1.** On a helicopter or autogiro, an assembly consisting of long, narrow airfoils or wings set in an approximately horizontal plane, together with the hub to which they are attached, which, when rotated, produces lift for an autogiro, or both lift and thrust for a helicopter. **2.** Any similar device subsidiary to the main rotor, that rotates in either a vertical or a horizontal plane. See **antitorque rotor. 3.** A rotating part of an electrical or mechanical device or piece of equipment, as in the compressor of an axial-flow jet engine, or in a gyroscope.

rotor angle of attack. With a helicopter, the acute angle between the no-feathering axis and a line perpendicular to the line of flight in the plane of symmetry.

This angle is considered positive when the no-feathering axis points rearward. See **no-feathering axis.**

rotor assembly. An assembly consisting of rotor blades, hub, swashplate, links, and other associated parts.

rotor blade. 1. Any one of the airfoils in the rotor of a rotary-wing aircraft. **2.** Any one of the vanes on the rotor of the compressor in an axial-flow jet engine.

rotor-blade angle. The acute angle between the chord of a rotor blade at a zero-lift angle of attack, and a plane perpendicular to the no-feathering axis. Also called 'pitch' (which see).

With a twisted rotor blade, the angle at two-thirds or three-quarters radius is usually chosen to characterize the entire blade.

rotor-blade area. The planform area of a given rotor blade, equal to its length times its mean chord.

rotorcraft, *n.* A rotary-wing aircraft.

rotor disc. The space occupied or described by the rotating blades of a rotor.

In aerodynamic theory, the rotor disc is sometimes assumed to be infinitely thin.

In combination, as *rotor-disc area.*

rotor-disc loading. The load supported by a rotor disc, derived by dividing the gross weight of a helicopter or autogiro by its total disc area.

rotor downwash. The downward deflection of air from a rotor.

rotor head. A rotor hub.

rotor hub. The central component of a rotor, to which the blades are attached and where the rotor is attached to the drive shaft.

rotor inclination. The tilting of the tip-path plane of a rotor disc, either by cyclic pitch control or hub tilting.

rotor mast. The supporting structure for the rotor in a helicopter or autogiro.

rotor plane. A rotary-wing airplane. See **rotary-wing aircraft.**

rotor pylon. A rotor mast.

rotor thrust. The thrust exerted by the rotor of a helicopter in any direction.

When a helicopter hovers, thrust is being exerted in an upward direction, but its force is equal to that of the weight of the helicopter. See **thrust,** *n.*, note.

Rotte, *n.* [German.] A two-ship formation. See **Schwarm,** *n.*

round, *n.* (rnd) **1. a.** A unit of gun ammunition consisting of a projectile, propellant, igniting charge, and primer—those components necessary to fire the gun once. **b.** A single shot or a single projectile fired, as in 'we poured 1,000 rounds into the target.' **2.** Also applied to a piece of rocket ammunition or to a bomb, esp. in the phrases 'complete round,' or 'bomb complete round.' See separate entries. **3.** A circular taxi run once practiced as a way of learning how to use the controls of an airplane. *Obs.*

In sense 1, 'round' is also called 'round of ammunition,' but the two terms are not always interchangeable, matters of clarity and euphony being considered.

round, *v. To round out,* to flare out. See **flare,** *v.*

round of ammunition. Full for 'round' (which see, senses 1 and 2). Applied esp. to gun ammunition, but also to rocket ammunition.

A round of ammunition may be either fixed ammunition or loose ammunition. See **round,** *n.*, esp. note.

roundout, *n.* A flareout (which see).

round-robin, *n.* A nonstop flight of an aircraft or formation of aircraft, in which takeoff and landing are made at the same place.

rounds counter. An instrument or device that indicates the number of rounds left in a machine gun or group of machine guns.

round-the-clock, *a.* Of or pertaining to a time duration of twenty-four hours in which sustained activity takes place, as in 'round-the-clock bombing,' 'round-the-clock schedule,' etc.

round-trip flight. 1. A flight of an airplane from a given base to a distant point or place, and back either to the original base or to a nearby base. **2.** The travel of a passenger by air to and back from a given place.

In sense 1, the round-trip flight of a bomber may be done without landing, but that of a cargo or passenger plane may involve one or more landings.

rout (*auth abbr*). 'Routine.'

route, *n.* An established way or course for aircraft; a course flown, or planned to be flown, by an aircraft.

route briefing. Briefing (which see) with respect to the route to be flown, and concerning the course to be flown, electronic navigational aids along the route, regulations affecting the flight, and other general aspects of the flight with regard to its route.

Route Chart. Any one of three charts, scale 1:2,000,000, designed for use with high altitude, long-range flights over established military and commercial air routes. See **USAF** (*auth abbr*).

Major cities, hydrography, roads, railroads, spot elevations, gradient tints, important navigational aids, and air facilities are indicated. One covers the Aleutians and Alaska, another Alaska and the West Coast down to Seattle, the other the East Coast through Newfoundland.

route forecast. A weather forecast of conditions expected to prevail to a specified extent along each side of a route for a given period of time.

route support. In the Military Air Transport Service, the support given air transport operations over designated routes by additional aircraft, necessary to maintain scheduled operations.

routine order. An order issued in accordance with routine procedures, as distinguished from a combat order or any other order requiring the special attention of a commander.

Routine orders include general orders, special orders, court-martial orders, etc.

routing indicator. A group of letters indicating the geographic location of a station or headquarters, used in routing messages.

routing slip. A slip of paper attached to a letter, memorandum, or the like, indicating the places or individuals in their proper order that are to receive the communication.

Rover Joe. 1. A WW II system of forward air control used in close air support. **2.** The forward air controller who operated in this system.

Although the system to which 'Rover Joe' was applied was used in North Africa in 1942, the name itself was not adopted until the Italian campaign of 1943, after the British had called a similar system 'Rover David' named for Wing Commander David Haysom of the RAF.

Royal Aeronautical Society. A British society founded in 1866, devoted generally to the furtherance of aeronautical science.

Royal Aircraft Establishment. A British aeronautical research and experiment establishment. Abbreviated 'R.A.E.'

The R.A.E. is at Farnborough, and is under the control of the Ministry of Supply rather than the RAF. Its function, however, is similar to that of the USAF establishment at Wright-Patterson AFB. The antecedents of the R.A.E. go back to the Balloon Equipment Store established in 1878. The R.A.E., as such, was established in 1918.

Royal Air Force. 1. *Specif.* (RAF) The name of the air force of Great Britain. **2.** A name applied to the air force of certain other monarchies.

In sense 1, the RAF was formed on 1 April 1918 by the amalgamation of the Royal Flying Corps and the Royal Naval Air Service. The RAF is an autonomous service, coequal with the British Army and Navy.

The air forces of British dominions and commonwealths are not a part of the RAF, being distinguished in title by a qualifying word or phrase, as in 'Royal Australian Air Force,' 'Royal Canadian Air Force,' and 'Royal New Zealand Air Force.'

In sense 2, the name 'Royal Air Force' is usually found

with a qualifying word indicating nationality, as in 'Netherlands Royal Air Force,' 'Royal Hellenic Air Force.'

Royal Flying Corps. The name of the British air arm from 1912 to 1918: See note.

From 1912 to 1914 the Royal Flying Corps combined both Army and Navy units; from 1914 to 1918 the Royal Flying Corps was an Army corps responsible for military aeronautics. See prec., note.

Royal Naval Air Service. The name of the British naval air arm from 1914 to 1918.

In 1918, the Royal Naval Air Service was combined with the Royal Flying Corps to form the RAF; the Navy regained control of a naval air arm (the Fleet Air Arm) in 1939.

RP (*abbr*). **1.** *auth.* 'Release point (ground traffic).' **2.** 'Rally point.' **3.** 'Rocket projectile.'

RPIO (*auth abbr*). 'Registered publication issuing office.'

rpm (*auth abbr*). **1.** 'Revolutions per minute.' Applicable to any rotating mechanism. **2.** *Caps.* 'Registered publication memorandum.'

This abbreviation (sense 1), pronounced by letter, is often used in a singular sense, as in 'engines are cut to a low rpm,' or 'the rpm has reached a danger point.' The rpm of an aircraft piston engine normally refers to the crankshaft speed, as shown on a tachometer.

RPMIO (*auth abbr*). 'Registered publication mobile issuing office(r).'

rpmn (*abbr*). 'Repairman.'

RPS (*auth abbr*). 'Registered publication section.'

RPSM (*auth abbr*). 'Registered publication shipment memorandum.'

rpt (*auth abbr*). 'Repeat.'

rptr (*abbr*). 'Repeater.'

RPU (*abbr*). **1.** *auth.* 'Registered publication unit.' **2.** 'Retention pending use.'

rqn (*auth abbr*). 'Requisition.'

rqr (*auth abbr*). 'Require' or 'requirement.'

RQS (*auth abbr*). 'Ready qualified for standby.'

rqst (*abbr*). 'Request.' See **req** (*auth abbr*).

RR (*auth abbr*). 'Railroad.'

rr (*abbr*). 'Rear.'

RROTC (*auth abbr*). 'Executive for Reserve and ROTC affairs.'

RRS (*auth abbr*). 'Retired Reserve Section.'

RS (*abbr*). **1.** *auth.* 'Road space.' **2.** *auth.* 'Regulating station.' **3.** 'Reception station.'

RS-1. A semirigid airship built by Goodyear in 1925 for the US Army.

The RS-1 was the first and largest semirigid airship built in the US, 275 feet long with a helium capacity of 710,000 cubic feet. After two years the RS-1 was dismantled because of deficiencies in construction.

R/S (*abbr*). **1.** *auth.* 'Report of survey.' **2.** 'Routing slip.'

rsch (*auth abbr*). 'Research.'

RSCR (*auth abbr*). 'Reserve Special Commendation Ribbon.'

rsg (*auth abbr*). 'Reassign.'

rsgmt (*abbr*). 'Reassignment.'

RSI (*abbr*). 'Research Studies Institute.'

RSM (*abbr*). 'Radio squadron mobile.'

rsn (*auth abbr*). 'Reason.'

rspv (*auth abbr*). 'Respective.'

rsq (*auth abbr*). 'Rescue.'

RSS (*auth abbr*). 'Rifle sharpshooter.'

rstr (*abbr*). 'Restricted.' See **rest** (*auth abbr*).

RT (*abbr*). **1.** *auth.* 'Ranger tab.' **2.** *auth.* 'Reduction table.' **3.** 'Receive-transmit.' **4.** 'Radiotelephone.' **5.** 'Runup and taxi.'

R/T (*abbr*). 'Radiotelephone.'

rt (*abbr*). 'Rate.'

RTC (*auth abbr*). 'Replacement training center.'

RTCA (*abbr*). 'Radio Technical Commission for Aeronautics.'

RtdA (*auth abbr*). 'Returned absentee.'

rtg (*abbr*). 'Rating.'

rtn (*abbr*). **1.** *auth.* 'Return' or 'returnee.' **2.** 'Retain.'

RTO (*auth abbr*). 'Rail transportation office(r).'

RTST (*auth abbr*). 'Radio technician selection test.'

RT switch. A switch device that prevents radar echoes from feeding into a radar transmitter. See **gate,** *n.*

RTU (*abbr*). 'Replacement training unit.'

rudder, *n.* **1.** A movable control surface, usually attached to a vertical stabilizer, by which an air vehicle is guided in the horizontal plane. **2.** The cockpit control for using this surface; the action of using this surface.

On a rocket missile or the like, a rudder may be placed to work either in the airstream or in the jet stream. See **jet vane.**

'Rudder,' in sense 2, is used without the article in such expressions as 'use rudder to straighten it out.' See **bottom rudder, left rudder, right rudder, top rudder.**

rudder angle. The acute angle between the chord of a rudder moved from a neutral position and an aircraft's plane of symmetry.

This angle is positive when the trailing edge of the rudder is to the left of neutral.

rudder bar. In certain light airplanes, a foot-operated bar in the cockpit to which the control cables leading to the rudder are attached.

rudder pedal. One of a pair of pedals in the cockpit of an airplane, by means of which the rudder is operated.

ruddevator, *n.* One of a pair of control surfaces set in a V, each of which combines the functions of both a rudder and an elevator.

Ruddevators are used on some airplanes, and on the 'flying boom' refueling hose.

Rug jammer. A type of jammer used by the Allies in WW II, operating in the 200 mc to 550 mc band.

rumble, *v. intr.* To advance the throttle of an engine too quickly. *Slang.*

Rumpler, *n.* [*Rumpler*-Werke, a WW I German

manufacturing company.] A German, two-place fighter and observation biplane of WW I.

run, *n.* **1.** The flight of an aircraft toward a target or other place preparatory to a strafing attack, a bomb drop, a parachute drop, or the like; *specif.*, a bomb run, as in 'he was too low at the beginning of his run.' See **run-in,** *n.*, sense 1. **2.** A high-speed movement of an airplane on the ground, water, or other surface under its own power or momentum. See **landing run, takeoff run,** and cf. **roll,** *n.*, sense 3, note. Also see **taxi,** *v.* **3.** An air flight from one place to another, as in 'the North Atlantic run from New York to London.'

run, *v. To run up an engine,* to operate an aircraft engine at a relatively high rpm while the aircraft is standing still in order to test, check, or warm the engine.

runaway, *a.* Operating out of control. Said of a machine gun, propeller, aircraft engine, or other mechanism.

run-in, *n.* **1.** The run of an aircraft toward a target or place, esp. the run of an aircraft from an initial point to a drop or landing zone. **2.** A breaking-in operation of a new, rebuilt, or overhauled engine, performed to allow the engine to adjust itself to mating contours between moving parts, to wear away high spots, etc.

runner, *n.* A sliding device attached to certain aircraft or missiles for takeoff or landing. See **ski,** *n.*, note.

running fix. A fix (which see, sense 3), determined by using two lines of position obtained at different times from one reference point and adjusted to a common time.

running landing. A term applied to a helicopter landing when it lands like a fixed-wing airplane.

A running landing is made by a helicopter esp. on terrain at high elevation where the air is of such thinness that the helicopter cannot hover, requiring forward motion to maintain lift.

running light. A nautical term sometimes applied to a navigation light on an aircraft.

running rabbits. A type of interference on a radar screen caused by other nearby radar sets, consisting of random spots drifting across the screen.

running takeoff. A helicopter takeoff involving a run on the ground.

A running takeoff is made esp. under circumstances similar to those for a running landing.

runup, *n.* **1.** An act or instance of running up an engine. **2.** A run (in sense 1). *British.*

runway, *n.* (rwy) **1.** A surface area on land, snow, or ice used for the takeoff and landing of land-based airplanes. Cf. **landing strip. 2.** *Restrictive.* A paved or otherwise improved surface used for the takeoff and landing of land-based airplanes. Cf. **landing strip,** sense 2.

In sense 1, 'runway' is generic, and applies to the narrow longitudinal center of an airstrip, as well as to the paved area of an improved air base. In sense 2, the runway may be wide enough to accommodate several airplanes running abreast, or it may be just wide enough to accommodate a single plane.

'Runway' is not normally applied to the flight deck of an aircraft carrier, nor to the water surface used by seaplanes.

runway light. Any one of a series of lights used to outline a runway. See **B-2 runway light.**

runway localizing beacon. A radio beacon that gives lateral direction along and beyond a runway, used to aid aircraft in landing under instrument conditions.

Ruptured Duck. 1. An epithet applied to the PBY. **2.** A popular name for the WW II Honorable Service Lapel Button.

RUQ (*auth abbr*). 'Rifle unqualified.'

RUUR (*abbr*). 'Regrade unclassified upon receipt.'

RV (*auth abbr*). 'Reading and vocabulary test.'

R/V (*abbr*). 'Rendezvous.' See **rdvu** (*auth abbr*).

RW (*abbr*). **1.** *auth.* 'Radiological warfare.' **2.** 'Runway.' See **rwy** (*auth abbr*).

r/w (*abbr*). 'Right of way.'

RWR (*auth abbr*). 'Rail-water-rail.'

rwy (*auth abbr*). 'Runway.'

ry (*auth abbr*). **1.** 'Railway.' **2.** *Capitalized.* 'Ryuku' when used in combinations.

Ryan, *n.* [*Ryan* Aircraft Corporation or The *Ryan* Aeronautical Company, successor.] Used in the names of airplanes: See note.

Ryan airplanes include the *Ryan M-1*, a passenger-air mail monoplane, a modified version of which, the 'Spirit of St. Louis,' was made for Charles A. Lindbergh; the *Ryan B-5*, a six-seat passenger monoplane, modified from the 'Spirit of St. Louis'; and the *Ryan ST-4*, an obsolete primary trainer.

S

S (*letter* or *abbr*). See **Sierra** (*code*). **1.** Used as a code meaning 'antisubmarine version,' in the designations of Naval aircraft so modified. **2.** Variously used as a symbol or abbreviation meaning 'Boeing Airplane Company,' 'Schweizer Aircraft Corporation,' 'Sikorsky Aircraft,' or 'Sperry Gyroscope Company, Incorporated,' in the designations of Naval aircraft.

S, *v. intr.* To make a track either on the ground or in the air resembling the letter 'S,' as in 'the pilot S-ed back and forth over the bombers.' Also *tr.*, as in 'he S-ed his airplane to the hardstand.' Cf. **snaking,** *n.*, sense 2.

S (*abbr*). **1.** 'South.' **2.** 'Search,' or 'search and rescue' in designations of USAF aircraft and other equipment. **3.** 'Service.' **4.** *auth.* 'Staff' when used in designating the major staff offices of a group or smaller unit, as *S-1*, *S-2*, *S-3*. See **A** (*abbr*), sense 6. **5.** 'Servicing of aircraft required,' as used in the VIP code.

s (*abbr*). 'Sharpshooter.'

SA (*abbr*). **1.** *auth.* 'Secretary of the Army.' **2.** *auth.* 'Small arms.' **3.** 'South Africa.' Nationality Condensation Code. **4.** 'Search-amphibian' in designations of USAF aircraft.

SA-16A. The AF designation for a twin-engine, high-wing flying boat developed by Grumman, used in both military and naval service for general utility, transport, evacuation, or rescue. Popularly called the 'Albatross.'

Most SA-16A airplanes are triphibian versions. The Navy and Coast Guard designation is *UF-1*.

S/A (*abbr*). 'Special activities.'

SAA (*auth abbr*). 'Senior Army Advisor.'

S.A.A. (*abbr*). 'Small-arms ammunition.' *British.*

Saab, *n.* [Swedish '*S*venska *A*eroplan *A.B.*'] Used in the names of Swedish aircraft, as in *Saab-90*.

SAAD (*abbr*). 'San Antonio Air Depot.'

SAAF (*abbr*). 'South African Air Force.'

SAAMA (*auth abbr*). 'San Antonio Air Materiel Area.'

SAASC (*abbr*). 'San Antonio Air Service Command.' Now *hist.*

SAATSC (*abbr*). 'San Antonio Air Technical Service Command.' Now *hist.*

SAB (*abbr*). 'Scientific Advisory Board.'

sabin, *n.* A unit used in measuring or expressing the capability of a surface to absorb sound, equivalent to one square foot of a perfectly absorptive surface.

sabot, *n.* [Pronounced 'sabo,' the 'a' as in *ask*.] **1.** *Artillery.* A support or container in which a projectile is centered to permit firing the projectile in a gun of larger caliber than the projectile. See note. **2.** An aluminum case or jacket fitting around the steel core of certain armor-piercing ammunition.

In sense 1, the sabot is of a size to fill the larger bore, and is normally detached from the projectile once in flight. The sabot may incorporate a rocket motor for giving additional velocity or range to the projectile.

Originally borrowed (*circa* 1600) into English from the French in the sense of 'wooden shoe,' the word 'sabot' has been in military use since about 1850, as applied to various shoelike devices used in fitting projectiles to the bore of cannon or rifles, or in providing projectiles with an outer casing to take the grooves of rifling.

sabotage, *n.* (sbtg) With special reference to war: **1.** Any positive action taken deliberately by an agent or sympathizer of one country, coalition, or faction (esp. as part of an underground movement) to impede, obstruct, or interrupt the normal processes of production, or the regular work of employees, or the scheduled buildup of a war effort within an area controlled by another country, coalition, or faction. **2.** The damage resulting from such action.

Sabotage covers anything that leads, or is intended to lead, directly and deliberately to damage or injury, as in planting a bomb, removing a part from a machine, putting sand into a lubricant, instigating a strike, forging a signature, doctoring a report, etc. The concept behind this word, however, does not normally include espionage, since the latter requires other positive action to translate it into damage or injury.

sabotage, *v. tr.* To damage *something* through sabotage.

sabotage bomb. A bomb used by a saboteur to damage, destroy, or injure property or persons.

In intelligence practice, a sabotage bomb discovered unexploded may be classified as belonging to category A, B, or C, according to the degree of urgency for disposal.

saboteur, *n.* One who commits sabotage.

Sabre, *n.* Also **Saber.** Short for 'Sabrejet.'

Sabrejet, *n.* Also **Saberjet.** A popular name for the F-86.

SAC (*abbr*). **1.** *auth.* 'Strategic Air Command.' Pronounced as a word, and used attrib., as in *SAC headquarters*. **2.** 'Senior aircraftman.' *Brit-*

ish. **3.** *auth.* 'Supreme Allied Commander' in combinations only.

SACEur (*auth abbr*). 'Supreme Allied Commander, Europe.'

sack, *n.* **1.** A bed, esp. a military person's bed or bunk. *Slang.* **2.** *Sack time,* time spent in bed, corresponding to 'flying time.' *Jocular.*

SACLant (*auth abbr*). 'Supreme Allied Commander, Atlantic.'

Sacramento Air Materiel Area. (SMAMA). An air materiel area with headquarters at Sacramento, California.

sacred cow. The private airplane of a high-ranking official. *Slang.*

sad sack. A slovenly or inept airman or soldier. *Slang.*

S.A.E. (*abbr*). 'Society of Automotive Engineers.'

S.A.E. number. A number used by the Society of Automotive Engineers to designate the viscosity of a lubricant, as in *30 S.A.E.* or *50 S.A.E.*

An S.A.E. number is approximately one-half the Saybolt number for an oil having the same viscosity. See **Saybolt number.**

SAF (*abbr*). **1.** *auth.* 'Secretary of the Air Force.' **2.** 'Strategic air force.'

safe, *a.* **1.** Of a pilot: Who does not accept unnecessary risks in operating an aircraft. **2.** Of flying altitude, air travel, speed, rate of climb, etc.: Considered to be free, or nearly free, of undue risks arising from the operation of an aircraft. **3.** Of a load: Within the capacity of an aircraft to carry without undue risk. **4.** Of a bomb or ammunition: So set as not to detonate accidentally.

safe landing. A landing in which there is neither damage nor injury.

safety, *n.* Used attrib. to designate: **a.** Things used to afford a factor of safety against damage or injury, as in *safety belt, safety fuze* (see **fuze,** *n.,* sense 2), *safety zone,* etc. **b.** Acts, circumstances, etc., that relate to safety, as in *safety program, safety standard.* See also **flying safety, ground safety.**

safety, *v. tr.* To secure an aircraft *part* against loosening from vibration; *specif.,* to secure a *nut* by a wire or cotter pin. Hence, **safetied,** *a.*

safety belt. A strap anchored to a stationary part of an aircraft and fastened around the body of a person to keep him from being thrown from his seat or position.

safety factor. Any margin, factor, or element that insures safety, or a degree of safety, in an operation. See **factor of safety.**

safety fuel. A fuel that is safe or relatively safe from accidental ignition.

safety groove. A groove around the circumference of certain types of rocket ammunition between the motor and the head, designed to weaken the rocket so that it will break if chamber pressure in the motor rises beyond a given point.

safety harness. A harness serving the same purpose as that of a safety belt.

safety level of supply. The level of supply required to permit continued operations during any minor interruptions in the normal flow of supply, or to absorb an anticipated increase in the supply demand. This level includes supplies in addition to those required for the operating level of supply.

safety observer. A person who accompanies a pilot during hooded flight, remaining outside the hood to guard against mid-air collision or other accidents.

safety officer. A staff officer responsible for the study of all conditions and circumstances, including the testing of equipment, procedures, etc., so as to advise upon and supervise matters involving the safety of personnel.

See **flying safety** and **ground safety.**

safety pilot. 1. A safety observer qualified as a pilot and ready to take over the controls if necessary. **2.** A pilot who rides in an aircraft during testing and checkout of remote control equipment or of automatic equipment in order to take over if such equipment fails.

safe vertical drop. Any vertical drop of an object from a height that does no damage to the object. See **vertical drop.**

SAFI (*auth abbr*). 'Senior Air Force Instructor.'

SAFS (*auth abbr*). 'Secondary Air Force Specialty.'

SAGE (*abbr*). 'Semiautomatic ground environment,' a name for a defense system that provides instantaneous information needed for waging air battles, built about a type of electronic digital computer that reports and acts upon a developing situation.

SAGE was developed in the Lincoln Laboratory of the Massachusetts Institute of Technology.

S.A.I. (*abbr*). 'Societa Aeronautica Italiana.' Used in the names of WW II aircraft, as in *S.A.I. 207,* a single-seat fighter.

sail, *v.* **1.** *tr.* To cause a *glider* or *sailplane* to soar or fly. **2.** *intr.* Of a sailplane or person in a sailplane: To fly or soar. Cf. **volplane,** *v.*

In these senses, the word 'sail' had special application in the early days of gliders before they were used in conjunction with powered aircraft.

sailplane, *n.* A glider with a low minimum sinking speed and good flying and control characteristics, designed esp. for soaring. Sometimes called a 'performance-type glider.'

The sailplane may be launched in various ways, as by being towed by a car or an airplane, or by being cast off by a winch.

sailplane, *v. intr.* Of a person: To engage in sailing a sailplane.

salary, *n.* The compensation regularly paid an employee who works by the year, month, or week.

This term is appropriate for civilian employees, but not for service personnel. The latter receive pay.

sales, *n.* Used attrib. in sense: Of or pertaining to the sale of commissary goods or other items, as in *sales account, sales commissary, sales officer,* etc.

Sally, *n.* A name given by the Allies to the Mitsubishi Ki 213, a twin-engine Japanese Army heavy bomber of WW II.

Salmson, *n.* A French manufacturer of aircraft engines and, during WW I, of aircraft. Used in the names of WW I aircraft, as in *Salmson 2-A2.*

The Salmson 2-A2, a two-seated radial-engine biplane, was used by the A.E.F. for observation and photography.

salute, *n.* **1.** In a general sense, a greeting or sign of courtesy passed between parties, as by gesturing with the hand, firing a cannon, dipping a flag, dipping wings, etc. **2.** Among military persons, an outward sign, mark, or act of courtesy, respect, or honor given in a specific and prescribed manner; *specif.,* the hand salute (which see). See also **rifle salute. 3. a.** The position of the hand, or of a weapon, flag, etc. in saluting. **b.** The entire attitude of one's body when saluting, as in 'he stood at salute.' **c.** *To return a salute,* to acknowledge another's salute by making a salute of one's own.

In sense 2, the position taken in presenting arms is considered a salute.

salute, *v.* **1.** *intr.* To make or give a salute. **2.** *tr.* To show respect or courtesy to a *person, flag,* etc. by giving a salute.

salv (*auth abbr*). 'Salvage.'

salvage, *n.* (salv) **1.** The action of saving or rescuing something from discard or destruction so that it, or its parts, may be used again in one form or another, as in 'the salvage of radio parts was necessary.' **2.** The activity that performs this action, as in 'you may turn it over to salvage.' **3.** That which is saved or rescued: See note.

Salvage in sense 3 applies esp. to property no longer usable in its present form because of wear, damage, deterioration, or incompleteness, but usable in some other capacity or form. It may include condemned, discarded, abandoned, or captured property, including scrap and waste.

Used attrib., as in *salvage contract, salvage collection points, salvage officer, salvage property,* etc.

salvage, *v.* (salv) *tr.* **1.** To save or rescue *something* from discard, abandonment, or destruction so that its parts may be used again, as in 'the airplane was salvaged for its rubber tires'; or for its own use in another capacity, as in 'he salvaged a propeller to replace the damaged one.' **2.** To retrieve *something* from impending loss, as in 'he salvaged his medical supplies from the sinking plane.' **3.** To rehabilitate a *person* for further use.

salvo, *n.* **1.** A simultaneous, or nearly simultaneous, discharge of shots from two or more closely placed guns against the same target. **2. a.** The release of several bombs or rocket missiles simultaneously, or in close train, from one or more aircraft at a single target. **b.** The manner of such release, as in 'he released his bombs in salvo.' **3.** The aggregate of shots, bombs, or rockets so discharged or released.

Used attrib., as in *salvo area,* an area in which salvoed bombs fall, *salvo bombing, salvo button,* a control button used to release bombs in salvo, etc.

In sense 2, 'salvo' is, in most contexts, used in reference to the release of bombs from a bomb bay when the salvo switch is used, although, strictly speaking, the bombs, stacked on top of each other, are released in close train. Use of 'salvo' in this context, however, is considered good usage. Cf. **Crawfish** (*code*).

salvo, *v. tr.* To discharge or release *something* in salvo; *specif.,* to release an entire load of *bombs* in salvo.

salvo-arm, *n.* A device on a bomber used mechanically to salvo and arm the bombs without regard to the intervalometer or the toggle switch. Cf. **salvo switch.**

salvo switch. A switch used to salvo the bombs carried by an airplane.

SAM (*abbr*). **1.** *auth.* 'Surface-to-air missile.' **2.** 'School of Aviation Medicine.' **3.** 'Special air mission.'

sample, *v. tr.* To test *opinion, attitudes, knowledge,* etc., by means of a sample survey.

sample survey. A survey made on any point of interest by taking examples in sufficient numbers to establish a basis for forming statistical conclusions.

A sample survey may be taken at random or by selection. It is applied to such matters as the attitudes held by a group, the amount of knowledge held by average individuals, etc.

Sampson Air Force Base. An AF base at Geneva, New York, a former Navy base named for Rear Admiral William T. Sampson, who died in 1902.

Samson, *n.* In full, **Samson spot cord.** A trade name applied by the Samson Cordage Works to a cotton braided cord of high tensile strength.

This cord sometimes has a core of steel wire or phosphorous bronze wire at its center, and has many uses. See **bungee,** *n.* It is called 'spot cord' because of the different colors braided into it.

samurai spirit. A willingness to die young and vigorous. Named after the Japanese samurai, a military class.

San Antonio Air Materiel Area. (SAAMA). An air materiel area with headquarters at San Antonio, Texas.

San Bernardino Air Materiel Area. (SBAMA).

An air materiel area with headquarters at San Bernardino, California.

S&B (*auth abbr*). 'Sterilization and bath.'

Sandia Base. An Armed Forces base at Albuquerque, New Mexico, site of the field headquarters of the Armed Forces Special Weapons Projects Command.

This base is named for a nearby range of mountains.

sand load. *Radio.* An attenuator which is a mixture of sand and graphite, used as a terminating section to dissipate power in radio-frequency lines, as in a coaxial cable. Also called a 'dry load.'

SAP (*abbr*). 'Semi-armor-piercing.' Attrib., as in *SAP bomb.*

sapper, *n.* One who digs trenches or tunnels so as to undermine a fortification, or to provide a place for the laying of a mine.

SAR (*auth abbr*). 'Search and rescue.'

Sarah, *n.* An electronic communication system.

sat (*auth abbr*). **1.** 'Satisfactory.' **2.** *Capitalized.* 'Saturday.'

satellite, *n.* **1.** Anything that attends another of the same kind, as in astronomy, a body that revolves about another body, or in space aviation, a man-made body caused to revolve about the earth. **2.** *Specif.* An airfield that lies close by, or is associated with, a larger airfield upon which it is dependent; also a dependent airstrip or other installation. Attrib., as in *satellite base, satellite drome, satellite field, satellite installation.* **3.** A nation that depends upon another for political or economic guidance, as East Germany is said to be a satellite of Russia. Attrib., as in *satellite air force.*

satellite vehicle. A vehicle made to revolve about the earth and used for gathering scientific data, esp. on radiation.

SAtk (*auth abbr*). 'Strike attack.'

saturate, *v. tr.* **1.** To reduce the effectiveness of any type of defense by the tactic of bringing so many aircraft per unit of time over a *defense area* that the electronic and mechanical responses of the defender's equipment, such as his antiaircraft batteries, become erratic because of the multiplicity of targets. **2.** To attack an *area* with bombs or other missiles so as to leave no place in the area unscathed.

In sense 1, the phrasing is *to saturate the defenses, to saturate the flak,* etc. In sense 2, see **saturation bombing.**

saturation, *n.* **1.** The condition or state of something holding something else to its fullest capacity, as in 'the saturation of a sponge with water'; *specif.*, that condition of a body of air when it holds all the moisture it can under given pressure and temperature. **2.** The striking of a target area with such numbers of missiles that no place in it remains untouched by destruction. Attrib., as in *saturation attack, saturation raid.* **3.** *Saturation of defense,* the action or process of saturating antiaircraft defense. See **saturate,** *v.*, sense 1.

saturation adiabat. A pseudoadiabat.

saturation bombing. Intense area bombing intended to leave no place in a given area free from destructive effects.

Saturation bombing may be achieved by dropping many small bombs, or by dropping a medium number of large bombs, or by dropping a single massive bomb.

sausage balloon. Any captive balloon shaped like a sausage and often linked to another balloon of the same shape. *Slang.*

saved pay. A special pay which an enlisted person could claim under the Career Compensation Act of 1949, which amounted each payday to the difference between what had previously been authorized for family allowances and what the new act authorized. *Hist.*

This pay was effective until a given cutoff date or until the end of a person's enlistment, whichever was the earlier.

Savoia, *n.* Short for next.

Savoia-Marchetti, *n.* A designation for certain WW II Italian military airplanes produced or developed by a company of that name.

The *Savoia-Marchetti 79* was a three-engined bomber; the *Savoia-Marchetti 85* was a dive bomber.

sawtooth climb. An airplane climb made at various airspeeds to determine the speed for a maximum rate of climb.

A sawtooth climb is so-called because the trace of such a climb, as recorded by a barograph, resembles sawteeth.

Saybolt number. A number that designates viscosity of a lubricant, as in *60 Saybolt* or *100 Saybolt.* See **S.A.E. number.**

SB (*abbr*). **1.** *auth.* 'Supply Bulletin.' **2.** 'Search bomber,' as used in designating aircraft engaged in air rescue, as in *SB-17* or *SB-29.* **3.** 'Medium bomber' (*Srednii bombovos*), used in the names of Russian aircraft from 1925 to 1945, as in *SB-2.* **4.** 'Scout-bombing' in Naval aircraft designations. *Hist.*

SB2A. The Navy designation of the WW II A-34.

SB2C. The Navy designation for the WW II A-25 built by Curtiss.

SB3. A Russian midwing bomber of WW II, with twin in-line engines, developed by the State Factory.

SB-29. A B-29 modified for search and rescue.

S/B (*auth abbr*). 'Selection board.'

SBA (*auth abbr*). 'Small Business Administration.'

S.B.A. (*abbr*). 'Standard beam approach.' *British.*

SBAMA (*auth abbr*). 'San Bernardino Air Materiel Area.'

S band. A designation formerly given to a band

of radio frequencies between 1,550 and 5,200 megacycles.

Use of this designation is no longer authorized in the AF.

SBASC (*abbr*). 'San Bernardino Air Service Command.' Now *hist.*

SBD. The Navy designation for the A-24 of the AAF, as in 'SBD-3.'

sbm (*auth abbr*). 'Submit' or 'submission.'

SBR (*abbr*). 'Standby reserve,' used in AF accounts to designate tools and equipment in that category.

sbtg (*auth abbr*). 'Sabotage.'

sby (*auth abbr*). 'Standby.'

SC (*abbr*). **1.** *auth.* 'Supply Corps.' **2.** 'Statistical control.' **3.** 'Signal Corps.' See **SigC** (*auth abbr*). **4.** 'Service Command.' As used in the USMC and formerly in the AAF. **5.** 'Stratocumulus.' See **Sc** (*abbr*). **6.** 'Separate cover.'

SC-54. A C-54D modified for search and rescue.

S/C (*abbr*). 'Statement of charges.'

Sc (*abbr*). 'Stratocumulus.'

scalar, *n.* An entity representing that which has a magnitude without direction. Distinguished from a vector.

scalar, *a.* Of a quantity: Having magnitude but not direction. See second note under **velocity,** *n.*, for example of use.

scale, *n.* A proportion between a model, drawing, map, or the like and a thing represented, as in 'it was drawn to a scale of one inch to one mile.'

scale effect. An effect in fluid flow that results from changing the scale, but not the shape, of a body around which the flow passes.

This effect is relevant to wind-tunnel experiments. Correction for this effect is by use of a Reynolds number (which see).

scale model. A model of something built to a smaller or larger scale but duplicating the shape in all essential details.

scan, *n.* **1.** The process of bringing something under systematic search or observation with the intention of detecting some significant object, as in radar or in watching out for hostile aircraft either from the ground or air; *specif.*, radar scan. **2.** The motion or the pattern associated with this process, esp. in radar. **3.** The extent of this motion or pattern, as in 'the scan was but a few degrees.' See **sector scan.**

The scans in radar are described by the patterns they make, as in *circular scan, conical scan, helical scan, linear scan,* and *spiral scan.* See separate entries.

scan, *v. tr.* **1.** To survey the *sky* or any particular airspace by looking successively from one point of direction to another. Said of pilots or observers seeking out a target or other object, or guarding against surprise. **2.** *Radar.* To traverse or sweep an *airspace* or *region* with a succession of directed beams emanating from a radar antenna. **3.** *Television.* To pass over a *subject, view,* or *image* with successive motions of an electronic beam or light beam so as to pick up and transmit the image, view, or the like by television. In the newest methods of television, only electronic beams are used.

In sense 2, the action of scanning does not include the action of tracking.

scanner, *n.* **1.** In radar, the mechanism used in scanning (see **scan,** *v.*, sense 2) and in tracking targets during gunfire. **2.** One who scans; a person responsible for scanning a certain succession of airspace or area in order to watch out for some object or other. Scanners are employed, for example, in air rescue operations.

In sense 1, the scanner is the mechanical and electrical structure that rotates or swivels so that it points in successively different directions. Incorporated in it is the radiator.

scanning, *n. Radar.* The motion, usually periodic, given to the major lobe of an antenna; the process of directing the radio-frequency beam successively over all points in a given region of space.

Used attrib., as in *scanning beam, scanning instrument.*

scanning loss. A loss in radar sensitivity due to scanning across a target, as compared to the sensitivity when the beam is directed constantly at the target.

SCAP (*abbr*). 'Supreme Commander, Allied Powers.'

SCAR (*abbr*). 'Subcaliber aircraft rocket.'

scarf cloud. A thin, halo-like cloud that mantles the head, and sometimes the sides, of a cumulus. Sometimes called a 'cap cloud' or 'false cirrus' (which see).

Scarff mount. [Named after Squadron Leader Frederick W. *Scarff* (died 1931), of the Royal Naval Air Service and the RAF.] A flexible gun mount for an open cockpit, consisting of a circular movable ring or track running around the cockpit, together with a swivel mounting device, by means of which the gun or guns can be swung through 360 degrees and elevated or depressed at will.

The Scarff mount was used during WW I and after, esp. with the Lewis gun.

SCARWAF (*auth abbr*). 'Special category Army personnel with Air Force.' Pronounced as a word.

Attrib., as in *SCARWAF personnel, SCARWAF unit,* etc. Army personnel and units in this category are 'assigned' with the AF for the performance of AF functions only. They are charged to AF strength. Cf. **assign,** *v.*

scatter bomb. Any bomb that scatters its effects over a wide area.

Applied to fragmentation bombs or fragmentation clusters, and to certain incendiary bombs equipped with bursters.

scattered drop. A bomb drop in a pattern not intended.

scattering cross section. A radar cross section that returns scattered echoes.

SCC (*auth abbr*). 'Standard commodity classification.'

SCCO (*auth abbr*). 'Security classification control officer.'

SCEL (*auth abbr*). 'Signal Corps Engineering Laboratories.'

scenario, *n.* An outline plan of the actions to be undertaken during a projected exercise or maneuver.

scene, *n.* A place where some action takes place, as in *scene of battle, scene of action, scene of attack.*

This term is appropriately applied to airspace, as well as to places on the surface or under the seas.

sch (*auth abbr*). 'School.'

schedule, *n.* (sked) **1.** A guide postulated to time the beginning, intermediary phases, or the end of an act, series of acts, movements, or operation, as in 'the regular schedule called for forty landings each hour.' **2.** The time set for an action or event, as in 'he came in on schedule.' **3.** A tabulation showing the times postulated for a flight, movement, or the like; a timetable.

To be on schedule, to act or move at times called for by a schedule; *to operate on a schedule,* to perform various acts or moves in accordance with a schedule.

schedule, *v.tr.* **1.** To designate a time for an *aircraft, other vehicle,* or *body* of men to arrive, depart, or make some other move. **2.** To establish a schedule for an *operation* or the like, as in 'air transport operations were scheduled to meet overall demands.' Hence, **scheduled,** *a.*

scheduled airlift. The movement by air of personnel or materiel over established routes at regular intervals.

scheduled airline. An airline that operates on a regular schedule.

schematic drawing. A drawing that shows clearly the disposition of parts and their interrelations, sometimes by use of conventional symbols.

Schematic drawings are made of electrical circuits, mechanical installations, disposition of units on a map, or the like.

schlieren, *n. Schlieren method of photography,* a method of photography in which varying refractions in a medium caused by differences in pressure, density, or the like are detected by photographing a beam of light that passes through the medium.

Shock waves may be photographed by this method.

Schmetterling, *n.* A German code word for a rocket-powered, radio-controlled, subsonic missile launched from the ground against bomber formations in WW II.

Schneider index. A numerical index for indicating physical fitness. See next.

Schneider test. A physical-fitness test esp. for pilots that takes into account the results of several individual tests, as those on pulse rates and systolic pressure.

This test was developed by Dr. Edward C. Schneider (1874–1954), a pioneer aviation physiologist, honorary member of the Aero Medical Association, and the recipient of the John Jeffries Award in 1942.

Schneider Trophy Race. An international hydroairplane race in which the contestants competed for a trophy donated by M. Jacques Schneider (1879–1928), a wealthy French aviation enthusiast.

The trophy had to be won three times in succession to be permanently possessed. The race was made eleven times between 1913 and 1931 before England finally took the trophy. In 1925, Lt James Doolittle won the race and set four records in doing so. Two years previously, Lt D. Rittenhouse also won the race for the US. The race, a test of flying ability as well as of speed, was run on several different overwater courses during the years of competition.

schnorkel, *n.* A retractable air-intake tube on a submarine, permitting the crew to charge the batteries of the craft while it is submerged. Hence, *Schnorkel-detecting radar.*

Scholander apparatus. An apparatus that by using a solution to absorb the oxygen from a given amount of gas, determines the ratio of oxygen volume to the volume of unabsorbed gas.

school, *n.* (sch) **1.** An institution where students learn under the instruction or guidance of a faculty. **2.** The locale of such an institution.

'School' is applied in the AF to a great variety of teaching and learning activities, as to the Air War College, the Air Command and Staff College, the Command and Staff School, the School of Aviation Medicine, gunnery schools, aircraft mechanics schools, etc.

school bus. A jocular name for the airplane used by student pilots on the ground in certain early flying schools so as to learn the controls. See **taxi,** *n.*

School of Aviation Medicine, USAF. A school of the Air University for the training of technical and medical specialists and for research into causes, prevention, and cure of ailments peculiar to persons who fly.

Usually called the 'School of Aviation Medicine' (SAM), this school is located at Randolph Air Force Base and at Gunter Air Force Base.

school solution. A faculty solution.

Schwarm, *n.* The German designation for an operational flight of four or five airplanes in WW II.

A Schwarm consisted of two Rotten; three Schwarm made up a Staffel; four Staffeln made a Gruppe.

science, *n.* **1.** A branch of study concerned with observing and classifying facts in a particular field, together with the discovery and formulation of verifiable general laws in respect to the field, chiefly by the use of deductions from hypotheses and from inductive reasoning, which

laws, strictly speaking, deal only with quantitative matters, as in mathematics, physics, and chemistry. **2.** The systematized knowledge that arises from any such branch of study, classified and available for use; *specif.*, such knowledge related to the physical universe and its phenomena. **3.** Any special action or practice considered not only to be in harmony with such knowledge in certain relevant fields, but also to provide the means of achieving particular and practical ends, as in the phrases, 'air science,' 'domestic science,' 'the science of medicine,' 'the science of animal husbandry,' or 'the science of how to play tennis.' **4.** The people who are the custodians of such knowledge; the people who know how to act with knowledge and skill, as in 'a disease not known to medical science.'

The word 'science' as used in senses 1 and 2 is normally accepted by everyone as a proper term when applied to the physical and mathematical fields of chemistry, physics, astronomy, geology, and mathematics, or when applied to the field of biology with all its specialized subfields. In these the facts are quantitative in nature, and the laws are subject to objective verification. On the other hand, many persons avoid using the word in reference to the so-called social sciences, such as those of economics, political science, sociology, ethics, psychology, and anthropology. In these fields, the laws are considered to be less subject to objective verification than those in the physical and mathematical fields, and the facts are qualitative, as well as quantitative, in nature.

In sense 3, 'science' is closely related to the meaning of *art*, except that the connotation of knowledge is paramount in the word 'science,' as opposed to skill in the word 'art.' The two words are often joined in a single phrase, i.e., 'the art and science,' as used in defining such words as *strategy*.

Scientific Advisory Board. A board that advises the Chief of Staff, USAF, upon scientific matters.

scientific intelligence. Intelligence or intelligence information regarding scientific research and developments in foreign countries.

scientific research. 1. Research in a field of science. **2.** Research done by employing methods and techniques considered to reflect a high degree of exactness in the results.

In sense 1, scientific research usually connotes either basic or applied research. In sense 2, scientific research need not be in a field of science.

scientist, *n.* One who is learned in one of the physical, mathematical, or biological sciences.

scissoring, *n.* A technique of flight by escort fighters in which escorting aircraft from each side of the formation continually crisscross each other either above or below the formation.

scissors, *n.* A set of torque arms. *Slang.* See **torque arms.**

SCM (*auth abbr*). 'Summary court-martial.'

SCNAWAF (*auth abbr*). 'Special Category Navy with Air Force.'

SCO (*auth abbr*). 'Statistical Control Office(r).'

SCOOP (*abbr*). 'Scientific computation of optimum procurement.'

This is a flexible procedure for computing budget estimates to reflect frequent changes in basic programs.

scoop, *v. To scoop out*, to help extricate a bomber formation from attack on its return to base by sending fighter escort to meet it. *Colloq.*

scope, *n.* **1.** A cathode-ray screen. **2.** A cathode-ray tube. **3.** Short for 'oscilloscope.'

In sense 1 also used attrib., as in *scope image, scope interpretation, scope return*, and others.

scope dope. A radar watcher. *Slang.*

scope photo. A radarscope photograph.

scope photograph. Full for 'scope photo.'

score, *v. To score a hit*, to hit a target with a bomb, shell, or the like. Hence, *to score a near miss.*

scoring formula. The formula used to convert a raw score into a standard score.

Scorpion, *n.* A popular name for the F-89.

Scorsby base. A trade name for a machine, upon which gyroscopic instruments are mounted, that simulates the roll, pitch, and yaw of an aircraft. Also called a 'Scorsby platform.'

SCORU (*abbr*). 'Statistical control and operations records unit.'

Scott Air Force Base. An AF base at Belleville, Illinois, named for Corporal Frank S. Scott, the first enlisted man to lose his life in an air accident, killed in 1912.

scout, *n.* **1.** An aircraft used to reconnoiter an airspace or area and to probe its air defenses. **2.** An early designation, chiefly *British*, for a fighter, esp. a fast, lightly armed fighter. **3.** An aircraft used in search and rescue operations. **4.** *Capitalized.* A popular name for the L-15. **5.** Short for 'scout bomber.' **6.** The action of scouting, esp. in attrib. uses, as in *scout plane.*

scout, *v. tr.* To probe an *airspace* or *surface area* for the presence of something; to search out hostile *aircraft* or *submarines*. Chiefly *Naval.*

scout bomber. A former Navy designation for a carrier-based airplane used as both a scout or reconnaissance plane and a bomber.

scouting, *n. Specif.* The action of searching from an aircraft. Also used attrib., as in *scouting flight, scouting force, scouting plane, scouting speed, scouting squadron*, etc.

This word is commonly used in connection with submarine searches and in air rescue operations.

SCP (*auth abbr*). 'Survey control point.'

SCPt (*auth abbr*). 'Security control point.'

SCR (*abbr*). 'Signal Corps Radio.' A designation for any of several older radio sets or other complete electronic assemblages, distinguished in type by an assigned number. *Obsolescent:* See **AN nomenclature system.**

For example, the *SCR-277* is a portable, low-frequency, loop-type, four-course radio range transmitting station,

the *SCR-399* is a high-frequency ground-to-ground radio, and the *SCR-584* is a mobile medium-range radar unit, designed for use with antiaircraft artillery.

scramble, *n.* **1.** The whole action involved in getting interceptors into the air in the shortest time possible, sometimes without adequate warmup: See note. **2.** The complete action of a single interceptor pilot in climbing aboard his aircraft, starting his engine, taxiing, making the takeoff run, and getting into the air in the shortest time possible. **3.** *pl.* Interception operations that involve such actions, as in 'the fighter airplane was used in convoy escort, patrol, and scrambles.' **4.** In general, any unceremonious action while getting under way.

In sense 1, the scramble is often marked by diverse movements all at the same time; some aircraft may be parked with pilots climbing aboard, others may be taxiing, others on the takeoff run, etc. This action is hurried. The scramble may begin before the pilots get into the airplanes, or it may begin after the pilots are in their airplanes ready to act upon receiving orders.

Attrib. in senses 1 or 2, as in *scramble alert, scramble hut, scramble order, scramble signal,* etc.

scramble, *v.* **1.** *tr.* To put *interceptors* into a scramble in a hurried effort to meet an enemy air attack. **2.** *intr.* Of pilots or their airplanes: To engage in a scramble. **3.** *tr.* To alter transmitted radio or telephonic *frequencies* in order to make them unintelligible unless unscrambled; to transmit a *message* with altered frequencies.

scramble ramp. An apron used to facilitate the scramble of aircraft. See **apron,** *n.*

scrambler phone. A telephone instrument that scrambles a message.

scrap, *n.* Anything considered to have no value except for its raw materials. Also attrib., as in *scrap metal.*

This term is applied to fragments of material or to things discarded as no longer serviceable. Scrap differs from waste in that the latter is considered to have no value whatever.

screen, *n.* **1.** Anything used to protect or shield a country or friendly force from hostile attack, interference, or observation. **2.** A surface upon which images may be projected or displayed. **3.** A filter or other device that separates foreign matter from air or liquid.

In sense 1, 'screen' is applied to: **a.** A force or formation interposed between the enemy and the shielded force. **b.** A camouflage, smoke screen, or natural feature that serves to hide the shielded force. **c.** An early-warning radar network.

screen, *v. tr.* **1.** To shield, hide or protect *something.* **2.** To review and inspect *personnel* with the object of detecting different qualities or qualifications. **3.** To examine *files* or other *data* closely in search of persons having certain qualifications, or in search of things having desired features or capacities. **4.** To put *requisitions, requests,* etc. through some selective process; to pass judgment on *requirements.*

screen grid. An electrode placed between the control grid and the plate of certain vacuum tubes to reduce interelectrode capacitance. See **grid,** *n.,* sense 4.

screening, *n.* The action of the verb 'screen' in various senses. Used attrib., as in *screening agency, screening center, screening mission, screening test.*

screw, *n.* A screw propeller.

screw propeller. A name sometimes given to the bladed propeller. See **airscrew,** *n.*

Each blade of a propeller is so shaped as to trace a helix through the air like a screw thread.

scrip, *n.* A small piece of paper marked in monetary amounts used as currency at certain overseas air bases or stations.

See **military payment certificate.**

scrounge, *v. tr.* To secure *something* by special effort or by devious methods. *Slang.*

scrub, *n.* The act or action of scrubbing a mission or operation. *Slang.*

scrub, *v. tr.* **1.** To cancel a *plan, mission,* or *operation,* esp. after a long wait or psychological buildup; to cancel a planned attack on a *target.* Sometimes *to scrub out.* **2.** To wash a *person* out, esp. after he has had some reason to expect success.

Originally *slang* in both senses.

scrub target. A target that has been scrubbed.

SCS (*abbr*). 'Signal communications system.' Used, as in *SCS-51,* to designate an instrument landing radio system, now considered obsolete.

sct (*auth abbr*). 'Scout.'

SCU (*abbr*). 'Statistical control unit.'

scud, *n.* Fragments of loose clouds driven by wind; fractonimbus.

scupper, *n.* An opening used for drainage.

On aircraft the scupper sometimes operates by suction.

sd (*auth abbr*). **1.** 'Sound.' **2.** *Caps.* 'Special duty.'

SDIT (*abbr*). 'Service de Documentation et d'Information Techniques de Aéronautique.'

This service is used by NATO countries.

SDO (*auth abbr*). 'Special duty only.'

SdRng (*auth abbr*). 'Sound ranging.'

SE (*auth abbr*). 'Single engine.'

S.E.5A. [From '*S*couting *E*xperimental.'] A British, single-place, biplane fighter of WW I, developed by the Royal Aircraft Establishment.

A small number of S.E.5A's were procured by the A.E.F.

seaborne, *a.* **1.** Carried on a ship or ships. **2.** Of an air assault: Launched from a ship or ships.

Cf. **airborne,** *a.,* and **land-based,** *a.*

SEAC (*abbr*). In WW II, 'Southeast Asia Command.'

sea campaign. A campaign conducted primarily upon the surface of the seas, air power (if used) being directed against either surface vessels

or hostile aircraft over the seas. Cf. **seaborne,** *a.*, and **land campaign.**

sea clutter. Sea return.

sea communications. A system of water routes and facilities used in transporting persons and goods upon the seas.

seadrome, *n.* An airdrome established at sea, to accommodate either seaplanes or land-based airplanes, or both.

sea duty pay. Additional pay for an airman for authorized service performed aboard a marine vessel for specified periods.

Seafire, *n.* A naval version of the Supermarine Spitfire, specially adapted for operation from aircraft-carriers.

sea fog. An advection fog formed over an open body of water when warm, moist air moves over a colder water current.

Sea fog retains its name even though it moves over land.

sealant, *n.* A sealing compound.

sea level. 1. The level at the surface of the sea; *specif.*, mean sea level adopted as a standard for measuring heights or altitudes. **2.** The standard datum plane from which altitudes are computed by means of differences in atmospheric pressures.

sea marker. A dye marker used in the sea.

sea mine. A mine normally dropped in water by a water vessel.

seaplane, *n.* **1.** An airplane designed or equipped to take off and alight on water only, i.e., either a float plane or a flying boat, as distinguished from a landplane, carrier plane, or amphibian. **2.** In some contexts, a float plane, as distinguished from a flying boat.

Attrib. in sense 1, as in *seaplane base, seaplane fighter, seaplane float, seaplane tender*, etc.

seaplane hull. The hull of a flying boat.

sea power. Also **seapower,** *n.* **1.** That power that arises from man's ability to sail ships upon the seas. **2.** An instance of this power as it exists in a particular nation, esp. with reference to its adaptation to military ends. **3.** A force consisting of naval and merchant ships. **4.** The naval arm. **5.** A nation having naval strength.

The different senses of 'sea power' parallel those of 'air power' (which see).

sear, *n.* That part of the lockwork of a firearm that engages the hammer or striker to hold it in a cocked position.

search, *n.* **1.** The action of looking, esp. from an aircraft, for something lost, as for lost persons or aircraft forced down at sea or in a remote land area; a phase of search-and-rescue operations. **2.** The action of looking for or locating hostile aircraft or other hostile forces, as in 'search and patrol.' **3.** In radar scanning, the action of looking for an object of interest.

Attrib. in sense 1, as in *search aircraft, search headquarters, search mission, search rate*, etc.; in sense 2, as in *search attack, search patrol*, etc.; in sense 3, as in *search receiver, search sector, search track*, etc.

search and rescue. The action involved in searching for, lending aid to, and rescuing personnel either on land or on sea.

In this action, aircraft, land and sea surface vehicles, and submarines may be employed. See **Air Rescue Service,** note.

Attrib., as in *search-and-rescue commander, search-and-rescue unit.*

search and rescue coordination center. A rescue coordination center. See separate entry.

search antenna. A radar antenna or antenna system designed esp. for search.

searchlight, *n.* (slt) An apparatus for projecting a beam of light upon an object, esp. on aircraft flying at night; the beam of light projected.

Attrib., as in *searchlight battery, searchlight beam, searchlight control, searchlight fighter-team, searchlight unit.*

searchlighting, *n.* The action of projecting a radar beam steadily upon an object instead of intermittently in scanning. Cf. **linear scan.**

search pattern. A pattern used in searching for something, as by aircraft in searching for lost personnel or equipment, or by aircraft or radar in searching for an intruding force.

search radar. Radar or a radar set designed esp. for searching out objects, as distinguished from radar designed primarily for other purposes, such as navigation, bombing, or altitude measurement.

Search radar ordinarily determines only the range and azimuth of objects within its area of detection. It is used for early warning, for use in connection with ground-controlled approach and ground-controlled interception (with auxiliary precision and height-finding radar), and for other appropriate purposes.

sea return. *Radar.* Echoes from the surface of a body of water that tend to clutter the radar screen.

sea smoke. Steam fog. See separate entry.

seat, *n.* **1.** In an airplane, a place for a single person to sit. **2.** In the phrase *seat of the pants*, used adverbially or attributively, as in to 'fly by the seat of one's pants' or 'seat-of-the-pants flying' in sense: Without benefit of flight instruments or navigational aids; entirely by the sense of feel. *Slang.*

seat belt. A safety device normally consisting of a strap or straps on a seat that may be buckled over the lap, as during takeoffs and landings or during an air battle.

seater, *n.* Used in combination with designating numbers, as in 'two-seater,' 'three-seater,' i.e., a vehicle providing a seat each for the designated number of people.

seating capacity. The number of seats on an aircraft. See **load factor.**

seat mile. A unit for measuring capacity passenger travel: one seat, occupied or unoccupied, transported one mile.

On a given trip, the seat miles consist of the number of seats on the airplane multiplied by the number of miles. See **passenger mile.**

SEATO (*abbr*). 'Southeast Asia Treaty Organization.'

seat pack. Short for next.

seat-pack parachute. A parachute assembly which when donned has the pack at the wearer's seat.

seawing, *n.* A popular name for a hydrostabilizer.

sec (*auth abbr*). **1.** 'Section' or 'security.' **2.** 'Secretary' in combinations only.

secd (*auth abbr*). 'Secondary.'

SecNav (*auth abbr*). 'Secretary of the Navy.'

second, *a.* After the first; next in rank to the first; etc. Used in various locutions, as in 'airman second class,' 'second lieutenant,' etc.

secondary AFS. Any Air Force Specialty held by an individual other than his primary AFS.

secondary bomb damage. Nonphysical bomb damage. See **bomb damage,** sense 2.

secondary control. Control over an airborne remote-controlled gunnery system when primary control cannot be, or is not, exercised. See **primary control,** note.

secondary landing. In amphibious operations, a landing made outside the designated principal landing area.

secondary mission. Any mission assigned an organization, group of persons, or person, deemed to be additional or supplementary to the primary mission.

There can be more than one secondary mission.

secondary responsibility. *Specif.* The responsibility for certain aspects of contract administration performed at the office of an AF plant representative or air regional office other than the office of administration.

These include such functions or activities as production supervision, purchase inspection, property accountability, cost analysis, approval of cost-plus-fixed-fee subcontractor's invoices, assistance in price redetermination, and preliminary or final inspection of completed product.

secondary stall. A stall following recovery from an original stall.

secondary target. (stgt) **1.** A target having second priority in case the primary target cannot be attacked. See **tertiary target. 2.** In less precise usage, any of one or more targets designated for attack in case the primary target cannot be attacked.

secondary-type glider. A glider having somewhat better aerodynamic characteristics than those of a primary-type glider. Cf. **performance-type glider.**

second-echelon maintenance. The former designation for maintenance performed on equipment by the organization in which used.

Now a part of organizational maintenance, and no longer differentiated from first-echelon maintenance.

second front. A front opened up after a single front has been established. Used esp. in WW II.

second lieutenant. A commissioned rank or person in the AF, Army, or Marine Corps, immediately below first lieutenant, the lowest of the commissioned ranks or persons; (*capitalized*) the title of this person.

second-line, *a.* Of aircraft: Having formally recognized limitations for combat or other military use, used, however, in emergency and in services for which first-line aircraft are not available.

second pilot. 1. A copilot. **2.** An AF pilot with a rating designating him to serve as a copilot of a specified aircraft.

second-stage rocket. A rocket carried within a larger rocket, launched by its own propellant while in flight. See **Wac Corporal.**

Second World War. A common name for the world war (1939–1945) that ended with the defeat of the Axis powers. See **World War II.**

secret, *a.* **1.** Of classified material: Having such status that the unauthorized disclosure of which would endanger national security, cause serious injury to the interests or prestige of the US, or be of great advantage to a foreign nation with respect to the US. See **classification,** *n.*, note. **2.** Concealed, not openly shown or revealed, as in 'a secret agent' or 'a secret air base.'

In sense 1, often capitalized or written full caps.

secretary, *n.* (secy) **1.** A name applied to any of certain US officers of government, responsible for an executive or military department, as in 'the Secretary of the AF.' **2.** *Capitalized.* The title of such an officer. **3.** A name sometimes given a particular staff officer responsible to the commander for certain official correspondence, records, etc., as in 'the Air University Secretary' or 'Secretary, Air Staff.'

Secretary of Defense. The civilian head of the Department of Defense and the second ranking member of the President's cabinet; the title of this officer.

This title was also given the head of the former National Military Establishment (1947–1949).

Secretary of the Air Force. (SAF) The civilian head of the Department of the Air Force.

Secretary of the Army. The civilian head of the Department of the Army.

Secretary of the Navy. The civilian head of the Department of the Navy.

Secretary of War. The designation for the

civilian head of the now historical War Department; the title of this officer. *Hist.*

secret weapon. A weapon closely guarded or kept under concealment so as to be used with advantage before countermeasures can be taken against it. Also *transf.*, as in 'his secret weapon was his staff work.'

section, *n.* (sec) A distinct part of something.

Applied to: **a.** A part of a formation, or a distinct group, of aircraft. **b.** A distinct part of a physical structure. **c.** A subdivision of a branch in certain headquarters organizations. See **branch,** *n.*, note. **d.** A subdivision of certain other organizations, as in 'the travel section of a finance office.'

Sectional Chart. An aeronautical chart (scale 1:500,000) used for flights of short duration. Issued by the US Coast and Geodetic Survey. Officially called 'United States Sectional Chart.'

sector, *n.* A clearly defined area or airspace designated for a particular purpose: See note.

Variously applied, as to: **a.** A defined airspace in which a given force is responsible for its air defense. The airspace may be defended by fighters, AA batteries, barrage balloons, or by a combination of these. **b.** A defined part of the enemy's back or rear area, used in assigning air attack missions. **c.** A distinct part of a front held by a given force. **d.** A defined area in a coastal frontier defense; the organization responsible for its defense. **e.** A segment of airspace extending conelike from a radar scanner. See next.

In senses a, c, and d, the term 'sector' is used to suggest defensive, rather than offensive, action. Cf. **zone of action.**

sector scan. A radar scan through a limited angle, either in azimuth or depth, as distinguished from a scan that fully rotates. Hence, **sector scanning.**

secure, *v. tr.* **1.** To get credit for a *kill*. See **kill,** *n.* **2.** To gain *air superiority* and take measures against its loss; to take an *objective* and take measures against its loss. **3.** To close up a *safe*, *office*, or *building* so as to provide security for classified matter in accordance with regulations. **4.** In the Navy, to end or wind up an *exercise* or *operation*.

security, *n.* (sec) **1.** The condition of being protected against the compromise of classified matter, espionage, sabotage, surprise attack, annoyance, or observation. **2.** The rules or principles followed to achieve this condition, as in 'security requires that we arm each guard.' **3.** A principle of war embodying the thesis that protection against surprise attack, espionage, and sabotage is essential to success in battle.

Attrib. in respect to: **a.** Protection against espionage or the compromise of classified material, as in *security briefing*, *security check*, *security violation*. **b.** Protection against surprise attack, as in *security forces*, *security troops*, etc.

security classification. The classification given a document, piece of equipment, or other thing that indicates the degree of danger to the nation if information within or about it is revealed or compromised.

The usual classifications are confidential, secret, and top secret. See **restricted data.**

security clearance. A clearance given a person permitting him access to classified material, equipment, or information up to and including a given classification, provided he can establish a need-to-know.

security courier service. A courier service authorized and able to handle and transport classified information and material.

security darkness. A condition in which there is sufficient darkness to provide security against unaided visual observation.

In security darkness, visibility is less than one-half mile.

security information. Information considered of such a nature as to warrant a security classification.

security measure. A measure taken to assure security against compromise of classified matter, espionage, sabotage, surprise attack, annoyance, or observation.

security patrol. *Specif.* An air patrol that wards against surprise activity on the part of the enemy.

Security Service. Short for 'United States Air Force Security Service.'

secy (*auth abbr*). 'Secretary.'

seek, *v. tr.* To go toward a *target* or other *object* in reaction to some influence such as heat, light, or sound emitted by the target or object. Said of certain guided missiles or pilotless aircraft. See next and **target-seeking,** *a.*

seeker, *n.* Any moving object that seeks its direction through a device attracted to light, heat, radio waves, sound, or the like, esp. a missile that finds its target by means of the light, heat, or the like emitted by the target; the device used in such an object. See **heat seeker, homing,** *n.*, note, **homing device, target seeker.**

segregated area. A geographical location in which one nation or coalition of nations comes into armed conflict with another nation or coalition of nations, such location not being an integral part of the conflicting nations or coalitions.

By this definition, Korea in 1950–1953 was a segregated area, wherein the interests of Communist China and of the United States and other nations of the UN were in conflict. 'Segregated area' is used esp. in contexts involving doctrinal discussions.

sel (*auth abbr*). 'Selectee.'

selective service. (SSvc) Often *capitalized.* **1.** Short for 'Selective Service System.' **2.** The service of a person in the Armed Forces in consequence of being inducted under the Selective Service System. Distinguished from 'voluntary service.'

Selective Service System. A system for selecting

and inducting persons into the armed forces of the US.

The Selective Service System was set up by the Selective Training and Service Act of 1940, and was reestablished by the Selective Service Act of 1948.

selectivity, *n.* A capability of air forces to make a selection from a wide variety of weapons, routes, tactics, targets, and effects.

selector, *n.* Any electrical or mechanical device for the automatic selection of something required for a particular purpose, as a selector for dropping bombs in a certain way, or a selector for firing a particular gun. Attrib., as in *selector panel, selector switch, selector valve,* etc.

self-contained, *a.* **1.** Contained within the same case or cover that contains something else. Applied to the motor of a rocket, to a fuze, etc. **2.** Making up a single package.

In supply usage, a *self-contained unit* is a unit of manufacture normally received, stored, and shipped without wrapping, boxing, or other external protection.

self-destruction equipment. Equipment that may be destroyed by a self-contained explosive.

Detonation of the explosive may be by a time-delay mechanism, by radio command, by automatic trip mechanism, or by other device. Secret equipment exposed to the danger of capture may be rigged with a self-destruction device.

self-guided, *a.* Of missiles: **1.** Directed along a course by use of self-contained devices, as by use of a preset mechanism, a radio set, or a self-reacting device. See **guided,** *a.*, note. **2.** In a restrictive sense, directed in response to built-in self-reacting devices only.

self-inductance, *n. Electricity.* Inductance within a circuit induced by the circuit itself. See **inductance,** *n.*

self-inflicted, *a.* Of a wound or other injury to one's person: Deliberately caused by one's own action.

self-loader, *n.* A self-loading firearm or gun.

self-loading, *a.* Of a firearm or gun: That utilizes either the explosive gases or recoil to extract the empty case and chamber the next round.

Self-loading firearms or guns include both semiautomatic and full-automatic types.

self-piloting ignition. The continuous ignition of a ramjet's fuel-air mixture by means of the flame in the combustion chamber.

self-propelled, *a.* **1.** Of a gun: Mounted on a vehicle that has its own motive power. **2.** Of a missile: That is propelled by fuel carried by the missile itself, as in the case of a rocket. **3.** Of a military unit: Having self-propelled guns. **4.** Of a vehicle: Given motion by means of a self-contained motor.

self-reacting device. A device that works as desired in response to some environmental influence other than direct or remote control.

A homing device (sense 2) is an example of a self-reacting device; also a device that levels out the flight of a missile upon attaining a certain altitude is a kind of self-reacting device. Cf. **inertial guidance.**

Selfridge Air Force Base. An AF base at Mt. Clemens, Michigan, named for Lieutenant Thomas E. Selfridge, killed in 1908 when he flew as a passenger with Orville Wright in demonstrating the Wright brothers' airplane for the US Government.

self-sealing, *a.* Of a fuel tank: Lined with a substance that closes immediately over any small rupture in the tank, such as a bullet hole.

Selsyn, *n.* [A General Electric trade name, coined from *self-syn*chronous.] A term applied either to a synchro generator or a synchro motor, designed for different purposes, as for synchronizing gunfire with a radar scanner. See **synchro,** *n.*

Selsyn zeroing. The zeroing-in of a Selsyn with the mechanism or equipment that it reacts with, as with a gun.

Sembach Air Base. An air base at Sembach, Germany, named for the city.

semiannual, *a.* For AF purposes: Occurring or issued every half year. See **biannual,** *a.*

semi-armor-piereing bomb. A bomb designed esp. for use against lightly-armored targets.

The semi-armor-piercing bombs are intermediate in design between general-purpose bombs and armor-piercing bombs, i.e., they have heavier cases than general-purpose bombs, and a heavier charge than armor-piercing bombs.

semiautomatic, *a.* Of a firearm or gun: Utilizing part of the force of an exploding cartridge to extract the empty case and chamber the next round, but requiring a separate pull on the trigger to fire each round. See **automatic,** *n.*, and cf. **full-automatic,** *a.*

semidiameter, *n.* In air navigation, a factor sometimes used in reckoning the angular altitude of the sun or moon, being one-half the angular diameter of the body.

If the upper or lower limb of the sun or moon is observed, its angular altitude is minus or plus its semidiameter, as the case may be, since the angular altitude of the body is measured from its center.

semimonocoque, *n.* **1.** A semimonocoque fuselage. **2.** An airplane with such a fuselage.

semimonocoque, *a.* **1.** Of a fuselage: Constructed with longerons as well as frames and formers, the longerons reinforcing the skin in taking the bending stress to which the fuselage is subjected. **2.** Patterned after a fuselage so constructed. Said of an airplane, design, or construction.

semimonthly, *a.* For AF purposes: Occurring or issued twice a month, esp. at intervals of two weeks or fifteen days. See **bimonthly,** *a.*

semirigid airship. A dirigible having its main envelope reinforced by some means other than by a completely rigid framework.

The semirigid airship usually has a metal keel within the main envelope which in conjunction with some other means of stiffening, as ropes, cables, nets, and the like, gives support. Like the rigid airship, the semirigid airship may contain several individual gas cells within the main envelope.

semiskilled, *a.* Qualified to assist a skilled specialist, but not so skilled as to work without supervision.

senior, *a.* **1.** Considered older, better skilled, or more experienced in some regard, as in years in service or time served in a particular grade, etc. **2.** Designating a person or his position with greater responsibility than another with similar duties.

A person of higher rank is normally considered senior to one of lower rank, although his age and time in service may be less.

senior AFS. An Air Force Specialty given a person to indicate his status as skilled rather than semiskilled.

senior aircraft observer. An aeronautical rating higher than that of aircraft observer, and indicative of superior qualifications in its holder; the person who holds this rating.

senior colonel. A colonel who has been in grade for some time.

senior officer. 1. An officer senior to others either by rank or date of rank. **2.** An officer of field grade or higher.

senior pilot. An aeronautical rating higher than that of pilot, and lower than that of command pilot; a person holding this rating.

Under current regulations, a senior pilot requires seven or more years' service as a rated heavier-than-air aircraft pilot, at least 2,000 hours of flying time as pilot or copilot, and a current green instrument card.

SENL (*auth abbr*). 'Standard Equipment Nomenclature List.'

sense antenna. A receiving antenna, used with a directional receiving antenna, that distinguishes the direction of the signal.

sense indicator. A flight instrument used to determine whether an aircraft is flying toward or away from a VHF omnidirectional radio range station. See **VHF** (*auth abbr*) and **omnidirectional radio range.**

sensible horizon. A plane that passes through the eye of an observer, at right angles to the vertical and parallel to the rational horizon.

Because it is always tangent to the earth, or tangent to a spherical surface parallel to the earth, the sensible horizon is actually a succession of planes for a moving observer.

As the sensible horizon is normally established by use of a sextant, it is usually called a 'bubble horizon.' See **bubble horizon** and **celestial horizon,** esp. note.

sensing, *a.* Of a device: That reacts in some particular way when stimulated by electronic or other type waves emanating or reflected from an object or other source, as in *sensing antenna, sensing unit.*

sensing antenna. A sense antenna.

sensitive, *a.* Of a position, organization, or post: In which highly classified materials are handled.

sensitive altimeter. 1. Originally, an aneroid altimeter, in reference to the aneroid as a sensing element. **2.** An altimeter sufficiently sensitive for use in instrument flying.

sensitivity, *n.* **1.** The property of an explosive that relates to the quickness of its reaction to the igniting action, as in 'the high sensitivity of an initiator, or the low sensitivity of a bursting charge.' **2.** The property of an electrical or electronic piece of equipment to respond quickly and clearly to a signal, sometimes measured by its response to a minimum signal.

sentinel, *n.* **1.** *Capitalized.* A popular name for the L-5. **2.** A person charged with standing guard and giving notice of danger when danger arrives.

sentry, *n.* A guard, esp. one who stands guard at a point where only properly authorized and identified persons are permitted to pass. Usually called 'guard' in the AF.

Seoul Air Base. An air base at Seoul, Korea, named for the city.

sep (*auth abbr*). **1.** *Capitalized.* 'September.' **2.** 'Separate.'

separate, *v. To be separated,* to be formally relieved of obligation to continue in the active military service by means other than death or retirement; to be returned to civilian life. Said of both commissioned and enlisted persons. See **separation,** *n.*

During and at the end of WW II, officers were said to be separated; enlisted men were discharged.

separate air force. An autonomous air force independent of a country's army or navy. Also called 'independent air force.'

separate operating agency. *Specif.* An operating agency directly subordinate to Headquarters USAF and outside the normal organizational structure of the AF.

separate unit. 1. For purposes esp. of manpower and organization, a special unit on a squadron level directly under the headquarters of an establishment higher than a wing. **2.** A colored or Negro unit. Sometimes used in the AAF, but now *hist.*

In sense 1, the separate unit is distinguished from a headquarters squadron in that it performs a special mission for the establishment. For example, an AF band when directly under a command headquarters is considered a separate unit.

separation, *n.* **1.** The process by which a person is separated from the service, i.e., returned to civilian life. See **separate,** *v.* **2.** The condition that arises when the flow of air in the boundary layer leaves the surface of the airfoil or becomes

turbulent. See **laminar separation, turbulent separation;** also **stall,** *n.*, sense 1.

Separation (sense 1) may be effected by discharge, by resignation, revocation of a commission, dismissal, etc., the particular method being that which is appropriate to the individual and purpose. At the end of WW II, separation was effected for large numbers of persons, some of whom signed up for the reserve. In the process, certificates of service were issued, physical examinations made, orders cut, etc. Officers were provided with a 'Military Record and Report of Separation'; enlisted personnel honorably separated were provided with an 'Enlisted Record and Report of Separation Honorable Discharge.' Under current regulations, enlisted persons are provided with a 'Report of Separation from the Armed Forces of the United States.'

Attrib. in sense 1, as in *separation center, separation procedure,* etc.

SEPE (*auth abbr*). 'Seattle Port of Embarkation.'

SepRos (*auth abbr*). 'Separation processing.'

sequence valve. A valve that automatically opens or shuts in response to a particular preceding event.

ser (*auth abbr*). 'Serial.'

sergeant, *n.* (sgt) **1.** In the AF, any one of the noncommissioned officers, i.e., a staff sergeant, technical sergeant, or master sergeant. **2.** In the former AAF and in the Marine Corps, a noncommissioned officer immediately above corporal and immediately below staff sergeant, corresponding to airman 1st class in the AF. **3.** In the Army, a noncommissioned officer between corporal and sergeant first class, corresponding to staff sergeant in the AF. **4.** *Capitalized.* The title given to a sergeant in any grade. **5.** Used attrib. to designate rated personnel in the grade of sergeant, as in *sergeant aviator, sergeant observer, sergeant pilot.*

See **E** (*abbr*), sense 1, **first sergeant.**

sergeant major. A designation for the chief administrative noncommissioned officer of certain unit (group or higher) headquarters; the position of this person.

The sergeant major assists the adjutant in certain units.

serial, *n.* (ser) **1.** A numerical or lettered designation, or a combination of numbers and letters, assigned to something or other for convenience in planning and scheduling, esp. in planning, scheduling, and controlling movements by air, land, or water. **2.** The element, group, or thing so designated. See **glider serial, parachute serial.**

serial number. Any number from a series used to identify a person, piece of equipment, or the like.

'Service number' is preferred to 'serial number' in reference to persons in the AF.

series, *n. Specif.* Short for 'model series,' as in 'the new airplane belongs to series E.' See **model,** *n.*, note.

serics circuit. *Electricity.* An arrangement in which the parts of a circuit are placed end to end to form a single path for the current. Ct. **parallel circuit.**

series production. Production of an item of equipment, in which all individual units are essentially alike within a given model series.

Applied esp. to the production of engines or aircraft when the requirement for multiple production of a given production model is carried out. See **model,** *n.*, note.

SERTH (*auth abbr*). 'Satisfactory evidence received this headquarters.'

serv (*auth abbr*). 'Service' in combinations only.

serve, *v. intr.* To carry out one's military duties or assignments *under* a given commander, or *in* a given unit or place, as in 'he served under General Doolittle in North Africa.'

service, *n.* (svc) **1.** The performance of labor for another, normally without producing a tangible commodity. Applied esp. to the repair and maintenance of machines, or to those activities that keep an organization and its members in a fit and sound condition, sometimes, however, to the exclusion of supply, as in 'the supply and service of this unit was his responsibility,' or as in the phrase 'supply and service contracts.' **2.** That which is accomplished by virtue of such performance of labor. **3.** The carrying out of military or other duty or assignments; the status derived from this, as in 'he had service with the Civil Air Patrol.' **4.** The organization or force in which a person serves: **a.** Applied to any one of the three branches of the Department of Defense; hence, short for 'armed service': See note. **b.** Applied to a branch of an armed force, esp. if such branch is noncombatant and renders support or aid to combat units, as in 'Air Force Medical Service.' **5.** *To be of service,* to be of value.

Attrib. uses bring out some of these meanings clearly. In sense 1, *service company, service pilot;* sense 3, *service award;* sense 4a, *service club, service pride, service-connected disability, service designation.*

In sense 4a, 'service' is distinguished from 'arm' or 'force' in that the term has connotations of the services rendered. Perhaps because of this, it is customary to refer to 'an enlistment in the services' rather than 'an enlistment in the forces,' although it is common to say 'an enlistment in one of the armed forces.' See **armed service.**

service, *v. tr.* To do whatever is necessary to an *airplane, engine,* or other piece of *equipment,* or to a *part,* in order to make it operational or serviceable.

'To service' sometimes implies only refueling and relubricating, but sometimes it implies doing other things, as supplying with ammunition, cleaning, making minor repairs, etc.

serviceability, *n.* The degree to which a thing can render service.

The degree is usually indicated by a percentage figure or by an adjective, such as 'low,' 'high,' or 'excellent.'

serviceable, *a.* **1.** Ready to be used for the purpose intended; in suitable condition for use. Said of

ammunition, of an engine, airplane, or other piece of equipment. **2.** Suited to the need at hand; useful.

Usage in these two senses may be illustrated as follows: 'A serviceable R-1820 engine is not serviceable for installation in a B-29,' or 'live .30 caliber ammunition is serviceable for a .30 caliber gun, but not so for a gun of another size.' The AF normally uses the word in sense 1.

serviceable property. Property in fit condition for use in accordance with the purpose or specification for which it was procured, i.e., for which it is recorded.

service academy. An academy (which see) for one of the Armed Services.

The Air Force, Army, Navy, and Coast Guard have service academies. See **United States Air Force Academy**, etc.

service apron. An apron for use in the service or repair of aircraft. See **apron,** *n.*

service award. An award for honorable service conferred upon an individual or unit, entitling a person or a member of the unit to wear a certain medal or device; a medal or device authorized by such an award.

Service awards are distinguished from decorations, and include various theater medals or ribbons, the American Campaign Medal, the Good Conduct Medal, and the overseas bar.

service bomb. Any bomb, regardless of type, for direct use against an enemy.

Service bombs are distinguished from practice bombs and drill bombs.

service cap. The standard visored cap used in the Air Force.

service ceiling. The height above sea level, under normal air conditions, at which a given airplane is unable to climb faster than at a specified rate per minute (100 feet in the US and England).

Cf. **combat ceiling.**

service club. A recreational facility designed for use during off-duty hours by airmen, their families and friends.

service coat. The coat of the service uniform.

service command. A command organized to provide supply and maintenance. Sometimes in official names, as in *X Air Force Service Command*. Now *hist.* in the AF.

Both 'service command' and 'air service command' were terms of general reference in WW II, as well as being used in specific reference.

service group. 1. In a general sense, a maintenance and supply group of a wing. **2.** In WW II, an early name for an air service group; also short for 'air service group.'

serviceman, *n.* A person in the armed services.

service medal. A medal worn by virtue of a service award.

service number. (SN) A serial number assigned to a member of the armed services. In the AF, this term is preferred to 'serial number' in this specific sense.

service personnel. 1. Personnel that render support and aid, as distinguished from combat personnel or flying personnel. **2.** Military personnel. *Loose* usage.

service pilot. An aeronautical rating not currently effective formerly given a pilot qualified to fly only aircraft other than those used in combat; a person who had earned such a rating.

Service pilots were many during WW II.

service record. The record of service of an airman, beginning with the date of his entry into military service; also, loosely, the qualification record of an officer or warrant officer.

service ribbon. A ribbon or ribbon bar of prescribed size, identical in color and design to a suspension ribbon, worn on the uniform in lieu of a decoration or medal.

service school. A school conducted by one of the military services, primarily for service personnel.

Services of Supply. An early WW II name for the Army Service Forces (1943–June 1946).

Redesignation was by War Department General Orders No. 14, 12 Mar 1943.

service star. A small star-shaped piece of metal worn on a campaign ribbon or ribbon bar, signifying membership in a unit that participated in a battle or campaign.

Each bronze service star worn stands for a separate battle or campaign. Each silver service star signifies participation in five battles or campaigns.

service stock. A predetermined quantity of specified items, conveniently located, for issue to a maintenance shop, repair activity, personnel processing unit, or the like, for use in its operation.

service stock control level. The level at which service stock must be kept to provide for a specified number of days of anticipated issue.

service stripe. A federal service stripe.

service test. 1. A test, under simulated or actual conditions, to determine the characteristics, capabilities, and limitations of a given piece of equipment or materiel. **2.** A similar test made of a plan, method of doing something, or organization. **3.** An operational suitability test, esp. when used as an attrib., as in *service-test guided missile*. **4.** A test made at any point in the development of a piece of equipment or materiel, with the object of predetermining, if possible, ultimate capability and serviceability.

Sense 1 is distinguished from sense 3 by a slight difference in purpose. See **operational suitability test.**

Sense 4 includes any test made during the research and development stage, or a test to see if a contractor has complied with specifications, or a test on refined or modified material.

service-test, *v. tr.* To put *something* through a service test. Hence, **service testing.**

service-test aircraft. Aircraft procured in limited

numbers prior to general adoption or standardization by the AF, for controlled use or operation under normal or anticipated conditions, with the object of testing design, materials used, methods, etc., and of determining what operational procedures will be required to use the aircraft.

Service-test aircraft, as well as service test guided missiles, have the classification symbol 'Y' prefixed to the model designation.

service troops. Military personnel used to support, but not to engage in, flying operations or combat operations.

service-type, *a.* Of aircraft, equipment, etc.: Specifically designed or manufactured for one or more of the branches of the armed services.

service uniform. The normal uniform worn by service personnel except for special duty requirements.

This uniform varies. In the summer, the tan uniform, with or without the coat, with blue tie and blue belt, is authorized; in the winter, the blue wool uniform, with coat or jacket, blue shirt and blue tie, is authorized.

service unit. An organizational unit with the primary mission of providing services, such as a maintenance squadron or a supply squadron.

servo, *n.* Short for 'servomotor,' 'servomechanism,' or the like.

servo, *a.* or *prefix.* [Latin *servus*, slave.] That makes use of a servomechanism, as in *servo feed*, *servo tab*, *servo-unit*, etc.

servo-amplifier, *n.* An amplifier in a servosystem.

servocontrol, *n.* **1.** Control of anything through use of a servomechanism. **2.** The servomechanism that provides this control; *specif.* on an airplane, an auxiliary control surface that by mechanical or aerodynamic relay takes over part of the load in operating a larger control surface.

A flying tab is a kind of servocontrol in sense 2.

servodyne, *n.* A power unit used in a servosystem.

servomechanism, *n.* A mechanism in which control of position, speed, power output, etc. is effected by a device or devices that automatically change or correct, or help to change or correct, such position, speed, power, etc. in accordance with a predetermined setting or manipulation.

A servomechanism may, in one instance, be a simple relay in which, for example, a control lever is connected with a flying tab, which is the device that helps move the control surface into desired position. Or it may be a mechanism in which an auxiliary motor provides the power for keeping something in correct position, reacting to anything that serves to trigger the mechanism, such as a photoelectric cell, a meter, a particular voltage, etc. The mechanism that aims a gun on a ship, reacting to roll, pitch, and yaw is a kind of servomechanism.

servomotor, *n.* A motor that supplies power for moving a servomechanism or a component of a servomechanism.

servosystem, *n.* The system in which a servomechanism works.

For example, a source of power output that is controlled by a servomechanism may have some of its power output used to cause a reactor, such as a thermostat, to react so as to trigger motion in a servomotor, which in turn drives the servomechanism. The whole constitutes a servosystem.

sesquiplane, *n.* A biplane in which one wing has half the area, or less, of the other, as with the Nieuport 27.

set, *v.* **1.** *To set down*, to land an *aircraft;* (*intr.*) to land. **2.** *To set the controls*, to adjust the controls. **3.** *To set course*, see **course,** *n.*, note.

settle, *v. To settle with power*, to descend slowly and vertically in a helicopter with power.

sev (*auth abbr*). 'Sever.'

seven-o-one calculator. Written **701 calculator.** An electronic digital, binary-type computer built by, rented out, and serviced by International Business Machines (IBM), and used for the solution of complicated or lengthy mathematical problems.

This machine, so large and intricate as to require temperature and humidity control and the constant attention of several technicians to keep it in operation, is one of the speedy calculators used in the services, doing calculations in a few minutes that would require several lifetimes if done by the human mind. Several of these machines have been manufactured, and improved models are being developed.

seventy-five, *n.* Short for '75 mm cannon.'

Sewart Air Force Base. An AF base at Smyrna, Tennessee, originally known as Smyrna Air Force Base, renamed for Major Allan J. Sewart, a bomber pilot and recipient of the Distinguished Service Cross, killed in the Solomons, 1942.

sextant, *n.* Any of several similar instruments for measuring angular altitude, as of a celestial body; *specif.*, one with an arc graduated for one-sixth of a circle.

'Sextant' is often applied to instruments more precisely termed 'octants,' 'quintants,' etc. See **bubble sextant, marine sextant, octant,** *n.*

sextant altitude. The angular altitude of something, esp. of a celestial body above the celestial or bubble horizon, as determined with a sextant.

The code or symbol for 'sextant altitude' is 'Hs.'

SF (*auth abbr*). 'Standard form.'

sfc (*auth abbr*). 'Sergeant first class.' *Army.*

sferics, *n.* [Coined from atmo*spherics*.] **1.** An electronic detector of electrical discharges in the atmosphere; a storm detector. **2.** The electrical discharges detected by this.

sfgd (*auth abbr*). 'Safeguard.'

SFPE (*auth abbr*). 'San Francisco Port of Embarkation.'

SG (*abbr*). **1.** 'Surgeon General.' **2.** 'Smoke generator,' as part of a symbol. **3.** 'Service group.' **4.** *auth.* 'Standing Group.'

sgd (*auth abbr*). 'Signed.'

SGLO (*auth abbr*). 'Standing Group Liaison Officer to the North Atlantic Council.'

SGN (*auth abbr*). 'Standing Group, North Atlantic Treaty Organization.'

sgnr (*auth abbr*). 'Signature.'

sgt (*auth abbr*). 'Sergeant.'

sh (*abbr*). 'Shop.'

SHA (*abbr*). 'Sidereal hour angle.'

shack, *n.* A direct or perfect hit. *Slang.*

This is in allusion to the custom of making a shack the center of a target.

shadow, *n.* **1.** The shaded area on a surface cast by an object that intercepts the rays from a light source; a representation of this on an aerial photograph. Used in photo interpretation and visual reconnaissance. **2.** A surface shielded from atomic radiation. Attrib., as in *shadow burn.* Used in ascertaining the center of an atomic explosion. See **radar shadow.**

shadow aircraft. An aircraft used for scouting.

shadow factory. 1. A factory that produces war materials under the guise of producing something else. **2.** A factory building made to appear as another type of building by modifying its outline so that it casts a deceptive shadow.

SHAEF (*abbr*). 'Supreme Headquarters Allied Expeditionary Forces.' Pronounced as a word. *Hist.*

shaft, *n.* A strong bar that supports a rotating propeller or other device, or that transmits power.

shaft axis. The axis that runs down the longitudinal center of a shaft, esp. a rotor shaft.

shaft horsepower. (shp) The horsepower delivered to a propeller shaft before being converted into thrust by the propeller.

shakedown, *n.* A phase during which something is tried out and subjected to operating conditions so as to make for efficient handling and to permit familiarization with its features and peculiarities. Attrib., as in *shakedown flight, shakedown mission,* etc.

shallow, *a.* Of a dive, glide, or climb: Executed so that the line of flight departs from the horizontal by only a few degrees. Also said of a turn that departs but little from a straight line.

shallow dive bombing. Bombing done from a dive less than 30 degrees off the horizontal.

SHAPE (*auth abbr*). 'Supreme Headquarters Allied Powers, Europe.' Pronounced as a word.

shaped charge. An explosive charge so shaped as to have a hollow at one place, the hollow causing blast to take a desired direction when the charge is detonated.

The effect of this charge is called 'Munroe effect.' The charge is sometimes called 'hollow charge' or 'beehive-shape charge.'

shark, *n.* A name given the P-40 by the Flying Tigers. *Popular.*

shavetail, *n.* A second lieutenant. *Slang.*

shavetail, *v. To shavetail it over,* to scurry over to a particular place. *Slang.*

Shaw Air Force Base. An AF base at Sumter, South Carolina, named for Lieutenant Ervin D. Shaw, killed in 1918 while on active duty with the Royal Flying Corps in Europe.

Shche (*abbr*). A designation for Russian airplanes designed by Alexei Shcherbakov, as in *Shche-2,* a twin-engine, high-wing monoplane, used as a troop carrier, freight transport, and air ambulance.

shear, *n.* Shearing stress.

shear, *v.* **1.** To cut off a *member* (as a wing on an airplane) under the force of shearing stress. **2.** To cut off a *bolt, pin,* or the like up next to the surface that it goes through.

shearing stress. A stress between two contiguous parts of a body that tends to make one slide against the other in a direction parallel to their plane of contact. This stress results from applied forces.

shear line. The line along which two contiguous parts of a body may shear, or have been sheared.

shell, *n.* **1.** A hollow metal projectile designed to be shot esp. from a cannon, containing, or intended to contain, a high-explosive, chemical, or atomic charge. Attrib., as in *shell burst, shell fragmentation,* etc. **2.** A shell case (which see); a shotgun shell or a complete round of artillery or small arms fixed ammunition.

Certain larger shells (in sense 1) may contain propaganda leaflets and a small burster to break the shell and scatter the leaflets. Cf. **bullet,** *n.*

shell, *v. tr.* To shoot shells at a *target.*

shell case. That part of a cartridge or complete round for holding a charge, primer, and, usually, a projectile; a case.

The term 'shell case' is applied to the cases of small-arms ammunition as well as to those of cannon ammunition.

Shemya Air Force Base. An AF base on Shemya Island, Alaska, named for the island.

Shenandoah, *n.* A rigid airship commissioned for the Navy in 1923 and wrecked in 1925 in a line squall over Ohio. Also known as the 'Z.R.I.'

Sheppard Air Force Base. An AF base at Wichita Falls, Texas, named for US Senator Morris Sheppard, who died in 1941.

SHF (*auth abbr*). 'Super high frequency.'

shield concept. A concept of how to meet the initial phases of a hostile attack.

The plan based upon this concept provides sufficient forces to slow the enemy down so that a counterblow can be dealt. Used esp. in NATO contexts.

shielded, *a.* Of aircraft engines: Having the igni-

tion system inclosed in metallic conduits to prevent radio interference from the engine.

shimmy damper. A pneumatic-hydraulic device incorporated in a nose gear to reduce the rapid oscillation of the nose wheel during takeoff and landing.

ship, *n.* **1.** In naval parlance, any seagoing vessel that moves under its own power. **2.** An airship. **3.** Also commonly applied to an airplane.

In sense 1, a class name for a vessel may designate it as a boat, as in 'torpedo boat,' but the torpedo boat, when referred to by the general term, is called a 'ship,' not a 'boat.' See **boat,** *n.*

ship, *v. tr.* To send *something to* a destination or person by means of an aircraft, land carrier, or vessel.

ship-based, *a.* Operating, or designed to operate, from a carrier or other ship. Said of aircraft.

shipboard aircraft. An aircraft designed to take off from and land on the deck of a ship.

ship-borne, *a.* **1.** Carried on a ship. **2.** Operated from the deck of a ship. Said of aircraft.

ShipDa (*auth abbr*). 'Shipping data.'

ShipDTO (*auth abbr*). 'Ship on depot transfer order.'

ShipgO (*auth abbr*). 'Shipping order.'

ShipIm (*auth abbr*). 'Ship immediately.'

shipment, *n.* (shipmt) **1.** That which is sent upon a single shipping document or shipping ticket. **2.** The action or process of shipping something.

shipment control depot. An AF depot having the functions of monitoring and controlling the requisitioning and shipping of materiel to overseas activities.

shipmt (*auth abbr*). 'Shipment.'

shipping, *n.* **1.** The action of the verb 'ship.' Attrib., as in *shipping band, shipping center,* etc. **2.** The ships used in transporting goods or men. Often considered as an air target.

shipping container. A container or wrapping used for shipping something.

shipping document. An AF form that lists the items being shipped and accompanies the shipment.

This document serves as both an invoice and a receipt, and is used to transfer property between base supply officers or between unit supply officers.

shipping officer. The officer responsible for property being shipped, in most cases the consignor.

shipping order. *Specif.* An order issued by Headquarters Air Materiel Command or by a depot to a lower echelon of supply, directing shipment of Air Force property from the lower echelon activity.

shipping ticket. A record of what is shipped. The shipping document is a kind of shipping ticket.

shipping time. In supply usage, the elapsed time between the shipment of materiel by a supplying activity and the receipt of the materiel by the requiring activity.

ShipReq (*auth abbr*). 'Ship to apply on requisition.'

ship-to-shore assault. An amphibious assault involving the use of small boats operating between ships and the shore.

Shiroi Air Base. An air base at Shiroi, Honshu, Japan, named for the city.

shock cord. A cord that absorbs shock, esp. one that consists of a bundle of rubber strands that permits stretching, as in a bungee.

shock front. The outer side of an atomic shock wave at which pressure rises from zero up to its peak value. Also called a 'pressure front.'

shock mount. A mount for sensitive instruments that reduces or prevents transmission of shock to the instrument.

shock sphere. In an atomic airburst, the sphere made by the shock wave.

shock stall. *Aerodynamics.* A sudden reduction of lift on an airfoil brought about at supersonic speeds by airflow separation aft of a shock wave.

A shock stall has incorrectly been called a 'compressibility burble' (which see).

shock strut. A strut provided with a shock absorber for use in landings.

shock wave. A boundary surface or line across which a flow of air or other fluid, relative to a body or particle passing through the fluid, changes discontinuously in pressure, velocity, density, temperature, and entropy within an infinitesimal period of time. **a.** Such a boundary surface or line that comes into being when an aircraft or projectile flies or moves at transonic or supersonic speeds. **b.** Such a surface or line produced by the expansion of gases away from an explosion.

Shock waves are usually classified into categories, according to the angle at which they occur with relation to a surface or to a flow, or according to the effect they exercise upon the air (or other fluid) meeting and passing through them. See **compression wave, expansion wave, mach wave, oblique shock wave.**

shoe, *n. Specif.* A piece of iron used on a tail skid.

shoot, *v.* **A. 1.** *tr.* To let fly a *missile* with force, as in 'he shot the bullet through his heart'; to fire a *weapon,* as a gun or cannon; to strike or hit *something* with a missile. **2.** To clear a *way* or *path* through something by letting fly missiles. **3.** *To shoot down,* to cause an *aircraft* to fall by hitting it with missiles. **4.** *To shoot something up,* to strike something with several missiles. **5.** *intr.* To perform the art of shooting something (as in sense 1). **B.** *transf.* or *fig.* **6.** *To shoot a field* or *station,* to fly low over a field and observe its

features or identify it. **7.** *To shoot a landing,* to practice at making a landing. **8.** *To shoot a bearing, to shoot the stars,* etc., to take a reading on one's position. **9.** *To shoot the breeze,* to talk volubly or knowingly. *Slang.* **10.** *To shoot a line,* to boast. *Slang.* **11.** *To be all shot,* to be unstrung or worn out. *Slang.*

Shooting Star. A popular name for the F-80.

shop, *n.* **1.** A place where an artisan or mechanic works. **2.** Any place of work, as an office. *Slang.*

shoran, *n.* Sometimes *capitalized.* [*Sho*rt *r*ange *n*avigation.] A radar system for precision position finding, used in aerial navigation and missile guiding. Attrib., as in *shoran reconnaissance, shoran set, shoran system.*

Under this system navigation is accomplished by ranging on two ground stations. Signals transmitted from the aircraft or missile trigger the two responder beacons.

shoran bombing. Bombing done after positioning the aircraft to the bomb-release point by shoran adapted to the purpose.

shore, *n.* **1.** The land bordering a body of water. **2.** In certain locutions, the land, as distinguished from the sea, as in *shore leave, shore station.*

shore-based, *a.* **1.** Land-based. Said of aircraft, radar units, organizations, etc. Considered *loose* usage. **2.** In more precise usage, based on land near the shore.

shore-to-shore assault. An amphibious assault carried out directly from craft that embarked from friendly ports. Cf. **ship-to-shore assault.**

Short, *n.* [*Short* Bros., Ltd., a British aircraft manufacturing firm.] Used in the names of airplanes, as in *Short Stirling, Short Sunderland.*

short, *n. Specif.* A bomb or shell hit short of the target. See **over,** *n.*

short-arm inspection. A routine physical inspection for venereal disease in a man. *Slang.*

short-delay fuze. A type of delay fuze used both in bombs and artillery projectiles, in which the fuze action is delayed for a short period of time, normally 0.01 to 0.24 seconds. See **delayed-action bomb,** note.

short-fuzed, *a.* Provided with a short-delay fuze. Said of bombs or shells.

short-legged, *a.* Having a short range. Said of an airplane. *Slang.*

short range. A capability of an aircraft, etc., considered effective only for short distances.

See **long range,** note.

short-range, *a.* **1.** Of an aircraft or other equipment: Having a capability that extends over what is considered a short distance. See **long range,** note. **2.** Of plans or actions: Intended only for the immediate future.

In sense 1, a line-of-sight electronic device may be considered short-range, but a device with a weak signal may also be considered short-range.

short-range weather forecast. A weather forecast for a period up to approximately twelve hours in the future.

short snorter. [See note.] **1.** A souvenir emblem of membership in an unofficial society, esp. in WW II, signifying the member's having been a pilot or crew member (or sometimes a passenger) on a transoceanic flight, and consisting, in one of its forms, of several pieces of paper currency stuck together and bearing signatures of persons who had likewise flown across the ocean or otherwise distinguished themselves. **2.** A member of this society.

The term appears to be in allusion to the practice of obtaining signatures while enjoying a 'short snort' at a bar.

short supply. 1. In procurement, a situation in which the total stock of an item on hand and on order is less than the quantity required. **2.** A somewhat jargon term meaning 'small stock.' **3.** *In short supply,* scarce.

short ton. The weight of 2,000 pounds. In general use in the US. See **long ton.**

short tour. Any tour of active duty of 90 days or less, on which a member of the AF reserve is ordered as an individual or as a member of a unit.

short wave. *Radio.* A term used to describe an electromagnetic wave shorter than those in the standard broadcast band, or of a higher frequency than those of the standard broadcast band. Attrib., as in *short-wave set.*

This term has been defined as a wave (1) of sixty meters wave length or less, or (2) shorter than 200 meters. In other contexts, the term refers to waves at frequencies of (1) above 3,000 kilocycles, or (2) between 1.5 to 30 megacycles. Current practice is to drop the terms 'short wave' and 'long wave' in preference to 'very low frequency,' 'high frequency,' 'very high frequency,' etc.

shot, *n.* **1. a.** A solid projectile without a bursting charge. **b.** A mass or load of numerous, relatively small lead pellets used in a shotgun, as birdshot or buckshot. **2.** That which is fired from a gun. **3.** The flight of a missile, as of a rocket. **4.** One who shoots, as in 'a good shot.' **5.** Short for 'snapshot,' 'camera shot,' etc.

shotgun shell. 1. A container or capsule, usually of stiff paper with a brass base, containing primer, powder, wadding, and shot for use in a shotgun. **2.** A blank shell of this type for use in a cartridge starter.

shoulder emblem. A cloth insigne worn on the upper sleeve one-half inch below the shoulder seam of coat or shirt.

The only shoulder emblem now authorized for wear on a service uniform is one denoting an overseas unit in a theater of operation in WW II, and wear is optional. But unit insignia are sometimes worn as shoulder emblems on flying clothes.

shoulder patch. The old name for a shoulder emblem.

shoulder weapon. Any firearm designed to be braced on or against the shoulder when firing, as a rifle, carbine, bazooka launcher, etc. Cf. **hand weapon.**

shoulder wing. A high wing.

show, *n.* Any operation regarded as having elements of drama in it. *Slang.* Cf. **bad show, good show.**

showdown, *n.* The settling of a matter finally and definitely, as by appeal to authority; the resolution of differences by bringing all issues into the open. *Slang.*

showdown inspection. A type of inspection.

This inspection is of clothing and individual equipment, as well as of organizational equipment, in which all items are laid out in a specified order so that they may be counted and their condition determined.

showdown shortage list. A list indicating shortages in the supplies authorized an organization, as determined by a showdown inspection.

This list is drawn up at the time of receipt of warning orders directing future movement of the organization to a port of embarkation for overseas destination.

shp (*auth abbr*). 'Shaft horsepower.' Also **s.h.p.** *British.*

Shp&Rec (*abbr*). 'Shipping and receiving.'

ShpTArBy (*auth abbr*). 'Ship to arrive not later than.'

shrapnel, *n.* **1.** Strictly speaking, small lead or steel balls contained in certain shells, which are discharged in every direction upon explosion of the shell. **2.** Also applied to shell fragments. *Popular.*

shred, *v. To shred out,* to take an *airman* or *officer* out of his general career field or peacetime specialty and give him a short training course on a limited part of his specialty; to divide a general *course* into more specific courses. *Colloq.*

shredout, *n.* A subdivision of a specific AF career field or peacetime specialty code, set up to cover a special type of equipment or a special part of a job description; a person being trained in this subspecialty. *Colloq.*

Shrike, *n.* An old name for the A-25.

shrinkage strut. On certain jet fighters, a nose-wheel strut that limits the nose-wheel retraction to a position short of full retraction.

This is used to hold the tire out of the fuselage where expansion after takeoff would cause seizure.

shroud line. One of a number of lines connecting the periphery of a parachute canopy with the harness.

shrtg (*auth abbr*). 'Shortage.'

Shturmovik, *n.* A popular name for certain Russian Ilyushin airplanes designed esp. for ground attack, as the Il-2 or Il-10. Also called 'Stormovik.'

shuttle, *n.* **1.** Short for 'shuttle service.' **2.** Short for 'shuttle bombing,' esp. in attrib., as in *shuttle raid.*

shuttle, *v. intr.* To fly back and forth between two points, as between the United States and Europe.

shuttle bombing. 1. The technique of bombing a target by taking off from a base, bombing the target, continuing on to another base, reloading, and bombing a target again on return to the home base. **2.** The bombing of a target so nearby that a bomber makes two or more round trips to the target in a single day of operations.

Attrib., as in *shuttle-bombing mission, shuttle-bombing raid, shuttle-bombing station.*

shuttle service. A transportation service between two places or across an ocean.

SIAM (*auth abbr*). 'Signal information and monitoring.'

SIC (*auth abbr*). 'Survey information center.'

sick book. An organization's record book for persons who are sick.

sick call. A formation at which those who report themselves as sick are examined and, if necessary, treated.

sick leave. 1. Absence from duty because of illness. **2.** The time or credit of such leave.

In Civil Service, sick leave is earned at the rate of one day for each two pay periods.

Sidcot suit. [Named after its inventor, *Sid*ney *Cot*ton.] A British one-piece flying suit, now outmoded, made of heavily padded fabric for use in unheated aircraft.

side, *n.* **1.** That part of an aircraft's space or substance that lies either to the right or left of an observer standing on the longitudinal axis and facing forward or aft, esp. that part near the middle of the aircraft's length. **2.** The outer or inner surface of the aircraft that has this relationship to the observer.

side, *a.* **1.** In a direction from without the aircraft toward its side, as in a 'side attack' or a 'side blow.' **2.** In a direction outward from the side, as in 'side drift.' **3.** Perpendicular to the plane of symmetry (as used in stress analysis), as in 'side direction,' 'side force.' **4.** Located in, or on a side, as in 'side gun,' etc.

side-by-side, *a.* Of seats or controls: Placed so that persons sit beside each other.

sidecar, *n.* An airship's car suspended off from the longitudinal center line. Also called 'wing car.'

sidelap, *n. Aerial photog.* That part along the side of an aerial reconnaissance strip that covers what a similar part of an adjacent strip covers. Cf. **overlap,** *n.*

The amount of this sidelap in vertical photography is sometimes expressed as a percentage of one strip, e.g., a sidelap of 50 percent would indicate that half of each strip covers the same area on the surface.

sidereal day. A day as measured by sidereal time.

A sidereal day begins and ends when the first point of Aries is directly over the reference meridian. Due to the motion of the earth around the sun, a sidereal day is almost 4 minutes shorter than the solar day.

sidereal hour angle. The angular distance between an hour circle passing through the first point of Aries to the hour circle passing through a given celestial body, measured westward from 0 through 360 degrees.

sidereal time. Time measured by reference to the apparent motion of the first point of Aries.

sideslip, *n.* The motion of an aircraft in which a relative flow of air moves along the lateral axis, esp. a downward slip along the lateral axis of an airplane when its wings are sharply banked, the slip being in reaction to gravity.

Pilots sometime use the sideslip in the latter instance to lose altitude. Cf. **skidding,** *n.*

sideslip, *v. intr.* To move in a sideslip.

sideslipping, *n.* The motion involved in a sideslip, esp. in a downward sideslip. Cf. **skidding,** *n.*

Sidi Slimane Air Base. An air base at Sidi Slimane, French Morocco, named for the city.

Sierra (*code*). An authorized word for the letter 'S.' See **Alfa** (*code*).

sig (*auth abbr*). 'Signal.'

SigC (*auth abbr*). 'Signal Corps.'

sight, *n.* A device for guiding the eye or an electronic beam, esp. a device for aiming a gun, bomb, or rocket so that the projectile will strike the target. See **bombsight,** *n.*, **computing sight, line of sight.**

sight base. In gunnery, the distance between the eye and the rings of an optical ring sight.

sighting, *n.* **1.** The act or procedure of aiming with the aid of a sight. Attrib., as in *sighting ability, sighting equipment, sighting platform, sighting system,* etc. **2.** The action of bringing something into view; the action of seeing something.

sighting angle. In bombing, the angle between the line of sight to the aiming point and the vertical.

At the bomb release point, the sighting angle and the dropping angle become the same.

sighting station. A place from which remote-controlled guns are sighted.

sight tracking line. The line of sight from a computing gunsight reticle image to the target.

sigma score. A score which denotes the number of standard deviations below or above the mean.

sign, *v.* **1.** *tr.* To write one's *name* on a *document* or *register.* **2.** *intr.* **a.** *To sign in,* to enter one's name in a register to signify reporting for duty. Hence, *to sign out.* **b.** *To sign off,* to break off radio contact; to end a conversation.

signal, *n.* (sig) **1.** Generally, a sign, notice, or symbol conveying a command, warning, direction, or other message, usually understood by prearrangement; the message so conveyed. **2.** *Specif.* An electrical or electromagnetic impulse, or aggregation of impulses, conveying a meaning or message.

This term is also loosely used in the sense of any electronic impulse.

signal, *v.* (sig) **1.** *intr.* To give or send a signal. **2.** *tr.* To communicate with a *person* by a signal.

Signal Corps. (SigC) A corps of the US Army, charged with the development, maintenance, and operation of communications systems within the Army.

The Signal Corps was considered the proper place for the use of airplanes when the first air arm of the Army was organized. See **Aeronautical Division.**

signal flare. A pyrotechnic flare of distinct color and character used as a signal.

signal panel. A strip of cloth or other material laid out on the ground and used to signal aircraft in the air.

signal pistol. A flare pistol used esp. for signaling; *specif.*, such a flare pistol with a relatively long barrel. Cf. **Very pistol.**

Sikorsky, *n.* [*Sikorsky* Aircraft Division of United Aircraft Corp.] Used in the names of airplanes, including helicopters, as in *Sikorsky Amphibian, Sikorsky S-51, Sikorsky S-40,* etc.

Sikorsky Aero Engineering Corporation was originally founded in 1923. It eventually became a division in United Aircraft Corporation in 1934. See **Chance Vought.**

sil (*auth abbr*). 'Silver.'

silk, *n.* A fanciful name for a parachute. In allusion to the material out of which parachutes were formerly made. See **hit,** *v.*, **nylon,** *n.*

silver, *n.* (sil) Used attrib. in designating insignia made of, or appearing to be of, silver, as in *silver bars, silver leaves, silver wings,* etc.

silver leaves. The silver-colored insignia of a lieutenant colonel or of a commander in the Navy.

silver oak-leaf cluster. A silver emblem attached to a decoration signifying the award of five bronze oak-leaf clusters. See **bronze oak-leaf cluster.**

Silver Star. A military decoration awarded any person (military, civilian, or foreign) who, while serving in any capacity with the Air Force, distinguishes himself by gallantry in action against an enemy of the United States. See **decoration,** *n.*

silver-tan uniform. A summer uniform made of officially approved materials having a whitish-tan appearance.

simplicity, *n.* A principle of war that embodies the thesis that success in war is, in part, dependent upon the use of organizations, lines of

communication, plans, and operations that are relatively free of complexity.

simulate, *v. tr.* To make *something* appear to be the same as something else, esp. to make it appear like that either found to be natural or like something expected to happen; to create a *condition* or *situation* that is essentially the same as some other, as in 'the ground trainer simulates the landing roll,' or 'they simulated an attack.'

simulated, *a.* **1.** Being like something else; considered for the purpose as the same as something else. **2.** Artificially creating an illusion of something natural. **3.** Artificially creating the conditions of a natural or real situation.

simulated altitude. A controlled body of air, as in a decompression chamber, in which the conditions of any given altitude may be simulated.

In simulating a given altitude the particular barometric pressure and temperature of that altitude in a standard atmosphere constitute the principal conditions sought after.

simulated flight. 1. The experience of flight obtained in a ground trainer. **2.** In war exercises, an imagined flight, or a flight that carries the principle of realism only up to a certain point.

simulated gunnery. The use of training devices to achieve practice in gunnery.

simulated rank. A status given a civilian in terms of military rank, as in 'the AMC engineer had a simulated rank of brigadier.'

simulation plate. A piece of film, bas-relief model, or some other device that shows a target or other area in scale, used in a simulator to provide realism for an aircrew trainee.

simulator, *n.* Any machine or apparatus that simulates a desired condition or set of conditions, such as a flight simulator. See **flight simulator.**

S-ing, *n.* The verbal noun of the verb 'S.'

single-blade propeller. A propeller having only one blade, counterbalanced at the other side of the hub by a heavy weight.

This is a rare form of propeller, having been employed chiefly for experimental purposes.

single-disc brake. A wheel brake on a landing gear, having a brake disc that receives the pressure of brake pucks on each side of it to produce the friction necessary for braking. See **multiple-disc brake.**

single drift-correction course. A single-heading course in which the factor of drift is applied but once.

single-engine, *a.* **1.** Having one engine; single-engined. Said of an aircraft. See **engine,** *n.*, note. **2.** Performed with a single-engine aircraft, as in 'single-engine flight' or 'single-engine attack.' **3.** Of a pilot: Qualified for or accustomed to flying a single-engined aircraft.

single-engined, *a.* Of an aircraft: Having only one engine, esp. a propeller-driven engine. See **engined,** *a.*

single float. A single central float fitted under a float plane and usually requiring two stabilizing floats to give adequate stability and to complete the float system.

single-heading course. A course laid out so that the aircraft maintains a single heading.

To do this, the navigator carefully plans the whole course in terms of pressure patterns and drift.

single-heading flight. A flight in which a single-heading course is used.

singleness of purpose. That state or condition of a military force that is brought about by a proper command and control arrangement in which each element of the force, in consonance with its own peculiar powers, contributes as effectively as possible toward the efficient achievement of the objectives specified for the force.

single-place, *a.* Of an aircraft or other vehicle: Providing space for only one person. Equivalent to 'single-seat' with a slight change in connotation.

single-point refueling. The refueling of an aircraft by use of a single opening, the fuel being forced into various tanks under pressure.

single-seat, *a.* Also **single-seated.** Of an aircraft or other vehicle: Having a seat for one person only. See **single-place,** *a.*

singleseater, *n.* A single-seat aircraft or other vehicle. Used attrib., as in *singleseater fighter.*

single-shot probability. A factor that measures the probability of a single bomb or other missile striking a specified target point or area.

single-stage compressor. A compressor so constructed as to use only one set of impeller vanes, either on a single-faced or double-faced wheel. Distinguished from a multistage compressor. See **double-entry centrifugal compressor** and cf. **multistage compressor.**

A single stage in an axial-flow compressor consists of one row of rotating blades next to a row of stator blades; however, axial-flow compressors are normally multistage.

single-stage missile. A rocket missile with a single charge. See **multistage rocket.**

single-stage turbine. A jet-engine turbine having only one row of stator blades next to one row of rotor blades.

single tow. The tow of a single glider by a powered aircraft.

sinking speed. The speed at which anything moves downward measured vertically, esp. in still air under given conditions of equilibrium.

SIOE (*auth abbr*). 'Special issue of equipment.'

Sioux City Municipal Airport. A municipal air-

port near Sioux City, Iowa, at which certain accommodations are provided for USAF units.

SIP (*auth abbr*). 'Standard Inspection Procedure.'

siper (*auth abbr*). 'Request the following items be domestic packed and shipped to.'

sipex (*auth abbr*). 'Request the following items be export packed and shipped to.'

sipim (*auth abbr*). 'Request immediate shipment.'

sir, *n. Capitalized.* A respectful term of address used by enlisted men and women in addressing a male officer, or by an officer addressing a male officer of superior rank, as in 'the papers are prepared, Sir.'

In addressing an officer or in answering a question, 'Sir' is the habitual term of respect used by airmen. Among themselves, the term is also used on the basis of normal courtesy. A superior officer addresses an officer of lower rank either by his title of rank, as in 'Captain, would you bring the report,' or, in reply to a question, he speaks without use of any title. Under circumstances where an officer of lower rank occupies an elevated position, as that of a chairman, a superior officer may address him as 'Sir.'

A practice still observed by many in addressing a superior officer is the use of the third person, as in 'Will the Colonel permit a question.'

WAF officers are often addressed as 'Sir' by airmen, but are normally addressed as 'Ma'am.' Noncommissioned officers are addressed as 'Sergeant' by airmen, although no discourtesy is implied if use of the title is not observed.

sit, *n.* In various colloq. uses: See note.

To sit over an airfield, to orbit or wait over an airfield; *to sit low on the ground* (said of certain aircraft), to be so built as to have little clearance off the ground; *to sit down,* to land; *to sit on a person's tail,* to pursue or to attack from behind.

sit (*auth abbr*). 'Situation' when used in combinations.

SitRep (*auth abbr*). 'Situation report.' Sometimes used as a common noun, and spelled 'sitrep.'

sitter, *n.* A sitting target. *Slang.*

sitting duck. An easy target. *Slang.*

sitting target. A target that requires the minimum in calculating lead or deflection.

situation, *n.* (sit) The conditions and circumstances relevant at any given time to a commander's or unit's position. Attrib., as in *situation report.* See **estimate of the situation.**

In a combat zone, the conditions and circumstances of both hostile and friendly forces are considered.

situation map. A map that represents a situation, esp. on an administrative or tactical basis.

situation room. A room similar to an air room maintained at headquarters below the level of wing. See **air room.**

SIW (*auth abbr*). 'Self-inflicted wounds.'

six, *n.* In various locutions: See note.

Six-by-four, a truck with six wheels, four of which are power driven (double wheels counting as one); *six-by-six,* a truck with six power-driven wheels; *six-jet airplane; six-engined; Form six-six* (usually written 'Form 66'); etc.

six-four, *n.* Usually written **64.** Short for 'Form 64,' the old physical examination form for aircrew members.

The 'Form 64' has been replaced by 'Standard Form 88, Report of Medical Examination,' and 'Standard Form 89, Report of Medical History.'

sk (*abbr*). 'Sick.'

skd (*auth abbr*). 'Skilled.'

sked (*auth abbr*). 'Schedule.'

skeet, *n.* A form of trapshooting in which moving clay targets are fired at. Attrib., as in *skeet range, skeet team.*

Practice in skeet is used to train gunners in firing at moving targets.

skeg, *n.* On a landing-gear ski, a runner that projects to the rear, designed to dig into the snow or ice as a means of maintaining directional control.

skeleton crew. A crew with several members less than a normal crew, capable of keeping something partly operative or in repair, but not capable of carrying on normal duties.

ski, *n.* **1.** Either of two relatively long pieces of wood, light metal, or other material, fastened, or made to be fastened, to a man's feet, and of a length and flatness as to enable him to support his weight and to slide on snow. **2.** *transf.* Any similar piece of wood or metal fastened to a vehicle in the place of wheels.

In sense 2, a ski, as distinguished from a runner or skid, is separated from the supported body by legs or by gear suggestive of legs. Both the runner and the skid are built closer to the body, the runner normally being narrower than the skid and sometimes raising the supported object off the surface. Both the runner and the skid normally run the length of the supported body, or of that part of the body being supported, as with that of a tail skid.

skid, *n.* **1.** A device on which an aircraft may slide, used as takeoff or landing gear. See **ski,** *n.*, note. **2.** An instance of skidding; an action or maneuver of skidding. See next, sense 1.

In sense 1, see **tail skid.**

skid, *v. intr.* **1.** Of an airplane in the air: To move along the lateral axis away from the center of curve when making a turn. Cf. **sideslip,** *n.* **2.** Of a vehicle on the ground: To slide sideways.

skidding, *n.* The sidewise sliding by an airborne airplane away from the center of the curve while turning.

Skidding is caused by insufficient banking, and is the opposite of sideslipping as restrictively defined.

skid fin. On some of the old biplanes, an upright surface usually placed above the upper wing, and lying within the plane of symmetry, to increase lateral stability.

skilled, *a.* (skd) Of a person: Expert in handling tools or in doing a job; *specif.*, qualified to perform the duties outlined by a particular AF Specialty without supervision.

skill level. *Specif.* The level of proficiency in a specific AF Specialty.

skills classification. A classification of personnel by measuring proficiency in AF Specialties.

skin, *n.* The outside covering of an airplane, float,

hull, or the like, made of metal, wood, fabric, or plastic.

skin friction. The friction of the air against the outside of a moving aircraft, rocket, or the like, esp. at high speeds; the drag or resistance caused by this friction.

skin-stressed, *a.* Of an airplane: Made so that the skin bears the primary stresses in the fuselage. See **monocoque,** *n.*

skip attack. An attack by skip bombing.

skip bomb. 1. A bomb when used in skip bombing. **2.** Skip bombing, when used attrib., as in *skip-bomb mission.*

skip-bomb, *v.* **1.** *tr.* To attack a *target* by skip bombing. **2.** *intr.* To engage in skip bombing.

skip bombing. Bombing by releasing one or more bombs from a plane flying at low altitude, so that the bomb or bombs glance off of the surface of the water or ground and strike the target. Used attrib., as in *skip-bombing airplane.*

skiplane, *n.* An airplane equipped with skis.

skipper, *n.* A name sometimes given to the pilot or commander of an aircraft or to the commander of a group of airborne aircraft. Chiefly *British.* Cf. **captain,** *n.*, sense 3.

skip zone. A ring-shaped area around a radio transmitter, within which radio signals cannot be received.

The outer edge of the skip zone is at the minimum distance at which sky-wave signals are received; the inner edge is at the maximum limit of reception of the ground-wave signals.

skirt, *n.* A name given the lower part of a parachute canopy.

ski site. A popular name in WW II for a launching site of the German V-1.

So named because of a resemblance to a ski site as seen from the air.

ski-wheel assembly. 1. A landing wheel assembly so constructed as to allow the operator to use either skis or wheels for landing or takeoff. **2.** An assembly that provides for the interchange of skis for wheels before takeoff.

ski-wheel landing gear. A landing gear provided with both wheels and skis for use on either snow or a hard surface.

sky, *n.* **1.** The apparent vault of blueness or starlit heaven above the earth that reaches from horizon to horizon; this vault considered as a surface, as in 'airplanes were over a large area of sky,' used with or without the article, the same as 'land' or 'water.' **2.** The region above the earth through which aircraft or missiles are directed, as distinguished from the land and seas. Sometimes used in the plural, as in 'a missile sent through the skies.' Cf. **air,** *n.*, sense 3. **3.** *attrib.* **a.** In sense 1, as in *sky light, sky writing.* **b.** In sense 2, as in *sky ambulance, sky battle, sky lane, sky rocket, sky transportation,* etc.

In sense 2, 'sky' is closely related in meaning to 'air' (sense 3) with, however, some differences. For example, 'to search the skies' suggests looking up as from the ground, or, if in an airplane, out toward the vault of the heavens, whereas 'to search the air' suggests looking every way, including looking down between an aircraft and the earth. Likewise, 'sky battle' suggests that the speaker is on the ground, whereas 'air battle' might be used by a participant in the battle. Also, 'air' suggests the region above and *around* the earth, whereas 'sky' suggests the region above only.

But these distinctions appear to be breaking down, and 'sky' is used where 'air' is also used, as in *sky force, sky freighter, sky lane, sky screen, sky sector, sky space, sky way*—even *skyborne arm.*

In one respect, however, 'sky' and 'air' are not interchangeable. 'Sky' like 'water' is used in the plural, but 'air' is not.

sky battle. An air battle, esp. as viewed from the ground. See **air battle,** sense 1.

skylift, *n.* An airlift.

Skymaster, *n.* A popular name for the C-54.

sky screen. An early-warning radar network for detection of hostile aircraft.

Skytrain, *n.* A popular name for the C-47.

Skytrooper, *n.* A popular name for the C-53.

sky wave. A radio wave which travels upward into space and may or may not be returned to earth by reflection from the ionosphere.

sky-wave synchronized loran. A kind of loran in which range is extended, and transmitting stations synchronized, by signals reflected from the ionosphere. Used esp. for nighttime navigation. Sometimes called 'SS loran.'

skywriting, *n.* The action of flying an airplane about so as to leave a trail of smoke or of some other visible substance, formed into lettering that can be read against the sky.

SL (*abbr*). Also **S.L.** 'Sea level.'

S/L (*abbr*). **1.** *auth.* 'Sound locator' or 'sound locating.' **2.** 'Squadron leader.' *British.*

slant distance. The line-of-sight distance between two points neither vertical to each other nor at the same elevation.

slant range. The line-of-sight range between two points not at the same elevation. Used as a distinguishing term. See **range,** *n.*, note.

This term is used in reference to range between an airborne gun or radar set and a ground target or other target not at the same elevation; between an antiaircraft gun and the future position of a target; between a bomber and a target; etc. See **line of sight** and cf. **horizontal range.** In operations, slant range includes the range between objects vertical to one another.

slant visibility. The degree of clearness in air in a direction other than the horizontal.

Since 'visibility' in meteorological usage signifies 'visibility in a horizontal direction,' occasion sometimes arises for use of the distinguishing term. See **visibility,** *n.*

slat, *n.* A movable auxiliary airfoil running along the leading edge of a wing, remaining against the leading edge in normal flight conditions, but

lifting away from the wing to form a slot at certain angles of attack. See **movable slot.**

slave, *n.* Short for 'slave station.'

slave compass. A slaved gyro magnetic compass.

slaved gyro. A gyro that is controlled by a magnetic force through a transmitter, as in a gyrosyn; an instrument that employs such a device.

slaved gyro magnetic compass. A compass, such as the gyrosyn, in which the gyro is synchronized to a magnetic force.

slave station. In a hyperbolic navigation system, that station of a given pair of stations that is controlled by the other station. See **master station.**

SLC (*abbr*). 'Searchlight control.'

sleeper, *n.* **1.** A submerged log or other similar underwater obstacle, which may damage pontoons or the hull of a flying boat. **2.** A bomb with a delayed-action fuze. **3.** A railroad car or airplane equipped for sleeping.

sleet, *n.* Falling rain, frozen or partially frozen.

sleeve, *n.* A word applied to various things that resemble a sleeve, e.g.: **a.** A drogue when towed behind an aircraft. **b.** A cloth cover for a wing.

sleeve insigne. An officer's insigne of rank worn on each sleeve of the evening dress uniform.

This insigne consists of a decorative design of cord or braid, with a braid at the base indicating by its width whether the wearer is a warrant officer, company grade officer, field grade officer, or general officer. The respective widths are ¼ inch, ½ inch, 1 inch, and 2 inches. Above the base braid appears the usual rank insigne.

sleeve target. A drogue towed as a target.

slenderness ratio. The aspect ratio of an aircraft landing ski or other elongated surface.

This ratio is shown by dividing the length of the surface squared by the area of the surface.

slew, *v.* **1.** *tr.* To turn or twist *something* about. **2.** *intr.* To twist off to one side.

slick, *n.* A film of oil or other substance floating on top of a body of water.

slick marker. A substance dropped into water to make a slick. The slick marker is used in daytime to determine the drift of an aircraft.

slide, *n.* A door on an aircraft that operates by sliding.

slip, *n.* **1.** The slipping or sliding motion of an airplane in certain flight attitudes: See note. **2.** The slipping of a propeller from its helical path resulting in a slight loss of forward movement through the air, expressed as the difference between the effective pitch and the geometric pitch of a propeller.

In sense 1, a slip occurs when the airplane yaws and slides ahead in forward flight, or slides downward when the wings are banked. See **forward slip, sideslip,** *n.* Cf. **skid,** *v.*, sense 1.

In sense 2, see **effective pitch, geometric pitch.**

slip, *v.* **1.** *intr.* Of an airplane: To slide as in a slip. See **slip,** *n.*, note. **2.** *tr.* To cause a *parachute* to fall faster or alter its direction by pulling at the shroud lines.

slippage, *n. Specif.* The amount that deliveries or a programmed output falls behind schedule.

slipstream, *n.* The turbulent flow of air driven backward by a propeller or propellers.

The slipstream of a single propeller flows in a spiral direction; that of a contrarotating propeller is free of spiral direction. When made to flow over an airfoil, it has aerodynamic effects.

slipway, *n.* A sheltered area between two docks.

slit trench. 1. A narrow trench in which persons may take refuge in case of air attack. **2.** A straddle trench.

SLOE (*auth abbr*). 'Special list of equipment.'

slope, *n.* The flight path of an aircraft if projected to a vertical plane. Hence, *slope angle, slope deviation.*

slope-line lighting. Runway lighting arranged in two rows of lights which appear as single lines of light from an aircraft making a correct approach.

slot, *n.* **1.** A narrow opening in the side, top, bottom, or end of something, as for looking out or for poking something through. **2.** *Specif.* An air gap between a wing and the length of a slat or certain other auxiliary airfoils, the gap providing space for airflow or room for the auxiliary airfoil to be depressed in such a manner as to make for smooth air passage on the upper surface. **3.** Any of certain narrow apertures made through a wing to improve aerodynamic characteristics. **4.** A position or place provided for in an organization or activity.

In sense 2, the slot associated with a slat appears only when the slat lifts away from the wing, whereas the slot associated with a slotted aileron changes its shape as the aileron is depressed. Both are called 'movable slots' or 'automatic slots.' In sense 3, the slot is sometimes called a 'fixed slot.'

slotted aileron. A kind of aileron mounted so as to form a slot between itself and the wing and to provide for a smooth air passage over the upper surface of the aileron when the aileron is depressed.

slotted flap. A flap constructed and installed in a manner similar to a plain flap, but designed to provide for a slot and a smooth flow of air between it and the rear edge of the wing when it is depressed.

slotted wing. A wing that makes use of slots.

slow neutron. A neutron of little comparative energy.

slow roll. A slow rotation of an airplane about its longitudinal axis executed by coordinated manipulation of the controls. Cf. **snap roll.**

slow-roll, *v.* **1.** *tr.* To put an *airplane* into a slow roll. **2.** *intr.* To execute or go into a slow roll. Said of a pilot or an airplane.

slow-time, *v. tr.* To break in a reciprocating *engine* by flying or running it below a certain rpm. Hence, **slow-timing,** *n.*

SLSM (*auth abbr*). 'Silver Life Saving Medal.'

slt (*auth abbr*). 'Searchlight.'

sluggish, *a.* Slow to react, not readily responsive. Said of a control, a control surface, or an airplane.

SM (*abbr*). **1.** *auth.* 'Soldier's Medal.' **2.** 'Strategic missile,' as in *SM-65.*

SM-64. The Navaho.

S.M. (*abbr*). 'Savoia Marchetti,' as in *S.M. 79.*

SMA (*auth abbr*). 'Senior military attache.'

small arm. For AF purposes: Any gun having a caliber of 0.60 of an inch or less, or any shotgun. Cf. **cannon,** *n.*

The designation of the caliber limit of a small arm may vary in some unofficial contexts or other branches of the service, hut types commonly include pistols, revolvers, rifles, shotguns, and machine guns.

Attrib. in plural form, as in *small-arms ammunition, small-arms fire, small-arms weapon.*

small business. For purposes of AF contracting, a business having employees who aggregate less than five hundred.

small circle. A circle on a sphere, the plane of which does not pass through the center of the sphere.

small-scale map. A map having a scale smaller than 1:1,000,000. Cf. **large-scale map.**

SMAMA (*auth abbr*). 'Sacramento Air Materiel Area.'

smbl (*auth abbr*). 'Semimobile.'

smcln (*auth abbr*). 'Semicolon.'

SME (*auth abbr*). 'Standard Medical Examination.'

SMG (*auth abbr*). 'Submachine gun.'

SMLO (*auth abbr*). 'Senior military liaison officer.'

SMM (*auth abbr*). 'Specially Meritorious Medal.'

SMO (*auth abbr*). 'So much of.'

smoe factor. [Origin obscure.] A factor used by a flight engineer to obtain maximum mileage, esp. when the fuel supply is low. *Popular.*

smog, *n.* [*Sm*oke *fog.*] City fog.

smoke, *v. intr.* Used with *along.* To travel steadily, esp. in a vehicle that emits smoke or exhaust fumes, as in 'we smoked along without trouble.' *Slang.*

smoke bomb. A chemical bomb filled with a smoke-producing substance, such as phosphorus, used for screening tactics, marking, etc.

Smoke bombs are designed either to be dropped from an aircraft or to be planted by hand.

smoke concentration. A screen of smoke used in tactical operations.

See **blanket,** *n.*, **curtain,** *n.*, **haze,** *n.*, sense 2.

smoke grenade. A kind of chemical grenade containing a smoke-producing mixture, used esp. for screening or signaling.

smoke screen. A screen of smoke used to hide a maneuver, force, place, or activity.

Smoke screens may be generated on the ground by use of smoke grenades or smoke pots; they may also be laid down by aircraft using smoke tanks, or by artillery fire.

smoke tank. A tank on an aircraft from which the aircraft in flight can lay down a smoke screen.

smoke trail. 1. A trail of smoke left by a burning aircraft flying through the air. **2.** A spray of smoke laid down by an aircraft using a smoke tank. Cf. **skywriting,** *n.*

Smoky Hill Air Force Base. An AF base at Salina, Kansas, named for a river.

SMOP (*auth abbr*). 'So much of paragraph.'

SMR (*auth abbr*). 'Special money requisition.'

SMS (*auth abbr*). 'Subject matter specialist.'

SMT (*abbr*). **1.** *auth.* 'Shop mechanic's test.' **2.** 'Square mesh tracking.'

SN (*auth abbr*). 'Service number.'

sn (*abbr*). 'Sanitary' or 'sanitation.'

snafu, *a.* Also **snafued.** [Situation *n*ormal, *a*ll *f*ouled *u*p.] Snarled up, thoroughly disorganized. *Slang.* Also used as a verb. See **fubar,** *a.*

snaking, *n.* **1.** The tendency of a high speed aircraft to yaw from side to side with a certain frequency. **2.** The action of weaving back and forth across a road, a battle line, or the like, in an airplane. Also called 'S-ing.' **3.** The action of weaving back and forth with a single-engine airplane while taxiing to enable observation of any possible obstructions ahead of the airplane.

snap report. A preliminary intelligence report immediately following interrogation of an aircrew returned from a mission, and dispatched prior to the preparation of a mission report.

snap roll. An aerial maneuver in which an airplane is made to effect a quick, complete roll about its longitudinal axis. Cf. **slow roll.**

snap-roll, *v. tr.* To put an *airplane* into a snap roll. Also *intr.*

snatch pickup. The action of hooking a flying airplane onto a stranded glider, bundle of supplies, or person, and towing or carrying the object away through the air. Attrib., as in *snatch-pickup operations.* Also called 'aerial pickup.'

snatch rescue. Rescue by snatch pickup.

SNB-1. The Navy designation for the T-11.

sneak, *n.* A furtive military move, esp. one made prior to both sides knowing that hostilities exist. Used esp. as an attrib., as in *sneak bomber, sneak punch, sneak raid.*

sneak attack. An attack made before a declaration of war or before hostilities are mutually recognized to exist. Cf. **surprise attack.**

sniffle valve. A double-acting valve located in the droppable wing tanks of certain jet airplanes,

such as the F-80, to prevent excessive air pressure or formation of a vacuum.

SNJ. The Navy designation for the T-6.

SNL (*auth abbr*). 'Standard nomenclature list.'

sno. An abbreviated spelling of 'snow' used as a combining form: See note.

Snocat, snogo, and *snomobile* exemplify this usage in reference to different pieces of mechanized equipment employed in moving snow or traveling over snow.

snooper, *n.* A name sometimes given a radar aircraft that, working alone, searches out targets and attacks them. Also *snooper plane.*

snorkel, *n.* Variant of 'schnorkel.'

snow, *n.* **1.** Precipitation that consists of small columnar and tabular crystals of frozen water which fall separately or in loosely cohesive clusters. **2.** A type of interference resembling falling snow that appears on a radarscope. See **noise,** *n.* **3.** Artful talk or writing intended to impress someone, as in 'he gave him so much snow that no room for disagreement developed.' *Slang.*

snowballing, *n. Specif.* The accumulation or increase of unpredicted problems during the progress of an operation.

snowflake, *n.* A code name for a rocket device for sending window to high altitudes.

snow job. An instance of giving someone a great deal of artful talk. See **snow,** *n.,* sense 3.

snow static. Precipitation static caused by falling snow. See **noise,** *n.*

snubber, *n.* Any device for checking the motion of something, as a shock absorber, a piece of rope, etc.

SO (*auth abbr*). **1.** 'Special orders.' **2.** 'Shipment order.' **3.** 'Sonarman.'

So (*auth abbr*). 'South' in combination only.

SOA (*auth abbr*). 'Speed of advance.'

soak, *n.* The exposure of equipment to a given temperature for a period of time long enough for the temperature of the equipment to reach that of the environment in which the equipment is to be operated. See **cold soak.**

SOAPD (*auth abbr*). 'Southern Air Procurement District.'

soar, *v. intr.* **1.** Of airplanes or persons within: To fly away or upward. **2.** Of airplanes, esp. gliders: To fly along without power and without loss of altitude; to fly upward in this fashion. Also said of persons within the airplanes.

soaring, *n.* The action of the verb 'soar.'

Attrib., as in *soaring flight, soaring glider, soaring plane.*

sock, *n.* Short for 'windsock.'

sock, *v. To be socked in,* to be closed or unusable because of no visibility. Said of a place, an air base, or the like. *Colloq.*

SOFAR (*auth abbr*). 'Sound fixing and ranging.'

soften, *v.* Sometimes *to soften up. tr.* To weaken the resistance of the *enemy* by an attack or attacks in preparation for a major assault; to bomb or strafe enemy *positions* or *locations* in preparation for another attack or assault.

SOI (*abbr*). **1.** *auth.* 'Signal operation instructions.' **2.** 'Standing operating instructions.'

SOIC (*auth abbr*). 'Supply officer in command.'

soil tractionability. The capacity of a soil to provide traction for nontracked military vehicles.

soil trafficability. The capacity of a soil to withstand traffic, esp. the traffic of military vehicles.

sol (*abbr*). 'Soldier.'

solar angle. The elevation angle of the sun above the horizon, expressed in degrees.

solar day. A day as measured by the interval of time between two successive transits of the center of the sun over the same meridian. Cf. **mean solar day.**

solar time. Apparent time. See separate entry.

soldier, *n.* **1.** In a general sense, any male person in an army or air force. See note. **2.** *Specif.* **a.** A male person in the Army. **b.** A male enlisted person in the Army, as distinguished from an officer. Used esp. in direct address.

In sense 1, application of the term to members of the USAF is becoming rare. 'Airman' is used in its place, but 'airman' is usually restricted to an enlisted man.

Soldier's Medal. (SM) A decoration awarded to any person in the Armed Forces for performing a heroic act involving voluntary risk of life in a noncombat situation. See **decoration,** *n.*

solenoid, *n.* **1.** A coil of closely wound turns of wire, which, when electrified, acts as an electromagnet. **2.** Such a coil surrounding an iron rod or bar which is free to move under the magnetic influence of the coil.

In sense 2, the solenoid is often used for the remote control of aircraft machine guns.

solenoid valve. A valve actuated by a solenoid (sense 1).

solid fuel. Any fuel in a solid state, such as coal, coke, powder, etc.; *specif.,* such a fuel consisting of powder, as used in certain rockets.

solidity, *n. Specif.* Short for next.

solidity ratio. The ratio of the total blade area of a propeller or rotor to the area of the propeller or rotor disc.

solid model. A model airplane made of solid wood or other material, as distinguished from a model incorporating a framework.

solid propellant. A propellant in a solid state used in rockets, as distinguished from a liquid propellant.

solid-propellant rocket motor. A rocket motor

using a propellant in solid form. See **rocket motor.**

solid rocket. A rocket using solid fuel. See prec.

solo, *n.* **1.** Short for 'solo flight.' **2.** An act or instance of soloing.

solo, *v. intr.* To make a solo flight, esp. to make a solo flight for the first time.

solo, *a.* Flying alone, or flying without instructor or copilot, as in 'a solo flight.'

solo, *adv.* Alone in an aircraft, or without an instructor or copilot, as in 'he flew solo.'

solo flight. A flight in which one flies solo. Often applied esp. to a student's first flight alone.

SOLog (*auth abbr*). 'Standardization of certain aspects of operations and logistics.'

SONAR (*auth abbr*). 'Sound, navigation and ranging.'

sonar, *n.* [*So*und *na*vigation *r*anging.] A method or system, analogous to radar, in which high-frequency sound waves are emitted so as to be reflected back from objects of interest, used esp. by ships for detecting underwater objects, such as submarines or mines; an apparatus used for this purpose.

SONCM (*auth abbr*). 'Sonar countermeasures and deception.'

Sondrestromfjord Air Base. An air base at Sondrestromfjord, Greenland.

sonic, *a.* Of or pertaining to sound, esp., in aviation contexts, to the speed of sound.

sonic barrier. The usual name for the transonic barrier.

sonic boom. A loud report generated by a plane flying at sonic speed, and heard esp. on the ground.

This phenomenon appears to be caused by the buildup of plane and engine noise as the remote speed of the plane corresponds with that of sound, the sound waves continuously reinforcing one another and creating around the aircraft a pressure field, which when suddenly dissipated causes an explosive sound. The pilot of the plane does not hear the explosive sound because his speed outruns the speed of the sound.

sonic speed. The speed of sound. See **speed of sound.**

sonne, *n.* A German long-range radio-navigation system in which a number of equisignal zones rotate in a time sequence so that a true bearing may be determined by noting the instant at which the equisignal is heard.

An Allied system patterned after sonne is known as 'consol.'

Sonne camera. A kind of continuous strip camera developed by Fred Sonne in connection with the Chicago Aerial Survey Company. See **continuous strip camera.**

Sonne strip. An unbroken still photographic strip of the terrain, as taken with a Sonne camera.

sonobuoy, *n.* An acoustic receiver and radio transmitter mounted in a buoy and used to detect underwater noises and transmit them.

Sonobuoys are sometimes dropped into the water by aircraft, and are used esp. to detect submarines.

soonest, *adv.* Immediately, as in 'it will be accomplished soonest'; as soon as, as in 'accomplish soonest possible.' *Colloq.*

SOP (*auth abbr*). 'Standing operating procedure.'

Sometimes used adjectivally in the sense of 'normal,' 'usual,' or 'standard,' as in 'this condition remained SOP.' This abbreviation is pronounced letter by letter.

Sopwith, *n.* [The *Sopwith* Aviation Co., Ltd., now defunct.] **1.** A popular designation for certain British WW I airplanes built by the Sopwith company. **2.** Used in the names of airplanes: See note.

Sopwith fighter biplanes of WW I included the *Sopwith Camel*, the *Sopwith Dolphin* (both procured by the A.E.F.), and the *Sopwith Pup*.

SOQ (*auth abbr*). 'Sick officer's quarters.'

sortie, *n.* **1.** Restrictive and for purposes of credit to a combat unit or to a combat crew member: A flight or sally of a single aircraft that, in accordance with duties of a combat mission, penetrates into airspace where enemy fire is, or may be, encountered: See note. Also called 'credit sortie,' which distinguishes it from sense 3. **2.** An instance of such a flight, as in 'he was credited with 5 sorties.' **3.** In general and not for purposes of credit: Any flight or sally into enemy-held territory or airspace, or any flight undertaken against the enemy, whether enemy airspace is actually reached or not, as in 'we had 40 sorties, two of which aborted before reaching the channel.'

In all senses, the sortie endures between takeoff and the end of flight. Flight may be ended by the aircraft's landing, crashing, ditching, or by being destroyed in the air. In reference to sense 1, the circumstances surrounding a particular flight sometimes require considerable judgment by the commander to decide whether or not the flight entitles his unit or the crew members of the flight to a sortie credit. For example, an abortive sortie may be deemed a credit sortie if the aircraft has reached airspace in which enemy fire can be expected whether such fire is actually encountered or not; whereas a sortie aborted before reaching such airspace is not to be deemed a credit sortie. Questions of motive for an abort on the part of the pilot are irrelevant to this determination.

A sortie is normally considered flown by a bomber or fighter, but the term is also applied on occasion to the flight of a reconnaissance or cargo plane penetrating enemy airspace.

See **abortive sortie, credit sortie, effective sortie, noneffective sortie.**

sortie credit. A credit for having performed a sortie, given an aircrew or aircrew member. See **credit sortie.**

sortie rate. The number of sorties flown by a unit in a given amount of time, expressed in terms of the number of sorties per aircraft in inventory or per aircrew, or in some other agreed-to manner.

When used as a planning factor, each reporting unit

must use the time period, sortie, and inventory in the same way. See **aircraft inventory.**

SOS (*abbr*). 'Services of Supply.' Now *hist.*

SOS (*code*). An international signal of distress.

sound barrier. Another name for the transonic barrier.

sound detector. A sound locator.

sound frequency. An audio frequency.

sounding balloon. A small free balloon for sending up air-sounding equipment.

sounding rocket. A high-altitude rocket for carrying air-sounding equipment. See **Wac Corporal.**

sound locator. A device formerly used to detect aircraft in flight by sound.

A sound locator comprised four horns, or sound collectors (two for azimuth detection and two for elevation), together with their associated mechanisms and controls, which enabled the listening operators to determine the position and angular velocity of aircraft.

soup, *n.* In slang usage. **1.** [See **pea soup.**] Fog, or dense cloud through which an aircraft flies. **2.** Nitroglycerin.

soup, *v.* [From *super.*] *tr. To soup up,* to adjust or modify an *engine* or *vehicle* so as to increase its horsepower. Usually construed as a passive.

Hence, **souped-up,** *a.*

soupy, *a.* Thick; cloudy; foggy. Said of the weather or of fog.

south magnetic pole. The magnetic pole located approximately at 73° S, 156° E, about 1,020 nautical miles north of the South Pole. See **magnetic pole.**

South Pole. A geographic point on the earth, which is at one end of the axis about which the earth revolves and which is on the opposite side of the globe from the North Pole.

South Ruislip US Air Base. An air base at South Ruislip, England, named for the city.

sovereign state. A country in which the government exercises the usual powers of government, is free from outside control to declare war, and is responsive to authority only from within its own borders.

SP (*abbr*). **1.** *auth.* 'Shore Police' or 'shore party.' **2.** 'Self-propelled.' **3.** 'Strategic Planning Chart.'

sp (*auth abbr*). **1.** 'Special.' **2.** *Capitalized.* 'Spain.' Nationality Condensation Code.

space, *n.* **1.** That which extends in all directions, and has no outward bounds nor limits of divisibility, and surrounds and encompasses all matter, as in 'the earth travels through space as it revolves about the sun.' See note. **2.** A limited extension of this noumenon. **a.** The extent beyond the earth's atmosphere, as in 'the meteor came from space to collide with the earth.' Usually called 'outer space.' **b.** An extent within the earth's atmosphere or other medium, as in 'the space occupied by the formation extended upward to a mile.' See **airspace,** *n.*, **space wave.** **3.** A limited extension in one, two, or three dimensions, as in 'the space between two points, two lines, or two solids,' or 'the house occupied the entire space on the lot.' **4.** Room for a person to occupy, as an accommodation on a train. **5.** An authorized position within an organization for either a military or civilian person. See **troop space.** **6.** *Point in space,* a point usually postulated as fixed either in outer space or in the atmosphere, ascertained by reference to a particular coordinate system.

In sense 1, space is defined in terms of the common or Euclidean concept. It should be noted, however, that according to certain non-Euclidean theory, space is not infinite in extent, and its conception cannot be separated from the conception of time.

In senses 1 and 2a, space is normally conceived as void or as occupied by ether. In sense 3, the concept is without reference to any occupying substance. In sense 6, an airborne aircraft is said to occupy successive points in space, usually considered fixed in reference to the earth. That is, they remain in the atmosphere and travel along at the same speed as that of the earth. If considered as points in space in reference to the sun, they would soon escape the earth's atmosphere into outer space.

space cadet. A hot pilot; a pilot that shows off. *Slang.*

space charge. *Electronics.* A negative charge in a vacuum tube resulting from electrons emitted from the cathode but not immediately drawn to the anode, remaining in the space between the cathode and anode.

space chart. A chart showing the number of military and civilian spaces authorized the AF, and the distribution of the spaces throughout the AF.

space control. *Photogrammetry.* The application of a relatively accurate system of measurement to an aerial photograph to determine differences in elevation, and distances and directions between points on the earth.

space flight. Flight in outer space.

space medicine. A branch of medicine concerned with the study, prevention, cure, or alleviation of illnesses or diseases that are expected to arise from space flight.

Space medicine deals with the effects or probable effects on the human body of conditions such as tremendous accelerations, weightlessness, cosmic radiation, etc.

spacer, *n.* Any device, part, or component, such as a bar, a wall, or the like, that holds other parts at a distance from each other, that separates one section of something from another section.

spacer leg. On a bombing mission involving a stream of several aircraft: A leg flown before turning in the direction of the initial point to permit all airplanes in the stream to be positioned or spaced at given distances.

The lead plane flies to the end of the spacer leg, turns toward the IP, followed by the other aircraft at designated distances.

spaceship, *n.* Any vehicular craft, presently only theoretical, designed to travel in outer space.

space warfare. Warfare conducted by use of weapons brought to bear upon earth targets from outer space.

space wave. *Radio.* That component of a ground wave that travels more or less directly through space from the transmitting antenna to the receiving antenna.

One part of the space wave goes directly from one antenna to the other; another part is reflected off of the earth between the antennas.

Spad, *n.* [From *S*ociété *P*our *A*viation et ses *D*érivés, a French airplane-manufacturing concern, now defunct.] **1.** A popular designation for an airplane built by the Spad concern, as in 'Eddie Rickenbacker in his French-built Spad firing on a Fokker D-7.' **2.** Used in the names of airplanes, as in *Spad VII*, a single-place, biplane fighter of WW I, *Spad XI*, a two-place, biplane fighter of WW I, and *Spad 91*-C1, a single-place, biplane fighter of the 1930's.

Many Spad airplanes were procured and flown by the A.E.F. in WW I. The Spad company was the same as the old Déperdussin firm, founded in 1910. It was combined after WW I with Blériot Aéronautique. See **Blériot,** *n.*

span, *n.* **1.** The maximum dimension of an airfoil from tip to tip or from root to tip, as of a wing, a rotor blade, or a horizontal tail; the measure of this dimension. **2.** The maximum width of an aircraft from wingtip to wingtip. **3.** *Specif.* Wingspan (which see).

Spangdahlem Air Base. An air base at Spangdahlem, Germany, named for the city.

span loading. The loading placed on an aircraft expressed in terms of the gross weight divided by the wing span (if a monoplane) or by the span of its equivalent monoplane wing (if a multiplane).

span of control. In management and organizational parlance, the number or amount of subordinates or subordinate organizations that are under the control of a supervisor or commander.

spar, *n.* Any principal structural member in an airfoil, esp. in a wing, running from tip to tip or from root to tip.

spar cap. A flat upper or lower strip on certain spars, to which the airfoil covering is fastened or attached.

spare, *n.* **1.** An extra piece of equipment, component part, accessory, or the like, that is held in reserve for use when needed. **2.** *Specif.* Short for 'spare aircraft' or 'spare part.'

spare aircraft. An aircraft that flies along with a formation of aircraft on a combat mission, and which replaces any aircraft that aborts before reaching enemy territory.

spare part. In supply usage, any part, component, or subassembly kept in reserve for the maintenance and repair of major items of equipment.

spark, *n.* **1.** The ignition fire produced in a cylinder of an internal-combustion engine; the apparatus producing or controlling this fire. See **advance,** *v.*, sense 3. **2.** A jamming noise like that of an electric razor used against radio communications.

spark, *v. tr.* To put life into *another* or *others* so as to get a job done, as in 'the Colonel sparked his men to a new record.'

spark transmitter. An antiquated type of radio transmitter used in radiotelegraphy, in which a condenser, inductance coil, and a spark gap are utilized to fashion radio waves.

spar truss. A truss between the upper and lower members of a built-up spar.

spat, *n.* Short for 'wheel spat.'

spchgr (*auth abbr*). 'Supercharger.'

SpCM (*auth abbr*). **1.** 'Special court-martial.' **2.** 'Spanish Campaign Medal.'

spd (*auth abbr*). 'Speed.'

spdltr (*auth abbr*). 'Speedletter.'

SPE (*auth abbr*). **1.** 'Subport of embarkation.' **2.** 'Special purpose equipment.'

spearhead, *n. fig.* Any force that precedes others in an attack; the leading or most advanced element of an attacking force.

spearhead, *v. tr.* To lead an *attack;* to provide the drive for launching an *attack;* to take the lead in an *undertaking.*

spearhead design. A spearlike design of gold braid worn on the sleeves of an evening dress uniform denoting rank by the number of stripes along the base. See **sleeve insigne.**

spec (*auth abbr*). 'Specify' or 'specification.'

SpecDevCen (*auth abbr*). 'Special Devices Center.'

special activity. 1. A unit, detachment, or other organization considered in context as having some special function that sets it apart from other units, detachments, or the like: See note. **2.** The actions performed by such a unit, detachment, or the like. Attrib., as in *special activity unit.*

Efforts have been made to give this term a single specific meaning, but the term resists these efforts. Its use is appropriate in reference to any activity that, for the purpose, is considered to be special. For example, a tenant unit in one situation may be regarded as a special activity because of its particular status, but such a unit, in another situation, may not be so considered. Likewise, a supported unit, but one not in a tenant status, may be considered a special activity. Likewise also, an activity organized wholly within a command for a particular, but a nonrecurring, purpose, and presenting no problem of logistic support, may be considered a special activity. Context rather than specific definition is required to bring out the particular character of the activity to indicate why it is considered special.

Special Aeronautical Chart. Any of a series of

aeronautical charts on a large scale suitable for plotting and pilotage navigation in areas of frequent aerial operations.

These charts are of a Lambert conformal conic projection. Their scales are either 1:250,000 or 1:500,000.

special air mission. An air mission, usually a nonscheduled transport mission, considered special for one reason or another: See note.

For example, an air mission to carry a very important person or persons or to carry high priority cargo is often considered a special air mission; a transport mission flown by special request and for which revenue is received is also considered a special air mission.

special air pickup. An air pickup (sense 1) made by an aircraft or aircrew not regularly used for such action, esp. under conditions of emergency, as for delivery of a part for a grounded aircraft.

special case report. An inspector's report on a case brought to notice outside the course of regular inspection.

special consultant. A consultant in a professional or technical field who is given an excepted appointment for a specified amount of time and for a stipulated remuneration.

special court-martial. (SpCM) A court-martial for offenses which do not warrant a trial by a general court-martial.

A special court-martial may impose sentences such as confinement up to six months, forfeiture of pay, or, subject to appellate review by a board of review, a bad conduct discharge.

special duty. Duty that is outside of a regular duty or regular duty assignment.

special equipment. Equipment designed or required for some special need; *specif.*, survival equipment carried aboard aircraft.

special heavy transport aircraft. A transport aircraft considered capable of carrying an especially heavy load; *specif.*, one capable of carrying a fifty-ton payload.

Sometimes called a 'very heavy cargo aircraft.' See **transport aircraft,** note.

specialist, *n.* One who specializes or practices in some particular branch or aspect of a profession, art, science, or other broad field of endeavor.

Warrant officers and airmen are considered specialists in their Air Force Specialties when they are classified as 'skilled.' Cf. **helper,** *n.*, **semiskilled,** *a.*

specialist staff. In certain headquarters organizations, a staff of officers who advise or represent the commander in respect to certain specialized fields, such as those of communications, ordnance, finance, military justice, etc. See **general staff,** sense 1.

In some headquarters, the functions of the specialist staff are absorbed in the coordinating staff.

specialized depot. A term designating an area depot when attention is directed to its function of serving its zone in some special capacity. See **area depot,** note.

specialized forecast. A weather forecast prepared for a special purpose.

The form and detail of a specialized forecast are determined by the requirements and the forecasting facilities.

specialized training. Training intended to develop ability or competence in some limited or specialized field, such as piloting, maintenance and repair, electronics, intelligence, etc. Cf. **special training.**

specialized unit. A unit (sense 1) prescribed by authority other than a table of organization.

The specialized unit includes the historical T/D unit and the provisional unit.

special list of equipment. A list that establishes interim equipment allowances pending inclusion of such equipment in appropriate authorization documents.

special mission aircraft. An aircraft provided, or used, for a special air mission or missions.

Special Navigation Chart. Either of two series of aeronautical charts designed for long-range navigation, with a scale of 1:5,000,000 or 1:2,188,872.

The charts with a 1:5,000,000 scale are primarily for over-water areas. The other series is designed for arctic navigation.

special order. (SO) Often *capitalized.* **1.** *pl.* A collection of numbered and dated publications issued upon the order of competent authority, each promulgating an announcement or directive affecting the status or activity of individuals. **2.** Usually *pl.* A particular issue of these publications.

SO's are issued for the DAF by order of the Secretary of the AF; for various commands, by order of the respective commanders. See **order,** *n.*, sense 2 and note.

Special Planning Chart. Any one of a series of aeronautical charts, scale 1:2,000,000, designed for interim use for operational planning of a tactical or strategic nature.

All types of hydrographic and cultural features, including railroads and major roads, are indicated. Relief is indicated by spot elevations and contours.

Special Plotting Charts. Any one of a series of aeronautical charts, scale 1:3,000,000, designed to provide plotting charts suitable for long-range navigation.

These charts show a minimum of base detail, but include shorelines, large cities, spot elevations, and isogonic lines.

special purpose item. In supply usage, an item designed to fill a special requirement, and having a limited application.

For example, a wrench or other tool designed to be used for one particular model of a piece of machinery is a special purpose item; a special purpose vehicle can also be regarded as a special purpose item.

special purpose vehicle. A ground motor vehicle designed for a specific purpose.

Such vehicles include fire trucks, ambulances, fork lifts, tugs, cranes, etc.

special records depository. A records depository for specialized classes of records.

special services. 1. The services rendered by Personnel Services for the leisure-time entertainment and recreation of AF personnel and their dependents. **2.** Often *capitalized.* A branch of Personnel Services that provides such services.

Special services provides for sporting activities, motion pictures, arts and crafts, live shows, etc.

special staff. A misnomer for 'specialist staff.'

Although a misnomer, this term has been used in official reporting.

special status. In supply usage, the status of an article or group of articles held for disposition or determination of identity or condition, or held or issued for a specific assembly, project, or work order.

special study. A special undertaking that requires both research (usually library research) and writing, directed at presenting an analysis or exposition of a particular subject; the written product that results from this undertaking.

The research in a special study may extend beyond that done in a library; it may be basic in character, applied, or inquisitive.

special training. 1. Training in some special subject not generally provided for in a normal training schedule; *specif.*, training in the operation or maintenance of a new type of equipment. **2.** Specialized training.

special training device. A training device produced or fabricated to meet a new or special need, as for training in a new and significantly different type of aircraft, or for training in a new system of bombing, etc. See **training device.**

specialty, *n. Specif.* An Air Force Specialty (which see).

special weapon. Any out-of-the-ordinary, modern weapon, such as an atomic, radiological, or biological weapon.

Special Weapons Command. Formerly, a major air command of the USAF, responsible for the developmental testing of atomic and other special weapons. Now *hist.*

The Special Weapons Command was changed to the AF Special Weapons Center, a subordinate command of the Air Research and Development Command.

specif (*abbr*). 'Specific' or 'specifically.'

specific, *a.* Designating any of various arbitrary constants: See note.

1. *Specific fuel consumption,* the amount of fuel in pounds per hour consumed or required by an engine per brake horsepower or per pound of thrust. **2.** *Specific gravity,* the ratio of the weight of any volume of a substance to the weight of an equal volume of another substance taken as standard at a constant or stated temperature. Solids and liquids are usually compared with water at 4° C. **3.** *Specific heat,* the heat in calories required to raise the temperature of one gram of a substance 1° C. **4.** *Specific humidity,* the amount of water vapor in a given amount of moist air, usually expressed in grams of water per kilogram of moist air.

specification, *n.* (spec) **1.** *pl.* A detailed statement, esp. in a contract, that sets forth the requirements or standards for a piece of equipment, a material, a service to be performed, etc. **2.** In the *sing.*, an item in such a statement.

specification serial number. A former designation for an Air Force Specialty Code number.

specific impulse. The thrust in pounds produced by burning one pound of a specified fuel with its oxidizer in one second. Said esp. of a rocket motor or rocket engine.

specified air command. A specified command of the Air Force.

specified command. 1. A command provided for by law, as one of those specified by the USAF Organization Act of 1951, namely, the Air Defense Command, the Strategic Air Command, or the Tactical Air Command; *specif.*, a specified air command. **2.** A one-service command under the strategic guidance of the JCS for the performance of a specific task.

In practice, a specified command in sense 2 is also a specified command in sense 1.

specl (*auth abbr*). 'Specialist' or 'specialize.'

SpeDiaT (*auth abbr*). 'Special diary transcript.'

speed, *n.* (spd) Rate of motion relative to a stated or implied reference point, and measured in terms of the passage of time; *specif.*, airspeed.

This word is sometimes used where 'rpm' would be more specific, as in 'propeller speed.' See **velocity,** *n.*, note.

speed brake. Any flap designed for slowing down an airplane in flight.

speed error. An error in the indication of an aircraft's magnetic compass, caused by a tilting of the indicator when the aircraft changes its speed while flying in an easterly or westerly direction.

This error is due to inertia. See **compass error,** sense 1 and note.

speed indicator. Short for 'airspeed indicator.'

speed line. In air navigation, a line of position as plotted on a chart, perpendicular or almost perpendicular to the course of an aircraft, and showing how far along the course the aircraft has flown. Cf. **course line,** sense 2.

speed of sound. The speed at which sound waves travel through a medium. See note and **mach,** *n.*

Sound travels at different speeds through different mediums, and it travels at different speeds under different conditions of temperature, etc. In air under standard sea-level conditions, sound travels at approximately 1,100 fps, or 33,220 cm per second, or 750 mph. Cf. **acoustic velocity.**

Speedpak, *n.* A trade name for a streamlined pannier or container fitted externally to the bottom of a fuselage, as on the Lockheed Constellation, used for carrying additional cargo or luggage.

The Speedpak is a kind of pod, but unlike the one used on the Fairchild XC-120, it is not a part of the fuselage.

Sperry, *n.* [*Sperry* Corporation, US manufacturer.] Used in the names of aircraft instru-

ments and accessories, navigational aids, etc., as in *Sperry bombsight, Sperry gyro horizon, Sperry instrument approach system.*

Sperry Award. An annual award, established by Elmer A. Sperry, Jr., Edward C. Sperry, and Helen Sperry Lea in 1936 in memory of their brother, Lawrence Sperry, pioneer aviator and inventor, and given 'for a notable contribution by a young man to the advancement of aeronautics.' Also called 'Lawrence Sperry Award.'

The award provides a certificate and an honorarium of two hundred and fifty dollars.

spike, *v. To spike it,* to force an *airplane* to land even though the landing speed is too high.

spilling, *n.* The escaping of air from beneath the canopy of a parachute at the periphery, as caused by instability or sideslipping.

spillover, *n.* **1.** The air in a ramjet engine that sometimes flows over the edge of the air intake to the outside. **2.** Interference received on a loran receiver from a station transmitting at a frequency near that to which the receiver is tuned.

spin, *n.* An aerial maneuver or performance, either controlled or uncontrolled, in which an airplane makes a vertical descent with its nose pointed sharply, or slightly, downward, while revolving about the line of descent in any of various attitudes.

In a spin, the airplane describes a helix of large pitch and small radius. Species or kinds of spin include the flat spin, the inverted spin, the outside spin, the precision spin, and the tailspin. See separate entries.

spin, *v. intr.* Of an aircraft or person within: To make a spin. *To spin in,* to crash into the earth in a spin.

spin axis. A spinning axis.

spinner, *n.* **1.** Something that spins, such as the arming propeller on certain bomb fuzes, a rotating radar antenna, etc. **2.** *Specif.* A streamlined fairing of approximately conical or paraboloidal shape fitted over the hub of certain aircraft propellers, and which rotates with the propeller.

spinner rocket. A spin-stabilized rocket. See **spin-stabilized projectile,** esp. note.

spinning axis. An axis about which an object rotates. Used esp. of a gyroscope.

spinning gyroscope. The conventional gyroscope. Distinguished from a vibratory gyroscope.

spin-stabilized projectile. Any projectile, as a bullet, shell, or rocket, steadied in flight by a rotating motion about its longitudinal axis.

A projectile fired from a gun has spin imparted to it by the rifling in the gun barrel; on a rocket, a ring of nozzles may be used with each nozzle slanted sidewise, so that the escape of the exhaust gases through them will impart spin to the rocket.

spiral, *n.* A flight maneuver or performance in which an airplane circles while ascending or descending, describing a helical path; the flight path so described.

spiral dive. A dive in which an airplane makes a spiral.

spiral-four cable. A cable composed of four insulated conductors wound spirally around a supporting core.

spiral instability. An unstable characteristic inherent in certain airplanes, which tends to cause an airplane, when its lateral axis is inclined, to go into a spiral dive, in which the inclination of the lateral axis may steadily increase with the radius of the turn decreasing.

spiral scan. A type of scan in which a point on the radar beam describes a spiral in space. Hence, **spiral scanning.**

Spirit of St. Louis. A single-engine, high-wing, Ryan monoplane flown by Charles A. Lindbergh, the first airplane to complete a nonstop solo flight across the Atlantic.

The flight began on 20 May 1927 from Roosevelt Field, New York, and ended at Le Bourget Airport, Paris, 33 hours and 39 minutes later, at 10:21 PM (Paris time), 21 May.

Spirit of St. Louis Medal. A medal, established by the citizens of St. Louis, Missouri, in 1929, in honor of Charles A. Lindbergh and his transatlantic flight and given for meritorious service in the advancement of aeronautics.

The medal is presented approximately every three years by the American Society of Mechanical Engineers.

Spit, *n.* Short for 'Spitfire.'

Spitfire, *n.* An RAF low-wing fighter with a single, in-line engine, developed by Supermarine and used throughout WW II.

The speed, rate of climb, superior maneuverability, and great fire power of the Spitfire made it one of the finest fighters of its day. In its long operational use it underwent numerous modifications, with designations such as *Spitfire IV, Spitfire P.R. IV, Spitfire XX.* Some Spitfires were also used by the USAAF.

splasher beacon. A kind of nondirectional homing beacon.

split, *n.* Short for 'split S.'

split beam. A radio beam or a light beam that is split.

split-ess, *v. intr.* To make a split S.

split flap. A kind of flap set into the under surface of a wing and covered by the upper surface, depressed downward chiefly to increase drag.

split S. A flight maneuver in which an airplane makes a half roll onto its back and then dives, either leveling off on a reversed heading after completing a half loop, or continuing the dive.

split vertical photograph. A photographic print made from the negatives of two aerial cameras arranged side by side and taking vertical photo-

graphs simultaneously to provide wider coverage. Hence, **split vertical photography.**

SPM (*auth abbr*). 'Self-propelled mount.'

spn (*auth abbr*). 'Sponsor.'

spoiler, *n.* **1.** A projecting member on an aerodynamically designed body, used to break down the airflow around the body so as to slow down its movement or decrease its lift. **2.** *Specif.* **a.** Such a member in the form of a movable spanwise flap attached to a wing, used esp. to decrease lift on the wing and increase the rate of descent. **b.** An attachment or set of attachments affixed to a drop tank designed to prevent the tank from ramming the aircraft through lift after release.

spoking, *n.* A malfunction in a radar set in which luminous spots continue on the screen for an abnormal length of time, interfering with presentations.

sponson, *n.* A projection from the side of an aircraft used for housing some part or for other purposes; *specif.*, a protuberance on either side of a flying-boat hull near the water line, used to give the plane stability in the water. See **hydrostabilizer,** *n.*

In the specific sense, not to be confused with a stabilizing float.

spoofing, *n.* The action of deceiving or misleading the enemy in electronic operations: See note.

Examples of spoofing include the continued transmission on a frequency after it has been effectively jammed by the enemy, the use of decoy radar transmitters to lead the enemy into useless jamming effort, transmitting radio messages containing false information for interception by the enemy, etc.

spot, *v. tr.* **1.** To place an *aircraft* or ground *vehicle* in a proper location for loading or unloading. **2.** To locate or espy *something*, as an aircraft or a troop concentration. **3.** To determine deviations of *gunfire* from a target by actual observation, in order to supply information for the adjustment of the fire.

spot check. A check or inspection of certain steps in an operation, process, or the like, of certain parts of a piece of equipment, or of a representative lot of completed parts or articles.

spot jamming. The jamming of a specific channel or frequency.

spot landing. A landing in a confined area, or a landing in which the aircraft is made to touch a particular spot or mark on the ground.

spot-negotiated sale. In supply usage, a sale made without obtaining written bids.

spot promotion. A temporary promotion of an officer made by a combat or battle commander, or by a theater commander, so as to assure that required authority resides in the officer if he serves in a key position.

An officer reverts to his former rank when he leaves the zone in which promoted unless he has otherwise received a regular promotion.

spot report. A concise, on-the-spot report on an air mission carrying information of critical value, transmitted by radio from aircraft in flight.

spot-size error. An error in the presentation of a radarscope, or in the interpretation of such a presentation, caused by the abnormally large size of the spot or blip, in which two or more objects appear as one, or in which range or azimuth presentation is distorted.

spot takeoff. The takeoff of a helicopter or other aircraft from a confined area. Cf. **vertical takeoff.**

spotter, *n.* **1.** A person within an aircraft who spots or looks for people, for other aircraft, troops, artillery hits, etc.; the aircraft in which this is done. See **weaver,** *n.* **2.** An aircraft spotter. **3.** *Navy.* A person who observes and reports on naval gunfire and often designates targets.

In sense 1, cf. **observer,** *n.*, note.

spotting charge. A small charge of powder, usually black powder, in a practice bomb, grenade, or the like, to show the location of its point of impact.

spray strip. A strip projecting from a flying-boat hull to deflect spray.

spreader bar. On each side of a wheel-ski landing gear, a vertical bar that braces the runner aft of the wheel against a protruding arm above the runner.

spring-loaded, *a.* Held or driven under spring pressure.

spring tab. A kind of flying tab that is connected to the main control surface by a spring or springs. See **flying tab.**

sprog, *n.* A recruit. *British slang.*

SpS (*auth abbr*). 'Special Services.'

spt (*abbr*). 'Support.'

SPTC (*auth abbr*). 'Specified Period of Time Contract.'

SptL (*auth abbr*). 'Support line.'

sq (*auth abbr*). 'Squadron.'

sqd (*auth abbr*). 'Squad.'

squad, *n.* (sqd) In the AF, a basic drill or parade formation consisting of an indefinite but small number of men forming a single rank or file.

squadron, *n.* (sq) **1.** In the USAF, a unit at a level of command immediately below, and usually subordinate to, a group. See note. **2.** Generally, the basic air unit of any military or naval service. **3.** A formation of aircraft, usually six or more. **4. a.** *Army.* A unit composed of a headquarters and two or more troops of cavalry. **b.** *Navy.* A unit consisting of a given number of

vessels or aircraft usually of the same type. **5.** A body of persons drawn up in a regular formation; *specif.*, a formation consisting of the personnel in a squadron (esp. in sense 1).

In sense 1, a squadron may be either a flying or a nonflying squadron. The flying squadron consists of a headquarters, two or more flights, and administrative and technical components, with the number of its aircraft dictated usually by the type of aircraft with which it is equipped. It may operate independently, but it is normally a part of a group. A nonflying squadron consists of a headquarters and other sections as determined by its primary mission. See **separate unit,** sense 1.

Attrib., esp. in sense 1, as in *squadron adjutant, squadron commander, squadron level, squadron mess,* etc.

squadron flyaway kit. A flyaway kit prepared for a squadron. See **flyaway kit.**

squadron leader. 1. The pilot in command of a squadron of aircraft. **2.** A commissioned rank or person in the RAF or RCAF, corresponding to major in the USAF.

squall, *n.* A sudden and brief wind, sometimes accompanied by thunder, lightning, and precipitation. See **line squall.**

squall line. A narrow zone of meteorological activity usually parallel or nearly parallel to a cold frontal surface, and occurring some distance in advance of it.

Squall line activity, or a line squall, is characterized by thunderstorms, heavy rain, brief windshifts, gusty winds, abrupt pressure rises, and abrupt temperature falls. 'Instability line' is used officially instead of 'squall line.'

squall-line thunderstorm. A frontal thunderstorm occurring usually in advance of a cold front. Also called a 'prefrontal thunderstorm.'

square base. The base of a bullet or shell that has cylindrical sides. Cf. **boattail,** *n.*

squawk, *v. intr.* Of an airborne IFF set: To emit a signal. *Slang.*

squawk box. An intercom microphone and loudspeaker housed in a single box. *Slang.*

squawk sheet. A list of complaints made out by a pilot or other aircrew member in regard to defects found in a particular aircraft. *Slang.*

squeeze, *v. tr. To squeeze the courses,* to bring the two courses in each pair of courses of a four-course radio range closer together, at the same time keeping a straight-line relationship between opposite courses.

squib, *n.* **1.** Any of various small-size pyrotechnic or explosive devices. **2.** *Specif.* **a.** An electrically detonated explosive charge in a thin-walled metal container, used as a jettisoning device on an aircraft. **b.** A small igniter used to fire a rocket.

squid, *v. intr.* Of an inflated parachute: To assume a longitudinal, squid-like shape under excessive air or wind pressure. See **critical closing speed.**

squirt job. A jet airplane. *Slang.*

SR (*abbr*). **1.** *auth.* 'Special regulations.' **2.** *auth.* 'Shipment request.' **3.** *auth.* 'Saudi Arabia.' Nationality Condensation Code. **4.** 'Short range' when referring to radar sets.

S/R (*auth abbr*). 'Service record.'

sr (*auth abbr*). 'Senior.'

SRA (*abbr*). 'Simultaneous range Adcock antenna.'

SrAvBad (*auth abbr*). 'Senior Army Aviator Badge.'

SRB (*auth abbr*). 'Service record book.'

SRC (*auth abbr*). **1.** 'Standard requirements code.' **2.** 'Sound ranging control.'

SrParaBad (*auth abbr*). 'Senior parachutist badge.'

SS (*abbr*). **1.** *auth.* 'Sworn statement.' **2.** *auth.* 'Steamship.' **3.** *auth.* 'Special staff.' **4.** *auth.* 'Staff specialist.' **5.** *auth.* 'Surveillance station.' **6.** 'Selective Service.' **7.** 'Standard frequency station.' **8.** 'Silver Star Medal.'

S/S (*abbr*). 'Statement of service.'

SSB (*auth abbr*). 'Single side band.'

SSgt (*auth abbr*). 'Staff sergeant.'

SSI (*auth abbr*). 'Standing signal instructions.'

SSIA (*auth abbr*). 'Specification serial of individual assigned.'

SS loran. Short for 'sky-wave synchronized loran.'

SSM (*auth abbr*). **1.** 'Silver Star Medal.' **2.** 'Surface-to-surface missile.'

SSN (*auth abbr*). 'Specification serial number.' Now *hist.* in the AF.

SSO (*auth abbr*). 'Statistical service office' or 'statistical service officer.'

SSS (*abbr*). **1.** 'Selective Service System.' **2.** 'Strategic support squadron.'

SSU (*auth abbr*). 'Statistical service unit.'

SSV (*abbr*). 'Ship to surface vessel.' The designation of a radar used to detect surface vessels from patrol surface craft.

SSvc (*auth abbr*). 'Selective Service.'

ST (*abbr*). **1.** 'Shipping ticket.' **2.** 'Short ton.'

St (*abbr*). 'Stratus.'

st (*abbr*). **1.** *auth.* 'Street.' **2.** 'Statement.'

sta (*auth abbr*). 'Station.'

sta- (*prefix*). 'Stanine,' as in 'sta-eight.' *Colloq.*

stabilator, *n.* A one-piece stabilizer mounted on the top of the vertical stabilizer, as on the XF-84H.

stability, *n.* In specific senses. **1. a.** *Aerodynamics.* A characteristic of an aircraft in flight that causes it, if disturbed from its condition of equilibrium or steady flight, to return to that condition; a similar characteristic of a parachute and its burden. **b.** The tendency of a projectile, as a bullet or shell, to remain balanced in flight. **c.** The characteristic of a seaplane, esp. a flying boat, to remain stable in the water.

2. *Meteorology.* The condition that exists in a given space of the atmosphere when the air is quiet and resists vertical displacement, due to the lapse rate being less than the adiabatic rate. **3.** *Explosives.* The property of an explosive against detonating under normal storage conditions.

In sense 1a, some aerodynamicists relate the stability of an aircraft only to rotation about any of its three axes, and do not charge a vertical or lateral displacement of the axes, as in sideslipping, against the stability characteristics of the aircraft. Others, however, do consider the tendency to resist such movements a stability characteristic: See **lateral stability.** Stability is variously analysed and differentiated, as in automatic stability, directional stability, dynamic stability, inherent stability, lateral stability, longitudinal stability, neutral stability, and static stability. See under separate entries. See also **spiral instability.**

In sense 2, cf. **instability,** *n.*

stability number. A number used in fire-control computations representing a dimensionless quantity that stabilizes tracking while computation is done in a minimum time.

stabilize, *v. tr.* In specific senses. **1.** To give stability to an *aircraft*, a *projectile*, etc. **2.** To fit out a *piece of equipment*, such as a turret, radar antenna, or the like, with special devices and to adjust it so as to make it maintain a desired attitude regardless of the angular attitude of the aircraft or ship on which it is mounted. **3.** To make a ground *area* firm by the addition of gravel or other material. **4.** To make a *battle front* or *sector* stable.

Hence, **stabilization,** *n.*, **stabilized,** *a.*, in all senses. In sense 1, see **fin-stabilized projectile, spin-stabilized projectile.** See also **stability,** *n.*, note.

stabilizer, *n.* Any airfoil or any combination of airfoils considered as a single unit, the primary function of which is to give an aircraft stability; *specif.*, the horizontal stabilizer (which see). See also **vertical stabilizer.**

stabilizing float. Any float used with certain flying boats or seaplanes to aid in giving the plane stability in the water. See **outboard stabilizing float.**

stable element. *Specif.* Any instrument or device, such as a gyroscope, used to stabilize a radar antenna, turret, or other piece of equipment mounted on an aircraft or ship.

stable oscillation. Oscillation that does not increase and tends to decrease in amplitude.

stack, *n.* **1.** Short for 'exhaust stack.' **2.** All the airplanes stacked up awaiting landing turns. *Colloq.*

stack, *v. tr.* **1.** To arrange *aircraft* awaiting landing instructions at various altitudes; to echelon *aircraft* vertically. **2.** To crash. *Slang.*

Often used with *up* in both senses.

staff, *n.* **1.** A selected group of officers, or officers and civilians, who assist the commander in his exercise of command. **2.** A major subdivision of certain staff organizations, as the coordinating staff in a general staff organization.

A staff provides information for the commander, prepares details of plans, translates the decisions of the commander into orders, causes the orders to be transmitted to the command, and monitors or supervises operations as directed.

There are different concepts for organizing a staff. In some concepts, the commander is assisted in his command functions by a vice commander or by one or more deputy commanders, and these may be considered to be members of his staff. On the other hand, they may be distinguished from the staff proper, which serves without powers of command. See **command element,** sense 2, and **staff element.**

Staffel, *n.* In plural **Staffeln.** The German designation of an air squadron, usually having from nine to twelve airplanes. See **Schwarm,** *n.*

staff element. Any one of the elements in a staff organization not considered to have command functions.

These elements consist of the chief of staff (except that this officer may also be considered a part of the command element), the deputy chief of staff, the assistant chief of staff, the director of a directorate, and the respective heads of divisions, branches, sections, and units. See **command element.**

staff judge advocate. Sometimes *capitalized.* The senior judge advocate on a commander's staff. Often called a 'judge advocate.'

A staff judge advocate acts as the legal adviser to the commanding officer, and in relation to the command, his duties correspond generally to those of The Judge Advocate General, USAF, with relation to the AF. Any other judge advocate on a commander's staff is an *assistant staff judge advocate.*

staff-modified aircraft. An aircraft modified for staff use, usually by soundproofing, addition of passenger seats, or other features.

staff officer. An officer who serves on a commander's staff, or who assists the commander, or the head of a department, in the exercise of his command.

The Chief of Staff, USAF, although a staff officer to the Secretary of the Air Force, is also a commander.

staff section. Any part of a staff that, for the purpose, may be identified as a section.

Major subdivisions or subordinate subdivisions may be considered staff sections. See **section,** *n.*

staff sergeant. (SSgt) A noncommissioned officer with the lowest rank of sergeant in the AF, immediately above airman first class and immediately below technical sergeant; the rank or grade of this person.

Staff sergeant in the AF corresponds to sergeant in the US Army.

staff study. An analytical study prepared for a commander which includes normally five parts, the subject, the statement of the problem, the assumptions (sometimes augmented by a statement of criteria used), the discussion (sometimes with conclusions), and action recommended; a similar study prepared for practice.

staff visit. A visit by a staff officer to an activity

or project team for the purpose of keeping in touch with progress being made.

A staff visit does not suggest any supervisory or monitoring purpose.

stage, *n.* One of the successive steps or periods in an action, motion, or process; likewise, the whole of an action, motion, or process when being distinguished from one that has successive steps, as in 'a single-stage reaction.' *Specif.* **1.** A period in a rocket's flight resulting from the propulsive force of one or other of its charges, as in 'two-stage rocket.' **2.** A step in the movement of fluid through a compressor that uses more than one impeller. See **axial-flow compressor,** note.

stage, *v.* **1.** *tr.* To bring *persons* or *things* to a particular place in preparation for further movement or in preparation for an operation. **2.** *Specif.* To bring *aircraft* to a place in preparation for an air operation. Often used with a preposition, as in 'we staged our bombers *through* (or *from* or *out of*) this airfield for the first raid'; also *intr.* with a preposition, as in 'five bombers staged *from* an airfield only ten miles from the target.'

In sense 1, the staging of personnel may include providing shelter and messing facilities, inspection, issue of supplies to make up shortages, rehearsal, etc.

stagger, *n.* The advance, or the amount of advance, of one wing of a biplane, triplane, or other multiplane ahead of another.

Stagger is measured either (a) by the acute angle between a line joining the wing axes and a line perpendicular to the upper wing chord, both lines being parallel to the plane of symmetry, or (b) by the percentage of gap between the leading edge of the advanced wing and a line drawn perpendicular to its chord at the leading edge of the other wing. Stagger is considered positive when an upper wing is ahead of a lower wing.

staggered formation. An aircraft formation in which elements are at different altitudes and to the side, front, or rear of one another.

staggers, *n.* Construed in *sing. Medicine.* A condition characterized by vertigo and accompanying unsteady gait, associated with caisson disease. *Popular.*

stagger wire. A wire connecting two wings and helping to maintain a constant stagger.

A stagger wire is normally one of a pair, which cross one another to form an X.

staging area. (StgAr) An area or general locality where troops, units, forces, equipment, or the like are staged during movement or before an operation. See **stage,** *v.*, and note.

staging base. 1. a. An air base, usually with minimum facilities, at which aircraft are staged during movement from one location to another. **b.** An advanced base at which aircraft are staged in preparation for an air operation. **2.** *Navy.* An advanced base for fueling and refitting transport ships, and for replenishing mobile service squadrons.

stagnant anoxia. An oxygen deficiency in the blood due to inadequate circulation.

Stalag, *n.* [German *Stammlager.*] A permanent German prisoner-of-war camp, esp. for enlisted men. Cf. **Oflag,** *n. Hist.*

Stalagluft, a prisoner-of-war camp for airmen, under Luftwaffe control.

stall, *n.* **1.** The action or behavior of an airplane (or of one of its airfoils) when by the separation of the airflow, as in the case of insufficient airspeed or of an excessive angle of attack, the airplane or airfoil tends to drop; the condition existing during this behavior. See note. **2.** A flight performance in which an airplane is made to lose flying speed and to drop by pointing the nose steeply upward. See **normal stall. 3.** An act or instance of stalling. **4.** Burbling, i.e., the action of airflow separation that results in a stall (sense 1). *Loose* usage.

In sense 1, the stall results from a reduction in circulation, and the airfoil changes in character from a streamlined body to a blunt body. This may occur at very low speeds or at very high speeds where turbulent separation occurs.

A stall is sometimes described as a *semistall* or a *complete stall.* In the semistall, the airplane tends to drop its nose but can be kept up by the pilot; in a complete stall, the airplane drops its nose without recovering.

Species of stall include the hammerhead stall, the high-speed stall, the secondary stall, the shock stall, the tip stall, and the whipstall. See separate entries. See also **blade stall, compressor stall.**

stall, *v.* **1.** *tr.* To put an *airplane* into a stall. **2.** *intr.* To go into a stall. Also with *out.*

stalled glide. A settling downward of an airplane when close to a stall.

stall fence. A barrier on the surface of a swept-wing that retards spanwise movement of the airflow.

Used on the Mig-15, the stall fence is considered to provide better aileron control at slow speeds.

stalling angle. Short for next.

stalling angle of attack. The critical angle of attack. See separate entry.

stalling speed. The speed of an airplane at which a stall occurs, or at which airflow separation begins.

NACA defines stalling speed as 'the speed of an airplane in steady flight at its maximum coefficient of lift.'

stall warning. Any condition that indicates a stall is about to occur, such as buffeting or a change in control force.

stan (*auth abbr*). 'Standard' or 'standing' in combination only.

StanAg (*auth abbr*). 'Military Standardization Agency Agreement.'

stand, *v. intr.* **1.** Of a vehicle: To remain still but ready to move at a moment's notice. Usually used as a present participle, as in 'the airplane

was standing but not parked.' **2.** *To stand down*, to stay out of the air; to refrain from air operations. **3.** *To stand by for takeoff*, to await a signal for beginning the takeoff run. **4.** With *by*. To await instructions or orders.

standard, *n.* (std) An organizational flag.

standard air. The air in a standard atmosphere.

standard atmosphere. Any hypothetical atmosphere having an arbitrarily selected set of atmospheric conditions used as a standard for purposes of comparing the performance of aircraft, of designing pressure altimeters, resolving problems in ballistics, etc.

The US standard atmosphere (sometimes called the 'NACA standard atmosphere,' or more often, the 'standard atmosphere') is considered to have an atmospheric pressure at sea level of approximately 29.92 inches of mercury (or 1,013.25 millibars), and a sea-level temperature of 15° C, with the pressure and temperature decreasing upward at fixed rates called the *standard pressure lapse rate* and the *standard temperature lapse rate*. This atmosphere is specified and defined in *NACA Technical Report 218*.

The *standard international atmosphere* (also called the 'international standard atmosphere') is similar to the US standard atmosphere, having a sea-level pressure and temperature of 1,013.2 millibars and 15° C.

standard beam approach. A kind of British continuous-wave instrument landing system, patterned after the German Lorenz system.

standard commercial article. An off-the-shelf article, sold in the commercial market as well as to the government. See **off-the-shelf,** *a.*

standard cost. In fiscal usage, a cost estimated in advance which would be incurred under the prevailing normal conditions, generally based upon engineering data as to materiel, labor, and facilities requirements.

Standard costs are used esp. in cost control and in formulating budgets.

standard datum plane. A hypothetical plane existing at the 0 foot level of a standard atmosphere; *specif.*, such a plane at the 0 foot level of the US standard atmosphere. See **standard atmosphere,** esp. note.

standard deviation. In the field of testing, a measure of the deviation of the individual values of a series from their mean value.

The standard deviation is expressed algebraically by the formula $\sqrt{\frac{\sigma x^2}{N}}$, where σ (sigma) means the sum of, x equals the deviation from the mean, and N equals the number of scores or individuals in the distribution. For example, let us assume a distribution of 5, with scores of 2, 4, 6, 8, and 10. The mean of these scores is 6, the deviations −4, −2, 0, +2, and +4. Each squared gives 16, 4, 0, 4, and 16. The sum of these is 40, which divided by 5 makes 8. The square root of 8 is 2.82. This is the standard deviation.

Other methods of arriving at the standard deviation are used, but they go back to the formula shown.

standard frequency service. A radio service that transmits standard and specified frequencies of high accuracy to enable testing of radio transmitters, receivers, and frequency meters.

standard isobaric surface. Any of several constant-pressure surfaces established as standard surfaces on which reports are made between stations.

standard item. In supply usage, an item considered the most advanced and satisfactory of its type, that has been adopted and procured, or recommended for procurement.

standard loran. The usual kind of loran, in which medium-frequency pulses from transmitting stations are synchronized by means of ground waves. Distinguished from sky-wave synchronized loran.

standard nomenclature list. (SNL) A list of the official AF names of items of equipment.

standard operating procedure. A standing operating procedure. A misuse.

standard pitch. The geometric pitch of a propeller taken at some standard distance along the radius, e.g., at two-thirds radius. See **propeller-blade angle.**

standard pressure lapse rate. The lapse rate in pressure in a standard atmosphere. See **standard atmosphere,** note.

At zero altitude, the pressure is 29.92 inches; at 20 feet, 29.90 inches; at 66 feet, 29.85 inches; at 112 feet, 29.80 inches; etc.

standard score. A score made by an individual in a test that shows a deviation from the mean expressed in terms of the standard deviation of the distribution, by which an individual may be compared with others or with the standard of the mean. See **standard deviation.**

A percentile score provides a method of comparing one individual with another, but it is technically not considered a standard score since it does not show deviation from the mean. See **raw score, sigma score, T-score,** *n.*, **z-score,** *n.*

standard time. The mean solar time, based upon the transit of the sun over a certain specified meridian, called the time meridian, and adopted for use over a considerable area (time zone).

Standard mean time, with few exceptions, is based upon a time meridian which is an approximate multiple of 15° longitude from the meridian of Greenwich, England. The standard mean times of the US are central standard time, eastern standard time, mountain standard time, and pacific standard time. See separate entries.

standard unit. 1. A unit (sense 2) prescribed by a table of organization. **2.** In the AFROTC, a unit (sense 5) in which both the basic and advanced courses are conducted.

standby, *n.* A condition or state of preparedness in which aircraft, with aircrews on board, remain ready for a combat flight.

standby base. An inactive base left in caretaker status in anticipation of future need.

Standby Reserve. That part of the Air Force

Reserve that is normally called to active duty only by war or by Congressional action.

standby storage. *Specif.* Storage for, or of, vehicles for withdrawal and use after ninety days, but within three years.

standby tooling. Tooling that is held in storage in anticipation of a contemplated future use.

stand-down, *n.* An act or instance of standing down. See **stand,** *v.*

standing, *a.* Of a vehicle: Stopped but occupied by a pilot or driver and ready to move on.

A standing aircraft is distinguished from a parked aircraft.

standing committee. A more or less permanently constituted committee. Cf. **ad hoc committee.**

Standing Group. A permanent subcommittee of the Military Committee of the North Atlantic Council, serving as an executive body, and composed of the representatives of the Chiefs of Staff of the United States, France, and the United Kingdom.

standing operating procedure. (SOP) **1.** A fixed and approved method or procedure for accomplishing something. **2.** *transf.* A set of instructions setting forth the method for doing something or carrying out an operation, prescribed for those operations, tasks, or features thereof that lend themselves to a standardized procedure.

standing order. An order of relative permanence.

standing patrol. A routine patrol that goes on more or less constantly.

stanine, *n.* A stanine rating.

stanine rating. Also sometimes **stanine score.** [Coined from *sta*ndard *nine*.] A separate rating or score for each of certain Air Force Specialties, indicating the predictive aptitude of a person, arrived at by converting raw scores received on a battery of aptitude tests to a standard score with a range of 1 through 9.

This term was first used at Maxwell Field in 1942. See etymological note by A. L. Hench in *Am Sp*, Feb 1951, pp 72–74.

stapp, *n.* [Named after John Paul *Stapp*.] A force of one G caused by acceleration.

Dr. John Paul Stapp (1911–), an Air Force medical officer, is noted for his crash survival research, esp. for tests made on the rocket sled at Edwards Air Force Base and at Holloman Air Force Base.

star, *n.* **1.** An insigne denoting rank, worn by general officers and by flag officers of the Navy: See note. **2.** Short for 'service star.'

In sense 1, a brigadier general wears one star in each appropriate place on the uniform; a major general, two stars; a lieutenant general, three stars; a full general, four stars; and a general of the Army or of the AF, five stars. Similar numbers of stars signify corresponding Navy ranks.

starboard, *n.* (stbd) The right side of an aircraft. See **right,** *a.*

This term is an extension of naval usage.

star rank. A rank of brigadier general or higher. Cf. **flag rank.**

stat (*auth abbr*). 'Statistic.'

state government. The government of any state in the Union.

statement of charges. A statement in which an airman or civilian acknowledges pecuniary liability for the loss, damage, or destruction of property; a form used for this purpose (DD Form 362).

state of the art. The level to which technology and science have at any designated cutoff time been developed in a given industry or group of industries, as in 'the airplane's capabilities were determined by the state of the art at the time it went into production.'

state-of-the-art, *a.* Of a contract: Requiring that the contractor produce something by using methods and techniques already known, without new research or development.

stateside, *a.* or *adv.* Of or pertaining to the continental limits of the US; toward or within the continental limits of the US, as in 'he was sent stateside.'

static, *n.* **1.** *Radio.* Unwanted and random noise produced in a radio receiver, caused by certain atmospheric conditions or other disturbances. See **atmospheric,** *n.*, **precipitation static;** cf. **noise,** *n.* **2.** Short for 'static electricity.'

static, *a.* Of or pertaining to statics; not moving.

static air pressure. Static pressure exerted by air upon an object, esp. by the air of the atmosphere as in a pitot-static tube. Distinguished from dynamic air pressure.

static balanced surface. A control surface that is in balance about its hinge axis when not subjected to aerodynamic forces. See **balanced surface.**

static cable. A steel cable anchored at both ends in the cabin or cargo compartment of an aircraft, to which static lines are attached in parachute jumping or dropping.

static ceiling. The pressure altitude at which a lighter-than-air aircraft neither gains nor loses altitude after the discharge of all ballast. Cf. **absolute ceiling.**

static discharger. A rubber-covered cloth wick, six to eight inches long, sometimes attached to the trailing edges of the surfaces of an aircraft to discharge static electricity in flight.

static electricity. A negative or positive charge of electricity that an object accumulates, which charge creates a spark when the object comes

near another object to which it may transmit its charge, or from which it may receive a charge.

Static electricity may accumulate on an aircraft during flight, and unless carried away by a ground wire after landing, may cause an explosion during refueling.

static equilibrium. A state of balance attained by a body acted upon by forces the resultant of which is zero.

static line. 1. A rope, webbing, or the like attached between a parachute pack and a static cable or other point inside an aircraft, which serves to open the pack and withdraw the parachute, as in dropping supplies or paratroops. **2.** A static cable. *Erroneous.*

static pressure. The pressure exerted upon an object by air or other fluid by virtue solely of its own molecular activity resulting from its density and temperature, no gain being due to outside work; *specif.*, static air pressure.

Static pressure in a pitot-static tube is that exerted by the atmosphere. Cf. **dynamic pressure, impact pressure.**

static propeller thrust. The thrust delivered by a rotating propeller when held from forward motion, as on a test stand.

statics, *n.* A branch of mechanics that deals with the equilibrium of forces, or with bodies held in equilibrium by forces acting upon them.

static stability. A property of an aircraft that causes it to return towards its original attitude after being disturbed about one of its axes. See **stability,** *n.*, sense 1a and note.

static thrust. The thrust produced by a jet engine, rocket motor, or the like, or by a propeller-engine combination, when held stationary. See **static propeller thrust.**

static tube. *Hydraulics* and *aeronautics.* A cylindrical tube inserted in a fluid, as water or air, with openings in the walls of the tube so that the direction of flow is across the openings, rather than into them, used in measuring the static pressure of the fluid; *specif.*, such a tube used in a pitot-static tube. See **pitot-static tube.**

station, *n.* (sta) **1.** The place of duty of a person or organization, as in 'over enemy territory, his station was in the turret.' Used attrib., as in *station assignment.* See **takeoff station. 2.** An assigned position of an aircraft in a formation. **3.** *On station,* already in the air and prepared to attack targets as directed or to perform other service, as in air-sea rescue. Said of aircraft giving air support. **4.** A military or naval establishment: **a.** An Air Force station (which see). **b.** An RAF air base. **c.** A Naval air station (which see). **d.** Used attrib., as in *station commander, station complement, station headquarters, station list.* **5.** A place or point that serves some special function, as a bomb station, a cargo station, or the like; also a place where some specialized function is performed, as an aid station or a clearing station. **6. a.** The place where some radio or radar facility is located, or where a radio or radar transmitter or receiver is located. **b.** The facility so located. Used attrib., as in *station authentication.* **7.** The relative standing that a military person has by virtue of his rank or seniority of rank, as in 'assumption of command depends upon one's station.'

In sense 2, see **hold,** *v.*, sense 2. In sense 4, 'station' is used as a general term, as in 'his station is Eglin.'

station, *v. tr.* To assign a *person* for duty at a particular place. Usually *passive,* as in 'he was stationed at Holloman.'

station allowance. An extra allowance for a person serving at a station where expenses are considered excessive. See **foreign duty pay.**

stationary front. A front along which neither air mass is displacing the other to a significant degree.

station excess. In supply usage, property considered in excess of the normal requirements at an active installation; all property at an inactive installation.

stator, *n.* **1.** In machinery, a part that remains fixed in relation to a rotating part, applied esp. to (a) a housing in a gas turbine, an axial-flow compressor, or the like, that has fixed rows of blades next to rows of rotating blades, or (b) that part of an electric motor, generator, or the like that contains the stationary parts of the magnetic circuits. **2.** A stator blade.

stator blade. A blade or vane that remains fixed with respect to a rotating blade, as one of the fixed vanes in a gas turbine or in an axial-flow compressor.

statoscope, *n.* An instrument, usually containing a highly-sensitive aneroid barometer, for detecting slight changes in the altitude of an aircraft.

statute mile. A measure of distance equal to 5,280 feet.

stay, *n.* A nautical term sometimes applied to a bracing wire on an aircraft, esp. to a cross-bracing wire in the fuselage structure of certain wood-framed airplanes.

stbd (*auth abbr*). 'Starboard.'

stc (*auth abbr*). 'Stepchild.'

stcu (*abbr*). 'Stratocumulus.' See **Sc** (*abbr*).

std (*auth abbr*). 'Standing' or 'standard.'

Stead Air Force Base. An AF base near Reno, Nevada, named for Lieutenant Croston Stead, fighter and bomber pilot of WW II, killed at the site of the base, 11 December 1949.

steam cloud. Fractonimbus (which see) that rises from a warm surface.

steam fog. A fog formed by cold air moving over warm water, causing the air to be saturated by evaporating water. Sometimes called 'frost smoke' or 'sea smoke.'

Steam fog may occur over open bodies of water or swamps.

Stearman, *n.* [*Stearman* Aircraft Co. or *Stearman* Aircraft Division, now integrated with Boeing.] Used in the names of now-obsolete airplanes, esp. training biplanes, as in *Stearman 73, Stearman PT-13,* etc.

steep dive bombing. Bombing done from a dive between 60 and 90 degrees off the horizontal.

steer, *n.* An instruction to steer an aircraft on a given heading, as given to a pilot by an aircraft controller.

steer, *v.* **1.** *tr.* To guide or direct an *aircraft, missile,* or the like through the air in any direction, esp. horizontally. **2.** *intr.* To engage in this action, as in 'the pilot steered while I handled the gun.' Hence, **steering,** *n.*

While in most contexts, 'steer' retains its usual connotation of directing horizontally, the three-dimensional movement of aircraft began early to influence the word, as in 'it had . . . a front horizontal rudder for steering in a vertical direction' (Hearne, *Aerial Warfare* (1909), p xi).

steering column. An early name for a control column.

steno (*auth abbr*). 'Stenographer.'

step, *n.* **1.** An abrupt break upward, resembling a stairstep, in the form of the bottom of a seaplane float or hull, designed to assist planing, to diminish resistance, to lessen suction, and to improve control while moving on the water. **2.** *On the step,* moving rapidly over the water in a seaplane, with the aft portion (i.e., that part behind the step) of the float or hull off the water. Said esp. of a takeoff. **3.** A position level occupied in a given grade, as in 'he was in the second step of a GS–14.'

step rocket. A multistage rocket.

ster (*auth abbr*). 'Sterilize.'

stereo base. *Photography.* The distance and direction, or a line representing distance and direction, between the center points of a stereo-pair.

stereocomparagraph, *n.* A device or instrument incorporating a stereoscope and a plotting or drawing arm, used to draw contour maps from stereo-pairs of photographs.

stereogram, *n.* A stereo-pair of photographs or drawings correctly mounted and oriented for stereoscopic viewing.

stereographic projection. *Cartography.* A projection of the earth's surface on a plane tangent to the globe at any point.

A stereographic projection has increasing distortion away from the point of tangency, but near the point of tangency a straight line closely approximates a great circle. A *polar stereographic projection* is a stereographic projection with the point of tangency at the North or South Pole, esp. at the North Pole.

stereo-pair, *n.* A pair of photographs or drawings, esp. photographs, of the same subject, which create a three-dimensional illusion when properly arranged and viewed together.

Each photograph of a stereo-pair is taken from a slightly different station in space, providing a large percentage of overlap. A stereo-pair may be viewed for effect with unaided vision by a trained person, but a stereoscope is normally used.

stereoscope, *n.* An optical instrument, using either lenses or mirrors, for viewing pictures to obtain a three-dimensional effect. See prec.

stereoscopy, *n.* The science that deals with the viewing of photographs and drawings for three-dimensional effect, and with the methods by which these effects are produced.

stereo triplet. A series of three photographs, of which the first and third overlap the second sufficiently to provide complete stereoscopic coverage of the center photograph.

stereovision, *n.* Vision in three dimensions, or the vision of two-dimensional images with three-dimensional illusion.

stern, *n.* The tail end of an aircraft, esp. of an airship. Cf. **tail,** *n.,* note.

Attrib. and in combination, as in *stern attack, sternpost.*

sternheavy, *a.* Of an airship: Having a tendency to sink at the stern. Cf. **tailheavy,** *a.*

stev (*auth abbr*). 'Stevedore.'

Stewart Air Force Base. An AF base at the United States Military Academy, Newburgh, New York, named for Lachlan Stewart, father of the donor of the original tract of land used for the base.

stf (*abbr*). 'Staff.'

stg (*auth abbr*). 'Staging.'

StgAr (*auth abbr*). 'Staging area.'

STgt (*auth abbr*). 'Secondary target.'

stick, *n.* **1.** Short for 'control stick.' **2. a.** A number of aerial bombs released from an aircraft so as to fall or strike in train. When the bombs are stacked one above the other inside the aircraft, they are ordinarily released simultaneously in close train. **b.** A number of paratroopers jumping singly and in succession in one pass over the drop zone. **c.** A number of aerial mines, flares, or the like released singly and in succession. **3.** A series of rounds fired in an automatic firearm or gun in one burst.

stick bombing. Train bombing.

stick commander. In parachute jumping, a person who is in charge of the parachutists from the time they enter the aircraft until their exit.

stick-fixed stability. A characteristic of a fixed-wing or a rotary-wing airplane in terms of its

longitudinal stability when its control stick or column is fixed or held in position during flight. This stability may be good or bad.

stick force. Control force as exerted on, or felt in, a control stick. See **control force.**

stick-free stability. A characteristic of either a fixed-wing or a rotary-wing airplane in terms of its longitudinal stability when its control stick is free to seek its own position in flight.

stick reversal. Control force reversal with respect to the control stick. See **control force reversal.**

sticky charge. An explosive charge covered with an adhesive substance to make it stick against an object when thrown or planted.

stiffener, *n.* Any structural member in an aircraft the primary function of which is to stiffen or give rigidity to the craft.

stinger, *n.* A tail gun or tail-gun emplacement in an airplane. *Slang.*

Stinson, *n.* [*Stinson* Aircraft Corp. or *Stinson* Aircraft Division, now integrated with Consolidated Vultee.] Used in the names of light airplanes, as in *Stinson L-5, Stinson Reliant,* etc.

Stirling, *n.* A British, four-engine bomber and transport plane of WW II, developed by Short. Modifications included the *Stirling II, III,* etc.

stk (*auth abbr*). 'Stock.'

stlr (*auth abbr*). 'Semitrailer.'

stock, *n.* (stk) **1.** A store or supply on hand of materiel, equipment, or other supplies. **2.** The wooden part of a firearm, esp. of a shoulder arm. Attrib. (in sense 1), as in *stock level* (see **level of supply**), *stock list, stock number, stock record,* etc.

stockage objective. A level of supply, expressed in terms of an objective, consisting of those supplies represented by the operating level of supply and the safety level of supply.

stock control. The control and management required to insure that supplies are adequate and are stocked geographically to meet current military requirements most economically.

stockpile, *n.* A reserve stock of materiel, equipment, raw material, or other supplies; *specif.,* a stock of an important or critical product or article stored for use in time of emergency.

stockpile, *v. tr.* To set aside or store an accumulation of *materiel, equipment,* or *raw materials,* esp. for use in an emergency.

stock record account. A numbered record of transactions of property subject to audit, prescribed by Headquarters USAF and maintained by the base supply officer.

stockroom, *n.* A room, section, or floor in a warehouse in which supplies, usually of a specific property class, are stored.

STon (*auth abbr*). 'Short ton.'

stooge, *v. intr.* Sometimes *to stooge around.* To fly about more or less without purpose; to make an uneventful sortie or patrol. *Slang.*

stoppage, *n.* (stp) **1.** An act or instance of stopping or interrupting an action, operation, progress, or the like, as in 'production suffered a stoppage'; also, the state of being stopped. **2.** A jam in an automatic weapon; the condition of being jammed.

stor (*auth abbr*). 'Storage.'

storage unit. In supply usage, an individual cabinet or set of cabinets, set of shelves, or the like for storing articles.

Storch, *n.* A popular name for the German Fi 156.

storm, *n.* **1.** An abnormal and usually violent disturbance of, or condition in, the atmosphere, accompanied by wind, rain, dust, hail, or the like; *specif.,* a wind force of 56–63 knots (AFM 105–5). **2.** A region in which a storm exists, as in 'we flew around the storm.'

Stormovik, *n.* Variant of 'Shturmovik.'

stovepipe, *n.* Something resembling a stovepipe in one way or another, such as a jet airplane or a cylindrical parachute bomb. *Slang.*

stow, *v. tr. Specif.* **1.** To retract an aircraft *component,* such as a landing gear or turret, and lock it in its retracted position. **2.** To pack or store *cargo* in the cargo space of an aircraft.

stp (*auth abbr*). 'Stoppage.'

str (*auth abbr*). 'Strength.'

straddle, *v. tr.* To lay aerial bombs about, but not on, a *target,* some falling short, others long, and others to the sides.

straddle trench. A deep, narrow trench for defecation, dug under field or combat conditions and used without seats.

strafe, *n.* A strafing attack; an instance of such an attack, as in 'he made a quick strafe before climbing to safety.'

strafe, *v.* [German 'punish.'] **1.** *tr.* To rake a body of *troops* or other *persons* with gunfire or rocket fire at close range and from a flying aircraft; to attack a *roadway, railyard, factory,* or other installation with bullets, shells, or rockets fired from a low-flying airplane. **2.** *intr.* To engage in this activity.

'Strafe,' pronounced as a rime of 'safe,' was a WW I word borrowed from the German *Gott strafe England.* Briefly used in a broad sense, i.e., 'to punish with whatever means,' it came to be used almost exclusively in the restricted senses indicated. Much opposition was voiced in England to its adoption (some as late as 1941), but the word, once associated with the peculiar action of the airplane suddenly striking from above with straight guns ablazing, served a need that no older word served. Cf. **rake,** *v.*

strafer, *n.* An aircraft or person that strafes.

strafing, *n.* The action of the verb 'strafe.'

Attrib., as in *strafing attack, strafing fire, strafing mission, strafing plane, strafing run*, etc.

strag (*auth abbr*). 'Straggler.'

straggler, *n.* (strag) An aircraft that cannot or does not keep up with other aircraft on a mission or in a formation.

StragL (*auth abbr*). 'Straggler line.'

straight, *n.* Practice flying on a straight path in the air. This term was used in the early flying schools, as in 'Lieutenant Wilkins on brevet doing straights.' Cf. **round,** *n.*, sense 3.

straight-in, *a.* Without circling or flying a pattern, as in *straight-in approach, straight-in landing.*

strat (*auth abbr*). 'Strategic.'

Strat Air. Short for 'Strategic Air Command.'

strategic, *a.* (strat) **1.** Of or pertaining to the use of strategy (which see) to create advantageous conditions for meeting the enemy in combat, or to achieve an ultimate objective, as in *strategic concept, strategic mobility, strategic plan, strategic vulnerability.* **2. a.** Of or pertaining to military measures or actions taken against the enemy's war-making capacity (see **vital target,** note), as in *strategic air attack, strategic air warfare, strategic bombardment, strategic offensive.* See **strategic air operation. b.** Organized, designed, or used to carry out these measures or actions, as in *strategic air arm, strategic air base, strategic air power.* **3.** Of raw materials: Needed for the industrial support of a war effort, as in *strategic atomic material.* **4.** In general usage: Significant or important; of value or importance in strategy, as in *strategic evaluation, strategic location.*

strategic air. Short for 'strategic air force' or 'strategic air power.' See **air,** *n.*, sense 4.

Strategic Air Command. (SAC) A major air command of the USAF, charged with carrying out strategic air operations and certain other operations as required. See **specified command,** sense 1.

The Strategic Air Command maintains heavy and medium bombers, long-range reconnaissance planes, and penetration fighters.

strategic aircraft. Any aircraft, such as a heavy bomber, heavy transport aircraft, or penetration fighter, designed to carry out strategic air operations.

strategic air force. An air force organized and equipped to carry out strategic air operations. See **air force,** senses 1 and 3.

strategic airlift. The continuous or sustained air transportation of personnel or materiel, or both, between theaters, or between the zone of interior and overseas theaters, to provide logistic support for a military effort.

Strategic airlift is a function of the Military Air Transport Service.

strategic air operation. An air operation that contributes to strategic air warfare. In *plural,* those operations by which strategic air warfare is conducted.

Strategic air operations are aimed at the enemy's military, industrial, political, and economic system, or at massive undermining of morale. The operations include strategic reconnaissance, strategic air transport, strategic fighter operations, and the employment of strategic missiles, as well as strategic bombing.

strategic air power. The power exerted by a strategic air force; the air force that exerts this power.

strategic air transport. Air transport, esp. between theaters, carried out or intended for the attainment of some strategic objective. See **strategic airlift.**

strategic air warfare. Warfare carried out by air units, together with supporting forces, designed to effect, through systematic application of force to selected vital targets, the destruction and disintegration of the enemy's war-making capacity to the end that he no longer retains the ability or will to wage war. See **vital target.** See also **strategic air operation.**

strategical, *a.* Strategic (which see).

strategic bomber. A bomber, usually a long-range bomber, used in strategic air operations.

This bomber is exemplified by the B-52, and is distinguished from a bomber used in tactical air operations.

strategic bombing. The bombing of a selected target or targets vital to the war-making capacity of a nation.

strategic bombline. A bombline used to indicate the geographical limits to which strategic bombing may be carried out without resulting in undesired damage or loss.

strategic concentration. The concentration of forces in an area or areas in accord with the demands of strategy.

This term is applicable to air, ground, and naval forces.

strategic concept. 1. A particular notion or idea on how to use a force, condition, event, or anything else, so as to achieve or maintain a strategic advantage; a particular idea on how to fight a war. **2.** A concept as to the nature of air power or war that leads to an emphasis upon strategic operations. See **concept,** *n.*

In sense 2, with specific reference to air power, the concept embraces the idea that air power, if properly understood and employed, is a means of destroying the war-making potential of an enemy, esp. by means of strategic bombardment.

strategic defensive. The large-scale or overall defensive action of a nation at war, as opposed to a defensive action on any smaller scale.

strategic direction. 1. The direction given to military operations through consideration of overall strategy. **2.** The direction or control

exercised over aircraft being used in strategic air warfare. See **strategic,** *a.*, sense 2a.

strategic fighter. A fighter, esp. a long-range fighter, used to support, or carry out, strategic air operations or other operations as directed.

Strategic fighters are used principally for long-range bombing or for long-range escort, but may be used for air defense, interdiction, or counterair operations.

strategic intelligence. Intelligence pertaining to the capabilities, limitations, vulnerabilities, and probable courses of action (or reaction) of foreign or enemy nations, used in carrying out national security measures, in conducting foreign policy, or in conducting military operations.

Strategic intelligence is considered to include the following types of intelligence: Military geography intelligence, transportation and communications intelligence, psychological and sociological intelligence, political intelligence, subversive intelligence, economic intelligence, scientific intelligence, armed forces intelligence, and biographical intelligence.

strategic material. A material needed for the industrial support of a war effort.

A strategic material may, or may not, be a critical material.

strategic missile. *Specif.* A guided missile designed for use in strategic attack. Hence, *strategic missile squadron, strategic missile wing.*

strategic mission. A mission that carries out or fulfills a strategic purpose. See **strategic,** *a.*, senses 1, 2, and 4.

strategic mobility. The capability of a unit, command, force, or thing that enables it to be readily moved in advance of engagement with hostile forces.

Antiaircraft artillery has strategic mobility, but it does not have tactical mobility. Cf. **tactical mobility.**

strategic objective. 1. An objective (which see, sense 1) for which strategy is shaped. **2.** A strategic target.

Strategic Outline Chart. Any one of several aeronautical charts suitable for plotting and indexing target information throughout the world.

These charts are some 18 in number, and they are of various scales, the smallest being 1:48,000,000, the largest being 1:2,476,300.

strategic plan. A plan of the strategy for the conduct of a war, a campaign, or the like. See **strategic,** *a.*, sense 1.

Strategic Planning Chart. An aeronautical chart made on a small scale so as to cover a large area, used in planning strategy.

The scales of these charts are 1:6,336,000, 1:17,500,000 and 1:38,000,000.

strategic reconnaissance. Aerial reconnaissance of an enemy territory to obtain strategic information regarding enemy terrain, activities, resources, or targets, or information on the results of strategic air operations. Attrib. with *mission, unit,* etc.

strategic reserve. 1. A force held in reserve as a strategic measure. **2.** In supply usage, a reserve level of supply held in a particular geographic location as a strategic measure in anticipation of a possible major interruption in the flow of supplies. This reserve is over and above those supplies represented by the stockage objective.

strategic support. Support, esp. air support, given strategic air operations.

Strategic support may be in the form of fighter escort, logistic support (esp. with air transport operations), or other activities that further the strategic objective.

Attrib., as in *strategic support squadron.*

strategic target. Any installation, network, group of buildings, or the like, considered vital to a country's war-making capacity and singled out for air attack.

Strategic targets include factories, stockpiles, power systems, etc. See **strategic,** *a.*, sense 2a.

strategic transport. Short for 'strategic air transport.'

strategic transport aircraft. A transport aircraft capable of, or used for, carrying out strategic air transport. See **transport aircraft,** note.

strategic unit. A unit in a strategic air force. Distinguished from a tactical unit (which see, sense 2).

strategist, *n.* One who devises or shapes strategy; a person who specializes in strategy.

strategy, *n.* **1.** The art or science of using such factors as time, space, geography, politics, and trends of events, together with available or potential power, to achieve a previously-conceived objective. **2.** The use of these factors to create advantageous conditions for meeting the enemy in combat, either to compel surrender or to achieve some other objective; the process of working out an operation so as to strengthen a nation or force, or to lessen the effects of its defeat, in its ultimate position. **3.** A tactic or stratagem. *Rare* in AF.

See **military strategy, national strategy.**

strato (*auth abbr*). 'Stratosphere.'

Stratocruiser, *n.* An airliner passenger transport version of the C-97 built by Boeing.

stratocumulus, *n.* (Sc) A layer of broken or continuous cloud composed of globular masses or rolls and having water content.

This cloud is usually turbulent, causing bumpy flying.

Stratofreighter, *n.* A military freighter version of Stratocruiser, the Boeing C-97A.

Stratojet, *n.* The B-47.

stratoliner, *n.* **1.** A general term applied to any large, passenger-carrying airplane that can fly at high altitudes. **2.** *Capitalized.* An airline passenger version of the C-75 (the Boeing 307).

stratosphere, *n.* (strato) **1.** An upper stratum of the earth's atmosphere lying immediately above the troposphere and, as treated by some meteorologists, immediately below the chemosphere, and characterized by horizontal and predominantly westerly air movements, a more or less constant temperature, and an absence of clouds. See note. **2.** Also applied to a thicker stratum extending from the troposphere through the chemosphere.

Attrib., as in *stratosphere airplane, stratosphere flying, stratosphere rocket,* and other phrases.

In the concept of sense 1, the stratosphere extends from above 11 kilometers to 32 kilometers (from above 7 miles to 19 miles) and is sometimes called the 'isothermal region'; in the concept of sense 2, it extends to about 80 kilometers (50 miles). See **chemosphere,** *n.*, and **isothermal region.**

stratus, *n. Meteorology.* A uniform layer of broken or unbroken cloud characterized by a complete absence of structural detail, occurring at altitudes from near the surface to 6,500 feet. Abbreviated 'St.'

stream, *n.* A movement of things in a steady flow, one after another or others, as in 'a stream of electrons,' 'a stream of bombers,' 'a stream of radar impulses,' etc.

stream, *v. tr.* To let a *parachute* trail backward without opening, usually not on purpose. Also *intr.*, as in 'the missile parachute streamed at mach 1 speed, but opened at lower speeds.'

streamer, *n.* A parachute that does not fully inflate when deployed, but streams or trails backward.

streamline, *n.* **1.** A shape or contour that decreases air resistance. **2.** *Technical.* The path followed by the particles of a fluid about a solid body when the fluid is moving about it. Commonly applied to a noneddying flow of fluid.

streamline, *v. tr.* **1.** To give a smooth contour to an *object,* such as an airplane or bomb, so as to decrease air resistance. Hence, **streamlined,** *a.* **2.** To force a *control surface* into its neutral position, as in 'the airflow streamlined the rudder.' Also *reflexive,* as in 'the elevators streamlined themselves.'

streamline flow. A steady flow of fluid past a body in which the fluid remains smooth and relatively unchanged, as in laminar flow.

streamlining, *n.* **1.** The action of the verb 'streamline.' **2.** A feature of an object that has been streamlined, as in 'the plane had excellent streamlining.' **3.** A piece or part, such as a fairing or fillet, fitted to achieve a streamline flow.

strength, *n.* (str) *Specif.* **1.** The number of persons belonging to an organization; the number of persons present at a given time or during a certain period. **2.** Force or power expressed in numbers or amounts of persons, equipment, or both persons and equipment.

This word is often found in phrases with a qualifying word, as in 'actual strength,' 'assigned strength,' 'authorized strength,' 'departmental strength,' 'effective strength,' 'fighter strength,' 'personnel strength,' etc.

strength accountability. The responsibility for keeping an accurate record of personnel strength; the carrying out of this responsibility.

stress, *n.* **1.** In general, a resultant condition of strain or pressure. **2.** *Mechanics.* **a.** A condition existent in a body when its internal structure or surfaces resist a force that produces or tends to produce deformation in the body; molecular resistance to change in shape or size. **b.** A force that produces, or tends to produce, deformation in a body, measured by the force applied per unit area.

stressed-skin construction. A type of airplane construction in which the skin bears all or part of the stresses arising in the airplane.

A fuselage of this type of construction is called a 'monocoque' or 'semimonocoque' type of fuselage.

strike, *n.* **1.** An attack upon a surface target; *specif.*, an air strike. **2.** A hit (which see). *British.*

Attrib., in sense 1, as in *strike mission, strike order, strike report,* etc.

strike photograph. A photograph made of a strike while the strike is in progress, used for purposes of critique.

striker, *n.* **1.** A firing pin or a projection on the hammer of a firearm, which strikes the primer in a fuze or in a round of ammunition. See **firing pin. 2.** A soldier or airman who does extra-duty work for an officer for extra pay.

striker plate. A plate in the breech of a firearm or gun, which supports the base of the cartridge or shell and which is pierced with a hole through which the striker or firing pin hits the primer.

striking, *n.* The action of attacking a surface target or targets by air.

Attrib., as in *striking arm, striking distance, striking force, striking power, striking radius, striking range,* and others.

striking velocity. 1. Impact velocity. See separate entry. **2.** The velocity with which a parachutist or the burden of a parachute strikes the ground.

stringer, *n.* Any one of a number of long, light, slender structural members used esp. as longitudinal members in an airplane fuselage, rocket body, or similar structure, or as spanwise members in a wing.

A stringer, like a longeron (which see), may be either of wood or metal, but is lighter and more slender than a longeron.

strip, *n.* **1.** A reconnaissance strip. **2.** A narrow surface for the takeoff, landing, or taxiing of

airplanes; *specif.*, an airstrip. Used esp. in combination, as in 'fighter strip,' 'landing strip,' 'takeoff strip,' and 'taxi strip.'

A strip (sense 2) is usually considered temporary, and receives the minimum of improvement.

strip, *v. tr.* **1.** To disassemble a *piece of equipment*, such as a gun, in order to clean, repair, or transport it. See **detail-strip,** *v.*, **field-strip,** *v.* **2.** To remove certain accessories or other nonessential pieces from an *airplane* in order to attain a higher speed. Often with *down*.

stripe, *n.* A chevron (which see) or arc denoting the rank of an enlisted person. Usually in *pl.*, as in 'he received his staff sergeant's stripes,' or 'he sewed on his stripes.' *Popular.*

strip map. A map of a narrow section of the earth's surface, esp. one showing the salient features of a route.

strip mosaic. A mosaic assembled from a reconnaissance strip.

A strip mosaic is generally used for picturing a road, river, or the like.

strip photography. The photography of a strip of terrain, rather than of a broad area.

stroke, *n.* The movement of a piston in a reciprocating engine between its dead center positions; the distance of this movement.

strong point. 1. A strongly fortified and heavily armed point in a defense system, usually supported by auxiliary armed positions. **2.** A reinforced point or fitting in an aircraft, used to anchor or tie down one end of a rope or line.

strop, *n.* A length of webbing that connects the static line in a transport aircraft to the static cable.

structural drag. Parasite drag.

structural integrity. The property of an airframe to withstand the loads for which it is designed.

structural weight. 1. The weight of the airframe (which see) of an aircraft. **2.** The construction weight of a rocket. See **construction weight.**

structure, *n. Specif.* **1.** The construction or makeup of an airplane, including that of the fuselage, wings, empennage, nacelles, and landing gear, but not including that of the power plant, furnishings, equipment, tanks, lines, etc. See **airframe,** *n.* **2.** The way in which a force is organized and controlled, esp. in the phrase 'command structure.'

In sense 2, the exact structure of command in a particular force, esp. if it be a joint or combined force, is not always subject to clear statement. For example, in a theater command the structure is usually such as to provide for the retention of operational control of units by the different service commanders; yet to provide for theoretical or unexpected circumstances, no precise definition of this structure may be made. See **command,** *n.*, note, **cooperation,** *n.*, **theater of operations,** note.

strut, *n.* **1.** A rigid member in a truss, designed ordinarily to bear compression loads in the direction of its length. **2.** *Specif.* Any rigid, external or retractable stick, rod, or column on an airplane serving to fasten one component to another, to hold two or more components at a certain distance, or to support a load. **a.** Such a member located between the fuselage and wings of an airplane, between the wings of a biplane or other multiplane, or otherwise located so as to support, brace, or hold a wing or other airfoil. See **cabane,** *n.*, **cabane truss, jury strut, lift strut. b.** Such a member between a landing wheel, float, ski, or the like and the rest of the airplane, serving to support the airplane on the surface. This member often incorporates a shock absorber and is retractable or telescopic. See **shock strut.**

'Strut' is often used with qualifying attributives in sense 2a or b, as in *interplane strut, wing strut, bogie shock strut, landing-gear strut*, etc.

stu (*auth abbr*). 'Student.'

stub plane. A stubwing (which see, sense 2).

stub wing. Also **stubwing,** *n.*, as in senses 2 and 3. **1.** A short wing, esp. as used on certain autogiros. **2.** That part of a wing on certain airplanes that lies next to the fuselage, to which the rest of the wing, separately built, is attached: See note. Also called 'wingstub.' **3.** Short for 'stubwing stabilizer.'

In sense 2, the stubwing often accommodates an engine nacelle or a jet engine. Cf. **inboard wing.**

stubwing stabilizer. A hydrostabilizer on a flying boat.

student, *n.* (stu) One who studies, or one who attends a school. Cf. **trainee,** *n.*

This word, in addition to its common uses, is applied esp. in the AF to a person attending any of the service schools. See **school,** *n.*

'Student' is frequently used attrib., as in *student bombardier, student pilot*, etc.

student officer. A commissioned officer on duty as a student. Cf. **cadet officer.**

Stuka, *n.* [From *Sturzka*mpfflugzeug 'dive bomber.'] A popular name for the Ju 87. See **Junkers,** *n.*, note.

stunt, *n. Specif.* An unusual and showy feat or maneuver performed with an airplane.

Stunts include barrel rolls, loops, hammerhead stalls, etc. Cf. **aerial acrobatics.**

stunt, *v.* **1.** *intr.* To perform stunts in an airplane. **2.** *tr.* To put an *airplane* through a stunt or series of stunts.

stupalith, *n.* A ceramic substance used in jet or rocket engines.

S turn. A flight maneuver in which the airplane flies a horizontal path resembling the letter 'S.'

An S turn is usually one of a series of such maneuvers flown consecutively and without break, in order to practice or learn coordination in manipulation of the controls and to become familiar with flight.

SU (*auth abbr*). 'Area service unit.'

sub (*abbr*). **1.** *auth.* 'Submarine.' Pronounced as a word. **2.** *auth.* 'Substitute.' **3.** 'Subordinate.'

subassembly, *n.* A unit or element of a major assembly, consisting of two or more separate parts assembled together.

A subassembly consists of parts which are individually replaceable, and may itself contain subassemblies.

subastral point. A substellar point.

subbase, *n.* In general, a base subordinate to another in some respect, as a base under the jurisdictional control, operational control, or administrative control of the commander of another base, or a base dependent upon another for logistic support.

Subbases include ancillary bases and auxiliary bases when the latter are in some measure subordinate to a major base.

subcaliber aircraft rocket. (SCAR) A subcaliber rocket designed to be launched from an aircraft.

subcaliber ammunition. Ammunition used with a gun, usually in practice firing, of a smaller caliber than that which is standard for the type of gun used. See **subcaliber rocket.**

Subcaliber ammunition is adapted for firing in guns of larger caliber by subcaliber tubes, interchangeable barrels, sabots, or other devices.

subcaliber rocket. A rocket designed esp. to be fired from launching tubes of larger caliber than the rocket itself.

subcaliber tube. A barrel or tube fitted into a gun barrel to permit the firing of subcaliber ammunition.

subcarrier wave. *Radio.* A carrier wave which is applied as modulation on another carrier wave.

subcloud car. On an airship, a car designed to be lowered by cable to a position beneath the clouds.

subcommand, *n.* A command subordinate to another command, esp. a command immediately subordinate to a major air command.

subcontractor, *n.* Any contractor (which see, sense 1) who assists a prime contractor in fulfilling a contract. In some special contexts, also called a 'contractor.'

subdepot, *n.* A subsidiary depot operating under the jurisdiction of, and performing functions specified by, another depot.

subj (*auth abbr*). 'Subject.'

subject, *n.* In photography, the object photographed; in television, the scene or image picked up by television cameras.

sublimation, *n. Meteorology.* The act or process of changing from water vapor to ice, or ice to water vapor, without an intervening state of liquid. See **condensation,** *n.*

sublimation nucleus. *Meteorology.* Any minute particle floating in the atmosphere, around which sublimation occurs.

Any particle which may become a condensation nucleus may also become a sublimation nucleus. See **condensation nucleus.**

sublunar point. The geographic position of the moon's center.

submachine gun. A short-barreled shoulder firearm using pistol-type ammunition and capable of full-automatic fire. Sometimes called a 'machine pistol' (which see).

subn (*abbr*). 'Substitution.'

subor (*auth abbr*). 'Subordinate.'

subordinate, *a.* (subor) Of a person, organization, or activity: Under the control of another; lower in the chain of command. Hence, **subordinate,** *n.*, a person subordinate to another.

A person is not subordinate to another by virtue of being of lower rank. He is subordinate by virtue of being under another's control. Cf. **superior,** *a.*

subpoint, *n.* A point on the earth's surface directly beneath a celestial body or airborne object. See **geographic position.**

This term is broader than 'subastral point,' 'subsolar point,' or 'substellar point.'

subq (*auth abbr*). 'Subsequent.'

subs (*auth abbr*). 'Subsistence.'

subsidence, *n. Meteorology.* A sinking and spreading out of a body of air.

subsistence, *n.* (subs) *Specif.* Food or provisions; also, a monetary allowance given a military person in lieu of food. See **basic allowance for subsistence.**

subsolar point. A point on the earth directly beneath the sun's center. See **geographic position.**

subsonic, *a.* **1.** *Aerodynamics.* Of or pertaining to subsonic speed. **2.** *Acoustics.* Of or pertaining to frequencies below audible frequencies. See **infrasonic frequency.**

Example of use in sense 1: *Subsonic aerodynamics,* that aerodynamics concerned with aircraft or other bodies designed to travel at subsonic speeds; *subsonic airplane,* an airplane designed to fly at subsonic speeds; *subsonic flight,* a flight at subsonic speed.

For sense 2, 'infrasonic' is preferred to 'subsonic.' Cf. **supersonic,** *a.*

subsonic speed. A speed relative to surrounding fluid less than that of the speed of sound in the same fluid. See **speed of sound.**

substation, *n.* A station subsidiary or subordinate to another; *specif.*, an electrical station where high-tension electricity from a main power station is changed to electricity lower in potential and sometimes rectified or changed in frequency.

substellar point. A point on the surface of the earth directly beneath a given star or planet. Also called a 'subastral point.' See **geographic position, subpoint,** *n.*

substitute standard item. In supply usage,

an item not satisfactory as a standard item, but procurable and usable in lieu of the standard item.

substratosphere, *n.* A high-altitude region of the atmosphere, just below the stratosphere.

The substratosphere has no fixed lower limit. The word is applied generally in somewhat the same manner as 'high altitude,' and in aviation contexts refers to a region high enough to require special flying aids, such as oxygen masks, superchargers, pressurized cabins, etc.

Often attrib., as in *substratosphere bombing, substratosphere flight,* etc.

subt (*abbr*). 'Substitute.'

subversion, *n.* The act of subverting or the state of being subverted; also that which subverts.

In AF contexts, 'subversion' commonly means the undermining of a political faith, etc. (see **subvert,** *v.*) by propaganda, inciting to treason, or otherwise spreading disaffection, and is distinguished from sabotage or espionage.

subversive, *a.* **1.** Tending to subvert; of or pertaining to subversion. **2.** *absol.* A subversive person.

subvert, *v. tr.* **1.** To weaken or corrupt a *person* or *group* in their loyalty or faith; to undermine a person's *faith* or *loyalty.* **2.** To undermine or weaken an established *order* or *system* by connivance, by passive or active cooperation with those who would destroy the order or system, or by other indirect and usually nonviolent methods.

suction wave. A rarefaction wave. See separate entry.

Sud-Est S.E. 5000. [See note.] A French single-seat jet fighter developed in a French government aircraft factory, designed to operate without a runway by means of a 3-wheeled platform which is dropped when airborne, skids being used for landing. Also called the 'Baroudeur.'

The factory at which this aircraft was developed is the Société Nationale de Constructions Aéronautique du Sud-Est (SNCASE).

suf (*auth abbr*). 'Sufficient.'

Suffolk County Air Force Base. An AF base at West Hampton Beach, Long Island, New York, named for the county.

sug (*auth abbr*). 'Suggest.'

Sugar (*code*). **1.** 'Accord no honors, provide servicing only,' as formerly used on a flight plan when a very important person was on the flight. **2.** A word formerly authorized for the letter 'S.' See **Able** (*code*).

suicide, *n.* In attrib. uses: See note.

Used to designate (1) actions or operations in which certain, or almost certain, death will result to the person or persons undertaking the action, as in *suicide attack, suicide mission;* (2) persons or organizations that undertake such actions, as in *suicide pilot, suicide squadron;* (3) equipment or weapons used in such actions, as in *suicide airplane, suicide bomb.* See **kamikaze,** *a.*

suitability, *n.* A term applied to a person, thing, or circumstance that indicates it can be used to produce desired results.

suitable, *a.* Of an action or solution: Productive of the desired results, cost and feasibility not being a consideration. See **acceptable,** *a.*

SUM (*abbr*). 'Surface-to-underwater missile.'

SumC (*abbr*). 'Summary court.'

SumCM (*abbr*). 'Summary court-martial.'

summary court-martial. A court-martial given an enlisted person for a minor offense, authorized to impose sentences such as confinement up to one month, forfeiture of two-thirds of pay for a like period, etc.

summer, *n.* The hot season of the year. Used attrib., as in *summer uniform.*

sump, *n.* A pit or tank into which fluids drain; *specif.,* a reservoir at a low point in a fuel or lubrication system where the liquid is collected to trap water or sediment.

Sun (*auth abbr*). 'Sunday.'

sun compass. A type of compass that is aligned with the sun in such a manner as to indicate true north.

The sun compass is a rather obsolete species of the astrocompass.

Sunday, *a.* or *attrib.* Effective, decisive, extraordinary, as in 'Sunday punch' or 'Sunday shot.' *Colloq.*

Sunderland, *n.* A four-engine, British flying boat of WW II and after, developed by Short, and used both as a reconnaissance aircraft and transport aircraft.

sundry fund. A nonappropriated fund derived from any of certain designated miscellaneous sources, as a club fund, mess fund, etc.

sunline, *n.* A line of position for an aircraft or ship obtained by computation based on observation of the sun's angular altitude at a specific time.

sunrise, *n.* The apparent rising of the sun above the horizon, beginning at the moment when the upper edge of the sun is visible.

sunset, *n.* The apparent descent of the sun below the horizon, ending at the moment when the upper edge of the sun is no longer visible.

sun tan. 1. A very light, brownish-yellow color, i.e., khaki color. **2.** *Sun tans,* khaki clothing, or a khaki uniform.

sup (*auth abbr*). 'Supply.'

super (*auth abbr*). 'Supersede' or 'supersession.'

superaerodynamics, *n.* A branch of aerodynamics that treats of bodies in motion at very high altitudes and at very great speeds, or of the motion of air that contains but a few molecules.

superbomber, *n.* A relative term sometimes ap-

plied to any large, long-range bomber currently considered uncommonly large or efficient.

supercarrier, *n.* An uncommonly huge aircraft carrier.

supercharge, *v. tr.* **1.** To force air or a fuel-air mixture into an *engine* by means of a supercharger; to equip an *engine* or *aircraft* with a supercharger. **2.** To pressurize an aircraft *cabin*, an ignition *harness*, etc. See **pressurize,** *v.*

Hence, **supercharged,** *a.*, in both senses.

supercharger, *n.* (spchgr) A pump or compressor for forcing more air or fuel-air mixture into an internal-combustion, reciprocating engine than it would normally induct at the prevailing atmospheric pressure.

Most aircraft engines use the centrifugal-type supercharger. Other types of superchargers compress air by different methods, as by piston or intermeshing and rotating lobes. See **centrifugal-type supercharger, reciprocating-type supercharger, Roots supercharger, vane-type supercharger.** See also **blower,** *n.*, sense 1, **external supercharger, internal supercharger, turbosupercharger,** *n.*

supercharger control. A control, manual or automatic, which adjusts the manifold pressure supplied by a supercharger. Sometimes called a 'boost control.'

supercooled, *a.* Of a liquid, esp. of water: That is cooled below its usual freezing point without solidifying.

Supercooled water droplets often occur in the atmosphere. Their condition appears to be dependent upon purity and a lack of agitation. Also called 'subcooled' or 'undercooled.'

Super Cub. A designation for certain Piper cub-type airplanes, such as the L-21 with a 135 horsepower engine.

Superdumbo, *n.* The B-29 used as a rescue plane with an airborne lifeboat. See **Dumbo,** *n.*

The B-17 was also called a 'Superdumbo' for a brief period when it was used for rescue work.

Superfort, *n.* Short for next.

Superfortress, *n.* The B-29 or the B-50.

superheterodyne receiver. A type of radio receiver in which intermediate frequencies are produced, amplified, and detected to produce audio frequencies. See **intermediate frequency.**

super high frequency. (SHF) *Electronics.* Any frequency between 3,000 and 30,000 megacycles.

superintendent, *n.* **1.** *Capitalized.* The title given to the commander of the United States Air Force Academy. **2.** A warrant officer or airman sufficiently advanced in his specialty to supervise technicians or supervisors. **3.** Also applied to certain other officials who have superintending duties.

In sense 1, 'Superintendent,' like other position titles, such as 'Chief,' 'Commander,' and 'Director,' is not normally used as a prefix title to a person's name, but is used in indirect or third person reference.

superior, *n.* A person higher than another or others in a chain of command.

superior, *a.* **1.** Of a military force: Having greater combat effectiveness than another because of an advantage due to numbers, better equipment, better techniques, or better concepts. **2.** Higher in a chain of command. Said of a person, esp. of an officer, or of a headquarters.

In sense 2, cf. **subordinate,** *a.*; also **senior,** *a.*

superiority, *n.* The quality or state of being superior. See **air superiority.**

Supermarine, *n.* [British airplane-manufacturing company, since 1938 a part of Vickers-Armstrongs, Ltd.] Used in the names of airplanes, as in *Supermarine Seafire*, *Supermarine Spitfire*, *Supermarine Swift*, and others.

superquick fuze. A type of impact fuze using a nose striker to cause the fuze to function almost instantaneously upon impact. Also called an 'instantaneous fuze.' Cf. **nondelay fuze.**

Super Sabre. The F-100.

supersaturation, *n. Meteorology.* The condition of a body of air when it holds more moisture than it normally would under the prevailing temperature and pressure.

supersede, *v. tr.* To take the place of *something* or *someone*, as in 'this regulation superseded the other.' Cf. **rescind,** *v.*

supersensitive fuze. A kind of impact fuze designed to function upon a very light contact.

Supersensitive fuzes are used esp. in antiaircraft projectiles and parachute fragmentation bombs.

supersonic, *a.* **1.** *Aerodynamics.* Of or pertaining to supersonic speed. **2.** *Acoustics.* Ultrasonic. Use in this sense is not recommended. See **ultrasonic,** *a.*

Examples of use in sense 1: *Supersonic missile*, a missile designed to travel, or that actually travels, at supersonic speed; *supersonic wind tunnel*, a wind tunnel in which the wind travels at supersonic speed relative to an object fixed within the tunnel. Cf. **subsonic,** *a.*, **hypersonic,** *a.*

supersonic boom. A sonic boom.

supersonic compressor. A jet-engine centrifugal compressor that rotates at such a speed that a relative supersonic velocity is imparted to the air inside.

supersonic propeller. A propeller that rotates at supersonic speeds.

supersonics, *n.* **1.** That branch of aerodynamics that treats of supersonic speeds or velocities. **2.** Ultrasonics.

supersonic speed. A speed relative to surrounding fluid greater than that of the speed of sound. See **speed of sound.**

supervise, *v.* (supv) *tr.* **1.** To exercise supervision over *work* or over a *person* or *persons*. **2.** In loose usage, to monitor. See **monitor,** *v.*, sense 1.

supervision, *n.* **1.** The process or activity by which a person, persons, or the work performed by them, is closely watched, evaluated, and controlled, with a view to maintaining work schedules and keeping the activity functional in terms of operational objectives. **2.** *Specif.* The authority and responsibility assigned by law to the Secretary of the Air Force, the Chief of Staff, and certain other members of the Department of the Air Force, respectively, for closely watching, evaluating, controlling, and keeping functional certain specified personnel, organizations, or activities, in terms of operational objectives.

'The Chief of Staff . . . shall have supervision over all other members and organizations of the Air Force' (*Air Force Organization Act of 1951*). See **administration,** *n.*, **command,** *n.*, sense 2.

The word 'supervision' is sometimes used in contexts where the word 'monitoring' would be preferred. See **monitor,** *v.*, sense 1.

supervisor, *n.* (supv) One who supervises; *specif.*, a warrant officer or airman qualified in his Air Force Specialty to supervise skilled persons.

supervisory inspection. An inspection conducted by persons charged with supervisory responsibilities over a project or activity, as by a commander or staff officer.

Personnel out of an inspector's office do not conduct supervisory inspections.

supp (*auth abbr*). 'Support.'

suppl (*auth abbr*). 'Supplement.'

supplemental, *a.* That adds or contributes to, or follows up, something, as in *supplemental early warning, supplemental report, supplemental support mission,* etc.

supplemental appropriation. In fiscal usage, an appropriation that covers needs not provided for in a previous appropriation for the same fiscal year.

supply, *n.* (sup) **1.** The act, action, or activity of supplying, as in 'supply was performed efficiently.' See note. Often distinguished from service. **2.** Usually *capitalized.* An organization or activity carrying out, or responsible for, supply (sense 1), as in 'Supply was out of parts.' **3.** In *pl.* or collective *sing.* The quantity or amount of provisions, equipment, hardware, or the like supplied or on hand, as in 'our supplies were low,' or 'a low supply of food and ammunition.' **4.** *pl.* **a.** In a broad sense, any or all items supplied, i.e., any or all items required for the equipment, maintenance, and operation of a military unit or activity, 'including food, clothing, equipment, arms, ammunition, fuel, forage, materials, and machinery of all kinds' (*Dict of US Mil Terms for Joint Usage* [1955]), as in 'our supplies were moved to a forward base.' **b.** In a restricted sense, those items regarded in context as excluded from some other specific category mentioned, esp. in the phrases, 'supplies and materiel' or 'supplies and equipment.' See note.

In sense 1, the action covers procurement, distribution, maintenance of things in storage, salvage, determination of kinds and quantities, and other procedures.

'Supplies' in sense 4a is, of course, not applied to real property (which see). In sense 4b, the term designates those items of supply not considered to be materiel (which see, sense 3), or those items not considered to be equipment (which see, sense 1). Likewise the term is used residually to provide for items of supply not otherwise specifically mentioned, as in 'supplies and spare parts were coming in a little better,' where 'supplies' would mean any items other than spare parts suggested by context.

It should be noted that, depending upon the point of view, some objects may be called 'supplies' in one context and 'equipment' or 'materiel' in another. If the attention is upon the supply function, they are called 'supplies'; if on their use or purpose, they are called 'equipment' or 'materiel.'

'Supply' or 'supplies' in sense 4a is often modified by a designating term to give it more precise meaning, as in *class II supplies, expendable supplies, reserve supplies,* etc.

supply, *v.* (sup) *tr.* To furnish or provide an *organization, force,* or the like with things; to furnish *equipment, parts, food,* or other things to an organization, etc., as in 'they supplied our ammunition.'

supply base. A base (which see, sense 5) established to support an operation or a force with supplies and services.

supply channel. A channel within the military establishment through which supplies are requisitioned or delivered.

supply control. The control exercised in adjusting supplies to satisfy current or anticipated needs.

This term covers several processes, those of stock accounting, statistical reporting, establishment of standards for measuring stock levels, standardized requisitioning, etc.

supply discipline. The discipline involved in conserving and protecting AF supplies for the public good. See **discipline,** *n.*, senses 1 and 5b.

supply drop. An airdrop of supplies, either with or without parachutes.

supply inspector. A person authorized by a base supply officer to perform inspection with respect to supplies as outlined in pertinent directives.

For example, a supply inspector establishes and maintains final identification and classification of supplies received, stored, issued, or shipped; determines the condition or status of damaged, deteriorated, or corroded supplies; etc.

supply level. A level of supply. See separate entry.

supply mission. 1. The mission of a unit or other body to provide supplies to a force, other unit, or persons. **2.** An air mission for the transport of supplies. Cf. **resupply mission.**

supply officer. An officer who deals in supply; an officer belonging to, or in charge of, a supply organization or activity. See **base supply officer.**

supply pipeline. In supply usage, the pipeline time for an item of supply from its manufacture until its availability for issue.

supply point. (SupPt) In general, any point at which supplies are stored and issued, as at a railhead, airhead, depot, dump, or other place.

supply table. A list of spare parts and other supplies required for the maintenance or overhaul of a specific quantity of aircraft or other equipment for a specified period of time.

support, *n.* (supp) **1.** Aid, assistance, protection, or cooperation provided one element, unit, force, activity, or the like by another, to the end of achieving either a common objective or one not in conflict with the objectives of the supporting element. **2.** Short for 'air support,' esp. in attrib. uses, as in *support aircraft, support mission,* etc. **3.** The element, unit, etc., that provides such aid, assistance, or cooperation, as in 'our support arrived at the rendezvous at the right moment.' **4.** The role of supporting, as in 'this group was in support of the advanced ground unit.'

In senses 1 and 2, support may be logistic or operational. See **air support, indirect support, logistic support, operational support.** Cf. **air cooperation.**

support, *v.* (supp) *tr.* To give support to an *organization,* a *force,* or an *operation.*

support aircraft. 1. A tactical aircraft that gives support, esp. to surface forces. **2.** An aircraft used for administration or transport in support of tactical operations.

Construed as a *sing.* or *plural.*

support command. 1. Any command that lends support to another. **2.** Short for 'air support command.' Now *hist.*

support group. A supporting group.

supporting group. Any of the groups in an AF wing that supports the primary-mission group of the wing with services or supplies.

Supporting groups in a combat wing are normally a maintenance and supply group, a station medical group, and an air base group. See **primary-mission group.**

supporting system. In logistic use: A total entity consisting of techniques, skills, and equipment, used to support a weapon system.

A supporting system is identified by reference to such equipment as transport aircraft, trainers, and weather reconnaissance aircraft. See **weapon system,** note.

support unit. A unit that supports another unit or organization, a force, or the like in combat or in any other operation.

A support unit may furnish close air support or logistic support, or it may furnish personnel or provide command direction as a supporting action.

suppressor grid. An electrode between the screen grid and the anode of certain vacuum tubes for preventing the flow of secondary electrons from the anode to the screen grid, thus preventing the anode current from decreasing.

SupPt (*auth abbr*). 'Supply point.'

supr (*auth abbr*). 'Superior.'

supremacy, *n.* The state of being supreme, or the position of having a high degree of superiority, as in 'supremacy in the air.' See **air supremacy.**

supreme commander. A commander superior in authority to all other commanders within a theater of war; the commander at the apex of a military establishment.

Used both as a specific and as a general term.

supt (*auth abbr*). 'Superintend' or 'superintendent.'

supv (*auth abbr*). 'Supervise' or 'supervisor.'

sur (*auth abbr*). 'Surface' in combination only.

surf (*auth abbr*). 'Surface.'

surface, *n.* (surf) **1.** That which is outermost and without depth in any object or thing; the outside part of a thing. **2.** Applied to the uppermost part of the earth, i.e., to the outer part of the land and seas, but not of the air. See **air,** *n.,* sense 3. **3.** Applied to the outside of an aircraft, airfoil, or other aerodynamically designed body. **4.** *transf.* An airfoil considered as a whole, as in 'lifting surface'; also short for 'control surface.'

In sense 2, 'surface' has many attrib. uses to distinguish actions, ideas, equipment, or conditions pertaining to the surface from those pertaining to the air, as in *surface campaign, surface combat, surface concept, surface distance, surface forces* (either ground or naval forces, or both), *surface navigation, surface ship, surface strategy, surface transportation, surface warfare, surface weather,* etc.

'Surface' is also used in such combinations as *surface-to-air, surface-to-surface,* etc. Said of missiles or communications.

surface concept. A concept of how to conduct a war or of how to wage a campaign or battle that either assigns the chief role to surface forces or sets up objectives that leave air strategy or the air potential out of account. Cf. **theater concept;** also **surface strategy.**

surfaced-based, *a.* Of electronic equipment: Based on the earth's surface. Cf. **air-based,** *a.*

surface echelon. 1. That part of an organization moved over the surface, either land or sea, as distinguished from an air echelon. **2.** A military or naval force that operates on the surface, as distinguished from one that operates in the air.

In sense 1, a surface echelon of an air organization often consists of the supporting units or elements. Cf. **ground echelon.**

surface strategy. 1. A strategy by which a nation seeks to achieve its objectives, esp. its military objectives, primarily through the use of surface forces. **2.** The strategy of a surface commander.

This term is relevant only in contexts where it is being compared with air strategy. Although it can be said that 'Gibraltar was an essential part of Britain's surface strategy in the power struggle of the 19th century,' use of the term in this context is misleading because no historical counterpart, i.e., air strategy, existed at the time. See **air strategy.**

surface wave. *Radio.* That component of a ground

wave which travels along the surface of the earth.

surg (*auth abbr*). 'Surgeon' or 'surgical.'

surge, *n.* A transient and abnormal rush in power or energy, as occurs in an electrical or electronic apparatus or in an engine.

surgeon, *n.* (surg) **1.** In military and naval usage, any medical officer. See **medical officer. 2.** *Specif.* and sometimes *capitalized.* A medical officer on the staff of a major air command, who advises the commander on medical matters and exercises control for the commander on matters pertaining to health. Sometimes called a 'command surgeon,' and sometimes, erroneously, an 'air surgeon' (which see).

Surgeon General. 1. Short for 'Surgeon General, USAF.' **2.** The office or department of the Surgeon General, USAF.

Surgeon General, USAF. The senior medical officer in the USAF, supervising the Air Force Medical Service and serving as the medical staff advisor to the Secretary of the AF and the Chief of Staff, USAF.

surplus property. Property determined to be in excess of government needs, as determined by the General Services Administration.

surprise, *n.* **1.** An emotional reaction on the part of a person or persons in response to an unexpected or sudden event, esp. in response to unexpected attack. **2.** This reaction considered as a factor for use in warfare; hence, a principle of war that success in war may be advanced by subjecting the enemy to this emotional reaction.

See **tactical surprise, technological surprise.**

surprise attack. An attack having the element of surprise.

This term is not opprobrious, and is used in reference to such attacks made after the formal amenities of declaring a war have been observed. Cf. **sneak attack.**

surr (*auth abbr*). 'Surrender.'

SurTrans (*auth abbr*). '(Via) first available government transportation not including air.'

surv (*auth abbr*). **1.** 'Survive.' **2.** 'Survey' in combinations only. See **sv** (*auth abbr*).

surveillance, *n.* **1.** The close or continued observation, by any means, of an area, place, airspace, lane of approach, or field of activity, in order to accrue information or to take action when the situation warrants. **2.** In air traffic control, the continuous watching of air traffic, esp. by electronic means.

surveillance radar. Short for 'airport surveillance radar.'

survey, *n.* (sv) An act or instance of examining or viewing to determine the situation, condition, etc.; *specif.*, an examination of the circumstances surrounding the loss, damage, or destruction of AF property. See **report of survey.**

surveying and staking crew. A line layout crew.

survival, *n.* **1.** The primitive act or state of continuing to live, esp. by the preservation of one's life against any immediate peril, such as drowning, starvation, dehydration, oxygen deficiency, heat, cold, low atmospheric pressure, bacteria, or radioactivity, as in 'survival was my main concern as I faced the jungle.' **2.** The discipline that a person must observe in order to protect, or to give himself a good chance to protect, his life against such peril, as in 'survival is taught to all members of the crew.'

In escape and evasion, survival is to be considered a separate act or state of being from that of preserving one's liberty.

survival equipment. In the AF, equipment carried aboard an aircraft for use in the event of a crash or forced landing at sea or in desolate land areas.

Survival equipment includes life vests, liferafts, survival kits, water stills, and other special equipment.

survival kit. Any kit containing special items considered necessary or useful to survival in the event of a crash or forced landing.

Survival kits ordinarily contain rations, water, and medical supplies. Other items are sometimes included, such as a firearm. See **bailout kit.**

survival medicine. That branch of medicine concerned esp. with medical problems connected with survival under such conditions as cold, oxygen deficiency, or dehydration.

survival suit. An antiexposure suit.

survl (*abbr*). 'Survival.'

SUSMOP (*auth abbr*). 'Senior United States military observer, Palestine.'

susp (*auth abbr*). 'Suspend.'

suspense date. The final date on which action must be completed on something, such as complying with an order, answering a piece of correspondence, submitting a report, or completing an operation.

suspension line. 1. A shroud line. **2.** A line attached to the hull or bag of a balloon or airship for supporting something beneath, such as a car.

suspension ribbon. A distinctive ribbon by which a medal is suspended from a fastener.

Suwon Air Base. An air base at Suwon, Korea.

sv (*abbr*). **1.** *auth.* 'Surveyer.' **2.** *auth.* 'Survey.' **3.** 'Service.'

svc (*auth abbr*). 'Service.'

SvS (*abbr*). 'Service school.'

SW (*abbr*). **1.** *auth.* 'Steel worker.' **2.** 'Secretary of War.' *Hist.*

swamp, *n.* A tract of wet, spongy land characteristically dominated by trees or shrubs. See **bog,** *n.*, note.

swamp buggy. A wheeled vehicle that runs on land, mud, or through shallow water, used esp. in swamps.

swashplate, *n.* A rotating member, usually circular, set obliquely on a shaft and acting as a cam, used esp. on a helicopter to control the pitch of rotor blades. See **cyclic pitch control.**

sway brace. A brace that keeps a bomb, fuel tank, or other object from swaying.

SWB (*auth abbr*). 'Short wheelbase.'

swbd (*auth abbr*). 'Switchboard.'

SWC (*abbr*). 'Special Weapons Command.' *Hist.*

swear, *v. tr. To swear in,* to administer an oath of allegiance to a *person* entering the military service. Often passive, as in 'they were sworn in during the morning.'

sweat, *n.* A condition of anxiety or trouble, esp. as used in the phrase 'no sweat.' *Slang.*

sweat, *v.* In *slang* usage. **1.** *To sweat out,* to await the outcome or arrival of *something* with anxiety or worry, as in 'with our tires flat, we sweated out the landing.' **2.** *To sweat it out,* to wait with anxiety.

sweep, *n.* **1.** An offensive mission by several fighters, fighter-bombers, dive bombers, or attack bombers over a particular area of enemy territory for the purpose of seeking out and attacking enemy aircraft or targets of opportunity. **2.** The action of flying over an area in making a search; the path flown in making a search. Attrib., as in *sweep width.* **3.** *Radar.* **a.** The movement of an electron beam across a cathode-ray screen; the line or pattern resulting from this movement. **b.** The movement of a radar beam through space. See **radar scan.** **4.** Short for 'sweepback.'

In sense 1, a sweep is sometimes made to clear the way for a formation of heavy bombers.

sweep, *v.* **1.** *tr.* To rake a *road, dump, radar station,* or the like with gunfire, bombs, or other missiles. **2.** To search the *sea* or other surface for the presence of something. **3.** To clear the *skies,* the *sea,* or other place of opposition. **4.** To move a *radar beam* across space, to move the *beam* of a jamming device across space. **5.** *To sweep back* (or *forward*), to slant backward (or forward). Said of an entire airfoil, or of a trailing or leading edge.

sweepback, *n.* **1.** The backward slant of a wing, horizontal tail, or other airfoil surface; the backward slant of a leading or trailing edge of an airfoil. **2.** The amount of this slant, expressed as the angle between a line perpendicular to the plane of symmetry and a reference line in the airfoil. Cf. **sweptback wing.**

sweep jamming. The action of jamming a radarscope by sweeping space with electronic impulses of the same frequency as those received by the radarscope.

sweep-through, *n.* A jamming transmitter that sweeps through a radio frequency band and jams each frequency briefly, producing a sound like that of an aircraft engine.

SWeFCO (*auth abbr*). 'Special weapons ferry control office.'

SWEL (*auth abbr*). 'Special weapons equipment list.'

swell, *n.* A long, undulating ocean wave, sometimes 36 feet high or more, caused usually by storm winds at a distance.

sweptback, *n.* A sweptback wing. Attrib., as in *sweptback airplane.*

sweptback wing. An airplane wing on which both the leading and trailing edges have sweepback, the trailing edge forming an acute angle with the longitudinal axis of the airplane aft of the root.

sweptforward wing. An airplane wing on which the wing axis forms an obtuse angle with the longitudinal axis of the airplane aft of the root.

sweptwing, *n.* A sweptback wing. Attrib., as in *sweptwing fighter.*

Swift, *n.* A British, jet-engined interceptor, developed by Supermarine.

swing, *v.* **1.** *To swing a propeller,* to pull or turn a propeller by hand, esp. to start the engine. **2.** *To swing a compass,* to test deviation in a compass by compass swinging.

swirl error. An error in the indication of an aircraft's aperiodic compass, caused when the aircraft turns, the friction between the compass card and the liquid surrounding the card tending to turn the card.

Swordfish, *n.* A British biplane developed by Fairey and used during WW II for torpedo-bombing, reconnaissance, mine-laying, and many other duties.

SWP (*abbr*). 'Southwest Pacific.'

SWR (*abbr*). 'Standing wave ratio.'

SWSD (*auth abbr*). 'Special weapons supply depot.'

SWTA (*auth abbr*). 'Special weapons training allowance.'

syllabus, *n.* A list or brief summary of the main heads, points, or topics in a book, treatise, course of instruction, or the like.

symmetry point. *Aerial photog.* A point in the focal plane corresponding to the center of distortion on a photograph. See **center of distortion.**

syn (*suffix*). A combining form indicating synchronized action or response, as in *gyrosyn, magnesyn.*

synchro, *n.* [From 'synchronous.'] An electrical device used for the instantaneous electrical transmission or reception of the angular position data of rotating parts.

A synchro may be a synchro generator (synchro transmitter) or synchro motor (synchro receiver). A synchro generator may be attached, for example, to the shaft of PPI radar antenna, transmitting angular data on the rotation of the shaft to a synchro motor, which reproduces the motion of the generator (hence of the antenna shaft), the motor being geared to the radar indicator in such a way as to show the direction of radiation from the antenna.

In addition, synchros are used for compass repeaters, for indicating the angular position of aircraft wing flaps, rudders, or other components, for fire-control systems, and for other purposes. They are often components in servomechanisms.

synchronize, *v. tr.* **1.** To cause *events* or *acts* to occur at the same time; to cause *something* to agree in time, as 'to synchronize the watches.' **2.** *Specif.* To cause certain functions, events, or movements to occur simultaneously in the cycle of operations of a *machine* or of a mechanical *apparatus* or *arrangement*, as a *machine gun*, so as to allow the firing mechanism to function only when the propeller is within certain degrees in its rotation, or a *bombsight*, so that its angular rotation agrees with groundspeed and keeps the target in the sight. **3.** *Electricity* and *electronics.* To maintain the same period and phase, or to maintain a constant phase difference, between two *frequencies* or *waves.*

Hence, **synchronized,** *a.*, **synchronous,** *a.*

synchronizing gear. A gear that synchronizes two or more operations or positions in a mechanical apparatus or arrangement; *specif.*, an interrupter gear.

synchronous bombing. Bombing done with certain bombsights, such as the Norden bombsight, in which the travel of the telescope, focussed upon the target, is synchronized with the groundspeed of the airplane, and the course flown is determined by manual adjustment of the bombsight, the two together determining the dropping angle and correcting for drift so that the release occurs at the right instant.

synchronous radar bombing. A kind of radar bombing in which special airborne radar equipment containing rate and steering mechanisms is used to control the direction of flight of the bombing aircraft, solve the bombing problem, and automatically drop bombs at the proper release point.

The radar equipment used in synchronous radar bombing is an independent unit, i.e., it is not used in conjunction with an optical bombsight.

synchroscope, *n.* **1.** An instrument for indicating whether electrical machines, such as magnetos, are synchronized with one another. **2.** An oscilloscope designed for the observation of short pulses, utilizing fast sweeps synchronized with the signal to be observed.

synop (*auth abbr*). 'Synopsis' or 'synoptic.'

synoptic, *a.* (synop) Affording a general or broad view; esp. with respect to meteorological data and activities, covering a large geographical area more or less simultaneously, as in *synoptic observations*, *synoptic weather data*, *synoptic weather flight*, etc.

synoptic chart. A chart or map showing weather conditions or changes over a large area at a given time, or during a given period.

synoptic meteorology. A branch of meteorology dealing with collective meteorological observations made more or less simultaneously at a number of points over a large geographical area, so as to obtain an overall view of weather conditions.

synthetic, *a.* Of, pertaining to, or made by an artificial synthesis, as in *synthetic oil;* hence, artificial or simulated, as in *synthetic combat mission*, *synthetic training device*, etc.

sys (*auth abbr*). 'System.'

systemic, *a.* Of, pertaining to, or affecting the body as a whole.

systemic poison. Any poison, such as blood and nerve poison, that affects the entire body. See **blood and nerve poison.**

T

T (*letter*). See **Tango** (*code*). **1.** A code symbol for 'Northrop Aircraft, Incorporated,' in designations of Naval aircraft, as in *FT-1*. **2.** A catalogue symbol for designating an item in a given category.

T, *n.* Anything shaped like a T, such as a wind tee.

T (*abbr*). **1.** *auth.* 'Trainer,' used as a prefix in USAF airplane designations, as in *T-6*, *T-11*, etc. **2.** *auth.* 'Transportation,' when used in combination. **3.** 'Training,' when used as a subject classification code by Headquarters USAF. **4.** 'Training version,' as used in designating modified Naval aircraft, as in *TV-1*. **5.** 'Ton.' **6.** 'Traffic headquarters,' in combination only. **7.** 'True,' when used in a navigator's log. **8.** 'Teletype.' **9.** 'Trail.' **10.** 'Transport,' as formerly used (*circa* 1920), in designating US Army aircraft. **11.** 'Torpedo,' as formerly used in designating Naval aircraft, as in *TBF*. **12.** 'Turboprop,' as used in the names of engines, as in *T-34*, or *T-40*, etc. **13.** 'Transportation needed' as used in the VIP code. **14.** 'Tactical' as used in the names of missiles. Cf. **T-131** and **TM-61.**

T-6. A single-engine, two-seated, low-wing, trainer airplane, developed by North American and popularly called the 'Texan.'

The former designation was AT-6.

T-11. A twin-engine, low-wing, cabin monoplane used for bombardier training, developed by Beechcraft, and popularly called the 'Kansan.'

The former designation for this airplane was AT-11. The plastic-nosed version is designated the T-7 (formerly the AT-7), used for navigator training, and called the 'Navigator.' A transport version is designated the C-45, and called the 'Voyager.'

T-28. A two-place, single-engine monoplane trainer with retractable tricycle landing gear, built by North American.

T-29. A twin-engined navigational trainer developed by Consolidated Vultee.

The T-29 is a conversion of the Convair Liner 240, and is fitted with 14 navigator posts. Also called the 'Flying Classroom.'

T-33. A two-place trainer version of the F-80.

T-131. An AF aircraft rocket, two and three-quarters inch in diameter, designed esp. for range.

TA (*abbr*). **1.** *auth.* 'Table of allowance.' **2.** *auth.* 'Target area.' **3.** 'Training-air-cooled,' as formerly used (*circa* 1920) in designating US Army aircraft.

T/A (*abbr*). 'Table of allowance.'

tab, *n.* **1.** A small auxiliary control surface set into, or attached to, a larger control surface, as to an aileron, elevator, or rudder. **2.** A name sometimes given to an appendix or supporting document, in reference to its label when so used, as in 'tab A.' See **force tab.**

In sense 1, the tab serves to bring the aircraft under better trim or balance. See **balancing tab, flettner,** *n.*, **flying tab, trim tab.**

In sense 2, some writers use the term advisedly to designate a subordinate part of an annex. In this system, the annex is an attachment to an appendix, an appendix is an attachment to the main text.

tab (*auth abbr*). 'Tabulate.'

table of allowance. (TA) A table or list that establishes the maximum amount of organic equipment for an AF base, organization, or activity. See **organic equipment,** note.

table of distribution. (TD) Often *capitalized*. A table formerly prepared by and for a major air command upon authority of the Department of the AF, which prescribed a particular distribution of the military and civilian personnel within a specialized unit against the authorization of a personnel allotment voucher. Often abbreviated 'T/D.' *Hist.*

The TD required approval by Headquarters USAF. It was used for a specialized unit. See **non-T/O unit, personnel allotment voucher, unit manning document.**

A *table of distribution-augmentation* (often capitalized) was a table prepared by a major air command augmenting the personnel of a specific standard (i.e., a T/O) unit. It has been made obsolete by the **unit manning document.**

table of distribution unit. A unit organized under a table of distribution. Usually called a 'T/D unit'; also called a 'specialized unit' (which see). Now *hist.*

table of equipment. A specific term formerly used to refer to a particular list of equipment authorized an organization. Now used only as a general term.

The master equipment allowance list (which see), although not the same thing, has superseded the table of equipment.

table of organization. Often *capitalized*. An AF publication or table prepared by the Department of the Air Force that prescribes the organiza-

tional structure and personnel for any one of several like units, i.e., standardized units, either combat or service, which have fixed missions and workload requirements. Often called and written 'T/O.'

The table of organization is unlike the older table of organization and equipment in that it does not authorize equipment.

The T/O, although tending to be replaced by the unit manning document (UMD), still serves as the basis for initial action in authorizing a unit provided for by Hq USAF. See **unit manning document.**

table of organization and equipment. An AF publication that prescribes the personnel structure and equipment of a standard unit activated under its authority. Often called 'T/O & E.'

The T/O & E is obsolescent, but persists as the authority for certain units organized before the T/O concept of organization was instituted, and, of course, before the concept of the unit manning document.

table of organization unit. A unit activated under a table of organization; a standard unit. Often called a 'T/O unit.'

tabulated altitude. The known angular altitude of a celestial body from a given point, as shown by a table.

TAC (*abbr*). **1.** *auth.* 'Tactical Air Command.' **2.** 'Tactical air coordinator.'

tac (*abbr*). **1.** *auth.* 'Tactics' or 'tactical' used in combining abbreviations, as in *tac officer.* **2.** 'Tachometer.'

TACA (*abbr*). 'Tactical air coordinator, airborne.'

TacAN (*abbr*). 'Tactical air navigation.'

TACC (*auth abbr*). 'Tactical air control center.'

TACGru (*auth abbr*). 'Tactical air control group.'

Tachikawa Air Base. An air base at Tachikawa, Japan.

tachometer, *n.* An instrument that indicates, in revolutions per minute, the rotational speed of a rotating unit, esp. a piston engine's crankshaft.

Two general types of tachometers are in use on airplanes: the electric tachometer and the mechanical tachometer (which see under separate entries).

tack, *a.* A short form for 'tactical.'

TACP (*abbr*). 'Tactical air control party.' *Obs.* Cf. **ACT** (*abbr*).

TACRon (*auth abbr*). 'Tactical air control squadron.'

tactic, *n.* [See note.] The singular form of the noun 'tactics' (which see, sense 2).

Although the form 'tactic' is old (used in the 17th century in the sense of 'tactician,' and in the 18th in sense 2 of 'tactics'), its recent use has some marks of being a back formation of 'tactics,' when the sense is singular and refers to a particular maneuver. This is the case when construed with or without the indefinite article, as in 'a tactic to be followed is to dive at the right moment,' or 'the basic tactic was to fly alongside.' It should be observed, however, that the plural form 'tactics' also continues to be used in the singular and particular sense, as in 'the basic tactics were to fly alongside.'

tactical, *a.* **1.** Of or pertaining to tactics, i.e., to the arranging, positioning, or maneuvering of forces in contact, or near contact, with the enemy so as to achieve an objective or objectives in an air campaign, air battle, or surface battle. Applied in this inherent sense to any combat or battle situation, whether in the air or on the surface, as in 'during the air duel, he had tactical advantage in that he had a greater rate of climb,' or 'the tactical reason for moving troops against that sector was to force the enemy to weaken his flanks,' or 'the achievement of air superiority involved the tactical capabilities of the aircraft, those of range, speed, and rate of climb,' or 'the tactical problem of putting aircraft over the target every hour required coordination within every part of the strategic bombardment force.' See note. **2.** Often used in sense 1 to distinguish between 'tactical' and 'strategic' considerations, as in 'the dominant military characteristics of aircraft are tactical and strategic mobility and striking power' (Bissell), or 'whatever the tactical situation, the strategic situation was good.' **3.** Used restrictively, with special reference to air combat action carried out in support of, or cooperation with, surface forces engaging the enemy. Applied to air-to-air combat and air strikes aimed at achieving air superiority, to air interdiction, to battle-area reconnaissance, and to bombing and strafing attacks upon battle-area ground targets. See note. **4.** Still more restrictively, applied to activities of surface battle-line areas only. Obsolescent in AF: See **tactical air direction post** and other like combinations. **5.** Of or pertaining to combat operations, as distinguished from administrative, technical, or logistical operations, as in 'Air Force motor transportation organizations fall into two classes, tactical and administrative,' or 'normally a reconnaissance wing is organized so that it has tactical and technical self-sufficiency' or 'the Air Force is a large organization engaged in tactical and administrative activities at home and abroad.' **6.** Denoting activities on a training base concerned with military drill, drill formations, and evolutions. Distinguished from technical or flying activities. See **tactical officer.**

The combinations of this adjective are numerous, and many of them point up the difficulty of restricting the application of the term as in sense 3 or, with more difficulty, as in sense 4. Before the advent of air power, tactical activities were, of course, associated with the battle area, since that is where tactics were practiced. Also by association, tactical operations as opposed to strategic operations suggested the battlefield. But this restriction of the term was accidental rather than inherent, and when air power extended operations essentially tactical in character to airspace and to areas removed from the surface lines of battle, it was sound to extend the application of the word 'tactical.' However, sense 3 is not uncommon in the Air

Force, and when so used it normally refers to the tactics involved in gaining air superiority and cooperating with surface forces. See **tactical air operation.**

That the term has broader implications, however, is shown in many contexts, as in those contexts that use *tactical aircraft, tactical scramble, tactical testing, tactical training, tactical unit,* etc., where the inherent meaning of sense 1 is retained. Senses 5 and 6 are, of course, special derivatives of sense 1.

tactical air. **1.** An air force, air arm, or air command responsible for tactical air operations. See **tactical,** *a.*, sense 3, **tactical air operation.** **2.** The airplanes belonging to such a force or command.

tactical air arm. **1.** That part of an air force organized esp. for, or charged with, tactical air operations; *specif.*, an arm organized from AF units charged with tactical air operations. **2.** An air arm of a naval or army force responsible for tactical air operations.

In sense 1, see **tactical air command.** The tactical air arm may be used in strategic air operations or air defense as well as in cooperation with surface forces. See **indivisibility,** *n.*, **tactical,** *a.*, sense 3.

tactical air command. (TAC) **1.** *Capitalized.* One of the major air commands of the USAF, charged with tactical air operations: See note. **2.** In general any air command charged with tactical or theater air operations. **3.** *Specif.* A designation (capitalized and usually numbered) for any of the several WW II units subordinate to an overseas numbered air force charged with cooperating with surface forces in carrying out tactical operations. Now *hist.* See note.

In sense 1, the Tactical Air Command is a specified command. Its mission is to 'command, organize, equip, train, and administer the forces, assigned or attached, to participate in tactical air operations.' Its responsibilities include those of joint air-ground operations.

In sense 3, the designation replaced that of 'Air Support Command' in Apr 1944.

tactical air control. **1.** The control exercised by an air commander over aircraft and air units engaged in tactical air operations, esp. in that aspect which involves close air support of surface forces. **2.** The guidance and direction exercised over aircraft in close air support operations, as in that exercised at an air control center.

tactical air control center. (TACC) A former name for the air control center (ACC).

tactical air controller. An officer in charge of an air control center.

tactical air control party. (TACP) A former name for air control team (ACT).

tactical air control system. The system through which tactical air control functions. See **air control center.**

tactical air coordinator. (TAC) An air coordinator who from an airborne vehicle directs or assists aircrews in detecting and attacking targets on the ground.

tactical aircraft. **1.** Aircraft designed for, or used in, fighting operations against a hostile force either in the air or on the surface. See **combat aircraft.** **2.** Sometimes restrictive: Aircraft used in close air support operations.

Usage in sense 2 tends to become too restrictive because it disregards other aspects of tactical air operations.

tactical aircrew. An aircrew assigned or trained for duty in a tactical aircraft. Distinguished from the aircrews of administrative aircraft, cargo aircraft, or the like.

A tactical aircrew is distinguished from a combat crew in that the latter includes the aircrews of supply aircraft operating over combat areas or in combat airspace. The tactical aircrew is trained to fight in the air or to carry out an attack upon surface forces or targets.

tactical air direction center. (TADC) The former name for a control and reporting center (CRC).

tactical air direction post. The former name for a target director post (TDP).

tactical air director. A name sometimes applied to the officer in charge of a control and reporting center.

tactical air doctrine. Detailed doctrine in respect to how to employ air vehicles in tactical air operations, esp. with respect to engaging ground forces or attacking ground targets. Usually called 'tactical doctrine.' See **doctrine,** *n.*

This doctrine, translated into a series of standing operating procedures (SOP's), deals in part with the command and control arrangements required to achieve unified and effective action with cooperating surface forces.

tactical airfield. **1.** An airfield used in tactical air operations; an airfield used by a tactical air force. **2.** An airfield used primarily by combat aircraft as opposed to logistical airfields or depot airfields.

tactical air force. (TAF) An air force charged esp. with carrying out tactical air operations.

In the AF, a tactical air force may be a component either of the Tactical Air Command or of a theater air organization. Its components normally include fighter-bomber units and troop-carrier groups. Its command resides in an air commander.

In WW II, the term was used overseas to designate a numbered air force composed of tactical air commands. See **tactical air command,** sense 3.

tactical air-ground operation. An operation in which surface forces and air forces closely cooperate to achieve a military objective.

tactical air group. A group organized and equipped for tactical air operations, usually composed of three squadrons, each equipped with the same type air vehicle.

tactical air intelligence. Intelligence that bears upon the capabilities, limitations, vulnerabilities, and probable intentions of a hostile air force, esp. of an air force that would challenge control of the air or provide support for hostile surface forces. See **tactical intelligence.**

tactical airlift. An airlift made as a part of a tac-

tical operation, esp. as performed in deployment, airborne assault, air evacuation, and air supply.

Tactical airlift is normally a function of troop-carrier aviation. See **strategic airlift, theater airlift.**

tactical air operation. An operation carried out by aircraft or air units against, or in the presence of, a hostile force, including cooperation with surface forces. See note.

In its broad and most acceptable sense, the term 'tactical air operation' includes any air operation in which tactics are employed against a hostile force. Thus, in this sense, an air defense operation against hostile air would be a species of tactical air operations, the same as close air support is a species of tactical air operations. Likewise, the use of tactics to penetrate defenses to a strategic target is, in fact, a tactical air operation. However, some users of the term, esp. among surface forces, attempt to restrict the term's application to those operations that bear upon (a) interdicting the movement of enemy surface forces and their supplies, and (b) providing close air support (including tactical airlift and medical air evacuation). See **taetical,** *a.*, sense 3, **taetical operation.**

In tactical air operations, the targets are either *hostile forces* or geographic positions essential to *hostile forces.* This is in contrast with strategic air operations, where the targets are factories, storage plants, railroad yards, other war-making facilities or installations, and long-range air installations not immediate to a battle area.

tactical air power. 1. The military power that inheres in a tactical air force, or in the tactical components of a nation's air force, as in 'tactical air power, not diplomacy, was decisive.' **2.** The air forces that exert this power, as in 'tactical air power participated as a full partner of the Army and the Navy.'

In some contexts, this term may be interpreted in either sense. See **air power.**

tactical air support. Air support, as of surface forces or of long-range bombers, that is tactical in character. Often *specif.* in reference to air-ground cooperation. Sometimes distinguished from troop-carrier air support.

tactical air transport. Transport by air of personnel or materiel, usually within a theater, but also in any tactical situation. See **theater airlift.**

tactical aviation. 1. An air force employed, or expected to be employed, primarily in tactical air operations; the aircraft used by this force, as in 'tactical aviation was used to isolate the battle area.' **2.** The art or science of employing tactics in air combat, as in 'tactical aviation was advanced markedly with the use of aircraft rockets.' **3.** The people who operate the aircraft used in tactical air operations, as in 'he asked tactical aviation for help.'

Like 'aviation,' this term is frequently vague in particular contexts.

tactical basic weight. The weight of an aircraft loaded for tactical operations, less the weight of its fuel and, except for a fighter, of its payload. See **payload,** *n.*, note.

tactical bombardment. 1. The action or process of bombing targets in cooperation with surface forces. **2.** The aircraft used in this kind of action, or short for 'tactical bombardment aviation.'

tactical bomber. Any airplane designed or used for tactical bombing, esp. a bomber with relatively short range and light bomb load.

Attrib., as in *tactical bomber force.*

tactical bombing. Bombing conducted, usually by tactical air units, in support of surface forces.

Bombing to achieve air superiority or to carry out interdiction is a part of tactical bombing, although the term tends to be restricted to battle area operations. 'Close support bombing' would be unambiguous for the restricted meaning.

tactical chart. An aeronautical chart provided for a specific target, usually tactical, in accordance with training or combat requirements.

In general, a tactical chart is similar to a highly detailed target chart.

tactical command. 1. A command in a tactical military force. **2.** The authority or leadership exercised by a commander over the tactical operations of his unit, as in 'he has tactical command without administrative responsibility.'

Hence, **tactical commander.**

tactical concept. 1. A particular notion or idea as to how to fight a battle. **2.** In military theory, a concept of war or air power that leads to an emphasis upon tactical operations as the best means of achieving victory.

tactical control. That control exercised, or to be exercised, over a military force as it carries out tactical operations.

tactical control center. Short for 'tactical air control center.' *Hist.*

tactical control mission. An air mission flown primarily for directing, controlling, or coordinating attacks by other aircraft upon surface targets.

Cf. **tactical air coordinator.**

tactical doctrine. A teaching, or body of teachings, in respect to how to employ tactical forces; short for 'tactical air doctrine.' See **tactical air doctrine.**

tactical intelligence. Intelligence that bears upon the capabilities, limitations, vulnerabilities, and probable intentions or reactions of a hostile force, either air or surface, used esp. in carrying out tactical operations.

Tactical air intelligence (which see) is a part of tactical intelligence.

tactical interrogation. Forward interrogation.

tactical light bomber. Any light bomber designed or used for tactical bombing.

In some contexts, 'light bomber' and 'tactical bomber' are synonymous.

tactical map. A map suitable for use in tactical operations; hence a large-scale map.

tactical missile. *Specif.* A guided missile used in tactical operations. Abbreviated 'TM.' Cf. **interceptor missile.**

tactical mission. A mission carried out, or as-

signed, in a tactical situation; *specif.*, an air mission in any part of a tactical air operation.

tactical mobility. The capability of a unit, command, task force, or the like that enables it to be readily moved while engaged in combat.

An airplane, tank, or naval destroyer each has tactical mobility. Cf. **strategic mobility.**

tactical officer. 1. An officer trained for, or assigned to, a tactical organization. **2.** In a training school, an officer in charge of those activities of the cadets or students that pertain to drill formations, instruction in the manual of arms, and other like military training exercises. Popularly called a 'tac officer.'

tactical operation. An operation conducted by either surface or air forces, or by both, against or in the presence of a hostile force.

Tactical operations for ground personnel have historically been restricted to the battle area, but this is not so for the airman. See **tactical,** *a.*, note, **tactical air operation.** Cf. **battle area.**

tactical plan. A plan for carrying out a tactical operation; *restrictive*, that part of such a plan that deals only with actual combat maneuvering, positioning, and the like, without reference to logistic aspects.

tactical radar. A radar set or installation designed for, or used in, tactical operations.

tactical radius. The distance that an aircraft can fly out and still return to the base of departure as measured by requirements of a particular tactical operation.

This is equivalent to the radius of an aircraft's action under load, operating, and weather conditions expected to be encountered. See **radius of action.**

tactical range. The distance over which an air vehicle can effectively operate in one general direction in combating a hostile force, as on a bomber escort mission or a tactical air mission.

Landing at a base other than that of departure or nonrecovery of the vehicle is usually implied in the use of this term.

tactical reconnaissance. Aerial reconnaissance to obtain information, such as that on terrain, enemy forces, or installations, required for planning tactical operations; reconnaissance carried out by tactical aircraft.

tactical reconnaissance mission. An aerial reconnaissance mission, employing photographic, electronic, or direct observation methods, flown for the purpose of obtaining information on terrain, hydrography, enemy forces, communications, installations, and activities.

Information obtained is used in short-range operational planning and to assist friendly forces in accomplishing their objective.

tactical reserve. That part of a force held initially in reserve for commitment at a decisive moment in a tactical operation.

tactical situation. The situation at any given time in respect to disposition, capabilities, limitations, and vulnerabilities of both friendly and hostile tactical forces either in the air or on the surface, or both.

tactical suitability. The suitability of a person, unit, piece of equipment, plan, etc., for use in a particular tactical operation.

tactical support. *Specif.* Short for 'tactical air support.' Attrib., as in *tactical support aircraft, tactical support mission.*

tactical surprise. Surprise in response to unexpected attack, unexpected courses of action, methods, or techniques. Cf. **technological surprise.**

tactical target. Any physical object, person, group of persons, or position singled out for attack during the course of battle or tactical operations in order to reduce, or to destroy, the enemy's ability to sustain his combat operation.

tactical testing. The testing of equipment under conditions that simulate those of combat.

tactical training. Training given personnel in the ways of meeting the enemy in battle or combat.

Tactical training is properly applied to the combat training given any aircrew, or member of an aircrew, expected to be in contact with a hostile force, whether the operation is strategic, tactical, or in air defense. When flying training is carried out with the expectation of combat, it becomes a part of tactical training. Cf. **flying training, technical training.**

tactical unit. 1. A unit activated or organized to fight the enemy, esp. in the AF to fight, strafe, lay mines, or drop bombs, or to assist directly in doing so. Distinguished from a service unit, administrative unit, technical unit, etc. **2.** *Restrictive.* A unit organized or activated for air support operations. Distinguished from a strategic unit or an air defense unit.

In sense 1, troop-carrier units, air rescue units, reconnaissance units, etc., are considered tactical units; likewise, strategic bombardment and air defense units. A large tactical unit may include service units, and a tactical unit may also function as an administrative unit. In sense 1, see **tactical,** *a.*, sense 5; in sense 2, see **tactical,** *a.*, senses 2 and 3.

tactical unit aircraft. An aircraft provided a tactical unit (which see, sense 1) for carrying out directly its primary mission.

Tactical unit aircraft include strategic bombers and reconnaissance aircraft, as well as combat aircraft used in air support operations and air defense.

tactical vehicle. 1. Any vehicle designed for field requirements in combat and tactical operations, or for training personnel for such operations. **2.** In restricted usage: A ground vehicle for use in such operations.

See **vehicle,** *n.*, also **air vehicle.**

tactician, *n.* One versed or skilled in tactics.

tactics, *n.* [See note.] **1.** That branch of the military art or science that treats of positioning, arranging, and maneuvering of forces in combat air-

space or in a battle area; i.e., the art or science of using equipment and weapons, or using military persons or units, or using positive action or passivity—all with the purpose of achieving in a combat situation some immediate advantage or of ameliorating a disadvantage with the force or forces at hand. Construed as a singular, as in 'he studied tactics, a subject that requires attention to detail.' **2.** A maneuver or positioning carried out in a combat or a battle situation in accordance with such art or science, as in 'the pilot's tactics was (or were) to come in firing.' Sometimes construed as a singular, if the sense is singular, but often restricted to use in the plural sense only, in which case the word 'tactic' is used for the singular sense. **3.** Also transferred in both senses in reference to nonmilitary situations, as in 'the tactics of a businessman.'

'Tactics' is of modern Latin origin, coined from the Greek *taktica*. The plural form in sense 1 is of a pattern with *dynamics*, *mathematics*, *linguistics*, etc., each construed as a singular despite its form. At an earlier date, these words also had singular forms parallel to *music*, *arithmetic*, *rhetoric*, etc.

In sense 2, tactics are closely related to techniques, the two often being referred to by the phrase 'tactics and techniques,' the phrase suggesting a distinction, but also close association, between the two. The distinction may be illustrated by a case in WW II when certain tactics were developed only after the use of a certain technique made them possible. This was the case with shuttle bombing. Here, the tactics were not only to place a bombing force in position to bomb certain targets, but to effect withdrawal by routes that could not be anticipated by enemy fighters. To execute these tactics, the usual technique of returning to the same general base area did not allow for the required withdrawal. But the technique of flying through and landing at bases in another area did provide for it. Thus, the execution of the tactics was dependent on the development of the technique. And, it may be added, the development of the technique was dependent upon the availability of proper equipment and bases. See **equipment, *n.***, and **technique, *n.***

TAD (*abbr*). 'Tactical air division,' 'training aids division,' or 'target area designator.'

TADC (*abbr*). 'Tactical air direction center.' *Hist.* Cf. **CRC** (*auth abbr*).

TADP (*abbr*). 'Tactical air direction post.' *Hist.* Cf. **TDP** (*abbr*).

tadpole, *n.* A target director post.

Taegu Air Base. An air base at Taegu, Korea.

TAF (*auth abbr*). 'Tactical air force.'

TAFCSD (*abbr*). 'Total active federal commissioned service date.'

TAFMSD (*auth abbr*). 'Total active federal military service date.'

TAG (*auth abbr*). 'The Adjutant General.'

TAHq (*auth abbr*). 'Theater Army Headquarters.'

tail, *n.* **1.** The rear end of something: See note. **2.** *Electronics.* A small pulse that follows the main pulse in the same direction.

In sense 1, 'tail' is a flexible term, esp. as applied to the rear end of an aircraft. In different contexts it means slightly different things, such as: **a.** The entire rear end of an aircraft, including the empennage and the aft part of the fuselage, as in 'it came to rest with its tail in the air.' **b.** That part of the fuselage that lies in the aft part of the aircraft, as in 'he crawled into the tail and manned the gun.' **c.** The empennage of an aircraft. See **horizontal tail. d.** An aircraft's wake considered as a line of direction, esp. in the combination 'tail wind.' **e.** That part of a bomb, rocket, or other missile that lies aft of the middle part or the body of the missile. Cf. **nose, *n.* f.** The trailing end of a formation.

Used attrib. in various senses: **a.** In reference to the general rear part of an aircraft, as in *tail attack*, *tail defense*, *tail section*, etc. **b.** In reference to the rear end of the fuselage, as in *tail cannon*, *tail compartment*, *tail gunner*, *tail radar*, *tail stinger* (a tail gun), etc. **c.** In reference to the empennage, as in *tail buffeting*, *tail control*, *tail drag*, *tail fin*, *tail flutter*, *tail trim*, etc. **d.** In reference to the underside of the fuselage tail, as in *tail bumper*, *tail float*, *tail hook* (an arresting hook), *tail jack*, *tail ski*, etc. **e.** In reference to the very end of the aircraft, as in *tail parachute*. **f.** In reference to the tail of a bomb or other missile, as in *tail spinner*, *tail vane*, etc.

tail area. The area of either the horizontal stabilizer or the vertical stabilizer, or both, projected through the fuselage. See **horizontal tail area.**

tail assembly. 1. The assembly of vanes and fins on a bomb or other missile that is provided directional stability or guidance. **2.** The empennage of an aircraft.

Bombs and missiles have 'tail assemblies,' but not 'empennages.'

tail boom. An outrigger structure on certain aircraft connecting a tail surface or a tail assembly with some other supporting member, as in the P-38 of WW II.

tail cone. 1. An exhaust cone. **2.** A cone of fire from the tail of an aircraft.

tail-end Charlie. *Slang.* **1.** A tail gunner. **2.** The last element of a bomber or fighter formation.

tail fuze. A fuze assembled in the rear of a bomb. Cf. **base fuze.**

tailheavy, *a.* Of an airplane: Having a tendency to sink at the tail while in flight if the longitudinal control is released. Cf. **sternheavy,** *a.*

tail-high landing. A touchdown landing in which the tail is kept high, the tail wheel or skid not touching the ground or runway; a fast landing.

A landing by an aircraft with tricycle landing gear would not be referred to as a 'tail-high landing.'

tailless, *a.* Without, or shown without, an empennage. Said of aircraft designs or of aircraft.

tailless airplane. 1. An airplane in which the vertical fin and rudder constitute the empennage, no horizontal stabilizer nor elevators being present. **2.** Also sometimes applied to an airplane of the flying wing type.

A tailless airplane (sense 1) differs from a flying wing in that the former is of more or less conventional design. Vertical control in either the tailless airplane or in the flying wing is accomplished by means of elevons.

tail-low landing. A slow landing in which the tail skid or wheel touches before the wheels.

tail-on wind. A tail wind that blows directly toward the tail. Cf. **head-on wind.**

tail parachute. A deceleration parachute attached to the tail of an airplane.

tailpipe, *n.* An exhaust pipe for escape of gases generated in an internal combustion engine; *specif.* in a jet engine, the pipelike structure aft of the exhaust nozzle. Attrib., as in *tailpipe nozzle.*

tailpipe burner. An afterburner. Hence, **tailpipe burning.**

tailplane, *n.* A horizontal stabilizer on an airplane. Chiefly *British.*

tail rotor. An antitorque rotor mounted on the tail of a helicopter.

tail rotor pedal. A pedal in a helicopter that controls a tail rotor for banking or turning.

tail skid. On certain airplanes, a skid attached to the underside and at the rear of the fuselage serving the function of a tailwheel. See **skid,** *n.*

Used esp. in the early years of aviation before the development of other devices, such as the tricycle landing gear or the tailwheel.

tail slide. A maneuver in which an airplane descends tail first for a brief interval after stalling at the top of a steep climb, as in a whipstall.

tailspin, *n.* **1.** A spin, so named in reference to the characteristic spiral action of the tail when the airplane is in a spin. **2.** *Restrictive.* An uncontrolled spin; *fig.*, a state of mental confusion or agitation, as in 'he went into a tailspin when faced with these facts.'

tail stand. A propping device used to support the tail section of certain aircraft, esp. those with tricycle landing gears, during loading and unloading operations.

tail surface. Either a control surface or a stabilizing surface in the empennage.

tail turret. A gun turret in the rear end of an airplane's fuselage; also, somewhat inexactly, a nonturning structure in the tail of an airplane mounted with guns. See **turret,** *n.*, note.

tail warning. A warning to an airplane's crew that their airplane is being approached from the rear.

This warning is normally by radar installed in the tail of the airplane. Hence, **tail warning radar.**

tailwheel, *n.* On certain airplanes, a wheel attached to the underside, and near the rear, of the airplane's fuselage, serving both as a support and as a carriage for the rear section of the airplane on the ground.

The tailwheel may be of many sorts, retractable, steerable, swiveling, fixed, etc. Used attrib., as in *tailwheel assembly, tailwheel bumper,* etc.

tailwind, *n.* Also **tail wind.** A wind blowing from such direction that the principal effect is to advance the ground speed of a given aircraft. See **tail-on wind.**

Roughly, any wind coming in toward the tail from a direction within 45° either side of the longitudinal axis of the aircraft is considered a tailwind. Cf. **crosswind,** *n.*, **headwind,** *n.*

take, *v.* **1.** *To take off.* **a.** Of a person or airplane: To go through the action of a takeoff (which see, sense 1), as in 'before you take off, check the bleed valve.' **b.** Also simply, to depart in an airplane, as in 'he was eager to take off.' **2.** Used in other phrases, as in *to take over command; to take the air,* to gain air superiority; *to take to the air,* to take off and fly away; *to take a bearing; to take a fix;* etc.

In the verbal phrase, *to take off,* 'off' is an adverb and is not combined with the verb 'take.' See **takeoff,** *n.*

takeoff, *n.* Also **take-off.** **1.** The complete action of getting an air vehicle into the air; *specif.*, in reference to a fixed-wing airplane, this action which begins with the start of the takeoff run and ends when the airplane is considered safely in the air; an instance of this action. **2.** In a restricted sense: The action involved when the aircraft actually loses contact with the surface and becomes airborne, as in 'from the moment of takeoff.' Said esp. of both fixed-wing airplanes and helicopters. **3.** The action involved in getting several airplanes into the air as a part of an operation, as in 'the take-off generally took an hour' (Kenney). **4.** In less technical language, the action of departing in an airplane.

In sense 1, the takeoff extends over a period of time determined by the circumstances. For example, the clearance of a particular obstruction may be considered an essential part of the takeoff. Or again, the actual moment of becoming airborne may be considered to end the takeoff. Or again, the ascent to an arbitrary height, such as fifty feet, may be set as a point ending the takeoff. Cf. **landing,** *n.*, sense 2.

attrib. **a.** Pertaining to the airplane during takeoff, as in *takeoff acceleration, takeoff characteristic, takeoff performance, takeoff thrust,* etc. **b.** Pertaining to the operation of an airplane during takeoff, as in *takeoff checklist, takeoff heading, takeoff setting,* etc. **c.** Pertaining to other actions or things involved in a takeoff, as in *takeoff order, takeoff plan,* etc.

takeoff airspeed. The airspeed at which an aircraft takes off, or is designed to take off. See **takeoff speed.**

takeoff assist. An instance of giving extra thrust to an airplane during takeoff through the use of a rocket motor or other device; also the device used in such a takeoff. See **rato,** *n.*

takeoff clearance. A clearance given by signal usually from the control tower for an airplane to begin its takeoff. See **air traffic clearance, clearance,** *n.*

takeoff distance. The distance required by an airplane to take off, measured from the airplane's point of rest to the point where it breaks contact with the surface.

Takeoff distance is sometimes spoken of as a capability, as in 'its takeoff distance is 800 feet.' This is determined by performance under some given set of conditions.

takeoff position. The position, usually at one end of a runway, from which an airplane begins its takeoff run.

takeoff power. The maximum power of an airplane's engine or engines, available for takeoff.

takeoff roll. A 'takeoff run.'

takeoff run. The run of an airplane on a runway or water surface just before takeoff, made to achieve sufficient airspeed to become airborne.

The takeoff run begins when the airplane starts from rest at the takeoff position, and ends when the wheels lose contact with the surface.

takeoff speed. 1. The speed, esp. the airspeed, at which an airplane actually becomes airborne. **2.** The airspeed at which a particular airplane normally becomes airborne, as in 'its takeoff speed is considered to be 80 knots.'

'Takeoff airspeed' is used by some persons instead of 'takeoff speed.'

takeoff station. The place in an airplane at which a given crew member is on duty during takeoff.

takeoff strip. A runway or airstrip considered esp. for its use in the takeoff of an airplane.

takeoff time. 1. A particular point in time set for, or at which occurred, the takeoff of an airplane or airplanes, as in 'as takeoff time approached, I tried to sleep.' **2.** The length of elapsed time required for the takeoff of a single airplane or of several airplanes, as in 'with 30-second intervals, takeoff time was 20 minutes.' Cf. **takeoff,** *n.*, sense 3.

takeoff weight. 1. The actual gross weight of an airplane at takeoff. **2.** The maximum gross weight at which a given airplane is authorized to take off. See **gross weight.**

talk, *v. To talk in* (or *down*), to give radio instructions to a *pilot* to bring him in through clouds or fog for a landing.

tallyho, *interj.* [After the huntsman's cry.] A word called over the radio by a fighter pilot when he sights an enemy, as in 'Tallyho, nine o'clock.' Chiefly *British.*

TALO (*abbr*). 'Tactical air liaison officer.'

tamper, *n.* In a thermonuclear bomb, any substance that resists movement for a split microsecond, used so that the active materials may build up greater pressure behind the substance.

tandem, *a.* Arranged with its elements or units one behind the other. Said of controls, landing gear, wings, etc. Also in combination, as in *tandem-powered, tandem-seated, tandem-winged.*

tandem airplane. Also **tandem aircraft. 1.** An airplane with two or more seats or sets of controls one behind the other. **2.** An airplane with two or more wings placed one behind the other in approximately the same plane.

tandem cockpit. A cockpit having two or more seats or sets of controls arranged one behind the other.

tandem office. *Communications.* A telephone office serving solely as a connecting link between other telephone offices or exchanges.

tandem-rotor helicopter. A helicopter having two main rotors arranged one behind the other.

Tango (*code*). An authorized word for the letter 'T.' See **Alfa** (*code*).

tank, *n.* **1.** A container or reservoir on an airplane or other powered vehicle from which liquid fuel is fed into the engine or engines; also any auxiliary container from which extra fuel may be conducted into the fuel system. Often called 'fuel tank.' Attrib., as in *tank-selector valve.* **2.** A container built into the cargo space of an airplane, ship, or other vehicle, and used for the stowage and transportation of bulk liquid, esp. liquid fuel. Attrib., as in *tank car, tank truck,* etc. **3.** A large stationary container, usually of metal, for the storage of liquids, esp. liquid fuels. Attrib., as in *tank farm, tank park.* **4.** An armored, full-tracked ground vehicle usually armed with automatic and heavy weapons. Attrib., as in *tank trap, tank warfare.*

tank berm. A dike of earth or concrete surrounding a fuel storage tank or tanks.

tank buster. *Slang.* **1.** An airplane designed for, or considered effective in, operations against tanks or other armored vehicles. **2.** *Specif.* The Hawker Hurricane.

tanker, *n.* (tkr) **1.** A cargo aircraft in which the cargo space consists principally of a built-in tank or set of tanks. Attrib., as in *tanker plane.* See **tank,** *n.*, sense 2. **2.** A sea-going vessel the cargo space of which consists principally of a large tank or set of tanks.

In sense 1, the tanker is used chiefly for the stowage and transportation of bulk liquid fuels, esp. for air refueling operations, as in the KC-97E.

tanker aircraft. A tanker (which see, sense 1), esp. for use in air refueling.

TAPE (*abbr*). 'Tactical air power evaluation.' Now *hist.* Used in FEAF. See **TARS** (*abbr*).

taper, *n.* An airfoil feature in which either the thickness or the chord length, or both, decrease from the root to the tip.

Hence, the expressions, 'taper in plan only' and 'taper in thickness ratio only.'

tape relay. A process by which a message received on tape is forwarded on tape.

taps, *n. pl.* A bugle call used at a military funeral as a last memorial to the dead; also used at training bases for lights out, the last call of the day.

This usage of 'taps' is of American origin, the original call being made by tapping a drum.

Tare (*code*). A word formerly authorized for the letter 'T.' See **Able** (*code*).

target, *n.* (tgt) **1.** A place to be reached and struck at: See note. **2.** A thing or place to be hit or

aimed at; any point, mark, person, area, position, or physical object towards which real or simulated missiles or blows may be, or are, directed, as in 'his airplane made a good target against the light of the moon,' or 'your bombing target tonight will be the synthetic plant.' **3.** Also a group of objects marked for attack: **a.** A body of persons, as in 'his company became the main target.' **b.** The scattered units of an industry, as in 'shipping became a prime target.' **4.** Also applied to less tangible things, such as an organization, a force, or nation, as in 'the Air Force is a tempting target for enemy sabotage and propaganda.' See **target audience.** **5.** A radar target (which see, both senses). **6.** Short for 'target date.' **7.** *On target.* **a.** Of an aiming device: Aimed so that the missile will strike the target. **b.** Of an airplane: Positioned so as to attack. **c.** Of a missile or other device used as a weapon: Actually in contact with the target.

Senses 1 and 2 differ largely in the point of view. For example, the target of a bombing mission is, during one phase, the geographic place towards which the bombers fly; in another phase, the physical installation or position upon which the bombs are dropped. In the first, the target is to be *reached* in order to be hit, as in the phrases 'to get through to the target' or 'fighter escort to the target and back.' Cf. **objective,** *n.*, sense 2. In the second, the target is simply a place to be *hit*, as in 'the bombs were released upon the target.'

attrib. **a.** Relative to bombing targets, as in *target approach, target city, target data, target identification, target information center, target observation, target panel, target zone,* etc. **b.** Relative to targets in the air, as in *target bearing, target glider, target locator, target range, target rocket, target speed, target towing, target tug,* etc. **c.** Relative to a radar target, as in *target echo,* and *target strength.*

Target A. The Pentagon. *Metaphoric.*

target airplane. Any airplane considered to be a target, as an airplane being tracked by radar, or a drone or tow plane used for target practice.

target analysis. 1. A process by which a particular installation, place, position, or concentration is analyzed and appraised for consideration as a target, esp. an air target, in terms of its vulnerability and relevance to a given strategy; also such a process of analysis in respect to several installations, places, etc. **2.** The activity that carries out this analysis.

Target analysis is used to determine the priority assigned to targets in enemy territory; also to the probable priority of friendly targets subject to enemy attack.

target approach chart. A plan-view target chart designed to afford special guidance to a bombardment aircrew on terrain and culture features along the course designated for approach to a particular target.

This chart usually shows considerable detail, and is studied by aircrews prior to a mission and kept for ready reference during the approach.

target area. 1. The area occupied by a target, as in 'bomb damage was great in the target area.' **2.** The area immediately surrounding, and including that occupied by, the target. **3.** The extent of surface exposed as a target.

In sense 3, cf. **echo area.**

target audience. In psychological warfare, the people at whom propaganda is directed.

target card. In gunnery practice, a card so marked as to serve as a target.

target category. Any category into which certain targets can be grouped.

target chart. Any of several special charts used in approaching, locating, and identifying a bombing target, or used in training for such approaching, locating, and identifying, such charts showing as much detail as possible (or as necessary) of both the target and the target area from a particular approach and altitude.

Target charts are normally large scale and schematic. They include the oblique approach chart, the target approach chart, and the target recognition chart. See separate entries. Cf. **air objective chart.**

target complex. 1. An entity comprised of a number of potential targets so closely interrelated that if certain ones are destroyed the others are impaired in function. Cf. **target system. 2.** In operational analysis, such an entity comprised of targets closely interrelated geographically.

The concept behind this term is various in application. The term may be applied in determining overall strategy, such as in relating ocean shipping to certain war-making plants of the enemy; or it may be more narrowly applied, as to interrelated industries within a single country, or even to a tactical situation where a given bridge, for example, or a given ammunition dump becomes a target closely related to the functions of other nearby targets. Esp. in operational analysis the complex is often conceived (as in sense 2) as confined to a particular geographic region, but in world-wide operations, the complex may be conceived in broader terms. See **horizontal target complex, vertical target complex.** Cf. **industrial complex.**

target concentration. The circumstance of several targets suitable for attack being concentrated in a relatively small area, as in 'the Ruhr offers considerable target concentration.'

target cushion. A cushion of reserves or capacity that enables a nation to carry on its war effort even though a particular target or targets are destroyed or neutralized.

Target cushion is a factor in target selection.

target date. A date aimed at for completing or beginning an action, as in 'your target date is 5 January.'

target director post. A special control element in the tactical air control system, used to position friendly aircraft by means of radar and radio over target or other geographical coordinates. Often abbreviated 'TDP' and called 'tadpole.'

The target director post operates directly under the control and reporting center.

target dossier. A dossier or file into which target materials, esp. air target materials, are assembled for possible use in evaluating a target, and in

providing materials for an air objective folder or combat mission folder. See **air target material.**

target elevation. *Radar.* The angular altitude of a radar target.

target figure. A figure representing the number of things expected or predicted to be made or done by target date.

target folder. Any folder that contains ready information on a target; a target dossier or a combat mission folder.

target identifiability. A property that resides in a potential target that expresses the degree to which it can be identified visually or by radar from the air.

Target identifiability is a factor in target selection.

target identification. The action or procedure for establishing the location and identity of a target.

Also used in combination, as in *target identification bomb*, a smoke or flash bomb used to help identify a target; *target identification equipment*, etc.

target image. In gunnery training, the image of a target on the film of a gun camera.

target intelligence. A part of air intelligence concerned with data on air targets. In combination, as in *target intelligence center*, *target intelligence data*, etc. See **radar target intelligence.**

target jacket. A manila jacket or folder containing intelligence material on a specific target.

target marking. The marking of a target with smoke or incendiary bombs or rockets, with air-dropped beacons, or with radar systems. See **beacon,** *n.*, **Oboe,** *n.*, **pathfinder,** *n.*

target material. Usually *pl.* Any material such as photographs, intelligence reports, etc., on specific targets; *specif.*, air target material (which see).

target of opportunity. A target that appears or is encountered through a favorable juncture of circumstances, as when a fighter-bomber finds a transport train not previously known to be at a certain place.

A target of opportunity cannot be predicted with certainty to be at a given place, but favorable conditions for its presence may be calculated upon.

target plane. A target airplane.

target pressure altitude. The pressure altitude from which a target is to be attacked from the air. See **pressure altitude,** senses 1 and 2.

target priority. The priority assigned a given target in a list of targets. See **priority,** *n.*

target range. 1. A place used for bombing or gunnery practice. See **range,** *n.*, sense 9. **2.** The distance a target is away. See **range,** *n.*, sense 6.

target recognition chart. A target chart showing the features of a target in great detail for use in making precise identification.

target rectangle. In bombing, an imaginary rectangle described about a target having its sides parallel to the track of the airplane.

target recuperability. A quality or condition that inheres in a factory, marshaling yard, city, or an entire system of factories, marshaling yards, etc., that makes it restorable to operation within a short time after neutralization by military attack. This is a factor in target selection.

target run. The run of an aircraft toward or over a target. See **run,** *n.*, sense 1.

target seeker. A missile, as a bomb or rocket, designed as a seeker (which see); the device within such a missile that directs it to the target.

target-seeking, *a.* Of missiles: Designed or made as seekers, as in 'target-seeking bomb.'

target selection. The action of deciding what target or targets are to be struck at, and in what order.

Target selection is a complex action based upon strategic or combat intelligence, or both, upon national policies, upon national and military objectives, and upon an analysis of expected effects. Cf. **target cushion, target identifiability, target recuperability, target vulnerability.**

target sleeve. A tow target consisting of a long sleeve. Cf. **drogue,** *n.*

target support. Fighter support to bombers over the target.

target system. A system of targets each of which is functionally related either horizontally or vertically to every other target in the system.

target timing. A radar technique for determining wind velocity by correlating the distance that a radar target travels across a radar screen with other known speed data. Used esp. in the arctic.

target tug. An airplane that tows, or is designed to tow, a sleeve or winged target. *British.*

target vulnerability. A factor considered in target selection that relates each potential target to a standard scale in terms of the degree to which it is considered vulnerable.

Each target is given a scale number.

Tarmac, *n.* [A trademark: *Tar mac*adam.] **1.** A bituminous substance used in paving. **2.** A surface paved with this substance, esp. an apron fronting a hangar.

Tarpon, *n.* A name given the TBF by the British for a brief period in WW II. *Obs.*

tarred canvas. A bituminous coated canvas prefabricated into rolls ready to be rolled out as a surfacing material for runways, roads, etc., used in WW II.

TARS (*abbr*). 'Tactical Air Research and Survey Office.'

The Tactical Air Research and Survey Office replaced Tactical Air Power Evaluation (TAPE).

tarzon, *n.* [*Razon* with metathesis and a 'T' added to give an allusion to Tarzan, a prototype of power.] A six-ton razon bomb. Hence, *tarzon bomb.* Cf. **trizon bomb.**

TAS (*abbr*). Also **T.A.S.** 'True airspeed.'

taschengurt, *n.* [German: *Taschen* 'pockets' plus *Gurt* 'belt.'] A short length of tape or webbing that bridges each rigging line on the periphery of a parachute canopy to insure proper development.

task, *n.* **1.** In a general sense, any limited undertaking imposed by another or by one's own sense of duty; an undertaking requiring labor and effort. **2.** *Restrictive.* **a.** Such an undertaking assigned so as to forward a mission: See note. **b.** A special undertaking requiring a specially organized but temporary force to carry it out, such as that involved in the operation of a task force. **3.** The purpose or objective of any such action.

In sense 2a, the task is subordinate to a mission, and innumerable tasks may be performed in carrying out a mission. This sense is closely related to sense 2b, in that each task is special and of a limited duration.

Although the word 'task' might describe the special character of an air mission (sense 2), which is special and of limited duration, it is not an appropriate word for this action because it has no connotation of 'being sent.'

In tactical or theater air operations, the three basic tasks (sense 2a) are considered to be counterair action, interdiction, and close air support. See **phase,** *n.*, note.

task force. (TF) **1. a.** A military force consisting of individuals or units, together with necessary equipment, temporarily grouped together to carry out a single precisely defined combat task or mission. **b.** Short for 'air task force.' **2.** A military force organized semipermanently under a single tactical commander to carry out a series of special combat tasks; applied esp. to a naval force so organized. **3.** Also a force organized to perform a special noncombat task. Cf. **task organization.**

In sense 1a, a task force, when composed of both air and surface units, usually requires special attention to the command arrangements to assure that tactical command of air units resides in an air commander.

Cf. **airborne task force, air task force, force,** *n.*, sense 1, **landing force, theater commander.**

Attrib., as in *task force commander, task force headquarters.*

task organization. An organization formed to carry out a specific task. Cf. **organization,** *n.*, sense 1.

TAT (*auth abbr*). 'To accompany troops.' Used attrib., and written 'tat,' as in *tat box, tat equipment.*

TATB (*auth abbr*). 'Theater Air Transportation Board.'

taube, *n.* [German 'dove.'] A WW I German type of monoplane, in which the wing and tail surfaces were similar to those of a dove, manufactured by Rumpler.

Taunus (*code*). An antijamming device that differentiates the blip of a genuine target from that of window.

taxable income. Among AF service personnel, that income normally comprised of base pay, incentive pay, and foreign duty pay, or of any one or combination of these.

Subsistence allowance and quarters allowance are not classed as taxable income with the federal government for military persons, but per diem payments are reportable in an individual's income tax return, any excess of per diem over actual expenses being reported as gross income.

taxi, *n.* **1.** A name once applied to an airplane used on the ground to train student pilots in their first use of the controls. *Hist.* **2.** The action of moving an airplane about on the ground under its own thrust, esp. in combinations, such as *taxi run, taxiway,* etc. For usage, see **taxi-test,** *v.*

This term appears to have been first used in sense 1 in 1911 at the Déperdussin Monoplane School at Brooklands Aerodrome, England. At this school, the student pilot practiced driving an airplane about on the ground as the first step in his training, sometimes achieving enough airspeed to rise a few feet off the ground, but usually confining his efforts to 'rounds' and other ground manipulations. An airplane used in this phase of training was not always airworthy and was referred to as the 'school bus,' 'bus' or, more often, 'taxi.' Because a need existed for distinguishing this airplane from the 'brevet machine' (which see), the word 'taxi' caught on and spread to other flying schools in the vicinity. The verb form also came into use and soon developed its present meaning. With changes in instructional techniques, however, the older noun meaning was discarded, except for certain connotations that possibly survive in sense 2. Usage in sense 2, however, is more to be regarded as a back formation of the participle 'taxiing' than as an extension of sense 1. In this, it is parallel to 'bomb.' See **bomb,** *n.*, sense 5.

taxi, *v.* Sometimes **taxy,** but not recommended. [See **taxi,** *n.*] **1.** *tr.* and *intr.* To drive an *aircraft* on ground or water, except for takeoff and landing runs, under the thrust or momentum of its own engines, as in 'he taxied the B-36 to the takeoff position.' Used *intr.*, as in 'he taxied from the parking area to the loading ramp,' or 'the airplane taxied out to the runway.' Often used with adverbs, as in 'he taxied up to operations.' See **taxiing,** *ppr.* **2.** *intr.* To practice controlling an airplane on the ground. *Hist.*

Evidence on the verb 'taxi,' like that of the noun, appears as early as 1911 at Brooklands Aerodrome, England. At that early date, it was used in both senses, but at the same time, the word 'roll' and the word 'waltz' were used in sense 1. See also **S,** *v.*

taxiing, *ppr.* Sometimes **taxying,** but not recommended. **1.** Used as a noun: The action of the verb 'taxi,' as in 'during taxiing he noted an oil leak.' **2.** Used as a noun attrib. or as an adjective, as in *taxiing airplane, taxiing lane, taxiing operation, taxiing test,* etc.

taxilight, *n.* **1.** A light on a taxiway. **2.** A light mounted on an aircraft for use in taxiing.

taxi machine. Another name for the taxi of the early flying schools. See **taxi,** *n.*, sense 1.

taxiplane, *n.* An airplane used for hire.

taxi run. A high-speed run of an aircraft on the ground for the purpose of testing some of its performances.

In a taxi run, an aircraft may rise a foot or two off the ground.

taxi service. Air transportation made available at frequent intervals.

taxi strip. A narrow taxiway.

taxi-test, *v.* To test some performance of an *aircraft* during taxi or on a taxi run.

taxi time. The time set for an aircraft to begin taxiing, preparatory to takeoff.

taxiway, *n.* (twy) Any path or surface area designated for taxiing to or from a runway, parking apron, ramp, or the like, esp. such a path or way on the airdrome of an air base.

Taylorcraft, *n.* **1.** The original Cub manufactured in the 1930's by Taylor Aircraft Company. **2.** Also used in the names of aircraft manufactured by Taylorcraft, Inc., as in *Taylorcraft Tourist, Taylorcraft Special De Luxe,* etc.

Taylor suit. An electrically heated flying suit used by the British in WW II.

TB (*abbr*). **1.** *auth.* 'Technical bulletin.' **2.** 'Torpedo bombing,' in designations of US Navy aircraft as in *TBF.* **3.** 'Heavy bomber' (*Tyazhelii bombovoz*), used in the names of Russian aircraft from 1925 to 1945, as in *TB-3, TB-7,* etc.

TBA (*auth abbr*). 'To be activated.'

T/BA (*abbr*). 'Table of basic allowance.' *Obs.*

TBD (*auth abbr*). 'To be disbanded.'

TBF. A single-engined midwing torpedo bomber, developed by Grumman and later manufactured by General Motors for the Navy, popularly known as the 'Avenger.'

TBGAA (*auth abbr*). 'Travel by government automobile authorized.'

TBI (*auth abbr*). 'To be inactivated.'

T-bird. A T-33 airplane. *Slang.*

TBMAA (*auth abbr*). 'Travel by military aircraft authorized.'

T-bolt, *n.* A Thunderbolt aircraft. *Popular.*

TBS (*auth abbr*). 'The basic school.'

TBV-1. A Naval designation for the A-35, popularly known as the 'Vengeance.'

TC (*abbr*). **1.** *auth.* 'Training circular.' **2.** *auth.* 'Transportation Corps.' **3.** *auth.* 'Trial Counsel.' **4.** *auth.* 'Training center.' **5.** 'True course.' **6.** 'Troop carrier.'

TCC (*abbr*). **1.** *auth.* 'Transport control center.' **2.** 'Tactical control center.' **3.** *auth.* 'Troop Carrier Command.' *Hist.* in the AF.

TCI (*abbr*). 'Terrain clearance indicator.'

TCO (*auth abbr*). 'Test control officer.'

TCP (*auth abbr*). 'Traffic control post.'

TCS (*auth abbr*). 'Temporary change of station.'

TD (*auth abbr*). **1.** 'Table of distribution.' *Hist.* in the AF. **2.** 'Tank destroyer.' **3.** 'Transmitter distributor.'

T/D (*abbr*). 'Table of distribution.' Used attrib., as in *T/D unit. Hist.* in the AF.

TDA (*auth abbr*). 'Table of distribution-augmentation.' *Hist.* in the AF.

TDC (*abbr*). 'Top dead center.'

TDD (*abbr*). 'Technical Data Digest.'

TDN (*auth abbr*). 'Travel as directed is necessary in the military service.'

TDP (*abbr*). 'Target Director Post.' Cf. **TADP** (*abbr*).

TDPFO (*auth abbr*). 'Temporary duty pending further orders.'

TDRL (*auth abbr*). 'Temporary disability retired list.'

tdwy (*auth abbr*). 'Treadway.'

TDY (*auth abbr*). 'Temporary duty.' Used attrib., as in *TDY travel, TDY unit.*

TDY expenses. Expenses incurred while on temporary duty away from a permanent duty station. See **travel expenses.**

TE (*abbr*). **1.** *auth.* 'Twin engine.' **2.** *auth.* 'Task element.' **3.** 'Thermal efficiency.' **4.** 'Table of equipment.' In this sense, sometimes written 'T/E.' Now *hist.*

team, *n.* **1.** A number of persons associated or organized together to achieve a common end, as in 'the bomber team includes both the aircrew and the ground crew.' Cf. *air defense team.* **2.** A group of people who work effectively together, as in 'we must work as a team,' or 'the Air Force team won the sky battles over Europe.'

teardown, *n.* The disassembling of something, such as an aircraft engine, either wholly or partially.

Attrib., as in *teardown line, teardown stand.*

tear gas. A substance, usually liquid, which, when atomized and of a certain concentration, causes temporary but intense eye irritation and a blinding flow of tears in anyone exposed to it. Also called a 'lacrimator.'

Chloroacetophenone is a common tear gas.

tec (*auth abbr*). 'Technician.'

tech (*auth abbr*). 'Technical.'

Pronounced as a word in combinations, as in 'tech order' or 'tech sergeant.'

technical, *a.* (tech) **1.** Of persons: Having knowledge, training, or skill to manipulate, use, inspect, appraise, or control mechanical apparatus, laboratory equipment, clerical procedures, manpower control, or the like; skilled or trained in a practical art. Often used to distinguish persons trained in skills from persons with scientific or professional training. **2.** Of abilities: Belonging to a person skilled or trained in a practical art, as in engineering. **3.** Of developments: Marked by the use of new scientific or engineering discoveries or by the employment of new techniques or methods. **4.** Of areas of activity: Involving specialized knowledge or training; requiring persons

with special skills. **5.** Of standards: Established by reference to special requirements serving exact and precise purposes. **6.** Of publications, data, or information: Concerned with the mechanical or practical arts, esp. in reference to materiel, such as the engine or airframe of the airplane. **7.** Of an organization: Established to maintain equipment, esp. for the support of a tactical organization. **8.** Of a school: That provides technical training. **9.** Of a word's meaning: As used in a specialized field.

As shown, 'technical' has numerous meanings in different contexts. Further illustration is shown in the following entries.

technical channel. A channel through which guidance and direction and sometimes control are exercised, or through which services are provided, but through which operational command is not exercised. Cf. **command channel.**

Examples of a technical channel include the channel through which the Commander, AMC, exercises technical jurisdiction over aircraft or other materiel, or the channels through which the Surgeon General, USAF, gives guidance to medical officers and coordinates medical services, etc.

technical control. Control exercised by virtue of technical jurisdiction.

In the case of personnel, technical control normally implies a degree of control over assignments, such as that exercised over medical officers by the Surgeon General.

technical direction. Direction exercised through a technical channel.

technical failure. An ambiguous or general term for materiel failure or mechanical failure. Said of aircraft.

technical flying. Instructional flying to train a student in the mechanical operation of an aircraft.

technical intelligence. Intelligence pertaining to foreign or enemy technological developments capable of, or having, a practical application to warfare; also, short for 'air technical intelligence.'

Technical intelligence deals, for example, with the principles of design and operation, physical characteristics, performance, nomenclature, and operational capabilities of foreign materiel or equipment. In a broader sense, it may embrace manufacture, methods of storage and maintenance, etc.

technical jurisdiction. A kind of jurisdiction analogous to command jurisdiction, but exercised through a technical channel rather than through a command channel.

For example, the Surgeon General, acting for the Chief of Staff, exercises technical jurisdiction over medical officers throughout the AF, although such officers are each under the command of an operational commander. Likewise, the Commander of AMC has technical jurisdiction over certain kinds of equipment, even though such equipment is assigned to another commander. For example, he is authorized, for cause, to ground an aircraft assigned to another commander.

Technical Manual. (TM) An Army publication approximately corresponding to the AF Technical Order, containing detailed information on technical procedures, including instructions on the operation, handling, maintenance, and repair of equipment.

Technical Manuals of interest to the AF are sometimes published jointly, bearing both Technical Manual and Technical Order numbers.

technical objective. An objective towards which research and development is aimed in developing weapons or pieces of equipment or in developing techniques for the handling of such weapons or equipment.

Technical Order. An AF publication that gives specific technical directions and information with respect to the inspection, storage, operation, modification, and maintenance of given AF equipment. Often called 'tech order.'

technical order kit. A kit consisting of the tools or parts necessary to use or maintain a piece of equipment as prescribed in an AF technical order.

technical personnel. Personnel trained in the operation, use, maintenance, or repair of specialized equipment, instruments, weapons, or the like.

technical representative. A person representing an aircraft or other company who visits or is stationed in an area where his company's products are being used, so as to advise upon their operation and maintenance.

technical sergeant. (TSgt) In the AF and Marine Corps, a noncommissioned officer immediately below master sergeant and immediately above staff sergeant; the rank or grade of this person. This rank corresponds to sergeant first class in the Army.

technical service. Any service performed in a specialized field, such as that of communications, chemical warfare, armament, or the like.

technical superiority. Superiority arising from having better weapons or equipment or in having more advanced techniques in handling or producing weapons or equipment.

technical supervision. Supervision through a technical channel, such as that performed by the Director of Statistical Services over various reports prepared in the field.

technical supply. 1. The supply of items that are peculiar to a particular service or a particular arm; *specif.*, such supply for the peculiar needs of the Air Force. **2.** The items provided by this supply. **3.** The activity that handles this supply.

technical surprise. Technological surprise.

technical training. 1. In a broad sense, that training for *both* military and civilian personnel in specialties other than those of an AF pilot or aircraft observer, as in the phrase 'Technical

Training Air Force.' **2.** In the more common but restricted sense, training in those AF Specialties other than those of a pilot or aircraft observer. Distinguished from flying training, military training, and tactical training.

This type training (sense 1) includes training in administration, supply, maintenance, personnel, finance, statistical services, etc.

Technical Training Command. An AAF command responsible for technical training.

This command was established in Mar 1941. See **Training Command,** note.

technician, *n.* (tec) One skilled or highly specialized in the method or practice of a particular trade, specialty, or the like, with special reference to mechanical details and the use of special techniques; one who has mastered the techniques of his art.

This word is esp. applied to enlisted persons—to mechanics, artisans, highly-trained operators, repairmen, and the like—but is also applied to other persons considered to excel in the techniques of their professions. When applied to airmen or warrant officers, it indicates the qualifications to supervise skilled persons. See **supervisor,** *n.*

technique, *n.* The mechanical or physical manner in which a tactic, maneuver, manipulation, or other action is carried out.

For example, if the tactic is to place a force within enemy-held territory, the technique for doing so might be by infiltration, by organizing a partisan force behind the lines, or by airdrop. Or again, the technique of delivering an atomic attack might be by piloted or pilotless aircraft, by an agent secretly planting a bomb, or by guided missile. The tactic is to maneuver so as to mount the attack, to evade an enemy attack, or to do anything desired; the technique is the particular way the tactic is done.

'Technique' is also used in reference to personal ways of doing a thing, as in 'his technique was to use his thumb for the button so as to free his fingers for agitating the cord.'

Sometimes, one may regard an action as either a technique or tactic, depending on the point of view, as in 'the technique or tactic of making a 90° turn after bomb release made it possible to avoid direct flyover.' Strictly speaking, perhaps, the making of the turn is the technique; the resultant positioning and avoidance is the tactic.

Because tactics are often dependent upon the development of techniques, and because techniques are likewise often dependent upon the development of equipment, set phrases such as 'tactics and techniques' or 'tactics, techniques, and equipment' are found in the literature analyzing plans or operations. See **tactics,** *n.*, note, and **equipment,** *n.*, note.

technological surprise. The surprise of a military body or nation in reaction to the sudden use against it of a new weapon or new piece of equipment, as was the case when the atomic bomb was first used in warfare.

The first use of radar in war caused technological surprise. Its use in devising new techniques resulted in a series of tactical surprises. Cf. **tactical surprise.**

technological warfare. Warfare in which each contesting side strives to achieve an advantage by developments in technology.

technology, *n.* The applied science by which improvements are made in the industrial arts and their products. Hence, **technological,** *a.*, and **technologist,** *n.*

AF interest in technology is primarily in reference to the development of new weapons and equipment, but it is not confined to this, for success in preserving the peace is considered to be based upon technology in its broadest applications.

TechRep (*abbr*). 'Technical representative.'

TechTAF (*abbr*). 'Technical Training Air Force.'

Tedder carpet. A technique of fast low-level strafing worked out by Air Chief Marshal Sir Arthur Tedder, a WW II RAF commander.

Sir Arthur Tedder (1890–) joined the Royal Flying Corps in 1916, and served in France and Egypt in WW I. Between wars, he served in the Air Ministry and in field commands. In Feb 1943, he was Allied Air Commander in Chief in the Mediterranean; in 1943–45, he was Deputy Supreme Commander to General Eisenhower.

tee, *n.* **1.** Short for 'wind tee.' **2.** *Electronics.* A T-shaped joint or section in a wave guide.

tee, *v.* **1.** *To tee up,* to get set for action. *Slang.* **2.** *To be teed off,* to be angered. *Slang.*

telecom (*auth abbr*). 'Telecommunications.'

telecommunication, *n.* (telecom) **1.** Communication at a distance, esp. by electrical or electronic means, such as by telegraphy, radio, television, or the like. **2.** *pl.* The science or art of communicating at a distance.

telecon (*auth abbr*). 'Teletypewriter conference.'

teleconference, *n.* A conference at which participants are some distance apart but are able to confer by telecommunication.

telegraphy, *n.* The art or practice of transmitting or receiving messages in signal code, esp. by a wire connecting the transmitter and receiver, over which makes and breaks in the electric circuit spell out the message; the system of such telecommunication. See **radiotelegraphy,** *n.*, **wireless telegraphy.**

telemeter, *n.* **1.** An electric or electronic instrument that measures a quantity, as that of speed, angle of attack, temperature, or atmospheric pressure, then transmits the measurements to a distant station. **2.** An instrument that measures the distance between an object and the observer, as a range finder.

The telemeter (sense 1) is used in certain guided missiles and rockets, as well as in certain scientific apparatus.

telemeter, *v. tr.* and *intr.* To transmit by telemeter.

telemetering, *n.* The sequence of events or the process involved in the measuring of a quantity or quantities by telemeter, transmitting and recording the results to a distant station, and in some cases integrating the results with others and connecting them electronically into new impulses that in turn activate a new sequence of events. Attrib., as in *telemetering equipment, telemetering system.*

telemetering station. A station that emits electronic impulses that become integrated in a telemetering system.

telephone, *n.* (tp) An instrument for telecommunication through the voice, esp. by means of a connecting wire between speakers. See **radiotelephone,** *n.*

Teleran, *n.* [From '*tele*vision, *r*adar, and *a*ir *n*avigation.' A trademark name.] A system used in air traffic control, in which the image of a ground-based search radarscope is televised to aircraft in the vicinity so that a pilot may see the position of his aircraft in relation to others.

telescope, *v. tr.* **1.** To reduce an *action* to its main essentials, with consequent reduction in time for its performance. **2.** To crash a *plane* so that it is pressed together fore and aft, somewhat in the manner of a telescope.

telescopic, *a.* **1.** Of a landing gear or other mechanism: Having parts that slide one within the other. **2.** Of control: That inheres in a superior commander over personnel or units of a subordinate commander. See **jurisdictional control,** note, for example.

Teletype, *n.* **1.** A trademark name for a kind of teletypewriter; also (*uncapitalized*) any teletypewriter. **2.** A message sent by this device; also the system of communication using this device.

Attrib., as in *teletype copy, teletype mechanic, teletype message, teletype operator, teletype service,* etc.

teletypewriter, *n.* **1.** An electrical communication device, similar to a typewriter, that sends electrical impulses representing letters and characters on its keyboard, and receives and automatically types messages from a similar machine. **2.** The system or method of communication using this device.

televise, *v. tr.* To pick up and transmit a *scene, image,* or the like by television.

television, *n.* (TV) **1.** The process of transmitting or receiving scenes, views, or images over a distance by radio or sometimes by wire (see note); the activity connected with this process. **2.** The branch of electricity or electronics that deals with this process. **3.** *elliptical.* **a.** That which is shown on a television screen, as in 'we are looking at television.' **b.** A television receiver.

Early methods of television (sense 1) employed electromechanical methods to pick up and receive images, using pierced, rotating discs, photoelectric cells, glow lamps, and other devices. Currently, television employs cathode-ray devices at both the transmitting and receiving ends of the system, together with other necessary electric or electronic equipment, the transmitting apparatus converting light waves from the subject into electronic impulses, and the receiving equipment reconverting the impulses into electron beams that are projected on the screen of the cathode-ray receiver to form the picture. In commercial television, voices and other sounds originating at the subject are ordinarily transmitted with the image.

Attrib. uses: *television equipment* (as used in guided missiles or pilotless aircraft), *television photograph, television scan, television weapon* (a missile guided to target by the aid of television). See following entries.

television camera. A device for picking up a scene to be transmitted by television, incorporating chiefly a lens and an iconoscope or orthicon.

television receiver. A receiver for receiving and presenting televised images, pictures, or the like, usually with their associated sounds.

This term is sometimes applied only to a receiver that presents both pictures and sound. See **picture receiver.**

television reconnaissance. Reconnaissance, esp. aerial reconnaissance, in which television is used to transmit the view from the reconnoitering point to another point, either on the surface or in the air.

television repeat-back guidance. A kind of command guidance for guided missiles or pilotless vehicles, in which a television camera and transmitter are mounted in the guided object to provide the operator with a picture to aid in guiding.

television screen. A cathode-ray screen in a television receiver. See **cathode-ray screen.**

televisor, *n.* An apparatus for picking up or scanning a view or image to be transmitted; applied esp. to the early electromechanical scanning devices. See **television camera.**

teller, *n.* A person in an air defense control center or filter center who relays information to the plotters or to other filter centers.

Sometimes the same person serves as a teller and plotter.

telling, *n.* The act or process of relaying from one point to another information regarding aircraft sightings and movements.

Attrib., as in *telling channel, telling circuit, telling procedure.*

temp (*auth abbr*). **1.** 'Temporary.' **2.** 'Temperature.'

Tempelhof Air Base. An air base at Berlin, Germany, named for the suburb of Berlin in which the air base is located.

temperature, *n.* (temp) The relative hotness or coldness of a thing, esp. of the atmosphere, measured on a definite scale, such as by the degrees of a thermometer. Attrib., as in *temperature gauge, temperature range,* etc.

Temperature is a relevant factor in handling many types of equipment and in carrying out many kinds of operations. The theoretical lower limit of temperature is absolute zero (which see); no upper limit is considered to exist.

temperature gradient. The rate of change in temperature between one point and another, esp. in reference to increase in height.

temperature inversion. *Meteorology.* A condition existent when the temperature of air increases

with altitude rather than decreases, as it does normally in the troposphere.

Tempest, *n.* A single-place, single-engine, low-wing fighter and fighter-bomber used by the RAF in WW II, developed by Hawker.

temporary, *a.* (temp) **1.** Of a building or installation: Built or prepared for use during a limited period of time. **2.** Of rank or grade: Recognized to be only for a limited time.

Cf. **permanent,** *a.*, senses 1 and 2.

temporary appointment. An appointment for a limited period of time; in the Civil Service, such an appointment not to exceed one year.

temporary change of station. A physical transfer of a person, group of persons, or organization from one station to another when return to the first station is contemplated, usually within a specified period of time.

temporary duty. (TDY) Duty performed away from the organization or station to which assigned or attached, usually extending over a limited period of time.

Attrib., as *temporary duty order, temporary duty travel.*

temporary grade. A grade held by a military person in accordance with a special schedule established during a period of emergency or special circumstance.

During such a period, a person may be in a temporary grade of major, for example, and concurrently in a permanent grade of captain. The schedule of temporary grades is established to meet the requirements of an expanded service.

temporary officer. An officer commissioned in an armed service, but without status in either the regular component or the reserve.

temporary promotion. Promotion to a temporary grade.

tenancy, *n.* A condition that exists when a tenant occupies space on a base.

tenant, *n.* A unit, other organization, detachment, or person assigned to one commander and under the operational control either of the commander to whom assigned, or of another, but occupying or using, on a more or less permanent basis, certain quarters or other real property under the jurisdictional control of a different commander. Often attrib., as in *tenant detachment, tenant organization, tenant unit.*

The tenant may receive from the landlord command or base any degree of logistic support in addition to the space occupied. The term, however, has sometimes been considered to apply to those organizations that receive logistic support, even when occupying no space belonging to the supporting unit. This is a misconception. Essential conditions for a tenant are: (1) assignment to a command other than the command lending space, (2) occupancy or temporary possession of actual space under the jurisdictional control of the landlord command, (3) control over its own operation. An example of the tenant-landlord relationship is that of a SAC refueling unit located on a base not under the command of the SAC commander, or that of an Air Rescue Service unit located at a base not under the command of MATS.

Theoretically, Commander A could attach a unit for operational control to Commander B's command; then Commander B could station the unit on Commander C's property. The unit would be a tenant to Commander C.

The status of a unit attached for operational control to a command other than the command to which it is assigned is not that of a tenant, because of the third condition above. Neither is the relationship between a unit subordinate to a command and the command's housekeeping unit that of a tenant. For example, the Air War College is not a tenant to the air base wing at Maxwell Air Force Base.

An attached unit may, or may not, be a tenant unit, depending upon the circumstances. If attached for operational control, even when occupying or using real property, it is not a tenant; if attached for logistic support only, it is a tenant only if it occupies or uses real property of the command to which attached. See **administrative control, operational control, jurisdictional control, resident unit.**

A transient unit housed for a night or so on a base is not a tenant.

tenant unit. A unit serving in the status of a tenant. Cf. **accommodating command.**

tender, *n. Specif.* A repair and supply vessel used by the Navy to service aircraft operating far from shore bases.

tension, *n.* **1.** The stress exerted on a member or object by forces or loads acting both away from each other and through the object, causing, or tending to cause, extension; the forces causing this stress. Distinguished from 'compression.' **2.** *Medicine.* The faculty or capacity of a gas at a given pressure and in a given amount (often in mixture with other gases) to make contact with, and extend itself into, another substance; *specif.*, oxygen tension (which see).

In sense 2, tension is sometimes called 'oxygen partial pressure.'

tentative table of equipment. Usually *capitalized.* A table or list prescribing equipment required to maintain newly developed or modified aircraft or missiles until provided for by an appropriate master equipment allowance list, equipment component list, or table of allowance.

ten-tenths cloud. Cloud that covers the sky. See **cloud cover.**

term (*auth abbr*). 'Terminate.'

terminal, *n.* An installation or place considered to be a stopping place, but not necessarily a turnaround point, on a transportation route; *specif.*, an air terminal; also short for 'airline terminal.' Cf. **terminus,** *n.*

terminal airspace. The airspace above and surrounding an airport or airports in a metropolitan district, used for maneuvering, holding, etc.

terminal ballistics. 1. A branch of ballistics that deals with the modification or action of a missile at the target, or at the end of its trajectory, as the flattening of a dumdum, or the breakup of a shell on explosion. See **penetration ballistics.**

2. The study of the effects of missiles on their targets. *Loose* usage.

terminal equipment. Communication equipment at which wire circuits terminate.

terminal forecast. A weather forecast of conditions expected to prevail for a given period of time in the vicinity of a terminal.

terminal leave. The accrued leave due a person on leaving military or government service.

terminal-leave pay. Regular pay received during terminal leave.

terminal meridian. The meridian where east and west longitude meet, 180° removed from the prime meridian.

terminal velocity. The constant velocity of a falling body attained when the resistance of air or other ambient fluid has become equal to the force of gravity acting upon the body.

termination inventory. An inventory of property held by a contractor which has been acquired for the performance of a terminated contract, and which is properly allocable to the terminated part of the contract.

term insurance. Insurance that becomes void upon the expiration of a specified period of time.

National Service Life Insurance in WW II was issued initially as term insurance with provision for conversion to other types of life insurance.

terminus, *n.* A town at the end of a transportation or supply line.

terr (*auth abbr*). 'Territory.'

terrain, *n.* **1.** Ground or a tract of ground, esp. considered with respect to its extent or topography as factors in a military operation, or with respect to its being the lower limit of flight or its use for landing an aircraft. **2.** Attrib., as in *terrain clearance indicator, terrain study*, etc.

Terrain is not normally considered to include cultural features. In some contexts, the term, more or less by default, is applied to water surface as well as to ground, as in 'the radar altimeter measures height above the terrain.'

terrain model. A relief model representing a particular area, such as that surrounding an air target.

terrestrial pole. Either of the earth's poles, as distinguished from a celestial pole.

terrestrial reference guidance. The guidance of a missile or the like by means of installed self-reacting devices which respond to some phenomenon in or of the earth or its atmosphere, such as magnetism or atmospheric pressure.

terrestrial swing. An airswinging that follows a sequence established by reference to a line on the ground.

terrestrial triangle. *Navigation.* A triangle on the earth, the points of which are the observer, the nearest pole, and the subpoint of a celestial body. It is the mirror on the earth of a celestial triangle.

territory, *n.* (terr) *Specif.* **1.** In a general sense, any area considered as a political or geographic entity belonging to, and under the control of, the US, but not forming a part of the Union. **2.** Often *capitalized.* In a restricted sense, such an area having an incorporated status, just short of the status of a State under the Constitution; *specif.*, Alaska or Hawaii. **3.** The land held by a military force, as in the phrases 'enemy held territory' or 'friendly territory.'

In sense 1, the term includes both the incorporated territories of Alaska and Hawaii and the unincorporated territories of Guam, Wake Island, and Midway Island, as well as Puerto Rico and the Virgin Islands, which possess attributes of both incorporated and unincorporated territories, but excludes both the trusteeship areas administered under the UN or under the Japanese peace treaty of 1951, and the Panama Canal Zone, which is controlled through perpetual lease. See **possession,** *n.*

terror, *n.* A state of intense fear. Used attrib., as in *terror attack*, an attack esp. on a civilian populace, intended to create panic and to lower morale, *terror bombing, terror weapon*, etc.

tertiary target. A target that has priority next to a secondary target.

test, *n.* **1.** A procedure or action by which a device, piece of material, piece of machinery, or the like is subjected to conditions, real or simulated, that will determine its true qualities or capabilities, or its suitability for use in a particular kind of operation. See **flight test, operational suitability test, service test. 2.** A procedure or action for determining, under real or simulated conditions, the effectiveness and suitability of a system, method, or the like. **3.** Such a procedure or action for determining a person's reactions, limitations, abilities, skills, or the like.

A test differs from an examination in that it suggests direct methods, the use of practical conditions of the operation as the proving ground, whereas an examination suggests a more general approach, usually involving visual scrutiny or indirect techniques of probing. Cf. **check,** *n.*, esp. sense 2, **inspection,** *n.*

Attrib. in sense 1, as in *test bed, test equipment, test mission, test rig, test run, test unit*, etc.

Also in combination to form verbs, as in *test-dive, test-fire, test-hop*, etc.

test, *v. tr.* To subject a *person, thing, method, theory*, or the like to a test.

test aircraft. An aircraft undergoing test; *specif.*, an aircraft assigned a recognized testing agency. Cf. **test-support aircraft.**

The testing agency tests and evaluates the adaptability of the aircraft or its equipment to a particular use.

test ammunition. Ammunition for testing firearms. See **high-pressure test cartridge.**

test chamber. Any chamber in which a person or thing may be tested, usually by observation through glass, as in a wind tunnel where objects are mounted and tested or studied.

test club. A heavy dummy propeller of small diameter, sometimes used on an aircraft engine to absorb power when the engine is being tested on a test stand.

test flight. A flight in which the performance or operation of an aircraft or of aircraft equipment is tested.

This term is applied esp. to the flight of new or modified aircraft or equipment for purposes of testing. Cf. **flight test,** note.

test-fly, *v. tr.* To fly an *aircraft* in order to test it or its equipment.

test hop. A test flight. See **hop,** *n.*, note.

test pilot. A pilot who test-flies new or modified aircraft.

test set. A set of equipment used to locate faults and troubles in communication circuits and equipment.

test stand. 1. A strongly-built, stationary stand on which a reciprocating aircraft engine is tested. **2.** A stand on which a jet engine, rocket engine, or the like is mounted for testing and measuring thrust. Also called a 'proving stand' or 'thrust stand.'

test-support aircraft. An aircraft assigned a testing agency for helping in testing activities, but which is not itself the subject of, or the vehicle for, a testing project.

tetraethyl lead. A liquid, $Pb(C_2H_5)_4$, used as an antiknock in gasoline.

tetrahedron, *n.* A geometric figure having four faces or sides.

Applied to objects more or less resembling a tetrahedron, as (a) a wind-indicating device used on an airfield, (b) a kind of beach or antitank obstacle, or (c) a four-pronged device dropped on enemy roads or airfields to puncture tires.

tetryl, *n.* A crystalline explosive of high sensitivity and brisance, used esp. as a detonator or booster, and sometimes as a bursting charge in small-caliber missiles.

Texan, *n.* A popular name for the T-6 (the former AT-6).

Texas tester. A machine that simulates aerial combat conditions for testing gunners or fire-control systems in bomber-to-fighter gunnery.

Texas tower. A radar tower built in the sea offshore, serving with others like it to supplement the early-warning network.

Named in allusion to the offshore oil derricks in the Gulf of Mexico.

TF (*abbr*). **1.** *auth.* 'Task force.' **2.** *auth.* 'Training film.' **3.** 'Trainer-fighter,' as in *TF-80.* **4.** 'Test flight.'

T.F. (*abbr*). 'Target tug.' *British.*

tfc (*auth abbr*). 'Traffic.'

tfcby (*abbr*). 'Trafficability.'

TFCSD (*auth abbr*). 'Total federal commissioned service date.'

tg (*auth abbr*). **1.** 'Telegraph' or 'telegram.' **2.** *Caps.* 'Task group.'

TG loran. [From '*T*raffic *G*uidance.'] Loran specially developed for mountainous areas to guide heavy traffic at the same altitude.

tgt (*auth abbr*). 'Target.'

TH (*abbr*). 'True heading.'

theater, *n.* Also **theatre,** esp. in Great Britain. **1.** A defined region with the airspace above it in which military or naval operations or other military or naval activities are conducted, or are expected to be conducted; *specif.*, short for 'theater of operations,' as in 'the European theater'; also short for 'theater of war.' **2.** A place where an assembly of persons may view a performance or the like.

Used attrib., in sense 1, esp. in specif. subsenses, as in *theater air logistics, theater concept of war, theater forces, theater headquarters, theater medical staff, theater mission.*

theater air commander. The officer in command of theater air forces in a given theater of operations.

The theater air commander is subordinate to the theater commander, and of equal status with the theater ground commander and the theater naval commander. However, see **theater of operations,** note.

theater air force. 1. The overall air force made up of the various air forces and other air units assigned a theater of operations. See **air force,** sense 1. **2.** *Theater air forces*, all of the air forces and other air units assigned a theater of operations.

In either sense, the theater air force or theater air forces include those air forces used in air defense and in air tactical operations.

Used attrib. in sing. form, as in *theater air force headquarters.*

theater airlift. Airlift, esp. tactical airlift, within a theater, normally performed by troop-carrier aviation. Cf. **tactical airlift.**

theater commander. The officer in command of all military forces (air, land, and sea) within a theater of operations. See **theater air commander, theater of operations,** note.

Although elevated from one of the three services, the theater commander discharges his responsibilities not as a member of any one service, but theoretically, at least, as a commander no longer with the point of view of a particular service. See **structure,** *n.*, sense 2.

theater concept. A concept of how to conduct a war that emphasizes the need or role of different theaters of operation.

This concept, historically speaking, is essentially a surface concept, considered by some to be outmoded except for limited wars.

theater of operations. Also **theater of operation.** A geographical region with the airspace above it, designated by competent authority to be under a single overall commander (the theater commander), and in which air, land, or naval, or all three, operations occur, or are expected to

occur, such operations being either offensive or defensive in the conduct of war.

A theater of operations is usually a segment of a larger theater of war. Its integrity, however, is often cut across by other concepts of operation, as by the employment of strategic air controlled by the Joint Chiefs of Staff through the Chief of Staff, USAF.

theater of war. A geographic region with the airspace above it considered to be inclusive of more than one theater of operation, as in the 'Asiatic-Pacific Theater of War' or 'European-African-Middle-Eastern Theater of War.'

theater ribbon. A ribbon worn for service in a particular theater of war.

theodolite, *n.* A sighting and measuring telescopic instrument that gives a reading on horizontal angles and, usually also, on vertical angles.

Used in meteorology to follow the ascent or drift of pilot balloons or clouds, or in determining heights of airborne objects. Also used in aerosurveying.

theory, *n.* **1.** An idea or notion elaborated to explain phenomena, made more or less plausible either by reasoning from accepted facts or by using it to discover new facts, as in 'the theory of flight' or 'the theory of lift.' **2.** An elaboration of the practical implications that inhere in a concept of how to do something, as in 'his theory of war compelled him to take the offensive,' or 'his theory of bombing includes the notion of establishing target priorities.'

thermal, *n.* An ascending air current caused by heat. See **convection current.**

thermal, *a.* Of or pertaining to heat.

thermal efficiency. The efficiency with which a rocket engine, jet engine, internal-combustion reciprocating engine, or any other engine employing heat converts the total heat energy of its fuel into energy available for propulsion. Cf. **overall efficiency, propulsive efficiency.**

In a jet engine, thermal efficiency depends upon variables, such as efficiency of turbines or cycle temperature.

thermal instability. *Meteorology.* The instability of a body of air with respect to its temperature distribution. See **convective instability.**

thermal jet engine. A jet engine that depends upon heat to expand air or other gases for rearward ejection, esp. a turbojet engine.

This term was used in the late 1930's and early 1940's when different methods for rearward ejection of gases were under consideration. Cf. **airstream engine.**

thermal photograph. A photograph made of an image tube or similar device that shows objects on the earth differentiated by their radiations of heat or infrared waves. See **aerial photograph.**

thermal radiation. Radiation in the form of heat, applied esp. to the heat radiation from an atomic or thermonuclear explosion.

thermal wind. A wind caused by differences in horizontal temperature.

thermate, *n.* A mixture of thermite and other substances, such as barium nitrate, to accelerate burning, used in incendiary munitions. Attrib., as in *thermate bomb.*

thermion, *n.* An electrically charged particle emitted by an incandescent material or substance. A thermion is either negatively charged or positively charged.

thermionic emission. The emission of thermions from an incandescent material or body, as from the cathode in a vacuum tube.

thermistor, *n.* A small resistor in which the resistance varies over a wide range with temperature.

thermite, *n.* [From the trademark 'Thermit.'] A mixture of powdered aluminum and an oxide of another metal, usually iron, which upon ignition produces intense heat. Used in incendiary munitions and in welding.

Attrib., as in *thermite bomb.*

thermocouple, *n.* A connection or junction of two pieces of dissimilar metals which produces a current when heated. Hence, **thermocouple ammeter.**

thermodynamic barrier. A barrier to high velocity flight in the atmosphere reached when friction heat caused by air particles striking or rubbing against the aircraft is sufficient to melt or weaken the surface of the aircraft.

thermodynamics, *n.* The science that treats of the mechanical action of heat, or the relationship of heat and mechanical energy, and the conversion of one into the other.

thermofission, *n.* The fission of nuclear material under the influence of extremely high temperatures.

thermojet, *n.* **1.** A jet of heated gases directed rearward to provide thrust. **2.** A thermal jet engine.

thermonuclear, *a.* Of or pertaining to nuclear reactions or processes caused by heat, esp. to nuclear fusion caused by the intense heat of an atomic bomb explosion. See **nuclear fusion.**

In combinations, as *thermonuclear bomb, thermonuclear explosion, thermonuclear reaction.*

thermopile, *n.* A series of thermocouples joined together so as to increase the current when heated.

thermosphere, *n.* A layer of the upper atmosphere, so named for the range of temperatures that prevail in it.

This is coextensive with the ionosphere as conceived by some, extending from the stratosphere at 80 kilometers (50 miles) to the upper limits. Temperatures range from the temperature minimum at 80 kilometers (50 miles) to several thousand degrees at around 400 kilometers (250 miles). See **ionosphere,** *n.*

thickness chart. *Meteorology.* A chart showing the distance in feet between constant-pressure surfaces.

thickness ratio. The ratio of the maximum thickness of a given airfoil section to its chord.

third-echelon maintenance. The former term for field maintenance.

thirty, *n.* A 0.30 caliber machine gun. Usually in *pl.*, in reference to two or more such guns mounted on an aircraft, or in a multiple mount.

thirty-day outlook. A weather forecast for a thirty-day period.

Thomas-Morse, *n.* [*Thomas-Morse* Aircraft Corporation, a US firm, now defunct.] Used in the names of airplanes, as in *Thomas-Morse MB-6*, a single-place, fighter biplane of the 1920's, and *Thomas-Morse 22*, an all-metal, racing monoplane, also of the 1920's.

Thompson Trophy Race. An American air race about a closed course in which the contestants compete for the Thompson Trophy donated by Thompson Products, Inc.

The race was held from 1930 to 1939 and resumed after WW II.

thorium, *n.* A radioactive element with an atomic weight of 232.12.

thou (*auth abbr*). 'Thousand.'

thp (*abbr*). 'Thrust horsepower.'

THq (*auth abbr*). 'Theater headquarters.'

three, *n.* Written **3.** Used in the VIP code for a major general.

three-day pass. A liberty pass for three days.

three-dimensional, *a.* Of, or making use of, three dimensions. Used esp. in contexts where the three-dimensional attributes of air power are being emphasized, as in 'three-dimensional strategy.' Also cf. **two-dimensional,** *a.*

three-dimensional warfare. Warfare in which air power is used.

three-directorate staff. A type of staff in which the coordinating staff is divided into three groupings, each headed by a director: Personnel and Administration, Operations and Training, Supply and Maintenance.

The directors in this type of staff function essentially as deputy commanders.

three-point landing. A term sometimes applied to a landing with certain type airplanes, in which the tail skid or tailwheel of the airplane and the two forward wheels of the landing gear all come into contact with the ground simultaneously.

This term is not ordinarily applied to landings of airplanes not equipped with a tail skid or wheel.

three-star general. A lieutenant general.

throat, *n.* The most constricted area or section of a duct, passage, or the like, as of a jet nozzle.

throat chokes. A persistent cough without any accompanying chest pain and without labored breathing, thought to be caused by the effect of cold, dry oxygen upon a pre-existing irritation of the throat.

Throat chokes may or may not be associated with dysbarism or decompression sickness, and is distinguished from chokes (which see).

throat microphone. A type of microphone held in contact with the throat and actuated by throat vibrations. Also called 'throat mike.'

throttle, *n.* **1.** A throttle valve. **2.** A throttle lever. **3.** In special usages: See note.

In sense 3, *to cut the throttle*, to decrease the flow of fuel to an engine by means of the throttle; *to give it* (an aircraft or aircraft engine) *the throttle*, to increase the flow of fuel; *to use enough throttle*, to adjust the throttle for sufficient fuel; *at full throttle*, with the throttle set for a maximum amount of fuel.

throttle, *v.* Usually *to throttle back* or *to throttle down.* **1.** *tr.* To close the throttle of an *aircraft engine* so as to use less fuel, or to use a minimum amount of fuel. **2.** *intr.* To close a throttle.

throttle jockey. A jocular name for a pilot.

throttle lever. A lever for moving the throttle valve of an aircraft engine.

throttle valve. A valve in the fuel system of an aircraft for controlling the fuel flow to the engine.

throw, *n.* The displacement, or the amount of the displacement, of a control surface to either side of its neutral position, as in 'rudder throw was measured by a rule.'

thru (*auth abbr*). 'Through.'

thrust, *n.* **1.** The driving force exerted on any aircraft, rocket, guided missile, or other object by its rotating propeller or rotor blades, jet or rocket engine or engines, or other propulsive device or force. See **propeller thrust. 2.** *Specif.* Jet thrust (which see).

In either sense, thrust, opposed to drag, is normally exerted along the longitudinal axis of an aircraft in a forward direction relative to a fixed point in space, and is usually thought of as a forward-directing force. With a helicopter, however, thrust is exerted in any direction. See **rotor thrust.**

In sense 1, thrust is a component of the total aerodynamic forces acting on an aircraft or winged missile parallel to and opposed to the relative wind, and results from engine power or from energy external to the body exerted in that direction. The forward movement of an untowed glider is not considered the result of thrust, but usually of gravity.

Thrust in sense 2 is measured in terms of the fluid mass flow in pounds per second multiplied by jet velocity (relative to the body) in feet per second divided by gravity acceleration of 32.18 feet per second per second.

thrust augmentation. The increasing of the thrust of a jet engine or of a rocket by any of various means.

Thrust augmentation for jet engines is accomplished by afterburning, reheating, water injection, etc.

thrust augmenter. Any contrivance used for thrust augmentation, as a venturi used in a rocket, an afterburner, etc.

thrust efficiency. Propeller efficiency.

This term is not ordinarily applied to rockets or jets. See **propulsive efficiency.**

thrust face. A blade face.

thrust horsepower. 1. The actual horsepower delivered by the engine-propeller unit of an aircraft. **2.** The thrust of a jet engine or rocket expressed in terms of horsepower.

In sense 1, thrust horsepower is derived from the formula, thp equals bhp multiplied by the percentage of propeller efficiency. Thrust horsepower is less than brake horsepower because the propeller is not 100% efficient.

In sense 2, thrust is converted into horsepower by the formula, thp equals thrust pounds times aircraft speed in miles per hour divided by 375.

thrust line. 1. A line along which the thrust of an aircraft engine acts, such as the axis of a propeller shaft. **2.** A line on a military map designated as a base line. Used for security reasons instead of the usual base line.

In sense 2, points are located on the map by giving their distances along the thrust line with reference to a base point on the line, and their distances perpendicular to the line.

thrust output. The net thrust delivered by a jet engine, rocket engine, or rocket motor.

thrust-pound, *n.* A unit of measurement for the thrust produced by a jet engine or rocket, as in '5,000 thrust-pounds.' See **pound,** *n.*, **thrust,** *n.*, note.

thrust power. The total driving force of an aircraft, equal to the product of thrust and aircraft velocity.

thrust stand. A test stand (sense 2).

thtr (*auth abbr*). 'Theater' or 'theatre.'

Thu (*auth abbr*). 'Thursday.'

Thule Air Base. An air base at Thule, Greenland.

Thunderbolt, *n.* A popular name for the P-47.

thunderhead, *n.* A well-developed mass of cumulus sometimes appearing before a thunderstorm. *Popular.*

Thunderjet, *n.* A popular name for the F-84.

thunderstorm, *n.* A local storm, usually of short duration, accompanied by thunder and lightning and often by strong gusts of wind, rain, and sometimes hail.

See **air-mass thunderstorm, frontal thunderstorm.**

thunderstorm cell. Any one of a number of discrete regions of convective activity making up a thunderstorm.

Thyratron, *n.* Sometimes *not capitalized. Electronics.* A trademark name for a type of gaseous triode tube used in wave shaping and control circuits.

TI (*abbr*). 'Technical intelligence.'

tie-down, *n.* **1.** A ring, hook, stake, or the like to which something is secured; a tie-down fitting. **2.** The act or process of tying something down.

tie-down fitting. An anchoring device in an aircraft, usually a ring, for tying down cargo, etc.

TIG (*auth abbr*). 'The Inspector General.'

Tiger, *n.* A popular name for the F11F.

tiger, *a.* Eager, esp. eager to fight, as in 'they are very tiger.' *Slang.*

Tigercat, *n.* A popular name for the F7F.

Tiger-Moth, *n.* A British, two-place training biplane developed by de Havilland, used prior to, and during, WW II.

tight, *a.* **1.** Of an aircraft formation: Having the individual aircraft spaced relatively close together. **2.** Having a short radius. Said of a turn or spiral. **3.** Of a defense: Closely held together.

Hence, **tighten,** *v.*, in all senses.

tilt, *n.* The inclination of a physical object from what is considered its normal or standard position: See note for examples.

a. The inclination of an aerial camera from the vertical, measured by the angle between the camera axis and a plumb line dropped from the optical center. **b.** The projection of this inclination to the photograph taken. **c.** The inclination of an aircraft, winged missile, or the like from the horizontal, measured by reference to the lateral axis or to the longitudinal axis. **d.** The inclination of an antenna reflector from the horizontal.

tilt, *v. tr.* To put an *object* into a tilt. Also *intr.*

tilting rotor. A rotor which is built so that it may be tilted.

tilt stabilization. The stabilization of something against tilting, as the stabilization of a radar antenna by means of a gyroscope.

time, *n.* **1.** A reckoning of duration; the system or process by which man measures this reckoning: See note. **2.** The interval or period between the beginning and end of an action or event, as in 'flying time,' or 'the jet plane has shrunk both time and space.' **3.** The coming, enduring, and passing of one moment after another, in which consciousness has being and events take place, considered to be a commodity of value in military planning or operations, as in 'space was traded for time to prepare a counterattack.' **4.** A particular moment, hour, day, or year, as fixed by a timepiece, calendar, or some other arbitrary reckoning system, as in 'the time for attack was 0600,' or 'the time in New York was 7 A.M. when it was noon in London.'

In sense 1, time is measured by the rotation of the earth with respect to the sun, to the 'mean sun,' or to the stars. This gives rise to apparent time, mean time, and sidereal time. See separate entries. These different times are ordinarily measured with respect to the Greenwich meridian or to a local meridian, resulting in Greenwich apparent time, Greenwich mean time, Greenwich sidereal time, local apparent time, etc. See separate entries. See also **equation of time, standard time.**

time, *v. tr.* **1.** To arrange or schedule some *event* or *occurrence*, or a *series* of events or occurrences, in an *operation* so as to achieve smooth or efficient performance, or another desired result. **2.** To adjust or regulate an *engine, automatic weapon,* or other *mechanism* or *device* so that the events in its cycle of operation occur in a proper sequence; to

regulate a *mechanism* or *device* for a given rate, duration of operation, etc.

Hence, **timing,** *n.*, in both senses. See **program,** *v.*

time base. In a radar set, a bright line on the cathode-ray screen, traced by the electron beam in synchronization with the transmitted pulses, by which range to an object is determined as a function of time, as indicated by the distance of the echo signal along the line.

time bomb. A bomb that may be set to explode sometime after being dropped or planted.

Short delay fuze bombs are not usually classified as time bombs. See **delayed-action bomb.**

time diagram. 1. In navigation, a diagram showing the relationship between longitude and hour angle. **2.** A diagram that shows corresponding times for different parts of the earth.

timed run. A bomb run in which the moment of bomb release is determined by timing the run from a given known point. Used in WW II in blind bombing, esp. with Gee-H.

time fuze. A fuze used on a delayed-action explosive; a delay fuze.

time of flight. The elapsed time during the flight of an aircraft, rocket, etc.; *specif.*, in gunnery, the time elapsed from the instant a projectile leaves the gun to the instant of impact or the instant of burst.

timer, *n. Radar.* A device in a radar set that establishes the pulse rate and controls the timing of other elements in the set.

time tick. 1. An act or instance of synchronizing watches or clocks, as by means of a person audibly counting off seconds to a specified hour or minute. **2.** Any signal, as a radio signal, used for setting timepieces.

time zone. A zone in which a standard time is used. See **standard time.**

The ocean areas of the world are divided into twenty-four time zones, each 15° of longitude in width, and each zone using the local mean time of its central meridian as a standard throughout the zone. On land, the time zones are ordinarily modified to provide for practical considerations.

TimIG (*auth abbr*). 'Time in grade.'

tin fish. A torpedo. *Slang.*

Tinker Air Force Base. An AF base at Oklahoma City, Oklahoma, named for Major General Clarence L. Tinker, a bomber and fighter pilot who disappeared on a mission from Midway to Wake Island, 1942.

tinsel, *n.* A kind of confusion reflector.

Tiny Tim. A code name or nickname for a kind of large (11.75″) aircraft rocket.

tip, *n.* The outer end of an airfoil, as of a propeller blade or wing, esp. a wingtip.

tip-loss factor. A mathematical factor used in correcting for the loss of lift in the tip region of an airfoil.

tip-path plane. The plane in which rotor-blade tips travel when rotating.

tip radius. Propeller radius. See separate entry.

tip speed. The rotative speed of a propeller or rotor at its blade tips.

tip-speed ratio. The ratio between the forward speed of a rotary-wing aircraft and the rotative speed of the rotor-blade tips.

tip stall. A type of stall at the wingtip or tips of an airplane, caused by a loss of lift resulting from a reduction in circulation at the tips.

If the stall affects one wingtip only, it may result in a roll or spin.

See **angle of attack for infinite aspect ratio.**

tiptank, *n.* A wingtip tank.

tire footprint. A term applied to that part of an aircraft's tire in contact with the landing surface when the aircraft is at rest. See **footprint pressure.**

TIS (*abbr*). 'Target information sheet.'

title, *n.* **1.** An appellation used with a person's name or as a term of address, as in 'he may be called by his title, that of Colonel.' **2.** An appellation associated with a person in reference to his office or position, as that of superintendent (which see).

In sense 1, see **military title.** Sometimes a title in sense 2 is used as a title in sense 1, as in the case of Congressman or President.

TJA (*abbr*). 'Trial judge advocate.'

TJAG (*auth abbr*). 'The Judge Advocate General.'

TjC (*auth abbr*). 'Trajectory chart.'

TjD (*auth abbr*). 'Trajectory diagram.'

tk (*abbr*). 'Tank.'

tkr (*auth abbr*). 'Tanker.'

tl (*auth abbr*). **1.** 'Truckload.' **2.** *Caps.* 'Time lengths.'

TLP (*auth abbr*). 'Total loss of pay.'

tlr (*auth abbr*). 'Trailer.'

tltr (*auth abbr*). 'Translator.'

TM (*abbr*). **1.** *auth.* 'Technical manual.' **2.** 'Tractor monoplane,' in designation of Navy aircraft. **3.** 'Thomas-Morse' in the designations of aircraft. *Hist.* **4.** 'Tactical missile,' as in *TM-61.*

TM-61. A winged guided missile, used in tactical operations, developed by Martin. Also called 'B-61' and 'Matador.'

tm (*abbr*). 'Team.'

T.M.G. or **TMG** (*abbr*). 'Track made good.'

T/M/S or **TMS** (*abbr*). 'Type, model, and series.'

TMSD (*auth abbr*). 'Total military service date.'

tn (*auth abbr*). 'Train.'

tne (*abbr*). 'Trainee.'

tng (*auth abbr*). 'Training.'

tnr (*auth abbr*). 'Trainer.'

TNT (*abbr*). 'Trinitrotoluene.'

tntv (*auth abbr*). 'Tentative.'

TO (*abbr*). Also written **T.O.** **1.** *auth.* 'Technical order,' officially in combinations only but used alone in common practice. **2.** *auth.* 'Theater of operations,' in combinations only. **3.** 'Takeoff.' **4.** Variant of 'T/O.'

T/O (*abbr*). 'Table of organization.'

T/O&E (*abbr*). 'Table of Organization and Equipment.'

TOC (*auth abbr*). **1.** 'Technical order compliance.' **2.** 'Theater of operations command.'

TOD (*auth abbr*). 'Time of delivery.'

TOE (*auth abbr*). **1.** 'Term of enlistment.' **2.** 'Tables of organization and equipment.'

TOF (*auth abbr*). 'Time of filing.'

TofOpns (*abbr*). 'Theater of operations.'

to-from indicator. An aircraft instrument used in flying an omnidirectional radio range that indicates whether the aircraft is flying toward or away from the omnirange station.

toggle, *v.* To release a *bomb* or *bombs* by the use of a toggle switch without benefit of the automatic release system of the bombsight. *Colloq.*

toggler, *n.* A togglier.

toggle switch. A two-position electric switch with a short knob or finger that is flipped up or down, or from side to side, to open or close a circuit.

The toggle switch has commonly been used as a bomb-release switch when the automatic bombsight is not used, esp. in formation bombing in which each toggler drops his bombs by following the lead of the lead bombardier. See **lead crew.**

togglier, *n.* Anyone who switches a toggle switch to release bombs from an aircraft. *Popular.*

Tojo, *n.* A name given by the Allies to the Nakajima Ki44. See **Nakajima,** *n.*

token, *n.* A sign, symbol, outward action, or the like that signifies one's formal position, intention, authority, observance of a formality, adherence to a principle, or the like.

In military contexts, this word is most often used attrib., as in *token bombing*, a small-scale bombing signifying only the attacking force's desire to indicate its power or its position; *token force*, a small force signifying observance of principle, as in 'Ethiopia sent a token force to Korea'; *token resistance*, small-scale resistance signifying formal, but not effective, resistance.

TO kit. A technical order kit.

Tokyo International Airport. An airport at Tokyo, Japan, formerly known as Haneda Air Base, at which space is provided for a MATS terminal.

Tokyo tank. A name sometimes applied, during WW II, to an extra, externally fitted fuel tank on an airplane. *Slang.*

tolerance, *n. Medicine.* The capacity of the body to adjust itself to shock, radiation, or any other abnormal condition or environment. See **acceleration tolerance.**

toluene, *n.* A liquid hydrocarbon ($C_6H_5CH_3$) normally obtained from coal tar, used in dyes, explosives, etc.

Tomahawk, *n.* A British name applied to the early export models of the Curtiss P-40A, P-40B, and P-40C of WW II.

The export version of the P-40 was known as the 'Hawk 81-A,' the manufacturer's designation.

Tommy, *n.* A British soldier.

Tommy gun. A trademark name for a certain submachine gun.

ton, *n.* **1.** A measure of weight, usually 2,000 pounds as used in the US. **2.** A measure of cargo capacity, 40 cubic feet.

The short ton is 2,000 pounds; the long ton, 2,240 pounds; the metric ton, 2,204.6 pounds (1,000 kilograms). The ship ton, freight ton, or measurement ton is 40 cubic feet. The displacement ton, 35 cubic feet, amounting to the volume of one long ton of sea water.

tone, *n.* A sound that impresses the ear with its individual character, esp. as regards pitch; *specif.*, such a sound emitted by a radio installation as a signal. Attrib., as in *tone control, tone signal.*

tonitro-cirrus, *n.* Tendrils of cloud combed by the wind from the top of a cumulus or cumulonimbus. Sometimes called 'false cirrus.'

ton-mile, *n.* One ton moved one mile. Cf. **passenger mile.**

tonnage, *n.* The aggregate of tons handled, esp. with reference to tons carried by aircraft.

Tony, *n.* An Allied name for the Japanese Kawasaki Ki 61.

TOO (*abbr*). 'Time of origin.'

tool, *v. tr.* To equip a *factory* or *industry* for production by designing, making, and integrating machines, machine tools, and special dies, jigs, and instruments, so as to achieve manufacture and assembly of products on a volume basis. Hence, **tooling,** *n.*, or **retooling,** *n.*

TOP (*abbr*). 'Torque oil pressure.'

top, *n.* **1.** The upper surface of a cloud cover; the space above the clouds, as in 'to climb on top at 4,000 feet,' or 'to make it over the top,' or 'he flew at 500 feet on top.' *Colloq.* **2.** The upper part or surface of an aircraft. Cf. **back,** *n.*, and see **top,** *a.*, sense 2.

top, *v. tr.* **1.** To bring the fuel in a *tank* or *tanks* back to the brim, esp. after warming the engines or after a staging flight. Usually with *off.* **2.** To pump a *liferaft* back to full inflation after its pressure has dropped because of a temperature drop or a slow leak. Usually with *off* or *up.* **3.** To bring the charge of a *battery* back to its highest level. Also with *off* or *up.*

top, *a.* **1.** At the highest military, policy, or admin-

istrative level, as in *top command, top man, top officer*, etc. **2.** At or on the top of an airplane, as in *top hatch, top turret*, etc.

top brass. A high-ranking military or civilian official. Usually *collective. Slang.* See **brass,** *n.*

top cover. 1. Cover at a high altitude for a military force. Cf. **low cover. 2.** Air cover that flies above the protected force.

top dead center. The dead center position of an engine piston and its crankshaft arm when at the top of its stroke.

Topeka Air Force Station. An AF depot located near Topeka, Kansas, formerly known as the 832nd AF Depot.

top kick. A top sergeant. *Slang.*

topo (*auth abbr*). 'Topography.'

topographic map. A map that shows the relief or topography of a region in some form; a relief map.

top priority. A priority that has precedence over all others.

top rudder. The action of turning an airplane's rudder upward when in a bank; the resultant position of the rudder after this action. Cf. **bottom rudder.**

TopSec (*auth abbr*). 'Top Secret.'

top secret. (TopSec) Of classified material: Having such status that its unauthorized disclosure would cause exceptionally grave damage to the US. See **classification,** *n.*, note.

Often capitalized or written in full caps.

top sergeant. A first sergeant. *Colloq.*

TOR (*auth abbr*). 'Time of receipt.'

torching, *n.* The burning of fuel at the end of an exhaust pipe or stack of a reciprocating aircraft engine, the result of an excessive richness in the fuel-air mixture.

tornado, *n.* **1.** A whirling wind of great velocity that forms a funnel-shaped cloud aloft which then moves or leaps along the earth in a narrow path destroying animal life, vegetation, and buildings. **2.** *Capitalized.* **a.** A popular name for the B-45. **b.** A Hawker single-engine fighter produced in prototype only at the beginning of WW II, and similar in appearance to the Typhoon.

torp (*auth abbr*). 'Torpedo' in combinations only; 'torpedoman.'

torpedo, *n.* A long, cigar-shaped explosive projectile designed to be launched into water, where it is self-propelling and usually directable, used against seagoing vessels or other targets in the water.

When designed for launching from an aircraft, it is sometimes called an 'aerial torpedo.'

Attrib., as in *torpedo attack, torpedo mission*, etc.

torpedo bomber. An aircraft designed or equipped to carry and launch torpedoes.

torpedo bombing. The launching of a torpedo or torpedoes from an aircraft against a target in the water.

torpedo carrier. *Specif.* A torpedo bomber. *British.*

torpedo run. The run of an airplane toward a target prior to launching a torpedo.

torpex, *n.* A high explosive consisting of TNT, cyclonite, aluminum powder, and wax, used esp. in torpedoes, mines, and depth bombs.

torque, *n. Mechanics.* A moment that produces or tends to produce rotation, twisting, or torsion, as that of a propeller shaft driven by a tangential force. See **torsion,** *n.*

This term is often applied to the moment set up in a single-propeller-driven airplane, the moment being in reaction to the rotating propeller, causing the airplane to tend toward rotation in the opposite direction to that of the propeller on the same axis. An airplane with a right-hand engine thus tends to drop its left wing and move toward the left because of torque. Devices such as the counterrotating propeller are used to counteract it.

torque arms. Two pieces of metal or other material hinged together to form an elbow, the two free ends attached each to one of two separate cylindrical or tube-like parts that telescope into each other, the elbow serving to allow the parts to telescope but preventing them from turning around. Also called 'nutcracker' or 'scissors.'

Used esp. in telescopic landing gear to prevent the wheel from castoring.

torque links. A pair of torque arms.

torque meter. A kind of dynamometer that measures brake horsepower by measuring torque reaction, used aboard an aircraft in flight.

torque pressure. A fluid pressure developed within a torque meter, used to activate a pressure gauge and measure torque.

torque stand. A test stand used in the measurement of engine torque.

torque wrench. A wrench designed to disengage when the torque required to turn a bolt, nut, or the like increases beyond a certain point; also a wrench with a gauge that shows the pressure exerted.

torsion, *n.* The internal moment of a body subjected to twisting or wrenching, as by the application of torque to one end of a shaft while the other is held fast or turned in the opposite direction; the act of turning so as to create this moment.

torsional, *a.* That causes or results in torsion, as in 'torsional force,' 'torsional load,' 'torsional stress,' etc.

TOS (*auth abbr*). 'Term of service.'

toss bombing. A bombing action that involves the use of centrifugal force to carry the bomb dropped away from the bomber.

Different ways of toss bombing are employed, but they all depend upon the bomber's being in a direction change with consequent acceleration. For example, a bomber that pulls out of a shallow dive can lend tangential momentum to the bomb if it is released during the pullout.

toss technique. A technique used in toss bombing.

TOT (*auth abbr*). **1.** 'Time on target' or 'time over target.' **2.** 'Time of transmission.' **3.** 'Table of organization (tentative).'

tot (*abbr*). 'Total.'

total, *a.* **1.** Comprising the sum of all measurable units, parts, or items. Used in such locutions as 'total bombs jettisoned,' 'total distance,' 'total disability cases,' etc. **2.** Complete, entire, utter. Used in such locutions as 'total air superiority,' 'total destruction,' 'total air war,' 'total victory.'

In sense 2, 'total' is often an intensive.

total aircraft inventory. An inventory of all the aircraft considered assigned or available to a unit; the sum of the active and inactive aircraft inventories.

Like other inventories, this term requires precise definition in terms of the commander's purpose before it can be used in reporting statistics.

total flying hours. The sum of the operational and nonoperational flying hours.

total impulse. The thrust of a jet engine, rocket motor, or rocket engine for the entire time that fuel is burning. See **impulse,** *n.*, sense 2c.

total mobilization. A mobilization of both the entire military forces of a nation and the industrial resources in preparation for war. Cf. **general mobilization.**

total war. A war in which the total military, economic, political, and social resources of a contesting nation are utilized, or potentially utilized, affecting directly all its inhabitants.

'Total war' is a point-of-view word. From the standpoint of one nation, the war may be total, but from that of another, it may not be. See **limited war,** note. Total war may, or may not, be waged with nuclear weapons.

touch, *v.* With the adverb *down. intr.* Of an aircraft or its crew: To bring the aircraft's landing gear into contact with a landing surface, with or without the intention of coming to a stop; *restrictively,* to land, as in 'the B-52 touched down at 0900.' Also *tr.*, as in 'he touched the B-36 down at Midway.' See **touchdown,** *n.*

touch-and-go landing. A landing in which the airplane touches down but does not come to a stop before making another takeoff.

touchdown, *n.* **1.** The action of touching down, as in 'during the touchdown he went through the exercise.' **2.** That part of a landing made at the moment when the landing gear touches the landing surface, as in 'touchdown was made at the end of the runway to permit a long roll.' **3.** An instance of touching down.

Toul-Rosiere Air Base. An air base at Toul-Rosiere, France, named for the city.

tour, *n.* **1.** A period or course of duty performed by a person at a given assignment or place, as in 'during the last 10 years he had a tour as an intelligence officer in Washington'; *restrictively,* a tour of operations, as in 'he will complete his tour when he flies his fortieth mission.' In full, **tour of duty. 2.** A term of military service, as in 'during his last tour, the airman served both in France and in Washington'; a hitch. Sometimes called a 'tour of active duty.'

tour of operations. A tour with assignment in combat flying operations that ends with the completion of a given number of missions. Sometimes called an 'operational tour.' Chiefly *British.*

tow, *n.* **1.** An act or instance of towing; the status of being towed, esp. in the phrase 'to take something in tow.' **2.** That which is towed, as a glider.

Attrib. in sense 1, as in *tow bar, tow cable, tow pilot, tow plane* (the airplane that does the towing), *tow rope, tow truck,* etc.

tow, *v. tr.* To pull an *object* along by means of a rope, cable, or the like. Said esp. of an airborne aircraft pulling an airborne glider or an aerial target. Hence, **towed,** *a.*

tower, *n.* (twr) Short for 'control tower.' Attrib., as in *tower operator, tower radio.*

tower launcher. A missile launcher that is vertical (or nearly so) and high enough to give directional stability to the missile. Also called 'vertical tower launcher.'

towing, *n.* The action of the verb 'tow.' Used attrib., as in *towing aircraft* (the aircraft that does the towing), *towing tug,* etc.

towing sleeve. A sleeve target.

tow target. A target towed, or designed to be towed, by an aircraft; a tow sleeve.

toxic bomb. A bomb, such as a chemical bomb, containing an agent for causing a toxic condition in persons exposed to it.

toxic warfare. Warfare conducted with the use of chemicals, biological agents, or products of atomic fission so as to produce casualties.

TP (*abbr*). 'Two-seater pursuit,' as formerly used (*circa* 1920) in designating US Army aircraft.

tp (*auth abbr*). 'Telephone.'

TPA (*auth abbr*). 'Travel by privately owned conveyance authorized.'

TPI (*abbr*). 'Target position indicator.'

TPNEG (*auth abbr*). 'Travel will be performed at no expense to the government.'

TPR (*abbr*). 'Trained personnel requirements.'

TPSI (*abbr*). 'Torque pressure in pounds per square inch.'

TPSN (*auth abbr*). 'Troop program sequence number.'

TR (*abbr*). **1.** *auth.* 'Transportation request.' **2.** 'Transmit-receive,' as in *TR switch, TR tube.* Also written 'T-R.' **3.** *auth.* 'Training division.'

tr (*auth abbr*). 'Training division.'

tra (*auth abbr*). 'Training' in combinations only.

trac (*auth abbr*). **1.** 'Tractor.' **2.** 'Tracer.'

tracdr (*auth abbr*). 'Tractor-drawn.'

trace, *n.* **1.** *Radar.* The line on a radar screen made by the time base. **2.** A line of marks made by something moving over a surface; a sign that is left behind.

tracer, *n.* (trac) **1. a.** A tracer bullet. Also *collective,* as in 'the air was full of tracer.' **b.** The pyrotechnic composition in a tracer bullet. **2.** A letter or the like sent out to determine the cause of non-delivery of something presumed sent.

Attrib. in sense 1, as in *tracer fire.* In the collective usage of sense 1, the plural 'tracers' is also used.

tracer bullet. A bullet containing a pyrotechnic mixture that is ignited by the exploding powder charge in the cartridge to make the flight of the projectile visible both by day and by night.

Tracer bullets may be spaced at intervals in a machine-gun load of ball ammunition either, as formerly done, to allow the gunner to follow the path of the stream of fire and thus improve accuracy, or to serve as a psychological deterrent to the enemy who may hesitate to press home against tracer. Use of tracer bullets as a crutch in aiming is considered to prevent a gunner from mastering his sighting system.

track, *n.* **1.** A hypothetical trace made on the surface of the earth by a flying aircraft, the trace being made vertically from the aircraft. Cf. **course,** *n.,* sense 1, **path,** *n.* See also **heading,** *n.,* note. **2.** The marks left by an aircraft's landing gear on the surface; the width between the outer limits of these marks, as in 'the track of the B-36 is 46 feet'; also the tread of the tires that make these marks. **3.** Blade track. **4.** A way or road built for a specific use, as in a 'railroad track,' or 'the track used for launching the Wright airplane.' **5.** An endless belt with cleats, pads, or the like, used on certain types of landing gear, on tanks, or other vehicles. **6.** The action of tracking, esp. by radar. **7.** An aircraft's trace on a radar screen or on a plot; the aircraft that makes such a trace.

In sense 7, 'track' is used esp. in air defense. Identification of tracks are as follows: Friendly, faker, Big Photo, keystone, canned, hostile, unknown, outbound, and unclassified.

track, *v.* **1.** *tr.* To observe or follow the progress of *something* moving, as an *aircraft,* a *formation of aircraft,* a *cyclone,* etc., by sighting and watching it, esp. by means of radar, an optical instrument, or radio direction-finding equipment, or through a gunsight; likewise to follow *something* on the ground from a moving aircraft, as done in bombing. **2.** To follow *something* by observing traces it has left behind. **3.** *intr.* Of a propeller or rotor blade: To describe a properly aligned circle or path in rotating. See **blade track. 4.** Of a wheel or tread: To follow the track made by another wheel or tread.

In sense 1, 'track' is sometimes construed to include plotting. See **plot,** *v.,* sense 1.

tracked gear. A landing gear equipped with tracks (which see, sense 5).

tracked landing gear. A caterpillar landing gear.

tracker, *n.* **1.** A person who tracks a moving object. **2.** A radar or other device used to track a moving object.

tracking, *n.* The action of the verb 'track,' as in 'the tracking of a target' or 'the tracking of a rotor blade.' Attrib., as in *tracking mission, tracking telescope,* etc.

tracking flag. A kind of trim tab attached to a rotor blade, used to make the blade track.

tracking index. The pipper in a gunsight.

tracking station. A station from which tracking is done.

track made good. The resultant track of an aircraft, represented as a straight line between the departure point and the last point of fix on the surface. See **TMG** (*abbr*); cf. **course made good.**

track Mercator. A transverse Mercator projection tangent to a great circle between any two selected points.

track-while-scan, *n.* An electronic device used to detect a radar target, to compute its velocity, and to predict its future position without interfering with continuous radar scanning.

tractor, *n.* (trac) That which draws or pulls.

Applied to a propeller that is so mounted on an aircraft as to pull the aircraft (or the part to which it is attached) through the air; also applied to the aircraft so propelled, or to the motor that drives such a propeller. Hence, in attrib. uses, as in *tractor airplane, tractor biplane, tractor hydroplane, tractor propeller, tractor screw,* etc. Cf. **pusher propeller.**

tractor propeller. A propeller that pulls. See **tractor,** *n.*

trade inversion. *Meteorology.* A temperature inversion between the trade winds and the dry air aloft.

trade wind. A drying wind that blows almost continually from an easterly direction from a subtropical high-pressure region to the region of lower pressure near the equator.

There are two belts of trade winds, one on each side of the equator. Those winds north of the equator come from the northeast, those south of the equator from the southeast. They are produced, in part, by coriolis force.

tradic (*abbr*). 'Transistor digital computer.'

traditional bomb. Any nonatomic bomb.

This is a relative term, subject to change in meaning from one time to another.

traf (*abbr*). 'Traffic.'

traffic, *n.* **1.** The flow of people, vehicles, or other

objects in a given area or airspace, or between two or more places, including moving, stalled, and temporarily stopped, but not parked, vehicles. **2.** The passengers, cargo, mail or the like carried in moving vehicles; also the vehicles themselves taken collectively. **3.** *Specif.* Air traffic (in both senses). **4.** *Communications.* The flow of messages transmitted and received over a communication channel; the messages in this flow.

Used attrib. in numerous combinations, as in *traffic bottleneck, traffic controller, traffic escort, traffic lee,* etc.

traffic analysis. In intelligence usage, the analysis of intercepted communications in order to obtain information concerning the organization and operation of the system of communication.

Information derived from traffic analysis is used as an aid in cryptanalysis, in intercept operations, etc.

traffic channel. A channel or route designated for air traffic; esp. in the Military Air Transport Service, a channel established for foreign traffic (which see).

A traffic channel established by Headquarters Military Air Transport Service is identified by code as to the origin and destination of foreign traffic moving within the channel.

traffic circulation map. A map showing surface traffic routes, the measures for traffic regulation, the roads for certain traffic to use, the location of traffic control stations, etc.

traffic control. The control exercised over any kind of traffic to insure efficient, expeditious, and safe movement; *specif.*, short for 'air traffic control'; the activity that exercises this control.

traffic-control projector. An instrument sometimes used for giving colored light signals to an aircraft on takeoff or landing, or for other vehicular traffic in a takeoff and landing area. Cf. **green light,** senses 2 and 3.

traffic pattern. A pattern in the air above or about an airdrome, which is normally followed under visual conditions either by aircraft prior to touchdown or by aircraft after takeoff. See **pattern,** *n.*, note.

trail, *n.* **1.** In bombing, the line between the point of impact of the bomb to a point on the ground directly beneath the aircraft at the moment of impact, assuming that the aircraft stays on course after release and maintains a constant speed. **2.** *In trail,* directly behind one another. Said of aircraft.

trail angle. In bombing, the angle, measured in mils, between a vertical line from the aircraft to the trail at the moment of the bomb's impact and a line from the aircraft to the point of impact.

trailing antenna. A type of aircraft radio antenna having one end weighted and trailing free from the aircraft when in flight.

trailing control-surface. A control surface at the trailing edge of an airfoil, esp. one within the empennage.

trailing edge. That edge of an airfoil, as of a wing, propeller blade, or rotor blade, over which the airflow passes last. Cf. **leading edge.**

train, *n.* **1.** A succession of things, one trailing or placed behind another, as in 'a train of gliders towed by an airplane'; *specif.*, such a succession of aerial bombs so released as to fall or strike one behind the other; also *specif.*, an explosive train (which see). **2.** *In train,* in continuous or unbroken line with one another. Said of falling bombs. See **close train** and **salvo,** *n.*, note.

train, *v.* **1.** *tr.* To give training to a *person,* a *group* of persons, or an *animal.* See **training,** *n.* **2.** *intr.* Of a person or group of persons: To undergo training, as in 'the squadron trained for five months.' **3.** *tr.* To bring *something* to bear upon an object, as in 'to train a gun upon a target'; also to aim or direct a *radar antenna* in azimuth.

train axis. An axis in an antenna mount that permits the antenna to be swiveled in azimuth.

train bombing. Bombing by releasing two or more bombs in succession from the same airplane in a single sighting operation, so as to make the bombs fall or strike in train.

trained, *a.* Brought to a particular efficiency in some skill or performance. Said of persons, crews, units, or animals.

trainee, *n.* (trne) A person being trained, esp. a person undergoing basic training or on-the-job training. Cf. **student,** *n.*, **training,** *n.*

trainer, *n.* (tnr) **1.** A training device, esp.: **a.** An aircraft used in pilot training. **b.** A ground trainer. **2.** A person who trains animals.

In sense 1a, trainers were formerly designated 'primary trainers,' 'basic trainers,' 'advanced trainers,' etc., according to the stage of pilot training for which they were designed; the designation 'trainer' has now replaced these other designations. Cf. **T** (*abbr*), sense 1.

In sense 1b, see **ground trainer, ultrasonic trainer.** 'Trainer' is not applied to a training aid.

trainer aircraft. An aircraft used as a trainer.

training, *n.* (tng) **1.** The process by which a person or animal is subjected to a kind of direction and restraint through which he learns to do specific things, to achieve the ability to do specific things, or to respond and act in certain ways when faced with particular situations. See note. **2.** Also, in a manner of speaking, a process by which a crew or other group of persons gains unity by virtue of its members learning to do certain things together. See note. **3.** The resultant of the process described in sense 1, as in 'his training carried him through the crisis.' **4.** Usually *capitalized.* A staff subdivision or section, or the activity associated with it, that deals with

training, as in 'A-3 included Operations and Training.'

In sense 1, 'training' cannot always be distinguished from 'education,' for the processes inherent in both terms are intermingled, but in general, the term 'training' suggests a narrower and a more practical objective than that of 'education.' The person undergoing training develops set habits of thought, set ways of thinking, or set ways of responding in given situations, and if confronted by unanticipated situations he must rely not so much upon his training (sense 3) as upon his intelligence and general background and information. In 'education' the process is more to enrich a person's understanding of facts, values, events, principles, and the like, than to provide specific ways of doing things. Because it is not always possible to anticipate every situation in the AF, something more than 'training' is sometimes required, and the process, though still called 'training,' may sometimes include processes by which the trainee becomes a student and his objective becomes that of understanding.

In sense 2, the process, although said to be in reference to a crew or group of persons, is still directed toward the individuals, for it is only an individual who has the power to do things.

The term is used in combination, as in *flying training*, *individual training*, *unit training*, etc. It is also used as an attrib., as in *training aircraft* (i.e., an aircraft used as a training device), *training base*, *training center*, *training film*, *training manual*, *training wing*, etc.

training aid. Something that aids an instructor in training or teaching persons, such as a photograph or set of photographs, or a film, a lecture, a cutaway, a mockup used for study, a display board, or any other like thing.

Training aids are not ordinarily considered training devices. Training aids facilitate classroom instruction; training devices are designed to train through simulated experience. Cf. **training device.**

training ammunition. Ammunition used for training persons in marksmanship, handling weapons, etc.

'Training ammunition' is ordinarily applied to both charged and uncharged ammunition used in training, practice, or drill, or to either. Cf. **practice grenade, training grenade.** See also **drill ammunition.**

training command. 1. Any military command established and organized to train personnel. **2.** *Capitalized.* An AAF major command established in July 1943. Now *hist.* **3.** Short for 'Air Training Command.'

In sense 2, the Training Command replaced the Flying Training Command and the Technical Training Command.

training device. A device or item of equipment designed or modified for use by the trainee in training. Distinguished from a training aid.

Training devices include aerial targets and associated equipment, and ground trainers. In less exact usage, this term has been used to include training aids. See **training aid,** esp. note.

training grenade. A dummy or inert grenade used in training. Cf. **practice grenade.**

training motion. The motion of a rotor blade rotating in the plane of the disc. Cf. **in-plane motion.**

training standard. A standard of proficiency to be attained and maintained by members of a given unit, established to assure accomplishment of the mission; a publication of such standard.

traject, *v. tr.* To throw or cast across.

trajectile, *n.* Anything trajected or impelled across or over something, or thrown through space.

trajectory, *n.* **1.** The curve in the vertical plane traced by a bullet, shell, bomb, or other object thrown, launched, or trajected by an applied exterior force, the projectile continuing in motion after separation from the force. **2.** Also the path traced through space in the vertical plane by a winged guided missile, a rocket, or a ballistic missile, such missile being propelled by fuel either the whole distance or a part of it.

The extension of meaning in sense 2 is comparable to that observed in the term 'projectile' (which see). Because of this, the term has become ambiguous and no longer clearly differentiates between the entire path traced, and that part of it during which the missile is no longer under propulsive force. Since the meaning of sense 1 is, nevertheless, required, the term 'ballistic trajectory' (which see) has been introduced.

trajectory-controlled, *a.* Of a missile: Guided or directed so that its trajectory will follow a predetermined curve.

tran (*auth abbr*). 'Transient.'

trans (*auth abbr*). 'Transport.'

transceiver, *n.* A unit combining the radio or radar transmitter and receiver, such as is used in a transponder.

transfer, *n.* (trf) **1.** The action of the verb 'transfer.' **2.** A person being transferred, or a person who has just been transferred.

Attrib., as in *transfer coupon*, *transfer flight*, *transfer order*, *transfer quota*, etc.

transfer, *v.* **1.** *tr.* To move a *thing* from one place to another; to move the control or possession of a *thing* from one person or authority to another, as in 'the records were transferred to this office.' **2.** To reassign or attach, and sometimes to move, a *person*, *group of persons*, *organization*, or the like to another organization, department, station, office, or the like. See note. **3.** In supply usage, to convey or turn over *property* to another person, unit, or station by effecting a reassignment of responsibility to another account, another responsible officer, or to both another account and responsible officer. **4.** *intr.* Of a person: To move from one unit or place to another, esp. with *in* or *out*, as in 'ten people transferred in last week.'

In sense 2, a person or unit may be transferred with certain limitations or restrictions, as in 'the fighter units were transferred to the operational control of the Ninth Air Force.' In this instance, administrative control and logistic support remain with the original command, and a physical movement need not be involved. See **assign,** *v.*, note, **attach,** *v.*

transform, *v.* To project a photograph by transformation.

transformation, *n. Aerial photog.* A process by

which one photograph is projected to, and printed in, the plane of another. Cf. **rectify,** *v.*, sense 2.

transformer, *n. Electricity.* An apparatus for raising or lowering the voltage of an alternating current.

transient, *n.* (trans) **1.** A person stopped temporarily at a station with destination elsewhere; also a transient aircraft. Cf. **casual,** *n.* **2.** *Electricity.* A surge of current or voltage in a line.

transient, *a.* **1.** Of persons or aircraft: Temporarily stopped but passing through to a destination. **2.** That deals with, or is used by, transients, as in *transient barracks, transient section.*

An aircraft stopped for repairs in a depot other than one at its own base is regarded as transient.

In sense 2, the word may be construed as a noun used attributively.

transient acceleration. A brief acceleration, either linear or angular, esp. in reference to an aircraft. Cf. **acceleration error.**

transient motion. A motion that exists when a mechanical system or apparatus passes from one steady state to another.

transit, *n.* **1.** The act or process of passing over or across a place, or from one place to another as in 'the airplane is in transit.' **2.** *Specif.* in navigation, the passage of a given celestial body across a celestial meridian. See **lower transit, upper transit. 3.** A theodolite with a telescope used in surveying.

transition, *n.* (trns) *Specif.* The change or changes involved in passing from flying one type of aircraft to flying another, esp. in connection with transition training. Attrib., as in *transition checkout, transition flight, transition pilot,* etc.

transitional trainer. An aircraft used in transition training.

transition flow. A flow of fluid about an airfoil that is changing from laminar flow to turbulent flow.

transition piece. In a turbojet engine, a part or section leading from an inner liner to a nozzle diaphragm. Sometimes called a 'fishtail.'

transition point. *Aerodynamics.* A point or line on an airfoil where the laminar flow becomes turbulent usually under circumstances where the airfoil travels at a speed in excess of that for which designed.

transition training. The training given a pilot or other crew member as he moves from the operation of one type of aircraft to another; *specif.,* such training that enables a pilot to operate combat or transport aircraft.

transitory target. A target that obtains only for a limited period of time, as in the case of a troop concentration, which may be dissipated in a short time.

translation, *n. Specif.* In air defense or tactical air operations, the action of directing or providing instructions or signals so that an airplane or missile may, and does, go from one place to another, as in vectoring.

See **vector,** *n.*, for example of use.

translational, *a.* Of or pertaining to the movement of a helicopter occasioned by a change in speed or pitch of the rotor blades.

For usage, see **hover,** *v.*, note.

translational lift. The lift force exerted on the rotor blades of a helicopter when increased speed is imparted to the blades or when their angle of attack is changed in going from one type of flight to another, such as from hovering to horizontal flight.

transmission, *n.* **1.** The action or process of transmitting something. See **transmit,** *v.* **2.** That which is transmitted, as a message or signal. **3.** A mechanical device or unit that transmits power from an engine to a driven component, esp. in a helicopter, the unit that transmits power through a reduction gear to the main rotor.

transmission line. Any conductor or system of conductors used to carry electrical energy or radio-frequency energy from a source to a point of expenditure.

Applied to: **a.** A cable or wire. **b.** A set of conductors from a radio conductor to an antenna. **c.** A wave guide.

transmission security. That aspect of communication security concerned with the transmission of electrical and radio communications.

transmissometer, *n.* An electronic apparatus for ascertaining the degree of visibility by measuring the amount of light that comes through the atmosphere to a fixed point from a fixed transmitting point.

transmit, *v. tr.* **1.** To send an *object, message* or other *communication* to a person or place by post, rail, wire, radio, or otherwise. **2.** To convey mechanical *motion* from one mechanism to another. **3.** To send out electrical *energy,* a radio *wave,* or the like.

transmitter, *n.* Any mechanism or device that converts one form or measure of energy or movement into a suitable form for transmission and then transmits it.

Applied to: **a.** That part of a telephone that converts sound waves into electrical impulses. **b.** A telegraphic device that converts mechanical motion into electrical signals. **c.** A potentiometer, synchro, or the like that converts voltage or current into new measures of voltage or current for transmittal. **d.** A radio apparatus that transmits frequency energy into the transmission line; also the whole apparatus of a radio sending station, including the antenna.

transoceanic, *a.* **1.** Of aircraft or missiles: Possessing the range for crossing an ocean, as in

transoceanic aircraft, transoceanic rocket, etc. **2.** Of actions or operations: Conducted across an ocean, as in *transoceanic flight, transoceanic warfare*, etc.

transonic, *a.* Of or pertaining to transonic speed, or to the phenomena arising when an aircraft or other body passes from subsonic to supersonic speed. See following entries.

transonic airplane. An airplane designed to fly within the range of transonic speeds.

transonic barrier. A so-called barrier to flight encountered by an airplane designed for subsonic speeds when it reaches transonic speed and meets the turbulence incident to diverse degrees of compressibility. Usually called 'sonic barrier.' See **mach line,** note.

Like other obstacles to flight, as those of drag or gravity, the sonic barrier is overcome by aerodynamic application.

transonic range. The range of speeds between the speed at which one point on an airplane (or other body) reaches supersonic speed, and the speed at which all points reach supersonic speed.

The transonic range for a particular airplane depends upon its design, but it may spread for some airplanes between approximately mach .8 and mach 1.2. See **speed of sound.**

transonic speed. 1. A speed at which an aircraft or other body moves relative to surrounding fluid when one or more local points on the body are moving at subsonic speed at the same time that one or more other points on the body move at sonic or supersonic speed. **2.** Any one of the several speeds within the transonic range of a particular aircraft. See **transonic range.**

Since transonic speed is relative to the surrounding fluid, the particles in the fluid pass over or across different parts of the aircraft at different speeds, depending upon the contours or shapes of the component parts. Thus, for example, one point on an airplane may be moving at only 600 mph, yet several other points may at the same time be moving at 750 mph; likewise, when several points on the airplane achieve a speed of 900 mph, several other points may have a speed of less than 750 mph. See **critical speed** and **remote velocity.**

transonic zone. The zone of transonic speeds.

transpac, *a.* Trans-Pacific, as in 'transpac operation.'

transparent mirror. A reflecting surface that may be seen through, but likewise reflects an image to the eye, as in the case of a reflector plate. Cf. **reflex sight.**

transpolar, *a. Specif.* Across the north polar region, as in 'transpolar route.'

transponder, *n.* An electronic device that receives a challenging signal and automatically transmits a response.

The transponder works in conjunction with the interrogator-responser, and enables the determination of bearing or range, or of both. It consists of a receiver, which receives the signal impulses, and a responder (or transmitter) that returns signal impulses to the interrogator-responser.

transponder beacon. A responder beacon of a transponder.

transpondor, *n.* Variant of 'transponder.'

transport, *n.* (trans) **1.** The conveyance of cargo or personnel by vehicle or vessel, esp. such conveyance by aircraft. **2.** A vehicle or vessel used in such conveyance, esp. a transport airplane, as in 'the runway is for heavy transports.'

Attrib., as in *transport aviation, transport flight*, etc.

transport, *v. tr.* To convey a *person* or *thing* from one place to another.

transport aircraft. Construed as a *sing.* or *pl.* An aircraft designed and built to transport persons or things.

In the AF, this term applies to a particular class of airplane officially designated by the abbreviation 'C.' Thus another type aircraft is not a transport aircraft even if used for transport.

Despite the abbreviation used to designate it, the transport aircraft is designed to transport more than cargo. It may carry passengers, troops, or supplies as well.

Transport aircraft are classified in different ways, as by manner of flight (*conventional, glider, jet*, or *rotary-wing transport aircraft*), by weight of payload (*light, medium, heavy*, or *special heavy transport aircraft*), or by function (*assault, strategic*, or *tactical transport aircraft*). See note under **medium bomber** for indication of ambiguity of weight categories for classification.

transport airplane. An airplane designed and built as a transport aircraft.

transportation, *n.* **1.** The process or action by which persons or things are conveyed from place to place. **2.** A factor in logistics concerned with this process or action; an activity that deals with this factor. **3.** The facilities used in transportation, esp. in attrib. uses, as in *transportation bombing, transportation network.*

Attrib. in sense 1, as in *transportation center, transportation facility, transportation officer*, etc.

transportation-control depot. An air depot that segregates AF materiel coming into or going out of a port and expedites its shipment to air depots or using organizations.

This term supersedes 'extransit depot' and 'intransit depot,' formerly differentiated.

transportation intelligence. A subdivision of strategic intelligence concerned with transportation. Sometimes called 'transportation and communications intelligence.'

transportation request. A government order on a transportation company to furnish transportation to a specified person or persons at government expense; the form used.

transport command. 1. Any command responsible for transport. **2.** *Capitalized.* Short for 'Air Transport Command.' Now *hist.*

transport control system. In the Military Air Transport Service, a system established to enable commanders to effect rapid coordination of activities related to the ground handling of transport aircraft, to exercise operational control over

transport aircraft, and to initiate preventive action in the flying safety program.

transport load factor. A load factor in air transport, expressed as a ratio of the payload weight carried in a transport aircraft to the allowable maximum payload weight within existing weight and balance limitations and under the prevailing operating conditions.

transport training unit. A school unit for training transport aircrews and certain technical ground personnel.

transverse acceleration. *Aviation medicine.* Acceleration of the body in a direction other than headward or footward, e.g., from back to front or front to back.

transverse (antenna) fuze. An electronic fuze in which the antenna is set at right angles to the longitudinal axis of the missile, the sensitivity pattern being ahead of the nose.

transverse Mercator. A map projection like the Mercator projection but with the base line at some great circle other than the equator.

Species of the transverse Mercator are the inverse Mercator and the oblique Mercator. See **track Mercator.**

trap, *n. Rocketry.* That part of a rocket motor that keeps the grain in place.

trapped fuel. The fuel in an engine or fuel system that is not in the fuel tanks.

travel, *n.* (tvl) **1.** The action of a person in going from one place to another, as by rail, boat, or air. **2.** The action of a missile or of a moving target in going from one point to another, as in 'the travel of a bomb' or 'the travel of a target'; also the traversing movement of a gun on its mount, as in 'the horizontal travel of a gun.'

Attrib. in sense 1, as in *travel allowance, travel fund, travel order* (see **blanket travel order, repeated travel order**), *travel pay, travel time,* etc.

travel, *v. intr.* Of an aircraft, missile, or other body: To move from one relative position to another, esp. to move through air or space, as in 'the bomber travels with the speed of sound relative to the surrounding air.'

travel expenses. Expenses incurred by a person while away from his permanent duty station, consisting of expenses for transportation, meals, lodgings, and reimbursable items such as authorized telephone calls.

traverse, *v. tr.* To move or point a *gun, radar antenna,* or the like to the right or left on its pivot.

Travis Air Force Base. An AF base at Fairfield, California, formerly known as Fairfield-Suisun Air Force Base, renamed for Brigadier General Robert F. Travis, a bomber pilot, killed in 1950.

TrB (*auth abbr*). 'Troop basis.'

trcmn (*abbr*). 'Traincrewman.'

tread, *n.* **a.** That part of a foot, wheel, tire, or gear that has contact with the surface as it moves. **b.** The mark or marks made by this contact, esp. a landing-gear tread (which see).

trepanning, *n.* The action of cutting a hole in the casing of an unexploded bomb so as to defuze it.

trf (*auth abbr*). 'Transfer.'

trg (*abbr*). 'Training.'

tri-. A combining form meaning 'three,' as in 'trimotored.'

Use of this form is largely governed by euphony. We would say 'trimotored' but not 'tri-engined.' 'Three' is often used in its stead.

trial, *n.* An action or process by which some piece of equipment is tested, as in 'the trial of a B-36.' Attrib., as in *trial flight, trial run.*

trial counsel. A judge advocate who prosecutes in the name of the United States cases referred to him for trial before the court indicated in the reference for trial.

triangle wing. The wings of an airplane designed to look like a triangle. See **delta wing.**

triangulation, *n.* A method of finding a position or location by means of taking bearings with reference to two fixed points a known distance apart, thus obtaining the values of one side and all the angles of a triangle, from which the position can be computed.

trick flying. Stunt flying.

tricycle landing gear. A three-wheel landing gear in which no tailwheel or tail skid is used, normally consisting of two main wheels with an auxiliary wheel forward. Also applied to landing gears of this type using skis or other devices. Often shortened to 'tricycle gear.'

tricycle undercarriage. A tricycle landing gear.

Trident, *n.* A popular name for the French experimental aircraft powered by both rocket and jet units, developed by the Société Nationale de Constructions Aéronautique du Sud-Ouest (SNCASO). Also called 'Sud-Ouest S.O. 9000.'

trig (*auth abbr*). 'Triangulation.'

trigger, *n.* **1.** A mechanism which when pulled, as with the finger, releases another mechanism, as in the trigger of a gun; likewise, a mechanism which when pressed does the same thing, as in the trigger on a control stick used to fire a gun. **2.** Also *transf.*, anything which when made or moved starts an immediate reaction, as in 'the radar echo served as a trigger to detonate the fuze.' Hence, **trigger,** *v.*

trigger bomb. A bomb that detonates upon impact. See **impact fuze.**

trigger button. A button, esp. on a control stick, that is used to fire a gun.

trigger motor. An electric motor on certain types of automatic weapons that operates the sear mechanism for rapid fire.

trigger pulse. An electronic impulse that starts a train of events, as in radio bomb fuze.

trim, *n.* **1.** The adjustment achieved by an airplane in respect to its attitude about all three axes, at which balance occurs in rectilinear flight with the main control surfaces seeking their neutral positions, as in 'the effect of power changes on trim' or 'the aircraft was set in trim for the long flight.' **2.** The action of putting an airplane in trim, as in 'rigging and trim are delicate matters.' **3.** The attitude of the longitudinal axis of an aerostat, esp. with respect to the horizontal, as in 'it is in low trim by the bow' (that is, its forward end is down); likewise, the attitude of a seaplane hull resting in the water with respect to its longitudinal axis and the horizontal.

In sense 1, trim is not limited to level flight. An airplane may be put in trim for a climb, glide, or dive.

trim, *v. tr.* To adjust or balance an *aircraft* so that it is in trim.

An aircraft is trimmed by adjusting trim tabs, by adjusting the load, by ballasting, etc.

trim angle. 1. The angle at which a trim tab is set to give trim to an airplane. **2.** The angle at which a seaplane hull rests in the water.

tri-met, *a.* Of charting or photography: Done by the use of a trimetrogon camera.

trimetrogon, *n.* A system of photography by using the trimetrogon camera.

Hence, *trimetrogon mapping, trimetrogon photography.*

trimetrogon camera. An assembly of three aerial cameras arranged and hooked up so as to take one vertical and two oblique photographs simultaneously, giving a horizon-to-horizon coverage. Also called a 'horizon-to-horizon camera.'

trimming tab. A trim tab.

trim speed. The speed at which an airplane maintains balance at a given trim.

trim tab. A tab attached to an elevator, rudder, or other control surface, used to trim the aircraft.

Some types of trim tabs may be adjustable on the ground only, while others are controllable from the cockpit in flight. Trim tabs, balancing tabs, and flying tabs are sometimes combined in one way or another.

trinitrotoluene, *n.* Any of various nitrates of toluene; *specif.*, a high explosive nitrate of toluene used alone or as an ingredient in other explosives. Usually referred to as 'TNT.'

Trinity bomb. The Alamogordo bomb.

triode, *n.* A three-electrode vacuum tube, containing a cathode, control grid, and anode.

trip, *n.* **1.** A journey, usually with the connotation of both going and returning, as in 'the inspector made a trip to the west coast.' **2.** *Specif.* in reference to movement by air: **a.** The going out and coming back on a combat air mission, as in 'on one trip he dropped four bombs.' **b.** In the Military Air Transport Service, the movement of a transport airplane from the point of origin to its final destination, which is usually back to its own point of origin, but may not be so. **c.** A one-way journey by air, as in '58 passengers were accommodated on transoceanic trips.' See **trip distance.**

In sense 2b, the trip consists of two flights, sometimes more, on a regular run; on an irregular run it may consist of two or more flights. See **flight,** *n.*, sense 4b.

trip (*auth abbr*). 'Triplicate.'

trip distance. In strategic airlift operations: The average distance between the aerial ports of embarkation and the approximate center of the combat area.

triphibian, *n.* [Coined by substituting *tri* for the *am* of 'amphibian.'] **1.** An airplane equipped with gear for taking off and landing on land, water, snow, or ice. **2.** A person equally ready to fight on earth or sea or in the air.

Although formed irregularly (since the Greek *amphi*, not *am*, is the prefix for 'two'), the words 'triphibian' and 'triphibious' were naturalized from their first appearance in English. H. L. Mencken (*Am Sp*, Feb 1944, p 14) notes use of 'triphibious' by Mr. Hore-Belisha in 1941, and Winston Churchill, in a world-wide broadcast of 31 Aug 1943, gave approval to its use by saying, "He [Mountbatten] is what—pedant notwithstanding—I will venture to call 'a complete triphibian,' that is to say, a creature equally at home in three elements—earth, air, and water—and also accustomed to fire."

triphibian, *a.* Designating airplanes equipped to take off and land on land, water, snow, or ice.

triphibious, *a.* [See **triphibian,** *n.*, note.] **1.** Designating a ground vehicle or aircraft, or the equipment used on them, that operates on land, water, snow, or ice. **2.** Designating forces, actions, strategy, etc., in which land, sea, and air forces are associated or involved.

triplane, *n.* An airplane with three wings placed one above the other, usually with the two lower wings divided by the fuselage, and the top wing a continuous plane or umbrella wing.

This is an obsolete form of airplane.

trip ticket. A ticket or form that the user of an official vehicle is required to sign, sometimes showing mileage and time of day.

tritium, *n.* An isotope of hydrogen of mass number 3 (symbol H^3 or T); a heavy hydrogen.

trizon bomb. A three-ton razon bomb.

trk (*auth abbr*). 'Truck.'

trkdr (*auth abbr*). 'Truck-drawn.'

trkhd (*auth abbr*). 'Truckhead.'

trmt (*auth abbr*). 'Treatment.'

trne (*auth abbr*). 'Trainee.'

trng (*abbr*). 'Training.'

trns (*auth abbr*). 'Transition.'

TrO (*abbr*). 'Transportation officer.'

troop, *n.* (trp) **1.** A body of soldiers. **2.** Seldom used except in the *plural.* **a.** Soldiers, members of a ground force; sometimes enlisted persons, as dis-

tinguished from officers or commanders. **b.** In certain contexts where the reference is general: Members of both the ground and air forces. **c.** Applied in WW II to members of the AAF.

In the AF, the trend is to restrict the use of this word to Army personnel. In certain attrib. uses, however, it is used to apply to AF personnel, as in *troop basis, troop ceiling, troop space.*

Attrib. in sense 2, as in *troop concentration, troop drop, troop housing, troop movement, troop seat, troop train,* etc.

troop basis. An administrative instrument used for determining the size and character of a military force required to carry out a particular mission, consisting of a list of units and persons (including civilians) by numbers, organization, equipment, and deployment.

This term is essentially an Army term, but is used in the Air Force esp. in contexts where both the Army and Air Force are involved, or where overall requirements of the Air Force are being considered. For examples of use, see **assign,** *v.*, note.

troop carrier. 1. Any vehicle or vessel used primarily to transport troops and their supplies. **2.** *Specif.* A transport airplane used for this purpose esp. in a tactical situation. **3.** Troop-carrier aviation, esp. in tactical situations. **4.** *Capitalized.* In WW II, the Troop Carrier Command, as in 'Troop Carrier had a different mission.'

In sense 2, the troop-carrier is usually a powered airplane, but might be a glider.

Attrib. in sense 2 or sense 3, as in *troop-carrier aircraft, troop-carrier glider, troop-carrier mission, troop-carrier support, troop-carrier wing,* etc.

troop-carrier air support. The support provided either a surface force or an air force by means of troop or supply transport in a tactical situation. Cf. **tactical air support.**

troop-carrier aviation. 1. That part of an air force charged with transporting troops or other military personnel, and sometimes their supplies, by use of air transport, esp. in a tactical situation; aircraft used by such a force. **2.** The employment of aircraft to effect tactical airlift.

In sense 1, the restriction to 'a tactical situation' is not inherent in the words 'troop-carrier aviation,' but in practice, the Military Air Transport Service effects transport between theaters and leaves intratheater and tactical airlift to troop-carrier aviation. Troop-carrier aviation is also used to carry air supplies in a tactical situation and to evacuate casualties.

Troop-Carrier Command. An AAF command charged with the air transport of troops, esp. in tactical situations, including glider-borne troops, parachute troops and equipment.

This command on activation (Apr 1942) was called the Air Transport Command, but it was redesignated the I Troop-Carrier Command in June 1942. Certain combat numbered air forces also had troop-carrier commands, each designated by the same number as that of the air force, as in 'IX Troop-Carrier Command.'

troop-carrier force. A force organized for transporting troops or other military personnel, esp. such a force under a theater commander.

troop-carrier group. 1. An AF group organized to carry troops and supplies, esp. in a tactical situation. **2.** A WW II group serving as a unit in a theater troop-carrier command. *Hist.*

troop-carrier unit. 1. An AF unit organized, trained, and equipped for transporting and supplying troops in combat and for evacuating casualties. **2.** A unit of a troop-carrier command in WW II. *Hist.*

troop-carrying, *a.* **1.** Of an airplane: Built or used to transport troops. **2.** Of an organization: Engaged in transporting troops.

troop space. An authorized space for a military person in an organization.

tropical cyclone. A cyclonic storm originating in the tropics. See **hurricane,** *n.*, **typhoon,** *n.*

tropical storm. A general term sometimes applied to a tropical cyclone in which the surface wind speed is 34 to 63 knots, below that of a hurricane.

tropopause, *n.* The boundary between the troposphere and the stratosphere. Cf. **aeropause,** *n.*

tropopause chart. A chart that shows different heights of the tropopause by place and season.

troposphere, *n.* The lower layer of the earth's atmosphere, characterized by a relatively constant rate of decrease of temperature with elevation, by turbulent air, and by a varying moisture content. See **atmosphere,** *n.*, note.

The thickness of the troposphere varies from approximately 60,000 feet at the equator to approximately 30,000 feet at the poles. Its thickness also varies with the seasons and with different meteorological conditions.

trouble-shooting, *n.* The locating and repairing of breakdowns as they occur.

trough, *n. Meteorology.* An elongated extent of relatively low atmospheric pressure.

trp (*auth abbr*). **1.** 'Troop.' **2.** *Caps.* 'Traffic regulation point.'

trsy (*auth abbr*). 'Treasury.'

trt (*auth abbr*). 'Turret.'

TRU (*abbr*). 'Transportable radio unit.'

Truax Field. An AF base at Madison, Wisconsin, named for Lieutenant Thomas L. Truax, who was killed in a training flight, 1941.

truck, *n.* (trk) A motor vehicle, usually loaded from the back, designed for hauling goods, or modified for transporting persons.

true, *a.* **1.** Determined by reference to a line between the observer and the earth's axis, esp. the axis at the North Pole, as in *true bearing, true direction,* etc. **2.** Conformable to a defined set of standards, as in *true airplane, true rocket,* etc. **3.** Corrected for error, as in *true airspeed, true altitude.*

true airspeed. The actual speed of an aircraft relative to the air through which it flies, i.e., the calibrated airspeed corrected for temperature, density, or compressibility. Often abbreviated 'TAS.'

true altitude. The altitude above mean sea level.
Since the pressure altimeter registers the altitude above whatever setting is set into the altimeter according to the standard pressure lapse rate, true altitude is ascertained at any given point by a setting determined by local ground-level pressure reduced to sea-level pressure. Cf. **pressure altitude.**

true azimuth. Azimuth measured by an angle from true north. Abbreviated 'Zn' or 'Z_n.'

true bearing. A bearing measured by an angle from true north.

true course. A course indicated by an angle measured clockwise from true north.

true heading. A heading measured with respect to true north.

true north. The direction of the North Pole from the observer; a line showing this direction.
Cf. **compass north, grid north, magnetic north.**

true precession. Actual precession, as distinguished from apparent precession. See **precession,** *n.*, sense 1.

truncated screwdriver. A cross-tipped screwdriver that may be used on either the Reed and Prince screw or the Phillips screw.

trunk line. 1. *Communications.* A line or circuit between two switchboards, central offices, or the like. **2.** The main line of an airline company, railroad, or the like.

trunnion, *n. Machinery.* Either one of a pair of cylindrical journals or stubs on opposite sides of a certain type bomb, cannon barrel, or other object, each of which may be fitted into a bearing, usually horizontally, so that the object is free to swing, and free to be elevated or depressed by movement in the bearing.

trunnion band. A metal band provided with trunnions, the band being bolted about some object, esp. about an aerial bomb that requires being swung down to clear the propeller or other obstacle on release from an airplane, as was the case with the Stuka and the Douglas Dauntless.

truss, *n.* A rigid framework made up of such members as beams, struts, and bars (welded or bolted together to form triangles), and itself a structural member that resists deformation by applied loads.

truss fuselage. A fuselage, the outer walls of which are built like trusses, often reinforced by cross members.

TS (*abbr*). **1.** *auth.* 'Transit storage.' **2.** 'Transmittal sheet.' **3.** Short for 'ATSC.' *Hist.* **3.** 'Top Secret.'

T/S (*abbr*). 'Turn-in slip.'

T-score, *n.* **1.** A standard score made by an individual person which shows a standard deviation, expressed in units of 10, from the mean of the scores made by the distribution, the mean being assigned a value of 50. **2.** Also sometimes a rating given an aircraft or other piece of equipment determined by its deviation from the mean of scores made by the distribution of equipment being rated, the mean being assigned a value of 50, the standard deviation being in units of 10.

TSD (*auth abbr*). 'Theater shipping document.'

TSgt (*auth abbr*). 'Technical sergeant.'

T/Sgt (*abbr*). 'Technical sergeant.' Also written 't sgt' (no period).

Tsibin, *n.* [P. V. *Tsibin*, A Russian aircraft designer.] Used principally in the names of gliders, as in *Tsibin KTS-20*, a single-wing troop or general transport glider.

TSIT (*abbr*). 'Technical service intelligence team.'

TSU (*abbr*). 'Technical service unit.'

Tsuiki Air Base. An air base at Tsuiki, Japan.

tt (*abbr*). **1.** 'Teletypewriter.' **2.** *auth. Caps.* 'Technical test.' **3.** *Caps.* 'Tractor type' in reference to certain early aircraft, as to the *Martin TT* in 1914.

TTA (*auth abbr*). 'Travel time authorized.'

TTAF (*auth abbr*). 'Technical Training Air Force.'

TTC (*abbr*). 'Technical Training Command.' *Hist.*

TTE (*auth abbr*). 'Tentative table of equipment.'

TTG (*abbr*). **1.** 'Travel with troops going.' **2.** 'Time to go.'

TTP (*auth abbr*). 'Total taxable pay.'

TTR (*abbr*). 'Travel with troops returning.'

TU (*auth abbr*). **1.** 'Task unit.' **2.** 'Technical service unit.' **3.** 'Training unit' as used in combination.

Tu (*abbr*). **1.** *auth.* 'Turkey.' Nationality Condensation Code. **2.** 'Tupolev,' as used in the designations of Russian aircraft designed by A. N. Tupolev (1888–).
Tupolev aircraft include the *Tu-2*, a twin-engine bomber; the *Tu-4*, a copy of the US's B-29; and the *Tu-10*, a twin-jet medium bomber.

Tuba, *n.* A code name for a kind of jamming transmitter operating in the range of 480 mc to 500 mc. See **electronic jamming.**

tuck-under, *n.* A tendency by one or other of certain airplanes to drop its nose when flying at or near its critical mach number.

Tue (*auth abbr*). 'Tuesday.'

tug, *n.* **1.** A motorized vehicle, aircraft, or ship designed or used for pulling or towing another. **2.** *Specif.* **a.** An airplane used or suited for towing gliders in flight. **b.** A small, powerful vehicle designed esp. for towing airplanes on the ground.
Attrib. in sense 2a, as in *tug aircraft, tug pilot, tug plane.*

Tulln Air Base. An air base near Vienna, Austria, named for the village closest to the air base.

tumble, *v. intr.* Of a person or thing: To turn end-over-end in falling.

tundra, *n.* A level or gently rolling plain in an arctic or subarctic region, the ground of which is

frozen in the winter but thawed to varying depths in the summer.

The plant cover of a tundra includes low shrubs, grasses, sedges, herbs, lichens, and mosses.

tune, *v. To tune in on,* to be in radio contact with a given station or person, as in 'he was tuned in on Maxwell.'

tuned, *a.* Of window: Cut proportionally in dimension so as to reradiate waves of a certain length or frequency.

tunnel, *n.* **1.** Short for 'wind tunnel.' **2.** A narrow way inside an airplane through which a person may crawl or slide to go back and forth to a station. **3.** A long hole inside the fuselage of an airplane that may accommodate either a fixed gun or a gunner who lies prone.

tunnel gun. A gun mounted inside an airplane fuselage and firing through an aperture.

Tupolev, *n.* Used in the name of Russian aircraft designed by A. N. Tupolev (1888–), as in 'Tupolev bomber' or 'Tupolev TB–7.' See **Tu** (*abbr*), sense 2.

turbine, *n.* A mechanical device or engine that spins in reaction to a fluid flow that passes through or over it; *specif.*, a gas turbine.

Attrib. and in combinations, as in *turbine blade, turbine disc, turbine-driven, turbine engine, turbine propeller, turbine vane,* etc.

turbine wheel. A wheel or disc equipped with blades or vanes, designed to spin in reaction to a fluid flow passing over or across the vanes.

turbo, *n.* Short for 'turbosupercharger.'

turbo. A combining form meaning: **a.** A turbine, as in *turbojet* or *Turbo-Cyclone.* **b.** A mechanism that uses a turbine, as in 'Turboliner,' where *turbo* is short for 'turboprop.'

The Wright Turbo-Cyclone engine makes use of turbines in developing power.

turbo-boost selector. A manually operated control unit on a multiengined airplane, by which the pilot selects the carburetor air inlet pressure required for the desired manifold pressure, so that an electronic turbo regulator can maintain a desired manifold pressure in all engines of the aircraft.

turbocompressor, *n.* A turbine-driven compressor. See **compressor,** *n.*

turbofan, *n.* **1.** The fan used in a ducted-fan jet engine. **2.** Short for this engine.

turbojet, *n.* Short for 'turbojet engine,' esp. in combinations, as in *turbojet fighter.*

turbojet engine. A species of jet engine that utilizes a gas turbine to drive an air compressor and engine accessories.

Turbojet engines include the centrifugal-flow jet engine and the ducted-fan jet engine. See separate entries. See also **gas turbine, jet engine.**

Turboliner, *n.* A modified 240 Convair Liner fitted with turboprop engines, the first commercial aircraft so powered to fly in the US.

turboprop, *n.* Short for 'turboprop engine.'

turboprop engine. A turbojet engine designed to drive a propeller from the turbine shaft. Also called a 'propjet.'

The turboprop engine develops thrust by virtue of its propeller and sometimes by the jet stream in addition.

turbosupercharged, *a.* Of an engine: Equipped with a turbosupercharger.

turbosupercharger, *n.* A supercharger utilizing an exhaust-driven turbine to operate the impeller.

The turbosupercharger is not an integral part of an aircraft piston engine. It is essentially a second-stage supercharger, used to maintain air-intake pressure at altitudes above the effective range of internal superchargers. Cf. **internal supercharger.**

turbulence, *n.* **1.** A condition in the airflow about a wing or other airfoil in which different velocities and pressures are laterally mixed between layers of the airflow. **2.** In the atmosphere, a local condition characterized by updrafts, downdrafts, and gusts.

turbulent, *a.* Of or pertaining to turbulence (a) about an airfoil, as in 'turbulent airstream,' or (b) in the atmosphere, as in 'turbulent weather.'

turbulent air. **1.** Air in the atmosphere that causes bumpiness for an aircraft or sudden changes in its balance or direction of flight, as in 'they encountered turbulent air at 10,000 feet.' **2.** Air undergoing turbulence about, or in the wake of, an airfoil.

turbulent boundary layer. A condition in the boundary layer when the laminar flow breaks down or when random lateral movement is superimposed on the laminar flow.

turbulent flow. An airflow about a wing or other airfoil in which the layers travel at radically different velocities involving lateral movement, with consequent differences in pressure. Cf. **compressible flow, transition flow.**

turbulent separation. Separation of a flow of air in a turbulent boundary layer.

turn, *n.* **1.** The motion involved when a moving vehicle, such as an airborne airplane, changes its heading. **2.** The action of executing this motion, as in 'they were not fast on turns.'

Technically, 'turn' is broad enough to apply when an airplane enters a climb or a dive, but usually the term refers to a direction change in the horizontal plane only, i.e., when the airplane changes heading or moves about the vertical axis. A change in direction resulting from a displacement force, as in that of drift, does not involve a turn unless the direction of the longitudinal axis is changed. Turns are characterized by such adjectives as *close, tight, wide, sharp,* or by an indication of degree, as in 'a 90-degree turn' or 'a 180-degree turn.'

turn, *v.* **1.** *intr.* Of an aircraft or its pilot: **a.** To change heading; to make a turn. Often with adverbs, as in 'to turn back,' 'to turn left,' etc. **b.**

To move about the lateral or longitudinal axis, as in 'to turn into a dive' or 'to turn over.' **2.** *tr.* To put an *aircraft* into a turn, as in 'he turned the aircraft toward the runway.'

turn-and-bank indicator. A bank-and-turn indicator (which see).

turnaround, *n.* **1.** The action of turning a vehicle or vessel around so that it may proceed back to where it came from; *specif.*, this action in reference to a cargo airplane or ship that offloads, onloads, and is serviced for an immediate return journey. **2.** The things done during this action, as in 'the turnaround took 30 minutes.' **3.** The time taken in this action. **4.** In some contexts, the round trip of a cargo airplane or ship, from its departure point to its destination and back, its return being without delay. Used when the airplane or ship repeats the cycle two or more times. Attrib., as in *turnaround inspection, turnaround maintenance.*

turnaround mission. *Specif.* A supply air mission in which the airplane lands at its destination, offloads or onloads (or both), and returns without delay, usually to repeat the cycle after returning to the point of departure.

The turnaround mission was used in the Berlin airlift.

turnaround time. 1. The time consumed in landing, offloading, onloading, and preparing for takeoff to return to the point of last departure. **2.** The time consumed in the round trip of a turnaround mission.

Turner Air Force Base. An AF base at Albany, Georgia, named for Lieutenant S. Preston Turner, killed in 1940.

turn indicator. A flight instrument, usually gyroscopic, which indicates in degrees per unit of time any turning movement about the vertical axis of an airplane.

The turn indicator is used in conjunction with the bank indicator. See **bank-and-turn indicator.**

turning point. A point on the surface, identified visually or by electronic means, over which an aircraft turns from one heading to another; also a point in the air at which a turn is made, as in response to an electronic signal.

turning radius. A radius of turn. See separate entry.

turn-in slip. A form used by an organization or individual to turn in supplies to an accountable officer or certain other designated officers.

turret, *n.* (trt) A domelike or hemispheric structure usually on the top, bottom, nose, or tail of an airplane's fuselage, in which guns are mounted, the structure, as distinguished from the guns, usually being built so that it can be turned either in azimuth only, or in both azimuth and elevation. See **ball turret, blister,** *n.*

Turrets to be occupied by gunners are normally made of a light metal framework and transparent plastic; remote-control types are ordinarily of metal.

Properly speaking, 'turret' is not applied to certain tail-gun positions if the structure involved does not actually turn, but it has sometimes been so applied, as in 'the tail turret of a B-25.'

'Turret' is frequently used attrib., as in *turret control, turret gun, turret gunner,* and in combinations, as in *nose turret, power-driven turret, top turret,* etc.

TUSAFG (*auth abbr*). 'The United States Air Force Group, American Mission for Aid to Turkey.'

Tushino Aerodrome. A military airport at the city of Tushino, adjoining Moscow, Russia. This is the principal Moscow military airport.

TV (*abbr*). **1.** *auth.* 'Television.' **2.** 'Test vehicle' (guided missile). *Navy.* **3.** 'Terminal velocity.'

TV. A Navy designation for the F-80 used in training. Cf. **V** (*letter*).

tvl (*auth abbr*). 'Travel.'

TVOR (*abbr*). 'Terminal VHF Omnirange.'

TW (*abbr*). **1.** 'Training–water-cooled,' as formerly used (*circa* 1920) in designating US Army aircraft. **2.** 'Tail warning,' in designating certain radar sets.

twilight, *n.* **1.** The sunlight that is diffused or reflected in the sky before sunrise and after sunset by the atmosphere and its dust. Attrib., as in *twilight period.* **2.** The period of time during which this light is diffused.

Twilight is considered to be divided into four overlapping twilights: civil, observational, nautical, and astronomical, each characterized by the amount of light afforded at its darker limits. Since these twilights are afforded for longer periods of time at one latitude than at another, the length of time, or the time available, in each is tabulated either in the *Air Almanac* or in the *Nautical Almanac.* See separate entries, i.e., **civil twilight,** etc.

twilight band. A band or zone lying between a bisignal zone and the equisignal zone. See **Adcock radio range.**

twilight zone. A bisignal zone.

twin, *n.* Short for 'twin-engine airplane.'

twin, *a.* Two; made up of two distinct like members, as in 'twin fins,' 'twin controls,' 'twin guns,' 'twin rudders,' etc.

twin-. A combining form meaning 'two' or 'dual,' as in 'twin-motor aircraft,' 'twin-tail boom,' 'twin-tailed,' 'twin-turbine,' etc.

Twin-Bonanza, *n.* A popular name for the L-23.

twin-boom, *a.* Having, made up of, or providing for two tail booms. Said of an airplane, a tail, or design. See **tail boom.**

twin-engine, *a.* **1.** Of an aircraft or other vehicle: Having two engines, as in 'the twin-engine jet fighter' or 'the twin-engine B-26,' or 'the aircraft is twin-engine.' **2.** *Restrictive.* Having two reciprocating, internal-combustion engines, as in 'one twin-engine plane and a four-jet plane came in at four o'clock.' See **engine,** *n.*, note, **jet,** *n.*, note,

twin-jet, *a.* **3.** Of a pilot or other crew member: Performing or assigned duty in an aircraft having two engines, as in 'he was a twin-engine pilot.' Used attributively only. **4.** Of training: Taken or performed in an aircraft having two engines.

twin-engined, *a.* Of an aircraft or other vehicle: Powered by two engines, *specif.*, by two reciprocating, internal-combustion engines. See **engined,** *a.*

twin ignition. Dual ignition. See separate entry.

twin jet. A jet aircraft having two engines, as in 'the bombers are twin jets.'

twin-jet, *a.* **1.** Of an aircraft: Having two jet engines. **2.** Of a pilot: Qualified for, or performing, duty in an aircraft having two jet engines.

twin-motor, *a.* Of an airplane or other vehicle: Having two engines.

twin-motored, *a.* Of an airplane or other vehicle: Having two engines.

Twin Mustang. A popular name for the F-82.

twister, *n.* A local name in the US for a tornado.

twix, *n.* A word for 'TWX.'

two, *n.* Written **2.** Used in a VIP code for a lieutenant general.

two-. A combining form, as in 'two-engined aircraft,' 'two-place airplane,' 'two-seat fighter,' 'two-seater,' 'two-stage supercharger,' etc.

TwoATAF (*auth abbr*). 'Second Allied Tactical Air Force, Central Europe.'

two-course radio range. A radio range that beams on-course signals in opposite directions.

The VHF horizontally-polarized two-course radio range is an example of this type radio range.

two-cycle engine. A two-stroke-cycle engine.

two-dimensional, *a.* Of, or involving, two dimensions. Used esp. in reference to operations confined to the surface, as in 'two dimensional techniques' or 'two-dimensional strategy.' Cf. **three-dimensional,** *a.*

two-ocean navy. A navy divided into two parts, one for operation in one ocean, the other for operation in another ocean. Cf. **penetrative ability.**

two-o-one file. Written **201 file.** **1.** A personal records file. **2.** A separate file formerly kept by the Adjutant General's Office in the War Department on each military person, which file included such records on the person as orders, letters of commendation, etc. See **master personnel record.**

two-seater, *n.* An aircraft or other vehicle with a seat for each of two people. Applied esp. to early, open-cockpit airplanes with two cockpits in tandem. Attrib., as in *two-seater monoplane.*

two-star general. A major general. See **star,** *n.*, sense 1 and note.

two-stroke-cycle engine. A piston engine requiring two strokes of each piston to complete a cycle. Often called a 'two-cycle engine.'

The two strokes completing the cycle in this type of engine are the exhaust-and-intake stroke, and the compression-and-power stroke. See **four-stroke-cycle engine,** esp. note.

TWoT (*auth abbr*). 'Travel without troops.'

two-zone system. *Supply.* A supply and maintenance system that provides for the US to be divided into two zones, east and west, each of the depots in one or the other zone specializing in the storage, distribution, and maintenance of specific property classes not duplicated in another depot in the same zone.

twr (*auth abbr*). 'Tower.'

TWS (*abbr*). 'Track-while-scan.' Applied to a certain type of radar.

TWT (*auth abbr*). 'Travel with troops.'

TWX (*auth abbr*). 'Teletypewriter exchange' (commercial).

TWX is often used as a word, applied to a message sent or received over any teletypewriter circuit. It is pronounced 'twix' or by separate letter.

twy (*auth abbr*). 'Taxiway.'

Tyndall Air Force Base. An AF base at Panama City, Florida, named for Lieutenant Frank B. Tyndall, a WW I fighter pilot, killed in 1930.

type, *n.* **1.** In general use: A kind, class, or order common to a number of individual members distinguished by some characteristic considered typical of others in the same class, as in 'there are four types of wings,' or 'what type of organization is recommended,' or 'that type of equipment will not serve.' **2.** *Specif.* in the nomenclature of equipment, the category immediately above subtype, as in 'the types are bombers and fighters.' See **model,** *n.*, sense 2 and note. **3.** A model of a foreign-made aircraft. Here the term is used nonspecifically when the aircraft cannot be given a name, as in 'this new type of Russian fighter.'

'Type' is often used in elliptical context, as in 'that type aircraft,' 'that type organization,' etc., where 'of' is omitted.

In sense 3, a type aircraft, when Russian, is assigned a number upon its first confirmed sighting. Thus, at the 1950 aviation display, an airplane that subsequently was identified as the Ilyushin Il-28 twin-jet light attack bomber, was known as Type 27.

typhoon, *n.* **1.** A violent tropical cyclonic storm, esp. in the Pacific. Often called a 'hurricane' in the West Indies. **2.** *Capitalized.* A British single-engine, single-seat, low-wing fighter and fighter bomber, developed by Hawker and used during WW II.

tyro, *n.* A person who is a beginner. Sometimes applied to a student pilot. Attrib., as in *tyro aviator, tyro pilot.*

U

U (*letter*). See **Uniform** (*code*). **1.** Used as a symbol meaning 'Chance Vought Aircraft Division' in the designations of US Navy aircraft, as in *F7U*. **2.** Applied as a classification symbol, as in 'U-1 bomb-release system.'

U (*abbr*). **1.** *auth.* 'Unit,' in combinations only. **2.** 'Utility version,' in designations of US Navy aircraft modified as such, as with the UF-1. **3.** 'Uranium,' as in *U235*. **4.** 'Unclassified.' **5.** 'Elementary trainer' (*Uchebnii samolyot*), used in the names of Russian aircraft from 1925 to 1945, as in *U-2*.

U-2. A utility single-engine Russian biplane.

UA (*auth abbr*). 'Uniform allowance.'

UAFSC (*auth abbr*). 'Utilization AFSC.'

UAL (*abbr*). 'Unit authorization list.'

UAM (*auth abbr*). 'Underwater-to-air missile.'

U-boat, *n.* [From German *Unterseeboot.*] **1.** A German submarine. Attrib., as in *U-boat shelter*. **2.** Any submarine. *Rare.*

U-bomb, *n.* A theoretical atomic or hydrogen bomb encased in uranium, the uranium of which would be transformed into deadly radioactive dust upon detonation.

UC (*abbr*). **1.** *auth.* 'Under construction.' **2.** 'Utility cargo' as formerly used in the names of aircraft, as in *UC-71, UC-78*.

The UC-78 was a cargo version of the AT-17, a two-engine, low-wing monoplane developed by Cessna.

UCMJ (*auth abbr*). 'Uniform Code of Military Justice.'

UCWR (*auth abbr*). 'Upon completion thereof will return to.'

UD (*auth abbr*). 'Undesirable discharge.'

UDT (*auth abbr*). 'Underwater demolition team.'

UDU (*auth abbr*). 'Underwater demolition unit.'

UE (*abbr*). **1.** *auth.* 'Until exhausted.' **2.** 'Unit equipment.'

UEAC (*auth abbr*). 'Unit equipment aircraft.'

UEE (*auth abbr*). 'Unit essential equipment.'

UF (*auth abbr*). 'Unit of fire.'

UF-1. The Navy designation for the SA-16A.

UFO (*abbr*). 'Unidentified flying object.'

UG (*abbr*). 'Underground.' Used in connection with industrial plants.

U.H. (*abbr*). 'Upper half.' See **rear admiral.**

UHC (*auth abbr*). 'Under honorable conditions.'

UHF (*auth abbr*). 'Ultra high frequency.' Also written 'uhf.'

UK (*auth abbr*). 'United Kingdom.'

ullage, *n.* Outage.

ultimate, *a.* Last in a series or train, as in 'ultimate aim,' 'ultimate control.'

ultimate load. In stress analysis, the minimum load that in its last increment causes physical breakdown in an aircraft or aircraft component during a strength test, or the load that according to computations, should cause such breakdown. See **load,** *n.*, sense 1.

ultimate load factor. A factor used in calculating an ultimate load. See **load factor.**

ultimate objective. An objective that determines the nature of strategic or diplomatic operations.

ultimate weapon. An absolute weapon. *Popular.*

ultra, *adv.* or *prefix.* Extremely; in a range beyond, as in *ultra audible frequency* (a frequency beyond the audible), *ultra high-altitude bombing, ultra long-range bombardment, ultrasonic, ultrastratospheric,* etc.

ultra high frequency. (UHF) *Electronics.* Any frequency between 300 and 3,000 megacycles per second.

ultrasonic, *a. Acoustics.* Of or pertaining to frequencies above those that affect the human ear, i.e., above 20,000 vibrations per second. See **sound frequency.**

Use of this term in acoustics reserves 'supersonic' for use in aerodynamics.

ultrasonic frequency. Any frequency above the limits of 20,000 vibrations per second.

ultrasonic relief map. A special map made of various sound reflecting materials, used with the ultrasonic trainer so as to simulate the radar reflection that would occur from that part of the earth represented.

ultrasonics, *n.* That branch of acoustics dealing with ultrasonic frequencies.

ultrasonic trainer. A ground trainer for using radar equipment in which ultrasonic waves are directed against an ultrasonic relief map to simulate responses occurring in actual radar operation during flight.

ultraviolet, *n.* Ultraviolet light. Used attrib., as in *ultraviolet absorption, ultraviolet radiation,* etc.

ultraviolet, *a.* Outside the visible spectrum at the violet end; higher in frequency than visible light. The opposite of 'infrared.' Said of light, rays, frequencies.

um (*auth abbr*). 'Umpire,' in combination only.

umbrella, *n.* **1.** An air umbrella. Attrib., as in *umbrella cover, umbrella fighters.* **2.** An open parachute. *Slang.*

umbrella wing. An airplane wing that extends in a single plane above the fuselage, as in the Ross RS-2L. Also called a 'parasol wing.'

UMD (*abbr*). 'Unit manning document.'

UMT (*abbr*). 'Universal military training.'

UMTS (*auth abbr*). 'Universal military training in service.'

UN (*auth abbr*). 'United Nations.'

un (*prefix*). Not. Used as a prefix to innumerable adjectives or adverbs, as in *unairworthy, unclassified, uneconomical, unmilitary, unserviceable, unskilled,* etc.

unacceptable, *a.* **1.** Of losses: Considered to be too high for the results obtained. **2.** Of an enemy's buildup: Considered beyond a point of safety for friendly forces, and requiring diplomatic or military action to stop. Said esp. of a striking force or of an atomic stockpile. **3.** Of an offer, proposal, or plan: Considered to have features, or to lack features, that make it necessary to reject.

Usage in sense 3, although perfectly logical, is often overworked. In some contexts it appears abrupt.

unalot (*auth abbr*). 'Unallotted.'

un-American, *a.* Not in harmony with the customs, ideals, traditions, or principles of the American people.

Because of the difficulties sometimes involved in getting people to agree on what are the customs, ideals, traditions, and principles of the American people, this term is often surcharged with personal views of both the user and the listener or reader. In many wide applications, however, the term is generally understood in the same way by many people. Its use is sometimes to arouse emotional responses in the reader or listener.

unasgd (*auth abbr*). 'Unassigned.'

unauthd (*auth abbr*). 'Unauthorized.'

unauthorized item. In supply usage, an item not authorized for storage and issue by appropriate tables of allowance.

UNC (*abbr*). 'United Nations Command.'

uncage, *v. tr.* To unlock the *gyroscope* in a gyro-controlled *instrument* so that it is free to move.

unclassified, *a. Specif.* Not having a security classification. Said of documents, information, lectures, equipment, etc.

unclassified track. The track of an aircraft after being seen but before being classified. See **track,** *n.,* sense 7.

uncld (*abbr*). 'Unclassified.'

Uncle (*code*). A word formerly authorized for the letter 'U.' See **Able** (*code*).

UNCMAC (*auth abbr*). 'United Nations Command Military Armistice Commission.'

unconditional surrender. Surrender by a military force or by a government behind a military force, made without reservation and without any condition precedent.

A phrase once used by General U. S. Grant at the battle of Fort Donelson (1862), and made a World War II watchcry in American and British diplomacy after the Casablanca conference (Jan 1943). The concept behind this phrase as applied in WW II has been the subject of controversy in the post-WW II period.

uncontained war. A war that tends to spread to larger and larger areas. See **war,** *n.*

uncontrolled mosaic. A mosaic fitted together without respect to control points, giving a pictorial representation of the ground but containing errors in scale and azimuth. Cf. **controlled mosaic.**

uncontrolled spin. A spin from which recovery cannot, or is not, made by use of the controls.

unconventional, *a.* Not bound by the traditional; not in accord with the usual, as in 'unconventional airplane,' etc. See **conventional,** *a.*

unconventional warfare. 1. Warfare conducted, at least in part, with atomic, chemical, or bacteriological weapons. **2.** Warfare conducted by the use of personnel, techniques, and tactics not normally employed by a regular military force, e.g., in the use and direction of guerrilla fighters not usually in uniform, in the development of evasion and escape procedures and mechanisms, or in the employment of subversive action against hostile states or groups.

unded (*auth abbr*). 'Underdeduction.'

under, *prep.* Used in various military contexts: See note.

'This force was *under* SAC' (i.e., it was a force belonging to SAC); 'to be *under* arms' (i.e., to have a weapon in hand or on one's person); 'to bring *under* air attack' (i.e., to subject to air attack); '*under* fighter cover' (i.e., protected by fighter aircraft); 'to be *under* orders' (see **order,** *n.,* sense 3).

underbelly, *n.* The belly of anything. Sometimes applied to the belly of an airplane.

Used with connotations of softness or of vulnerability, as in 'he burst into the underbelly of the bomber and brought it smoking to the ground,' or as in Churchill's 'the under-belly of the Axis.'

undercarriage, *n.* A landing gear. Chiefly *British.*

undercart, *n.* An undercarriage. *British.*

undercast, *n.* A layer of cloud beneath an aircraft, as in 'you will have undercast at target,' or 'he had 10/10 undercast and had to resort to D/R.' Distinguished from an overcast by the point of view. See **overcast,** *n.,* sense 2.

undercooled, *a.* Of a liquid: Supercooled.

underground, *n.* An organized group of people who carry on some regular operation without effective discovery by those in authority; the network to which these people belong.

An underground is one of the mechanisms set up for evasion and escape in unconventional warfare.

underground, *a.* **1.** Situated or placed below the surface of the earth, as in 'the underground hangar.' **2.** Of or pertaining to an underground.

underground, *adv.* **1.** Beneath the earth's surface, as in 'the factory was built underground.' Said esp. of hangars, factories, or storage places, to afford protection against air attack. **2.** Out of public view, as in 'the Allied friends went underground to assist us.'

undergunner, *n.* An aerial gunner whose station is in the belly of an aircraft.

Under Secretary of the Air Force. (USofAF) The principal assistant to the Secretary of the Air Force, and the second in command of the Department of the Air Force.

The Under Secretary of the Air Force is a civilian appointed by the President with the advice and consent of the Senate.

undershoot, *v.* **1.** *tr.* To land or crash an airplane short of a *runway*, or short of a *line* or *spot* thereupon. **2.** In bombing, to drop a bomb or bombs short of the *target;* in gunnery, to shoot short of the *target.* **3.** *intr.* To carry out one of the actions indicated in sense 1 or 2, as in 'he undershot and crashed.'

Hence, **undershooting,** *n.*, in all senses.

undes (*abbr*). 'Undesirable.'

undesirable discharge. A discharge under conditions other than honorable, given an airman by administrative action; a certificate of such a discharge.

uneconomical, *a.* Not economical (which see).

UNESCO (*abbr*). 'United Nations Educational, Scientific and Cultural Organization.' Pronounced as a word.

UNESCO is a specialized agency of the United Nations. Its constitution was adopted 4 Nov 1946. In 1955, there were 72 member nations.

unex (*auth abbr*). 'Unexecuted.'

unexpended, *a.* Of an allotment, appropriation, or the like: Not yet disbursed.

unfav (*auth abbr*). 'Unfavorable.'

unfeather, *v. tr.* To change the blade angle of a *propeller* or *rotor* from its feathered position. See **feather,** *v.*, **feathering,** *n.*

ungraded civilian. A person occupying an ungraded position under Civil Service.

ungraded position. A Civil Service position not given a specific grade, the wage being determined by the prevailing local scale, or by other criteria.

unguided, *a.* Of a missile or other object sent through the air: Not subject to guidance or control during flight; aimed only in launching.

unidirectional antenna. An antenna that radiates or receives radio waves most effectively in or from one direction only.

unif (*auth abbr*). 'Uniform' or 'uniformity.'

unification, *n.* A term applied to the creation of the National Military Establishment (later the Department of Defense), containing three separate and distinct military departments, but under the direction and control of a cabinet officer, the Secretary of Defense. Brought about by the National Security Act of 1947, as amended. Cf. **autonomous,** *a.*

'It is the intent of Congress . . . to provide three military departments for the operation and administration of the Army, the Navy . . . and the Air Force . . . [and] to provide for their authoritative coordination and unified direction under civilian control but not to merge them' (*National Security Act of 1947*).

Unification Act. A popular name for the National Security Act of 1947.

unified air command. An air command made up of air units of different allied nations under a single commander.

The Eastern Air Command of WW II under General George Stratemeyer was a unified air command.

unified command. A command made up of joint or combined forces, operating under a single commander.

The commander of a unified joint command is normally assigned by action of the Joint Chiefs of Staff; that of a unified combined command, by action of some Allied authority, as through the Combined Chiefs of Staff. Cf. **combined,** *a.*, **joint,** *a.*

unified commander. The commander of a unified command.

Uniform (*code*). An authorized word for the letter 'U.' See **Alfa** (*code*).

uniform, *n.* **1.** Dress or clothing of distinctive cut, materials, and color worn by the members of a military or other force; also, a single suit of this kind. **2.** *Specif.* Those articles of clothing, equipment, and accessories prescribed by AF regulations for military wear.

uniform allowance. (UA) A sum of money allowed an officer to pay for his uniform when he enters the service or returns to the service after an extended period of absence.

Uniform Code of Military Justice. (UCMJ) The body of laws and legal procedures applicable to the personnel of all services.

The UCMJ became effective on 31 May 1951, and supersedes the Articles of War and Articles for the Government of the Navy.

unilateral circuit. A communication circuit controlled and operated by only one particular service, as by the AF. Cf. **joint circuit.**

unit, *n.* **1.** A part of an aggregate or of a whole. Applied in the AF to any military organization

having a mission, functions, and a structure prescribed by competent authority, and constituting a part of a larger organization: See note. **2.** As sometimes used in manpower and organization, any such organization to which personnel are authorized by a unit manning document or by a table of organization. Sometimes called a 'manning unit.' Cf. **assign,** *v.*, senses 1a and 1b. **3.** Also formerly applied to any organization to which personnel were authorized by a table of distribution. Sometimes called a 'specialized unit.' Now *hist.* **4.** A subdivision of a section in the hierarchy of a headquarters. See **branch,** *n.*, sense 1. **5.** In the AFROTC, the military faculty and cadets at a college or university organized for instruction under the AFROTC program. See **detachment,** *n.*, sense 2. **6.** Anything considered as complete in itself, as in 'the power unit installed in the airplane.'

In sense 1, 'unit' is applied to air commands, air forces, air divisions, wings, groups, and squadrons. In this sense, smaller units make up larger units, and larger units make up still larger units, as in 'the major units of an air division are wings.'

In sense 2, 'unit' applies only to those units of sense 1 that have personnel prescribed by a unit manning document. That is, an air command, air force, air division, wing, and group are not considered units from this point of view. Only the headquarters of these organizations, together with the squadrons and certain special organizations to which personnel are directly assigned are considered to be units. Under this concept, the larger organizations are called 'establishments.'

Senses 1 and 2 are not contradictory. They represent two different ways of looking at the organizations involved, and often a single document will use the word in both senses, context being depended upon to differentiate the meaning intended. Not infrequently, however, the context is insufficient, and the word is ambiguous.

A unit (senses 1 and 2) may be wholly made up of military personnel, or of both military and civilian personnel. A unit is always an organization, but an organization is not necessarily a unit. See **organization,** *n.*

In sense 5, the word 'unit' appears to have received its initial currency on college campuses, where the unit is distinguished from the detachment. The detachment is authorized through a UMD; the unit, as such, is not.

Attrib. in various senses, as in *unit activity, unit commander, unit funds,* etc.

unit authorization list. Sometimes *capitalized.* **1.** An electrical accounting-machine list of specified equipment authorized each unit. **2.** A list that formerly authorized unit support equipment only.

In sense 1, the UAL provides for unit mission equipment and, when appropriate, unit support equipment.

unit citation. An award given a unit as a whole for certain performances or services; *specif.*, short for 'Distinguished Unit Citation' (which see). See also **Presidential Unit Citation.**

United Kingdom. (UK) The political and geographical entity consisting of England, Wales, Scotland, Northern Ireland, the Isle of Man, and the Channel Islands. In full, 'The United Kingdom of Great Britain and Northern Ireland.'

United Nations. (UN) A world-wide organization of nations, the member nations being pledged to maintain international peace and security and to cooperate in establishing and maintaining political, economic, and social conditions favorable to such peace and security.

The United Nations charter was signed in San Francisco on 26 June 1945 and became effective 24 October 1945.

United Nations Service Medal. (UNSvM) A United Nations decoration awarded military personnel for service in the Korean theater under certain specified conditions.

United States Air Force. (USAF) **1.** An official name given the air arm of the United States military forces, responsible for the development, training, equipment, and employment of aviation forces both combat and service. **2.** In a restricted sense between 1947 and 1951, the Regular Air Force. *Obs.* See **Air Force of the United States.**

In sense 1, the USAF was established under the Department of the Air Force by the National Security Act of 1947. In its establishment, the AAF, the Air Corps, the Air Force Combat Command, and certain other air units were transferred to it and thereupon lost their designations. According to the *Air Force Organization Act of 1951*, the USAF 'shall consist of the Regular Air Force, the Air Force Reserve, the Air National Guard of the United States and the Air National Guard while in the service of the United States.' Cf. **Air Force Establishment, Department of the Air Force.**

Used attrib. and often cumbersomely, as in *United States Air Force Officer Candidate School, United States Air Force publications, United States Air Force Recruiting Service, United States Air Force Reserve,* etc.

United States Air Force Academy. The service academy of the United States Air Force, authorized by act of Congress, 1 April 1954, often called the 'Air Force Academy.' Also popularly called the 'Air Academy.'

The Air Force Academy was first organized at Lowry Air Force Base, Denver, Colorado, but its permanent site is Colorado Springs, Colorado. Its first class of cadets began residence in July 1955 at Denver.

United States Air Force Institute of Technology. (USAFIT) The former designation of the Institute of Technology, USAF, the change being effective 1 September 1955.

United States Air Force Security Service. (USAFSS) A major air command of the USAF that develops, carries out, and supervises security measures within the USAF, where such security measures require centralized direction or control.

United States Armed Forces. *Specif.* Collectively, the regular components only of the Air Force, Army, Navy (including the Marine Corps), and Coast Guard.

This term has been given specific meaning by the *Dictionary of United States Military Terms for Joint Usage,*

and is distinguished from the 'Armed Forces of the United States' (which see).

United States Armed Forces Institute. (USAFI) An agency of the Department of Defense established to provide off-duty educational opportunities to members of the Armed Forces of the United States who are serving on extended active duty.

Assistance given participants is in various ways—through self-study courses, group-study courses, and esp. correspondence courses. Correspondence courses are administered from Madison, Wisconsin. The program of this agency is not to be confused with operation bootstrap nor with the civilian institutions program.

United States Army. (USA) The land military forces of the US, including the Regular Army, the National Guard of the United States, and the Army Reserve. Often shortened to 'Army.'

'In general the United States Army . . . shall include land combat and service forces and such aviation and water transport as may be organic therein. It shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations on land' (*National Security Act of 1947*). See **Army aviation.**

United States Coast Guard. (USCG) A military or police force responsible for certain duties along the coasts of the US, esp. in enforcing customs, immigration, and navigational laws, and for maintenance of the International Ice Patrol. Usually shortened to 'Coast Guard.'

The Coast Guard operates under the Treasury in time of peace, as a part of the Navy in time of war or when the President so directs.

United States Coast Guard Academy. (USCGA) The service academy of the US Coast Guard, founded 31 July 1876 on board a schooner, and established in 1910 at New London, Connecticut.

The Academy received its present name in 1915.

United States grid. A military grid superimposed upon a polyconic projection of the United States and its possessions. See **world polyconic grid.**

United States Marine Corps. (USMC) A corps of soldiers in the US Navy: See note. Also shortened to 'Marine Corps.'

The USMC includes land combat and service forces and organic aviation units. It is responsible 'for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign' (*National Security Act of 1947*). See **Marine aviation.**

United States Military Academy. (USMA) The service academy of the United States Army, authorized by act of Congress, 16 March 1802, and established at West Point, New York.

United States Naval Academy. (USNA) The service academy of the United States Navy, founded at Annapolis, Maryland, on 10 October 1845. The US Naval Academy was known as the Naval School until 1850.

United States Navy. (USN) The naval establishment of the United States: See note. Often shortened 'Navy.'

The USN includes sea-going fleets, aviation units, the US Coast Guard when operating as a part of the Navy under the provisions of law, and the US Marine Corps.

'In general the United States Navy . . . shall include naval combat and service forces and such aviation as may be organic therein. It shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea' (*National Security Act of 1947*).

United States Strategic Bombing Survey. **1.** A survey of bomb damage done by Allied strategic bombing forces during WW II, covering both primary and secondary damage in the Asiatic and European theaters of operation. **2.** The board that made this survey.

unit essential equipment. (UEE) That equipment, exclusive of base support equipment, required by certain units to carry out their mission, esp. by a tactical unit to operate and maintain its tactical unit aircraft for a period of 30 days at a prepared base.

This equipment is air-transportable, and when authorized is a part of the unit mission equipment. See **base support equipment, tactical unit aircraft.**

unit fund. A nonappropriated welfare fund established within a unit smaller than a group.

unit loading. *Specif.* The pressure of an aircraft's skis upon a surface of ice or snow, expressed by dividing the static gross weight of the aircraft by the contact area. Cf. **footprint pressure.**

unit manning document. A single personnel authorization document for each Air Force unit to which personnel are directly assigned, which reflects, by function, all manpower components of the unit, complete with military grades, Air Force Specialty Codes, and civilian and native personnel spaces. Abbreviated 'UMD.'

The UMD is machine prepared, and utilizes functional code in setting forth all functions within the unit. See **function,** *n.*, sense 3. The UMD has not eliminated the table of organization, but its use has eliminated the table of distribution-augmentation, as well as the table of distribution for non-T/O units. It is the operating document for T/O units in respect to total manpower authorizations.

The UMD applies to all manning units. These units consist of all squadrons in the Air Force and of all the several headquarters of the establishments, i.e., the headquarters of the Department of the Air Force and the headquarters of each major air command, of each named or numbered air force, of each air division, of each wing, and normally of each group. A wing, as such, does not have a UMD, neither does an air division, an air force, or an air command; likewise, the group, as such, does not normally have a UMD. See **establishment,** *n.*, note, **manning unit.**

unit mission equipment. Equipment provided for in the master equipment allowance list or in special lists of equipment for certain specific T/O units as authorized by Headquarters USAF. Abbreviated 'UME.'

Unit mission equipment is normally moved with a unit from one location to another.

unit of assignment. The unit to which a person

is assigned. Distinguished from the unit to which he may be attached.

unit of fire. (UF) A basic load of ammunition.

unit package. In supply usage, a box, bundle, reel, drum, bottle, bale, roll, or the like containing one or more identical units of manufacture and conforming to applicable packaging directives or to standard commercial packaging practice.

unit property. Used in phrase, *unit property record and equipment authorization list* (UPREAL), a former designation for the unit mission equipment of a unit authorization list. *Obs.*

unit support equipment. Equipment other than unit mission equipment required by a unit to perform its mission at a specified base.

Unit support equipment is normally retained by the base upon movement of the unit.

unit training. The training of a unit as a whole, such as is conducted at an Air Force Reserve Training Center. Distinguished from individual training conducted at such a center. See **corollary unit.**

unity of command. 1. A doctrine that effectiveness in warfare is best served by command being vested in a single person at the highest echelon and in a single person at each subordinate level in a chain of command. **2.** Applied somewhat hyperbolically in the fields of administration and personnel management, where efficiency is considered best served by a chain of control from one superviser to another.

In sense 1, see **air support, cooperation,** *n.*, **force,** *n.*, note, **theater air commander, theater commander.**

univ (*auth abbr*). 'Universal' or 'university.'

Universal Military Training. *Specif.* A proposed program for the common defense and security of the United States that would provide for the drafting into military service of all men in the United States as each becomes of a certain age, subject to certain physical and mental examinations, and for the training and service of such men for a period of time determined by law. In full, 'universal military training and service.'

Universal Plotting Chart. Any one of a series of aeronautical charts, scale 1:3,000,000 or 1:5,000,000, designed for use with celestial aids to navigation.

Each type of chart is prepared for a specific band of latitude and has printed on it only compass roses and a grid. Appropriate longitude must be added by the user.

universal transverse Mercator grid. A military grid system in which a grid network is applied to a transverse Mercator projection of certain zones, each zone extending to 80 degrees north and south latitude, 6 degrees of longitude wide, with one half degree of overlap on each side.

unk (*auth abbr*). 'Unknown.'

unlimited ceiling. No ceiling existing. See **ceiling unlimited,** note.

unlimited war. 1. A total war. **2.** An unrestricted war.

This term is usually ambiguous.

unliq (*auth abbr*). 'Unliquidated.'

UnODir (*auth abbr*). 'Unless otherwise directed.'

unpd (*auth abbr*). 'Unpaid.'

unqual (*auth abbr*). 'Unqualified.'

unrestricted war. A war in which the contestants recognize no conventions or restrictions in their use of weapons. See **war,** *n.*

UNRRA (*abbr*). 'United Nations Relief and Rehabilitation Administration.'

unsafetied, *a.* Unsecured against loosening. See **safety,** *v.*

unsat (*auth abbr*). 'Unsatisfactory.'

unsatisfactory report. A report submitted on a standard form of an unsatisfactory condition found in an item of equipment or in some technical procedure. Generally abbreviated 'UR.'

This form was originally known as AF Form 54, then as DD Form 535 (1 Oct 53) and now as AF Form 29 (23 June 54).

UNSCOB (*auth abbr*). 'United Nations Special Committee on the Balkans (Greece).'

unskd (*abbr*). 'Unskilled.'

unstable oscillation. Oscillation that tends to increase in amplitude so that a state of steady divergence may be reached.

unstick speed. The speed in the takeoff run required for a plane to become airborne. See **flying speed.**

unsvc (*auth abbr*). 'Unserviceable.'

UNSvM (*auth abbr*). 'United Nations Service Medal.'

unsymmetrical loading. A design that results in an unequal wing loading.

unvouchered fund. A fund out of which payments may be made without benefit of vouchers, or upon vouchers held pending audit.

UOHC (*auth abbr*). 'Under other than honorable conditions.'

UP (*auth abbr*). 'Under provisions of.'

up-aileron, *n.* The aileron at a negative angle. See **aileron angle.**

UP&T (*auth abbr*). 'Unit personnel and tonnage table.'

updraft, *n.* A large-scale, upward-moving air current.

updraft carburetor. A carburetor in which the air is sucked in from beneath, the air flowing upward through the venturi.

upgraded position. A position that has been given a higher grade.

upgrade training. The training of a person in a career field leading to a higher grade.

up lock. A locking device, mechanical or hydraulic, which keeps the landing gear in place when it is retracted. Cf. **down lock.**

UPO (*auth abbr*). 'Unit personnel office' or 'unit personnel officer.'

upper atmosphere. A term variously employed to designate the atmosphere at different high altitudes: See note.

Among geophysicists this term is sometimes applied to the atmosphere of the ionosphere, near and above 62 miles. Among meteorologists, it applies to (a) the atmosphere above the troposphere, (b) the atmosphere above the stratosphere, (c) the atmosphere above the limits to be reached by sounding balloons.

upper branch. In air navigation, that half of a terrestrial meridian, from pole to pole, on the same side of the earth as the observer, or that half of the corresponding celestial meridian, passing through the observer's zenith.

upper camber. The camber of the upper side of an airfoil.

upper critical parachute-opening altitude. The maximum altitude at which a person without special high-altitude equipment can safely open his parachute immediately. Cf. **critical escape altitude.**

upper deck. 1. In certain large aircraft, a deck, such as a flight deck, that is above the level of another deck. **2.** The open runway deck of an aircraft carrier.

upper front. In an occluded front situation, the upper line of intersection between the cold air masses.

upper-surface aileron. A kind of aileron or split flap let into the upper surface of a wing, the lower wing surface extending beneath the aileron.

The upper-surface aileron may be elevated only, the wing surface beneath it preventing its depression.

upper transit. The transit of a given celestial body across the upper branch of a celestial meridian.

UPREAL (*auth abbr*). 'Unit property record and equipment authorization list.' Pronounced as a word.

The UPREAL consisted of a list of items authorized a standard unit as prescribed by a master equipment allowance list. Equipment formerly listed in the UPREAL is now listed under unit mission equipment in the unit authorization list.

UpRec (*auth abbr*). 'Upon receipt.'

UPREL (*auth abbr*). 'Unit property record and equipment list.'

UPS (*auth abbr*). 'Under provisions of section.'

upslope fog. A fog formed by the adiabatic cooling of warm, moist air moving up a slope. See **Cheyenne fog.**

upstairs, *n.* In *slang* usage. **1.** Airspace above the ground or at a higher altitude, esp. as occupied by an aircraft. **2.** A higher level of command.

Also used adverbially, as in 'he flew upstairs,' or 'he raced upstairs again,' or 'the forward air controller called upstairs.'

upsun, *adv.* In a direction toward the sun; with the sun in one's eyes. Also used as an *adj.*, as in 'an upsun attack.'

up there. An expression for 'up in an airplane,' as in 'he's up there all alone.'

upwind, *a.* Made or done upwind; directed upwind, as in 'upwind attack,' 'upwind approach,' 'upwind leg.'

upwind, *adv.* Into the wind, as in 'they made their bomb run upwind.'

upwind position. The position of a helicopter's rotor blade when its tip is opposite to that of its downwind position (which see).

UR (*abbr*). 'Unsatisfactory report.' Also *attrib.*, as in *UR control office*, *UR digest*, etc.

U.R., *v. tr.* To make an unsatisfactory report on *something*. *Slang.*

uranium, *n.* A radioactive, nuclear-fissionable element found chiefly in pitchblende.

The symbol for uranium is U; its atomic weight is 238.07 and its atomic number is 92.

Three isotopes of uranium have been isolated: *U238*, which constitutes about 99.3 percent of natural uranium, *U235*, which constitutes 0.7 percent, and *U234*, which is present in natural uranium in minute amount. U_{235} may be made to undergo rapid fission (see **critical mass**); U_{238} may be converted to neptunium by neutron bombardment. See **plutonium,** *n.*

Used attrib., as in *uranium bomb*, *uranium fission*, etc.

urban-area study. An assembly of materials on a particular urban area to provide information for strategic military planning.

These materials contain data of all sorts—population density, industrial and residential areas, economy, history, water supply, etc.—and consist of reports, digests, photographs, maps, overlays, and other like displays.

urg (*auth abbr*). 'Urgent.'

urltr (*abbr*). 'Your letter.'

urmsg (*abbr*). 'Reference your message.'

US (*auth abbr*). 'United States.' Often written 'U.S.' See **abbreviation,** *n.*, note.

u.s. (*abbr*). 'Unserviceable.' Also written 'u/s.'

USA (*auth abbr*). 'United States Army.'

U.S.A. (*abbr*). 'United States of America.'

USAAF (*abbr*). 'United States Army Air Forces.' Also written 'U.S.A.A.F.' *Hist.*

usable property. In supply usage, property other than scrap, salvage, or waste material which is suitable for its original or some other use.

USAF (*auth abbr*). 'United States Air Force.' Sometimes pronounced as a word, and sometimes written 'U.S.A.F.'

'USAF' is preferred to 'U.S.A.F.' in writings for Air Force consumption, but for publications intended for both Air Force and non-Air Force people 'U.S.A.F.' has a certain prevalence. See **abbreviation,** *n.*, note.

'USAF' is used to designate certain aeronautical charts issued by the Aeronautical Chart and Information Center, as in *USAF Aeronautical Approach Chart*, *USAF Aeronautical Planning Chart*, *USAF Equidistant Chart*, *USAF Flight Chart*, *USAF Gnomonic Tracking Chart*, *USAF*

Jet Navigation Chart, USAF Long-Range Navigation Chart, USAF Loran Chart, USAF Navigational Flight Chart, USAF Outline Planning Chart, USAF Pilotage Chart, USAF Radar Chart, USAF Route Chart, USAF Special Aeronautical Chart, USAF Special Navigation Chart, USAF Special Planning Chart, USAF Special Plotting Chart, USAF Strategic Outline Chart, USAF Strategic Planning Chart, USAF Universal Plotting Chart, USAF World Aeronautical Chart. See separate entries listed by the second element of these combinations.

'USAF' is also used attributively in numerous other combinations, as in *USAF aircraft, USAF band, USAF board, USAF bombardment school, USAF Flight Test Center, USAF Ground Safety Program, USAF installation, USAF Medical Service, USAF officer, USAF Reserve, USAF unit*, etc.

USAFA (*auth abbr*). 'United States Air Force Academy.'

USAFACIS (*abbr*). 'United States Air Force Aeronautical Chart and Information Service.'

Now *hist.* See **Aeronautical Chart and Information Center.**

USAFACS (*auth abbr*). 'United States Air Force aircrew school.'

USAFAPS (*abbr*). 'United States Air Force air police school.'

USAFBMS (*auth abbr*). 'United States Air Force basic military school.'

USAFBS (*auth abbr*). 'United States Air Force bombardment school.'

USAFE (*auth abbr*). 'United States Air Force in Europe.' Attrib., as in *USAFE aircraft, USAFE manual, USAFE unit.*

Pronounced 'you safe' and sometimes 'you saffee.'

USAFECI (*auth abbr*). 'United States Air Force Extension Course Institute.' Often shortened to 'ECI.'

'USAFECI' is now obsolete, effective 1 Sep 1955. See **Extension Course Institute, USAF.**

USAFFGS (*auth abbr*). 'United States Air Force flexible gunnery school.'

USAFI (*auth abbr*). 'United States Armed Forces Institute.' Pronounced as a word.

USAFIT (*auth abbr*). 'United States Air Force Institute of Technology.' Sometimes pronounced as a word.

This abbreviation is now obsolete, effective 1 Sep 1955, when the Institute was renamed 'Institute of Technology, USAF.'

USAFNS (*auth abbr*). 'United States Air Force navigation school.'

USAFOCS (*auth abbr*). 'United States Air Force Officer Candidate School.'

USAFPS (*auth abbr*). 'United States Air Force pilot school.'

USAFR (*abbr*). 'United States Air Force Reserve.' See **AFRes** (*auth abbr*).

USAFSAM (*auth abbr*). 'United States Air Force School of Aviation Medicine.'

This abbreviation is now obsolete, effective 1 Sep 1955, when the designation was changed to 'School of Aviation Medicine, USAF.'

USAFSRA (*abbr*). 'USAF special reporting agency.'

USAFSS (*auth abbr*). 'USAF Security Service.'

USAF Training Prospectus. An AF publication containing a listing of professional, flying, and technical training courses available to AF military personnel, together with course descriptions, eligibility requirements, and other information.

USAFTS (*auth abbr*). 'United States Air Force technical school.'

USAirA (*auth abbr*). 'United States Air Attache.'

USAirMilComUN (*auth abbr*). 'United States Air Force Representative, UN Military Staff Committee.'

USAreur (*abbr*). 'United States Army in Europe.'

USASTAF (*abbr*). 'United States Army Strategic Air Forces (in the Pacific).' Used briefly in 1945.

USC (*auth abbr*). 'Under separate cover.'

USCG (*auth abbr*). 'United States Coast Guard.'

USCGA (*auth abbr*). 'United States Coast Guard Academy.'

USCINCEur (*auth abbr*). 'United States Commander in Chief, Europe.'

USDB (*auth abbr*). 'United States Disciplinary Barracks.'

USE (*abbr*). 'Unit support equipment.'

usea (*auth abbr*). 'Undersea.'

useful lift. The lift of an aerostat that may be used to carry passengers, cargo, fuel, oil, etc.

useful load. That part of the load (which see, sense 2) of an aircraft that is considered useful for carrying out a mission, including the payload, crew, equipment, fuel, oil, and ballast (except emergency ballast).

For example, on a bomber, the cannon and machine-gun ammunition are not a part of the payload, but they are a part of the useful load.

useful range. The effective range of electronic equipment.

USFA (*auth abbr*). 'United States Forces in Austria.' Now *hist.*

USForAz (*auth abbr*). 'United States Forces in Azores.'

USLant (*auth abbr*). 'United States Atlantic Subarea.'

USLO (*auth abbr*). 'United States liaison officer.'

USM (*auth abbr*). 'Underwater-to-surface missile.'

USMA (*auth abbr*). 'United States Military Academy.'

USMC (*auth abbr*). 'United States Marine Corps.'

USMeMilComUN (*auth abbr*). 'United States members, UN Military Staff Committee.'

USMilComUN (*auth abbr*). 'United States delegation, UN Military Staff Committee.'

USMilLias (*auth abbr*). 'United States Military Liaison Office.'

USMS (*auth abbr*). 'United States Maritime Service.'

USN (*auth abbr*). 'United States Navy.'

USNA (*auth abbr*). 'United States Naval Academy.'

USO (*abbr*). 'United Service Organizations.'
The USO, begun in February 1941 and endorsed by the government, is sponsored by several civilian organizations, the YMCA, the YWCA, the National Catholic Community Service, the National Jewish Welfare Board, the National Travellers Aid Association, and the Salvation Army, in order to provide a home away from home for enlisted persons in the armed services.

USofAF (*auth abbr*). 'Under Secretary of the Air Force.'

USPDO (*auth abbr*). 'United States Property and Disbursing Officer.'

USPHS (*auth abbr*). 'United States Public Health Service.'

USRepMilComUN (*auth abbr*). 'United States Representative, UN Military Staff Committee.'

USS (*auth abbr*). Also **U.S.S.** 'United States Ship,' as in 'U.S.S. Missouri.'

USSAF (*abbr*). 'United States Strategic Air Force.'
Used in WW II, but not extensively. See **USASTAF** (*abbr*), **USSTAF** (*abbr*).

USSAFE (*abbr*). 'United States Strategic Air Force in Europe.' Used in WW II.

USSBS (*abbr*). 'United States Strategic Bombing Survey.' Pronounced 'usbus.'

USSecMilComUN (*auth abbr*). 'The Secretary, United States Delegation, UN Staff Committee.'

USSTAF (*abbr*). 'United States Strategic Air Force.'

UT (*abbr*). 'Advanced trainer' (*Uchebny Treniro-vochny*) as used before 1945 in the Russian Air Force.

ut (*auth abbr*). **1.** 'Utility,' in combination only. **2.** *Caps.* 'Utilities man.'

util (*auth abbr*). 'Utility.'

utility aircraft. An aircraft designed for, or adapted to, general-purpose work, such as liaison, light cargo transport, medical air evacuation, observation, etc.

UTM (*abbr*). 'Universal transverse Mercator.'

UW (*abbr*). 'Unconventional warfare.'

UWaTU (*auth abbr*). 'Underway training unit.'

uwtr (*auth abbr*). 'Underwater.'

UXB (*auth abbr*). 'Unexploded bomb.'

V

V (*letter*). See **Victor** (*code*). **1.** In supply usage, a code used to indicate that an item is being shipped. **2.** A Naval designation sometimes used for a fixed-wing airplane: See note. **3.** A symbol meaning 'Lockheed Aircraft Corporation (Factory A)' in designations of Naval aircraft, as *P2V*, etc. **4.** A symbol meaning 'staff administrative aircraft' in the designations of USAF aircraft.

In sense 2, the 'V' is normally omitted in aircraft designations; hence, 'VR' (fixed-wing transport) appears as 'R,' 'VF' (fixed-wing fighter) appears as 'F,' etc.

V, *n.* Anything shaped like a V, such as a V-shaped formation of aircraft. See **vee, *n.*, V formation.**

V (*abbr*). **1.** *auth.* 'Volt,' in combinations only. **2.** 'Velocity,' as used in mathematical formulas. **3.** 'Victory,' as in *V Day*. **4.** *Not capitalized.* 'Verb,' as used in this dictionary. **5.** 'Vergeltungswaffe,' a German word meaning 'revenge weapon,' as used in *V-1* and *V-2*.

V-1, *n.* [Abbr. of German *Vergeltungswaffe eins* Revenge Weapon One.] A German robot bomb provided with wings, a horizontal stabilizer, and a vertical stabilizer, rudder and elevators, used in WW II. Also called the 'FZG-76' by the Germans, and the 'buzz bomb' by the British. Attrib., as in *V-1 bomb*, *V-1 weapon*, etc.

The V-1, first launched across the English Channel on 13 June 1944, was powered by a pulsejet engine mounted on its back. Its overall length was 25 feet 4 inches, and its greatest diameter was 2 feet 7 inches. This missile was provided with complicated control devices, kept on course by an automatic pilot. It had a speed of about 360 mph and a range of 150 miles, and flew at a height between 2,000 and 3,000 feet. Some 2,000 of these robot bombs were directed against England in WW II, most of them against London.

V-2, *n.* [Abbr. of German *Vergeltungswaffe zwei.* See preceding entry.] A large German liquid-fuel rocket, developed as a ballistic missile in WW II. Also called the 'A-4' by the Germans. Attrib., as in *V-2 rocket*, *V-2 weapon*.

The V-2, first launched against England on 8 Sep 1944, developed 60,000 pounds of thrust from its rocket engine. From nose to exhaust tail, it measured 46 feet, and its diameter was about 5 feet. Shaped like an artillery shell it was without wings, but was subject to some guidance through movable panels built into the four tail fins and through graphite vanes extending into the exhaust stream. Launched vertically, it quickly reached a speed of 3,600 mph, then was tilted in the direction of its target. It exhausted its fuel supply of 9 tons in 60 seconds, but reached an altitude of about 60 miles with a range of 200 miles, and plunged earthward at about 1,500 mph. Some 1,115 V-2's were sent across the channel in the last months of WW II.

VA (*code*). A US Naval designation for a fixed-wing attack airplane. See **V** (*letter*), sense 2, note.

Va (*auth abbr*). **1.** 'Virginia.' **2.** *Caps.* 'Veterans Administration.'

vac (*auth abbr*). 'Vacant,' 'vacate,' or 'vacuum.'

vacancy, *n.* An unfilled position in an organization provided for by a table of organization or unit manning document.

vacci (*auth abbr*). 'Vaccine' or 'vaccinate.'

vacuum tube. A sealed tube in which the air or other gas has been exhausted to such a low pressure that electric discharges may pass between electrodes inserted into the tube; *specif.*, an electron tube.

VAdm (*auth abbr*). 'Vice admiral.'

Val, *n.* A name given by the Allies in WW II to the Japanese Aichi D_3A_2.

Valetta, *n.* A British twin-engine transport airplane, developed by Vickers Armstrongs.

Valiant, *n.* **1.** A popular name for the BT-13 or BT-15. **2.** An RAF bomber with four turbojet engines, developed by Vickers Armstrongs.

Valsalva maneuver. [After Antonio Maria *Valsalva* (1666–1723), Italian anatomist.] *Medicine.* An exercise designed to assist in opening the Eustachian tubes. Cf. **pharyngeal pressure maneuver.** This exercise consists of holding the nose and mouth shut, then blowing.

valve, *n.* **1.** Any device, such as swiveling plate, hinged lid, plug, or ball, through which the flow of gas, liquid, or such solid materials as grain, powder, or gravel, may be checked, stopped, started, or regulated. **2.** A vacuum tube. *British.*

valve, *v. tr.* To release *gas* from the bag of a balloon or other aerostat.

valve man. *Specif.* The operator who actually fires a liquid-fuel rocket.

valve overlap. A situation in which two valves synchronized to open and shut oppositely are momentarily open or shut at the same time.

Vampire, *n.* A British fighter airplane with twin tail booms and a single turbojet engine, developed by de Havilland.

Vance Air Force Base. An AF base at Enid,

Oklahoma, named for Lieutenant Colonel Leon R. Vance, a Medal of Honor holder, lost in a hospital aircraft when forced down at sea off Iceland, 1944.

vane, *n.* **1.** Any plate, blade, or strip of metal, wood, or other material, so placed that it either (a) trails free in a fluid flow, as it does on a windmill or weathercock, or (b) imparts a reaction to a fluid flow that passes about its sides, as it may in the exhaust stream of certain rocket engines or as it does in the airflow of a diffuser. **2.** A blade on a rotating part that catches a fluid and impells it in a given direction, as on a compressor. See **vane-type supercharger.**

On a windmill, the vane, which is free to move about an axis, brings the wheel into the wind; on a weathercock, the vane, also free to move on an axis, points at one end in the direction of the wind; in the exhaust of a rocket engine, the vanes serve as a rudder or elevator; on a diffuser, the vanes, being fixed, give direction to the airflow; on a compressor, the vanes serve to build up compression.

vane-type supercharger. A kind of supercharger that has a rotor located eccentrically in a casing, with vanes attached to the rotor that slide back and forth to accommodate to the walls of the casing, the vanes catching the air at the inlet on one side of the rotor, then forcing the air around to the other side toward the outlet.

vapor, *n.* **1.** Any substance in its gaseous state, esp. a vaporized liquid that is visible. **2.** *Specif.* **a.** Fuel vapor. **b.** The water vapor in a condensation trail. Attrib., as in *vapor path, vapor scarf, vapor streamer, vapor trail* (all variant names for a condensation trail).

vapor eliminator. A device to lead off the fuel vapor in an engine's fuel system before the fuel is metered.

vaporize, *v.* **1.** *tr.* To convert *something* into a gaseous state, as through spraying or heating a liquid. **2.** *intr.* Of a liquid: To go into a gaseous state.

vapor lock. A stoppage or diminution in the fuel flow of an engine caused by fuel vapor accumulating in the fuel lines. See **fuel vapor.**

vapor trail. A condensation trail. See **vapor,** *n.*, sense 2b.

VAR (*abbr*). **1.** *auth.* 'Visual-aural VHF range.' **2.** 'Volunteer Air Reserve.'

Vargas Trophy. An award made in 1940 by Frank A. Tichenor, President of the Aeronautical Digest Publishing Corporation, in recognition of the support for aviation given by Getulio Vargas (1883–1954), President of Brazil (1934–1946, 1950–1954).

The award was made to air units of the US Army, Navy, and Marine Corps for contributions to good will among the Latin and North American people.

vari (*auth abbr*). 'Varityper.'

variable-area exhaust nozzle. An exhaust nozzle on a jet engine the opening of which is of a variable size. See **eyelid,** *n.*, and cf. **fixed-area exhaust nozzle.**

variable-incidence wing. A wing on which the angle of wing setting may be varied.

variable item. In supply usage, an item authorized for issue, but not subject to normal stock-level controls because of undetermined varying requirements of using units.

variable-pitch propeller. Any propeller that can have its blade angle changed while rotating.

Variable-pitch propellers include the automatic propeller, the controllable-pitch propeller, the full-feathering propeller, and the reversible-pitch propeller. See separate entries. Cf. **adjustable-pitch propeller.**

variable resistor. *Electricity.* A resistor having a sliding contact to change its value of resistance.

variable-time fuze. A type of proximity fuze that detonates within varying distances of the target after it comes under the influence of the target. Often shortened 'VT fuze.'

variant, *n.* A cipher or code symbol which has the same plain equivalent as another symbol.

variation, *n.* **1.** Magnetic variation. **2.** A minor departure from the specifications of a contract: See note.

In sense 2, a variation from a contract for procuring materiel does not adversely affect safety, performance, or durability; nor materially affect weight; nor adversely affect interchangeability; nor depart from the basic objectives of the specifications. Cf. **deviation,** *n.*, sense 3.

VART (*abbr*). 'Volunteer Air Reserve training.'

VARTU (*abbr*). 'Volunteer Air Reserve training unit.'

Vautour, *n.* [French 'vulture.'] A popular name for the Sud-Ouest S.O. 4050, a French sweptwing twin-jet aircraft designed for tactical support, bombing, and all-weather fighting. Cf. **Trident,** *n.*

VB (*abbr*). 'Vertical bomb.'

V-beam, *n.* Short for 'V-beam radar.'

V-beam radar. A radar that uses two planes of radiation, one vertical, the other slanted at an angle of 45°, each receiving separate signals, which are coordinated with the range of the target to secure an accurate measure of height.

V-bomb, *n.* Either the V-1 or the V-2.

VC (*auth abbr*). 'Veterinary Corps.'

V.C. (*abbr*). 'Victoria Cross.' *British.*

VCP (*auth abbr*). 'Vehicle collecting point.'

VCS (*auth abbr*). 'Vice Chief of Staff.'

VD (*abbr*). 'Venereal disease.' Attrib., as in *VD lecture.*

V Day. Victory day, considered to be that day when the enemy surrenders or is beaten into submission. Used as a watchword in WW II. See **V–E Day, V–J Day.**

VDP (*auth abbr*). 'Vehicle deadlined for parts.'

VEB (*abbr*). 'Variable elevation beam.' A height-finding beam, used in Chain Home radars.

vectograph, *n.* A photographic print or slide for three-dimensional viewing, made by superimposing one image of a stereopair upon the other with a slight offset.

vector, *n.* **1.** An entity which has both magnitude and direction, such as a force or velocity; a line segment that represents this entity. See **air vector, ground vector, wind vector.** **2.** *Specif.* The translation of an object, such as an airplane or missile, from one point to another point usually in a given interval of time. **3.** The line segment or direction followed in space, or to be followed, to achieve this translation, as in 'the aircraft controller signalled the missile, which followed a vector that resulted in its intercepting the rocket.' **4.** A line on a chart, or a voice communication, that indicates speed and direction to achieve this translation.

Attrib. in sense 2, as in *vector computer, vector error, vector problem.*

vector, *v. tr.* To guide a *pilot, navigator, aircraft,* or *missile* from one point to another within a given time by means of a vector communicated to the craft, as in 'he vectored the fighter to within a few hundred yards of the intruder'; to instruct a *pilot* on what heading to take, as in 'he vectored him back to base.'

Vectoring is usually done from the ground, or from a mother aircraft. Factors in vectoring are bearing, wind drift, altitude, and usually speed.

vector gunsight. A gunsight that contains a device that computes the vector required for the bullet to follow if it is to strike its target. Used esp. in firing at moving targets.

vectoring, *n.* The action of the verb 'vector.' Used attrib., as in *vectoring aircraft, vectoring computer.*

vector problem. A problem in interception in which the speed and direction of the object to be intercepted is first determined, followed by a calculation that determines the direction and speed that the intercepting object must pursue starting from a given point at a given instant in time.

Vector problems are subject to solution by electronic devices built into the intercepting objects.

V–E Day. The day of Germany's surrender (8 May 1945) in WW II, the day of victory in Europe.

vee, *n.* **1.** Something in the shape of the letter V, as a formation of aircraft so arranged, or an engine with its cylinders so arranged, etc. Also attrib., as in *vee antenna, vee formation,* etc. **2.** *Vee of vees,* a V-shaped formation, itself made up of smaller vee formations.

Veeder counter. [*Veeder*-Root, Inc.] A trademark name applied to a mechanical device for counting and recording mechanical movements.

vee engine. An internal-combustion, reciprocating engine having its cylinders arranged in a V shape when looked at from either end.

veep, *n.* A jeep equipped with VHF radio equipment. *Colloq.*

This term was applied esp. in WW II to jeeps so equipped for air-ground contact with tactical aircraft.

veg (*auth abbr*). 'Vegetation.'

vegetable, *n.* A slang or code word for a mine. *British.*

veh (*auth abbr*). 'Vehicle.'

vehicle, *n.* (veh) **1.** In essence, any contrivance or medium used to carry a load from one place to another. **2.** In concrete applications: **a.** Any conveyance for either land or air transport, as in 'the vehicles he saw were trucks, carts, and air transports.' **b.** In restricted (yet common) usage: A carriage or moving support on the ground only, exclusive of aircraft and exclusive of vessels, mounted on wheels, tracks, runners, rollers, or any combination of these, used to move persons or things from one place to another, as in 'he brought into play every vehicle, vessel, and aircraft.' **3.** In analysis of a weapons system, that component that constitutes the carrier, as in 'the vehicle for delivery of the bomb may be a man with a suitcase, an airplane, or a ship.'

Sense 2b is common among ground troops. The category includes amphibious vehicles.

vel (*auth abbr*). 'Velocity.'

velocity, *n.* (vel) **1.** Speed (which see). **2.** Speed, or rate of motion, in a given direction and in a given frame of reference.

In many contexts no distinction in meaning is to be made between 'speed' and 'velocity' (sense 1), the choice between the words being governed by a sense of association. However, 'velocity' is normally not used in reference to movements of a person or animal; instead 'speed' is used, as in 'his speed in typing,' or 'his speed in the mile was less than four minutes.' This restriction tends to carry over to inanimate objects when they are associated with man, as in 'the speed of an airplane.' On the other hand, 'velocity' appears to be preferred in reference to other inanimate objects, as in 'the velocity of the wind,' or 'the velocity of a bullet,' or 'the velocity of the electrons.' But 'speed' is often used likewise in these contexts.

In sense 2, 'velocity' is used in scientific or technical contexts. In these contexts, 'speed' denotes a scalar quantity equal only to that part of velocity that comprises its magnitude; whereas 'velocity' denotes a vector quantity that includes both magnitude and direction. See **coriolis force** for an example of usage.

velocity modulation. A kind of modulation in which the velocity of electrons in an electron beam is varied in cyclic fashion, causing the electrons to bunch together, each bunch of electrons causing a cycle of current as it passes an output electrode.

velocity of sound. The speed of sound.

vendor, *n.* In supply usage, any contractor, manufacturer, jobber, or commercial agency that sells something to the AF.

Vengeance, *n.* A popular name for the A-35.

Venom, *n.* **1.** A British airplane developed by de Havilland, having twin tail booms and a single jet engine, designed variously as a day fighter and fighter-bomber, and as an all-weather fighter. **2.** A British, low-wing, single-engine fighter of the 1930's, developed by Vickers.

In sense 1, the Venom is a development of the de Havilland Vampire.

vent, *n.* An opening through which air or other fluid may pass, as in a parachute where an opening, usually in the center of the canopy, allows air to escape, reducing strain and steadying the descent.

ventilation, *n. Medicine.* The act or process of aerating or oxygenating the blood in the lungs. See **hyperventilation,** *n.*, **hypoventilation,** *n.*

ventral, *a.* Situated on or in the belly of an aircraft, as in *ventral fin*, *ventral gun*, *ventral turret.*

Ventura, *n.* A popular name for the B-34.

venturi, *n.* A venturi tube.

venturi-pitot tube. A pitot-venturi tube.

venturi tube. [After G. B. *Venturi* (1746–1822), Italian physicist.] A short tube with a constricted throat which, when placed in a fluid flow parallel to the flow, brings about an increase in flow velocity at the throat with a consequent diminished pressure within the fluid at the throat.

The principle of the venturi tube was first applied in hydraulics, esp. to provide a means of metering liquid through a pipe by inserting a venturi tube in the pipe. In aeronautics, the tube has been combined with the pitot tube for measuring airspeed, and advantage has been taken of the diminished pressure at the throat to operate a gyroscope or other device. See **Bernoulli's law.**

ver (*auth abbr*). 'Verify.'

verbal, *a.* Given by word of mouth. Said of orders, instructions, or the like.

Verbal orders or instructions are, in many instances, later confirmed in writing.

Verey light. Incorrect for 'Very light.'

vernal equinox. 1. The point where the sun appears to cross the celestial equator from south to north. Also called the 'first point of Aries.' **2.** The time of this crossing, when day and night are everywhere of equal length.

The vernal equinox occurs about 21 March. Cf. **autumnal equinox.**

versatile, *a.* Of an aircraft: That lends itself to easy handling and many uses.

For example, a versatile transport is one that is easily loaded (usually carrying its own loading ramps), carries an adequately large payload, and is readily converted from a cargo carrier to a carrier for passengers or litter patients.

vert (*auth abbr*). 'Vertical.'

vertical, *n.* (vert) **1.** A vertical aerial photograph. **2.** A vertical plane or line.

vertical, *a.* **1.** Of a line or plane: Perpendicular to the horizontal; upright or in accord with a plumb line. **2.** Of a motion, or a resultant of motion: **a.** Made in a line perpendicular to the horizontal, as in 'a vertical dive' or 'a vertical climb.' **b.** Lying within a vertical plane, as in 'vertical deflection,' 'vertical lift,' 'vertical figure 8,' 'vertical corkscrew,' 'vertical velocity.' **3.** Made in a direction perpendicular to the horizontal, as in 'a vertical exposure.' **4.** Of an aircraft airfoil: Attached so that it lies parallel to the plane of symmetry and points upward. Said of a fin, stabilizer, etc. **5.** Of an organizational structure: Having control or supervision exercised through a chain of subordinates.

vertical aerial photograph. Full for 'vertical photograph.'

vertical attitude. The attitude of an aircraft with respect to its position about its lateral axis. The vertical attitude changes when the aircraft pitches.

vertical axis. 1. The axis of an aircraft in the plane of symmetry, about which the aircraft revolves in yawing. See **axis,** *n.*, note. **2.** In a gyroscope or gyroscopic body, an axis of precession that lies more or less vertical.

vertical bank. A bank in which the wings of the banking airplane are steeply slanted or vertical.

vertical bomb. A bomb that has no wings, but sometimes provided with control surfaces, as in the azon or razon bomb. Distinguished from a glide bomb or robot bomb such as the V-1.

vertical circle. A circle on the celestial sphere passing through the zenith and nadir of an observer.

vertical coverage. The coverage of a search radar in a vertical plane, measured by the degree of angular altitude.

vertical drop. 1. The drop of an object in trajectory or along a plumb line, measured vertically from its line of departure to the object. **2.** The distance measured. Also called 'drop.'

See **ballistic deflection, bullet drop, gravity drop.**

vertical engine. An internal-combustion, reciprocating engine having upright cylinders.

vertical envelopment. Envelopment of the enemy by means of airborne troops. See **envelopment,** *n.*, **vertical warfare.**

vertical fin. A fin (which see) affixed vertically. Applied commonly to the vertical stabilizer on either an airplane or airship. See **vertical stabilizer.**

vertical interval. A contour interval. See separate entry.

vertical photograph. An aerial photograph taken with the camera axis in a vertical position.

vertical plane. **1.** Any plane extending outward from the earth that passes through a vertical line, such as the plane of a vertical circle. **2.** The projection into a single plane of all the vertical planes in which a particular object moves, or in which several objects may be at rest, as in 'the trajectory of a bullet lies only in the vertical plane.' Always used with the definite article 'the.'

In sense 2, the vertical plane is a plane in which the object would appear to move if an observer, without depth perception, should view it from the side. In making a lazy eight, for example, an airplane actually moves in an infinite number of vertical planes (sense 1) but as seen in the vertical plane of sense 2, it appears to move in only one, i.e., only in two dimensions. See **horizontal plane,** sense 2 and note.

vertical point. *Aerial photog.* The plumb point. See separate entry.

vertical reversement. A flight maneuver, like the hammerhead stall, in which the airplane reverses its initial direction of flight by executing a vertical climb followed by a stall to inverted flight, then by a roll.

vertical stabilizer. On an airplane or other aircraft, a fixed or adjustable stabilizer having its plane parallel to the aircraft's plane of symmetry and to which, commonly, a rudder is hinged. See **vertical fin.**

Strictly speaking, the vertical stabilizer on an airplane does not include the rudder, but where the distinction is not important the term may be used to include it. See **horizontal stabilizer.**

vertical tail. The complete vertical component of an aircraft's empennage, esp. of an airplane's empennage, consisting of both fixed (or adjustable) and movable surfaces.

vertical tail area. The area of the vertical tail.

In measuring this area, it is customary to disregard the extra area of any fairings or fillets. See **horizontal tail area, tail area.**

vertical takeoff. A takeoff directly upward, as in a helicopter or the Convair XFZ-1.

vertical target complex. An industrial target complex consisting of potential targets related by their being in interdependent but different industries, such as would exist in a complex consisting of coke-ovens, steel mills, and shipping yards.

vertical turn. A turn made in a vertical bank.

vertical warfare. *Specif.* Warfare in which airborne troops are used.

vertigo, *n.* Dizziness or giddiness, esp. as brought on by airsickness.

Very, *n.* [See **Very pistol.**] Used attrib., as in *Very recognition signal, Very systems,* etc.

very heavy bombardment. **1.** Bombardment aviation equipped with very heavy bombers, as in 'this unit consists of very heavy bombardment.' Often abbreviated 'VHB.' **2.** Bombardment by very heavy bombers.

very heavy bomber. Any bomber considered in context as particularly heavy, thus having long range and carrying a large bomb load. See note under **medium bomber.**

very heavy cargo aircraft. A special heavy transport aircraft.

very high frequency. (VHF) Any radio frequency between 30 and 300 megacycles.

very important person. (VIP) A person either military or civilian who, by virtue of his high rank or important duty, is accorded special consideration or deference, esp. during travel or attendance at a conference.

Very light. A signal light or flare discharged from a Very pistol.

Also written 'Very's light,' esp. by British writers.

very long range. (VLR) A range considered to be greater than that fixed by the meaning of 'long range.' Applied to the capability of an aircraft, missile, or radio set.

This term is relative, and is used especially when technical improvements make the use of 'long range' inadequate for the purpose of describing something having greater range than that already described by 'long range.' For example, in WW II, the B-17 and B-24 were considered to have long range, but the B-29, having a greater range, was considered to have 'very long range.'

The term when applied to aircraft, as to the B-36, is in reference to range without benefit of air refueling.

very-long-range, *a.* or *attrib.* Of aircraft, missiles, or radio sets: Having very long range.

very low frequency. (VLF) Any radio frequency below 30 kilocycles.

Very pistol. [After USN Lt Edward W. *Very* (1847–1910), inventor.] A flare pistol used esp. for signaling; *specif.*, such a flare pistol of a type designed by Very, having a relatively short barrel. Cf. **signal pistol.**

Also written 'Very's pistol,' esp. by British writers.

ves (*auth abbr*). 'Vessel.'

vesicant, *n. Specif.* A blistering gas.

vessel, *n.* (ves) **1.** A water-borne craft such as a ship or boat. **2.** Also applied to an aircraft, esp. to an airship.

vet (*auth abbr*). 'Veteran' or 'veterinary.' Pronounced as a word in either sense.

veteran, *n.* (vet) **1.** A person experienced and practiced in some service or art, as in combat flying, or administration. **2.** A former member of one of the Armed Forces; a service veteran.

veteran preference. A special consideration given a service veteran in applying for a job.

Veterans' Administration. (VA) A US government agency that administers benefits for former members of the Armed Forces and for the dependents and other beneficiaries of de-

ceased former members of such forces. Also commonly written 'Veterans Administration.'

The Veterans' Administration was established by executive order (21 July 1930).

Veterans' Day. A day (11 November) set aside to commemorate the end of military hostilities in WW I and in WW II.

Veterinary Corps. (VC) *Specif.* A corps in the USAF Medical Service whose members are Doctors of Veterinary Medicine.

VF (*code*). A US Naval designation for a fixed-wing fighter plane. See **V** (*letter*), sense 2, note.

V formation. A V-shaped formation of aircraft, esp. one in which all aircraft are flying at the same altitude.

If elements of this formation are at different altitudes, this is usually indicated by additional context, as in 'a staggered V formation.'

VFR (*auth abbr*). 'Visual flight rules.'

Also found in combinations, as *VFR conditions, VFR flight, VFR traffic.*

Used adverbially, as in 'we will fly VFR.'

VFR clearance. An aircraft clearance for a flight under visual conditions.

VG (*abbr*). 'Velocity gravity,' i.e., G-force due to acceleration. See **stapp,** *n.*

VG recorder. An instrument for recording G-force due to acceleration.

VH (*auth abbr*). 'Very high.'

VHB (*abbr*). 'Very heavy bombardment.' Attrib., as in *VHB group, VHB unit.*

VHF (*auth abbr*). 'Very high frequency.'

Used attrib. to designate different types of radio ranges, as in *VHF aural-type radio range; VHF horizontally-polarized two-course radio range* (now *obsolete*); *VHF omnidirectional radio range* (VOR), which applies to (a) the phase-shift omnidirectional radio range, and (b) a type that utilizes two overlapping and rotating patterns of radio-frequency energy to produce a rotating on-course signal which may be received anywhere within the range as well as an indexing signal that passes through true south to enable a bearing to be found with respect to the radio-range station.

Also attrib. in other combinations, as in *VHF band, VHF direction finding, VHF homer.*

VHF/DF (*abbr*). 'Very high frequency direction-finding.'

VHF homing adapter. A homing adapter operating in the VHF range. See **homing adapter.**

VHF/UHF direction finder. A ground-based direction finder capable of use alone or in conjunction with airport surveillance radar.

vibration, *n.* A periodic motion of the particles in an elastic body in alternately opposite directions, esp. as manifested in an aircraft in flight by a quivering motion of some part or other, or as manifested by particles of air that transmit sound to the ear. Cf. **oscillation,** *n.*, sense 1.

vibration pickup. A sensitive device for detecting vibration.

vibratory gyroscope. An instrument that utilizes a vibrating rod or tuning-fork to perform certain equilibrium or directional functions of the spinning gyroscope. Also called 'vibratory gyro.'

This instrument is used as a rate gyro in certain high-speed aircraft.

vic, *n.* Short for 'vic formation.'

vic (*auth abbr*). 'Vicinity.'

vic (*code*). A code word for the letter 'V.' Chiefly *British.* See **Victor** (*code*).

vice, *a.* [Rimes with 'dice.'] Designating an official who assists, and acts in the place of, his immediate superior. See **vice chief of staff, vice commander.**

vice, *prep.* In place of; succeeding, as in 'General Strickland was appointed military governor, vice General Clutterbuck.'

Despite the dictionaries, this word is commonly pronounced as a rime of 'dice,' the same as the adjective of the same spelling instead of the somewhat strained 'vy'-se.'

vice admiral. A person in the US Navy, corresponding to a lieutenant general in the AF; the rank held by this person.

vice chief of staff. (VCS) An officer who acts for the chief of staff during his absence, and shares in the performance of his duties. *Capitalized* in specific titles.

Deputy chiefs of staff are subordinate to a vice-chief of staff when a headquarters has both titles in its organization. See **deputy,** *n.*, sense 2b.

vice commander. An officer who acts for the commander during his absence, and shares in the performance of his duties; the title of this officer.

This title is used instead of 'deputy commander' when the breakdown of staff positions requires the use of 'deputy commander' to designate some other officer or officers. See **deputy commander,** note.

vic formation. [See **vic** (*code*).] A V-shaped aircraft formation. Chiefly *British.*

Vickers, *n.* **1.** Any of certain guns made or designed by Vickers' Sons and Maxim, Ltd., esp. a type of water-cooled, belt-fed machine gun of Maxim design having a distinctive corrugated water jacket, widely used during and after WW I for both air and ground purposes, but now obsolete for aircraft. Attrib., as in *Vickers Browning, Vickers' gun, Vickers Predictor,* etc. **2. a.** Used in the names of airplanes made or developed by Vickers, Ltd., or by Vickers (Aviation), Ltd., British firms now a part of Vickers Armstrongs. **b.** Short for 'Vickers Armstrongs.' Used attrib., as in *Vickers Spitfire, Vickers Viscount, Vickers Wellington.*

Vickers Armstrongs. [*Vickers Armstrongs,* Ltd., a British aircraft-manufacturing firm.] Used in the names of aircraft, as in *Vickers Armstrongs Valiant, Vickers Armstrongs Wellington.*

Victor (*code*). An authorized word for the letter 'V.' See **Alfa** (*code*).

Victoria Cross. A British decoration consisting of a bronze Maltese cross awarded a member of the British armed services for remarkable valor.

First bestowed in 1857, it is the most highly prized of British military decorations. Abbreviated 'V.C.'

victory, *n.* **1.** The overcoming of an enemy in battle; an instance of this. **2.** *Specif.* An instance in which an airman destroys an enemy aircraft in air-to-air combat, as in 'he had 10 victories and 2 probables.'

victory roll. The roll of an airplane about its longitudinal axis, made by a pilot to celebrate a victory.

video, *n.* [See note.] **1.** The conversion of certain electronic impulses into wave lengths that can be seen. **2.** The display or presentation of such wave lengths upon a radar or television screen.

This word is a coined word formed from the Latin *videre* 'to see.' Its ending, although the same as that of the Latin *video* 'I see,' is analogous to the endings of 'radio' or 'audio.'

video, *a.* Of or pertaining to the visual presentation or display on a television or radar screen, as in *video amplifier*, *video frequency*, *video mapping*, etc.

video photograph. A photograph, esp. an aerial photograph, made from images displayed on a television screen. See **aerial photograph.**

Vigilant, *n.* A popular name for the L-1.

Viking, *n.* **1.** A large, liquid-fuel, high-altitude rocket, built for the US Navy by the Glenn L. Martin Co. **2.** A British airliner with two radial engines, developed by Vickers Armstrongs. **3.** A pusher amphibian developed by Vickers, Ltd., in 1918 and 1919.

In sense 2, an experimental version was powered by two turbojet engines.

VIP (*abbr*). **1.** *auth.* 'Very important person.' **2.** 'Very important passenger.'

This is normally pronounced by separate letter.

VIP code. A code consisting of five different letters and five numbers for use in telegraphic messages concerning visits by very important persons.

T indicates a need for transportation; *Q* for quarters; *S* for servicing of the aircraft; *H* for honors; and *N* for informal visit. A *1* indicates a general, a *2* a lieutenant general, a *3* a major general, a *4* a brigadier general, and a *5* a colonel.

virga, *n. Meteorology.* A trail of rain or snow from clouds, which evaporates before reaching the ground.

virtual axis. The axis of the conical surface described by the rotating blades of a rotary wing.

virtual bomb. The origin of reflected shock waves that occurs when a nuclear bomb is detonated in the air, the point of origin being coincident with the image point. See **image point.**

virtual temperature. *Meteorology.* The temperature at which dry air would have the same pressure and density as the air under consideration.

virus, *n.* In bacteriological warfare, an ultramicroscopic infectious agent which, unlike bacteria, will pass through a filter. Sometimes called a 'filtrable virus.'

vis (*auth abbr*). 'Visual' or 'visibility.'

viscosity, *n.* **1.** In a liquid, the property of internal resistance, caused by molecular attraction, that makes the liquid resist flow. See **S.A.E. number. 2.** In a solid, the property of yielding steadily under stress.

Viscount, *n.* A British, four-engine airliner, developed by Vickers Armstrongs.

visibility, *n.* (vis) **1.** The range of clearness in the air (or other medium) through which one sees, as in 'visibility was good and every target could be seen below the airplane.' Cf. **slant visibility. 2.** In assessing or reporting weather conditions, the range of clearness in a horizontal direction on the ground indicated by the greatest distance at which prominent objects can be seen, as in 'visibility one mile, ceiling, 2,000 feet.' **3.** The quality or condition of an object that makes it visible. **4.** A feature of an aircraft that permits a person or persons inside the aircraft to have more or less unobstructed views, as in 'the airplane had good visibility in the nose.'

In senses 1 and 2, this term is given restrictive meaning that excludes consideration of the space within an aircraft. For example, a condition of 'zero visibility' does not imply that the pilot cannot see his instruments.

In sense 4, see **accessibility,** *n.*, note.

visible horizon. The apparent meeting of the earth and sky as observed from any place on the earth or in the atmosphere.

See **horizon,** *n.*, sense 1.

visual, *a.* (vis) **1.** Of or pertaining to seeing something directly without aid of radar or photography as in *visual bombing*, *visual contact*, *visual observation*, etc. **2.** Of or pertaining to seeing, as distinguished from hearing or feeling, as in *visual aid*, *visual-aural range*, *visual signal*, etc. **3.** Of or pertaining to doing something by seeing, as distinguished from doing something by use of instruments, as in *visual flying.*

visual aid. *Specif.* **1.** A graphic demonstration or presentation, as a map, outline, filmstrip, or the like, esp. as used in academic training. Cf. **training aid. 2.** Any device or facility used in air navigation that utilizes sight over a distance, as a light beacon, panel, marking, or other device, as distinguished esp. from a radio or radar aid.

visual-aural radio range. Any radio range that sends out signals for both visual and aural reception; applied esp. to certain types of VHF radio ranges.

visual-aural VHF radio range. (VAR) A VHF radio range in which two separate signals are beamed in opposite directions for visual reception, and two additional signals beamed at right angles for aural reception and identification.

visual bombing. Bombing done by sighting on an aiming point or points, under conditions where the aiming point or points are visible from the bombing aircraft. Distinguished from radar bombing.

visual bombsight. A bombsight designed for aiming a bomb when the aiming point is visible.

visual communication. Communication by directly seeing at a distance the various signals, such as lights, flags, pyrotechnics, etc.

Visual communication is not considered to include communication effected by an electronic signal being displayed on a screen as in the case of a visual omnirange. This would be electronic or radio communication visually received. See **visual,** *a.*, but see also **visual-aural radio range.**

visual flight rules. (VFR) Rules restricting the flying of aircraft under conditions of contact flying to given minimum altitudes and limits of visibility.

The term 'visual flight rules' has replaced the term 'contact flight rules.'

visual omnirange. An omnidirectional radio range that transmits signals for visual reception.

visual photograph. A photograph taken directly of an object without benefit of infrared film or indirect presentation, i.e., of an object that can be seen by the human eye. Also called a 'conventional photograph.'

A visual photograph is distinguished from an infrared photograph, as well as from a radarscope or video photograph. See **aerial photograph,** note.

visual range. The distance within which something can be observed or identified visually.

visual reconnaissance. Reconnaissance by directly seeing, as distinguished from radar reconnaissance or photographic reconnaissance.

visual signal. A signal that is seen, as distinguished from one that is heard or felt.

vital target. A target which if destroyed or damaged seriously impairs or ends the ability of its user to wage war.

In strategic air warfare, vital targets are considered to include key manufacturing systems, sources of raw material, critical material, stockpiles, power systems, transportation systems, communication facilities, concentrations of armed forces, and food-producing areas.

vj (*abbr*). 'Jet velocity,' as in a reaction motor.

V-J Day. The day of Japan's surrender (14 August 1945 or 2 September 1945) in WW II, the day of victory in Asia.

The formal surrender on the U.S.S. Missouri was 2 September 1945.

VLA (*auth abbr*). 'Very low altitude.'

VLF (*auth abbr*). 'Very low frequency.'

VLR (*auth abbr*). 'Very long range.'

VMWW I (*auth abbr*). 'Victory Medal, World War I.'

VMWW II (*auth abbr*). 'Victory Medal, World War II.'

VO (*auth abbr*). 'Verbal orders.'

VO (*code*). A US Naval designation for fixed-wing observation planes. See **V** (*letter*), sense 2, note.

VOC (*abbr*). **1.** *auth.* 'Verbal orders of the commander.' **2.** 'Vehicle out of commission.'

VOCG (*auth abbr*). 'Verbal orders commanding general.'

VOCM (*abbr*). 'Vehicle out of commission for maintenance.'

VOCO (*auth abbr*). 'Verbal orders commanding officer.'

VOCP (*abbr*). 'Vehicle out of commission for parts.'

VOCS (*auth abbr*). 'Verbal orders chief of staff.'

V of V. A vee of vees. See **vee,** *n.*, sense 2. Hence, *V of V formation.*

voice, *n. Specif.* Sound uttered by a human being with his vocal organs.

Used attrib. to designate a manner of communication, esp. by radio, as in *voice call sign, voice communication, voice frequency, voice radio* (as distinguished from other sound radio or from visual radio), *voice signal, voice transmission,* etc.

Voisin, *n.* [Aeroplanes *Voisin.*] Any airplane made by the French Voisin firm, which produced airplanes from 1905 through WW I.

vol (*auth abbr*). 'Volume' or 'volunteer.'

volatile, *a.* Easily passing away by evaporation. Said esp. of liquid fuels.

volatility, *n.* The quality or property of a liquid for evaporating.

Volksjäger, *n.* ['People's fighter.'] A popular German name for the Heinkel 162.

volplane, *n.* [French *vol plané* from *vol* flight, and *planer* to glide or soar.] A gliding movement in an airplane. Hence, **volplanist,** *n.*

This word was commonly used about 1911; it has occasionally been used among recent writers.

volplane, *v. intr.* To glide. Said of an airplane or of a winged missile.

volumetric efficiency. The efficiency with which an internal-combustion piston engine draws air or an air-fuel mixture into its cylinders.

Volunteer Air Reserve. Formerly, that part of the active AF Reserve not in the Organized Air Reserve. Now *hist.*

Volunteer Air Reserve training unit. A name formerly used for a numbered air reserve squadron to which Reserve officers and airmen not in the Organized Air Reserve were assigned for administration and inactive duty ground training.

vomiting gas. A toxic gas, such as adamsite, that causes coughing, sneezing, sometimes vomiting, and other effects.

Voodoo, *n.* A popular name for the F-101.

VOQ (*auth abbr*). 'Visiting officers' quarters.'

VOR (*auth abbr*). 'VHF omnidirectional range.'

VOR receiver. Any radio receiver in an aircraft designed to receive signals from a VHF omnidirectional radio range and to interpret them for the aircraft crew.

vortex, *n.* A mass of fluid, such as air or water, having such circular or whirling motion that a cavity is formed in the center toward which things caught in its influence tend to move; the motion of such a fluid.

Small vortexes (sometimes spelled and pronounced 'vortices') normally form about the wingtips of an airplane when in flight.

vortex gate. A device for cutting off or neutralizing swirling airflow; esp. on the turboprop XF-84H, a dorsal fin placed just behind the cockpit canopy to neutralize the heavy torque set up by the supersonic propellers.

vortex generator. A movable surface on an aerodynamic body that may be used as a spoiler to break down the airflow.

vortex thermometer. A thermometer used to measure free-air temperature around an aircraft, mounted in a special housing that creates a vortex around the thermometer to eliminate errors caused by frictional and adiabatic heating.

VOSAF (*auth abbr*). 'Verbal orders Secretary of the Air Force.'

vou (*auth abbr*). 'Voucher.'

voucher, *n.* (vou) A paper or set of papers that serves to confirm or vouch for the validity of an account, record, or fact.

Vouchers are used as evidence of cash disbursements and as authority for cash disbursements. In supply usage, vouchers also serve as evidence for the receipt, shipment, issue, transfer, or disposition of property.

Vought, *n.* Short for 'Chance Vought,' as in *Vought Corsair.*

Vought-Sikorsky, *n.* [*Vought-Sikorsky* Division, a former division of United Aircraft Corp. between 1939 and 1943.] Used in the names of aircraft, as in *Vought-Sikorsky Kingfisher.*

In 1943 the Vought-Sikorsky Division was reconstituted into two divisions, the Chance Vought Division and the Sikorsky Aircraft Division.

Voyager, *n.* A popular US name for the C-45.

VP (*abbr*). 'Variable pitch.'

VP (*code*). US Naval designation for a fixed-wing patrol plane. See **V** (*letter*), sense 2, note.

For administrative purposes, VP and VR airplanes are further designated as four-engine landplanes (HL), two-engine landplanes (ML), four-engine seaplanes (HS), and two-engine seaplanes (MS).

VPM (*auth abbr*). 'Vehicles per mile.'

VR (*code*). US Naval designation for a fixed-wing transport airplane. See **V** (*letter*), sense 2, note.

For administrative purposes, VR airplanes bear further designations the same as VP airplanes. See **VP** (*code*).

vrille, *n.* [French.] A spin; *specif.*, an aerial performance or maneuver in which an airplane is made to descend in a spin. *Obs.*

VRS (*abbr*). 'Volunteer Reserve Section.'

VSD (*auth abbr*). 'Vendor's shipping document.'

VSR (*abbr*). 'Very short range.'

VT (*abbr*). 'Variable-time,' in combination only, as 'VT fuze.' See **variable-time fuze.**

VT (*code*). A US Naval designation for a fixed-wing trainer-type airplane. See **V** (*letter*), sense 2, note.

VTO (*abbr*). 'Vertical takeoff.' Also used figuratively in reference to a person who acts precipitously.

VTOL (*abbr*). **1.** 'Vertical takeoff and landing.' **2.** An airplane other than a helicopter that takes off and lands vertically.

Used in reference to the takeoff and landings of fixed-wing airplanes, such as in the Convair XFY-1, the Lockheed XFV-1, or an airplane experimentally being developed by Bell which uses jet engines reacting in a vertical line for takeoff or landing, then switches the engines so that they react parallel to the longitudinal axis for normal flight.

VTU (*auth abbr*). 'Volunteer training unit.'

VU (*code*). A US Naval designation for a fixed-wing utility airplane. See **V** (*letter*), sense 2, note.

vulnerability, *n.* **1.** The state or quality of being unprotected and open to attack and injury, as in 'the city has great vulnerability to the bomb.' **2.** A particular shortcoming or weak point in a person, thing, or force, as in 'the capabilities and vulnerabilities of an aircraft,' or 'the vulnerabilities of a nation at war,' or 'the capabilities, vulnerabilities, and intentions of an enemy.' **3.** Target vulnerability.

Attrib., esp. in sense 2, as in *vulnerability criteria, vulnerability test.*

vulnerable, *a.* **1.** Unprotected or unguarded in some vital respect, and open to attack and injury. Said of a person, group of persons, or installation. **2.** Of a plan: Having inherent weaknesses that make it inadvisable to follow. **3.** Of a position: Open to attack; weak; untenable.

Vultee, *n.* [*Vultee* Aircraft, Inc., now a part of Consolidated Vultee Aircraft Corp.] Used in the names of aircraft, as in *Vultee A-35, Vultee Valiant, Vultee Vibrator* (the BT-13).

V-weapon, *n.* Either the V-1 or the V-2. Attrib., as in *V-weapon site, V-weapon industry.*

W

W (*letter*). See **Whisky** (*code*). **1.** A code letter for 'Canadian Car and Foundry Company' in designations of Navy aircraft. **2.** A code letter for 'Willys-Overland Company' in designations of Navy aircraft. **3.** Used as a code suffix in the designation of Navy aircraft modified as an air warning version.

W (*abbr*). **1.** 'West.' **2.** 'Wife.' **3.** 'Weather reconnaissance,' used as a prefix in the names of USAF aircraft modified for weather reconnaissance.

W (*code suffix*). 'Regular Air Force Female Officer,' when used with a service number, as in '21253W.'

This suffix is used with the service numbers of WAFs, women nurses, and members of the Women's Medical Specialist Corps.

w (*auth abbr*). 'With,' in combinations only.

WAAC (*abbr*). 'Women's Army Auxiliary Corps.' Now *hist.*

Waac, *n.* A member of the Women's Army Auxiliary Corps. Now *hist.*

WAAF (*abbr*). 'Women's Auxiliary Air Force.' *British.*

WAB (*auth abbr*). 'When authorized by.'

WAC, *n.* [From **WAC** (*abbr*).] **1.** A member of the Women's Army Corps. **2.** A woman in the Air Force, i.e., a WAF. *Loose* usage.

Usage in sense 2 is colloquial but common. It stems, of course, from habits formed when the Air Corps was a branch of the Army.

As with 'WAF,' Air Force practice is to uppercase 'WAC,' although the *Style Manual* (1953) of the US Government Printing Office recommends 'Wac,' thus differentiating the person from the corps. Army practice, as illustrated in the *U.S. Army in World War II*, sanctions use of 'Wac' for the person, but 'WAC' is also used.

WAC (*abbr*). **1.** *auth.* 'Women's Army Corps.' See **WAC,** *n.* **2.** 'World Aeronautical Chart.'

Pronounced as a word in both senses.

Used attrib. in sense 1, as in *WAC detachment, WAC squadron,* etc.

Wac Corporal. A sounding rocket for very high altitudes, propelled by liquid fuel although adapted to using a solid propellant booster. Attrib., as in *Wac Corporal missile, Wac Corporal rocket.*

The Wac Corporal, used as a second-stage rocket in the nose of a V-2, reached an altitude of some 250 miles on 25 Feb 1949 at White Sands Proving Ground, New Mexico.

Waco, *n.* [The *Waco* Aircraft Company, a US firm, no longer producing.] Used in the names of aircraft, as in *Waco F-6*, a three-place biplane of the 1930's, *Waco CG-13*, and *Waco CG-14*, transport gliders of WW II.

WACSM (*abbr*). 'Women's Army Corps Service Medal.'

WADC (*auth abbr*). 'Wright Air Development Center.'

WADF (*auth abbr*). 'Western Air Defense Force.'

WAE (*abbr*). 'When actually employed.'

WAEPA (*abbr*). 'War Agencies Employees Protective Association.'

WAF, *n.* [From **WAF** (*auth abbr*).] A member of the Women in the Air Force.

Air Force practice is to uppercase this word, although the GPO *Style Manual* (1953) recommends 'Waf' to differentiate the person from the corps. Cf. **WAC,** *n.*, note; also **Wave,** *n.*

WAF (*auth abbr*). 'Women in the Air Force.' Attrib., as in *WAF officer, WAF personnel, WAF squadron.* Pronounced as a word.

WAF airman. An enlisted member of the Women in the Air Force. See **airman,** *n.*, note.

waffle, *v.* [Scottish or North English dialect.] *intr.* To fly unsteadily. *British.*

WAFS (*abbr*). 'Women's Auxiliary Ferrying Service.' *Hist.*

wage, *v. tr.* To carry on a *war.*

waggle, *n.* An instance of waggling an airplane's wings.

waggle, *v. tr.* To move an airplane's *wings* up and down while in flight, usually by way of giving a signal, and done by short oscillations about the longitudinal axis.

waist, *n.* The middle section of an airplane's fuselage. Applied esp. to the middle section of a bomber.

Attrib., as in *waist compartment, waist gun, waist gunner, waist hatch, waist window,* etc.

wake, *n.* **1.** The trail marked by disturbed air or other fluid created by a body passing through the fluid, esp. such a trail behind an aircraft moving through air. **2.** The air or other fluid that is so disturbed. Attrib., as in *wake drag.* **3.** The airspace immediately behind a moving aircraft, as in 'he followed in the wake of the B-52.'

A wake differs from a wash in that the latter denotes the surge of air or of other fluid rather than the air itself, or rather than the trail made by disturbed air.

wake efficiency. The efficiency with which the air or other fluid thrust backward by an aircraft's jet power plant propels the aircraft forward, expressed by the ratio of thrust power to jet power. See **jet power,** sense 2, **jet thrust.**

walk, *v.* **1.** *To walk a wing.* **a.** To walk on the wing of an airplane in flight as a stunt in aerial acrobatics, often stepping from one airplane to another. **b.** To walk on the ground at the wingtip of a taxiing airplane to prevent it from colliding with other objects on the ground, such as parked aircraft in the parking area. **2.** *To walk the rudder,* to swing an aircraft's rudder from side to side, done by stepping or 'walking' on the rudder bar or pedals. **3. a.** *To walk bombs,* to drop bombs in a string across a target or place. **b.** *intr.* Of bombs: To lay out across a target. **4.** *To walk away from an airplane crash* or *accident,* to survive an accident unhurt or without serious injury.

walk-around oxygen bottle. A carry-around oxygen bottle. See separate entry.

Walker Air Force Base. An AF base at Roswell, New Mexico, formerly known as Roswell Army Air Field, renamed for Brigadier General Kenneth N. Walker, killed in the Southwest Pacific while leading a bombing attack in 1943.

walkie-talkie, *n.* A two-way voice radio set, normally carried on the back with the receiver and microphone on a cord, used either while in motion or at rest.

The SCR-300 VHF is an example of a walkie-talkie. Cf. **handie-talkie,** *n.*

Walrus, *n.* A British, single-engine, amphibian, biplane flying boat developed by Supermarine, used prior to, and during, WW II for reconnaissance, training, communications duties, and air rescue. Attrib., as in *Walrus amphibian, Walrus cataplane.*

WANAP (*auth abbr*). 'Washington National Airport.'

wander, *n.* The drift of a gyroscope. See **drift,** *n.,* sense 2.

war, *n.* **1.** Open armed conflict between or among sovereign states or belligerent powers, esp. armed conflict recognized by formal declaration. **a.** Considered without reference to a particular conflict, as in 'during war.' **b.** Considered with reference to a particular conflict, as in 'during the war.' **2.** By hyperbole, any intense and hostile strife between sovereign states by means short of armed conflict, as in 'cold war.' **3.** The phenomenon of war, as in 'the study of war.'

The present world makes distinctions between one kind of war and another. There are contained wars, uncontained wars, limited wars, restricted wars, unrestricted wars, general wars, world wars, total wars, peripheral wars, cold wars, and hot wars. See separate entries.

warbird, *n.* A military airplane; a crew member of such an airplane. *Slang.*

War Claims Commission. A US government agency created in 1948 for the purpose of receiving, adjudicating, and providing for the payment of certain claims filed by prisoners of war or their kin survivors, or filed by certain US civilians, or by certain other groups.

War Council. The predecessor organization of the Armed Forces Policy Council.

Established in 1947, it was redesignated in 1949 by amendment to the National Security Act.

War Department. Between 1789 and 1947, a US government department, the secretary of which had cabinet status, having the responsibility of organizing, training, and maintaining the Army and conducting certain nonmilitary activities.

In the reorganization following the National Security Act of 1947, the War Department, as such, was discontinued. The Department of the Army assumed its historic functions, except for those resulting from the development of air power. These latter were assumed by the Department of the Air Force. Under reorganization, the Secretary of Defense was given cabinet status, but departmental secretaries were not given this status.

war emergency. 1. An emergency brought on by war. **2.** Any particular situation in combat calling for maximum attention and effort. **3.** A power setting for an aircraft engine, which when used gives maximum power, as in 'he pushed the throttle to war emergency.'

war-emergency power. The maximum power of a military aircraft engine, obtained by use of power settings specified by the manufacturer, and used for brief periods in emergencies or sometimes in takeoff.

Protracted use of war-emergency power is harmful to the engine.

warfare, *n.* The conduct of war; the manner of conducting war; a state existent when a war is being waged. Cf. **war,** *n.,* sense 1.

war game. A simulated battle or series of battles, or a series of simulated military moves by two opposing forces, undertaken to test the validity of a war plan, or undertaken to illustrate, demonstrate, or test the validity of an operational concept. See **concept,** *n.*

A war game may be staged in the field with personnel and equipment, or simply conducted by two teams in a series of conferences, each team alternately announcing what its moves are to be. A war game differs from a maneuver in that its object is to discover the strengths and weaknesses of a proposed plan or concept, each contestant being bent upon achieving overall sound results, not upon outwitting his opponent or demonstrating combat readiness, superior skill, or fitness. See **maneuver,** *n.,* sense 3.

war-game, *v. tr.* To subject a *plan* or *concept* to a test by means of a war game.

Warhawk, *n.* An American name for the Kittyhawk and Tomahawk models of the Curtiss P-40.

warhead, *n.* That part of a bomb, guided missile, ballistic missile, torpedo, or other missile, containing an explosive, chemical, or other charge intended to damage the enemy. Cf. **head,** *n.*, sense 2.

warm, *v. To warm up.* **1.** *tr.* To run or operate an *engine, radio set,* or other piece of equipment in order to heat the equipment to its normal operating temperature; *specif.*, to run the *engine* or *engines* of an *aircraft* for this purpose while remaining at a standstill on the ground. **2.** To heat *something,* such as an *instrument* or the *oil* in a tank, by means of a heating element. **3.** *intr.* **a.** Of a person, aircraft, or piece of equipment: To engage in, or perform, the operation indicated in sense 1. **b.** To become warm or heated.

warm front. The front or frontal surface of an air mass that is displacing a receding colder air mass.

The passage of a warm front is followed by a rise in temperature, shifting winds, and generally clearing weather.

warm-front thunderstorm. A frontal thunderstorm caused by warm, moist, unstable air being forced aloft over a colder layer of retreating air.

warmup, *n.* Also **warm-up,** *n.* An act or instance of warming up. See **warm,** *v.*

Attrib., as in *warmup time.*

warmup apron. An apron at which the engines of an aircraft are warmed up.

Warner-Robins Air Materiel Area. (WRAMA) An air materiel area with headquarters at Robins Air Force Base, near Macon, Georgia.

warning, *n. Specif.* The act or fact of giving notice of the approach of hostile or unidentified aircraft, esp. by means of an established aircraft-warning service.

Attrib., as in *warning controller, warning light, warning network, warning radar, warning system,* etc. See **aircraft-warning service, early-warning radar.**

warning horn. *Specif.* A horn in a landing-gear warning system. See **landing-gear warning system.**

warning net. Any system of communications set up to give warning of aggressive enemy movements, esp. the aggressive movements of enemy aircraft.

warning order. A preliminary notice that another order or action is to follow, designed to allow time for making plans and preparations.

warning point. Any point, which when reached, gives warning that a critical moment or action is to follow.

warning point level. The level of supplies at a zonal, master, or specialized depot designated as the point at which action must be taken to replenish stock.

warning point system. A system of blind bombing used in Europe during WW II in which a warning point established by Gee-H was used to mark the beginning of a timed run.

war of attrition. A war in which one side or both sides aim to win by causing the adversary's resources, esp. his military resources, to suffer unreplaced losses.

warp, *v. tr.* **1.** To change the shape of *something,* esp. an airplane's *wing,* by twisting. **2.** To give lift or drop to a *wing* by twisting it at the ends.

On some early-day airplanes, a system for warping the wings at will was used as a control system in the place of using ailerons. See **wing-warping,** *n.*

warping tip. A wingtip subject to being warped as a means of lifting or dropping the wing. Chiefly *hist.*

war plan. Any of the several plans drawn up to carry on a war, including (1) an overall plan that sets forth the military objectives of the nation in terms of the industrial and military capabilities of the nation, (2) special plans for each of the services, so designed as to implement the overall plan, and enable each service to function in full coordination with the others, and (3) any one of the lesser plans that implement the special plans of the separate services.

warplane, *n.* An airplane designed for use in combat, as a fighter or bomber.

war potential. The capacity and capability of a country to conduct a war, with respect to political, economic, industrial, social, psychological, and military factors.

war production. That portion of a nation's production, usually industrial production, which directly supports a war.

warrant officer. An officer who holds his rank by virtue of a warrant. See **chief warrant officer, junior warrant officer.**

A warrant officer has the same rights and privileges as a commissioned officer; he is addressed as 'Mister.'

Warren truss. A type of truss using single, rigid, diagonal braces between bays.

war reserve. Equipment or materials held in reserve for use in case of war.

war room. The name of the Army equivalent of an air room. This name survives in popular speech for an AF air room.

war surplus. A military article of supply or a piece of equipment which has been declared surplus because it is obsolete, unserviceable, or excess to current and reserve military requirements.

wartime, *n.* A time when a nation is at war. Used attrib. or as an adjective, as in *wartime aviation, wartime intelligence, wartime security,* etc.

war-weary airplane. An airplane no longer suitable for service in a combat area, but returned,

or subject to being returned, to the US for repair or junking.

Warwick, *n.* A twin-engine, British airplane developed by Vickers Armstrongs, used during and after WW II, and adapted to reconnaissance, air rescue, transport, and other purposes.

wash, *n.* **1.** The surge of disturbed air or other fluid resulting from the passage of something through the fluid; *specif.*, a surge of air and other gas that moves backwards and to the sides after an aircraft has passed. Cf. **backwash,** *n.*, **downwash,** *n.* **2.** The stream of air or other fluid sent backwards by a jet engine or a propeller.

The wash of sense 1 includes the surge of a jet stream or slipstream if they are present. See **jet wash, propeller wash.** Also cf. **wake,** *n.* In sense 2, more specific terms may be used: See **jet stream** and **slipstream,** *n.*

wash, *v.* Usually with *out.* **1.** *tr.* To eliminate a *person* from a course of training, esp. a pilot's course. **2. a.** To damage an *aircraft* beyond repair, esp. during the course of a landing. **b.** To crumble or sweep away a *landing gear.* **3.** To warp a *wing* so as to increase its lift. *Rare.* **4.** *intr.* Of a person: To fail a course of training. **5.** Of an airplane or landing gear: To suffer irreparable damage.

washin, *n.* A twist built into an airplane wing by which the angle of incidence is increased outward so as to give the wing increased lift toward the tip. Cf. **washout,** *n.*, sense 1.

washing machine. An airplane used for checking the flying proficiency of a pilot trainee. *Slang.*

Used in allusion to the possibility of the trainee being washed out.

Washington, *n.* The city of Washington, D.C. **a.** Often used in indefinite reference to a particular office or headquarters in Washington, as in 'the report is being prepared for Washington.' **b.** Also often personified, as in 'Washington instructed each command,' or 'Washington was determined to stop low-altitude stunting.'

Washington National Airport. An airport in Washington, D.C., at which space is provided for a MATS terminal.

washout, *n.* **1.** A warp in an airplane's wing giving a decrease in the angle of attack toward the tip. **2.** In *colloq.* usage. **a.** An act or instance of washing out. **b.** A person or airplane that has been washed out.

In sense 1, cf. **washin,** *n.*

washout board. A board that deliberates and acts on cases of persons up for elimination from a course of training.

WASP, *n.* [From **WASP** (*abbr*).] A member of the Women's Airforce Service Pilots. Now *hist.*

As with 'WAF,' AF practice is to uppercase 'WASP.'

WASP (*abbr*). 'Women's Airforce Service Pilots.'

Wasp, *n.* A popular name for any of certain radial aircraft engines made by Pratt & Whitney. Hence, *Wasp engine.*

Wasserfall, *n.* [From a German code name.] A German surface-to-air guided rocket missile of WW II. The Wasserfall used a liquid propellant.

Wassermann, *n.* The German code name for Chimney (which see). Also used in English.

wastage, *n.* Any loss in equipment or personnel incurred without some return to compensate for it; *specif.*, in a combat situation, a loss for which neither damage is done the enemy, nor other advantage is gained for the operation.

waste gate. An exit through which exhaust gas, in excess of that needed to drive the turbine of a turbosupercharger, escapes into the atmosphere. Also called a 'blast gate.'

water-based, *a.* Of aircraft: That take off and land on water. Distinguished from 'carrier-based' or 'land-based.'

water calorimeter. *Radio.* A type of calorimeter incorporating a water chamber, that measures the power of radio frequencies by the change in temperature of water heated by the frequencies.

water-cooled, *a.* Cooled by water. Said of an engine, a machine gun, or other apparatus. See **liquid-cooled,** *a.*

water echelon. That part of an AF organization that is transported to its destination by water, as distinguished from an air echelon or flight echelon.

water injection. The injecting of water into the combustible mixture of an engine to improve combustion within the engine or to provide additional cooling.

water landing. The landing of an aircraft on water. **a.** In reference to a seaplane or amphibian. **b.** In reference to a landplane, under conditions that permit a certain degree of control. Cf. **ditch,** *v.*

waterline, *n. Specif.* The line of intersection between the surface of the water and the side of a seaplane float or flying-boat hull when the airplane is afloat. See **load waterline.**

water loop. A violent, uncontrolled turn of a seaplane on water, analogous to a ground loop.

waterplane, *n.* Any plane that lands on and takes off of water.

water recovery. On an airship, the process of condensing and recovering water from the exhaust gases of the ship's engines, thereby partially making up for the weight lost as fuel is consumed.

water rudder. A rudder on a seaplane that works in the water.

water-taxi, *v. tr.* and *intr.* To taxi on water.

water tunnel. A device similar to a wind tunnel, but using water as the working fluid instead of air or other gas.

Wave, *n.* A member of the WAVES.

wave, *n.* A swell on the surface of a liquid; anything likened to this. Applied to: **1.** A mass of air particles of relatively narrow compass having more or less like characteristics throughout, that moves as a line or front across space. **2.** A boundary surface or line between such a moving mass and a body of air that shows characteristics unlike to it, as in a warm or cold front. **3.** A line of discontinuity in an airflow, esp. under conditions of compressibility, along which changes in pressure, velocity, temperature, density, and entropy occur, as in a shock wave (which see). **4.** An electric or electromagnetic pulse. **5.** Any one of a succession of aircraft formations that move across, or against, a target or other point.

wave cloud. A billow cloud.

wave form. The shape of an electromagnetic wave, or its graphic representation, showing variation in amplitude with respect to time.

wave guide. A hollow rectangular or cylindrical tubing used as a special form of very high frequency transmission line, the dimensions of the tubing determining the wave length to be transmitted.

wave length. Also **wavelength,** *n.* The distance in meters traveled by an electromagnetic wave during the time interval covered by a cycle. Usually 'wavelength' when used as an attrib.

waveoff, *n.* **1.** The act of refusing a landing to an approaching plane. **2.** In the Military Air Transport Service, the period of flight between the time such a refusal is given to the time at which a steady climb is begun.

WAVES (*abbr*). 'Women Accepted for Volunteer Emergency Service' in the Navy.

This organization is comparable to the WAF.

WB (*abbr*). **1.** *auth.* 'Weather Bureau.' **2.** 'Wage Board,' as used by Civil Service in job classification, as in *WB-1, WB-2,* etc.

In sense 2, the WB positions are those not covered by the Classification Act.

w/b (*auth abbr*). 'Will be.'

WBAN (*abbr*). 'Weather Bureau, Air Force-Navy.' Used attrib., as in 'WBAN analysis center.'

WBI (*auth abbr*). 'Will be issued.'

WB-S (*abbr*). 'Wage Board, Supervisor,' as used in Civil Service, as in *WB-S-6,* etc.

w/c (*abbr*). 'Wing commander,' esp. as used in the RAF and RCAF. *Capitalized* in specific titles.

WD (*abbr*). **1.** *auth.* 'When directed.' **2.** 'Wind direction.' **3.** 'War Department.' *Hist.*

wd (*auth abbr*). 'Withdrawn.'

WD AGO (*abbr*). 'War Department, Adjutant General's Office.' Also written 'W.D.A.G.O.' and 'WDAGO.' Now *hist.*

This abbreviation appears on certain forms still used in the Army and AF, such as the 'W.D.A.G.O. 65,' issued as an identification pass to certain selected civilians.

wea (*auth abbr*). 'Weather.'

WeAPD (*auth abbr*). 'Western Air Procurement District.'

weapon, *n.* (wpn) **1.** An instrument of combat, either offensive or defensive, used to destroy, injure, defeat, or threaten an enemy, e.g., a gun, a bomb, or a bomber. **2.** By extension, any device, method, or circumstance that can be used either directly or indirectly to destroy, injure, or defeat an enemy, as in 'radar was turned into an effective weapon against the invading forces,' or 'the weapon of hunger will paralyze the city.'

Determination of what constitutes a weapon is usually in the point of view. For example, a fowling piece used to shoot birds is not a weapon, because the circumstance of its use is not one of combat, but the same instrument, if used against a foe, would become a weapon. Likewise, an airplane used to carry a bomb may be looked upon as a carrier rather than as a weapon, in which case the bomb is considered the weapon, but the airplane may also be regarded as the weapon itself if no distinction is being made between the vehicle and its payload. In the case of a guided missile, if considered from the standpoint of its being sent out to a target, it is a missile; if from the standpoint of its destroying the target, it is a weapon. Cf. **absolute weapon, weapon system.**

'Weapon' is used attrib. in the singular form, as in *weapon development;* also in the plural form, usually signifying a plural sense, as in *weapons carrier, weapons selection,* etc. Use of the plural attrib. is probably influenced by practice in using plural attribs. for other nouns, such as 'communications' and 'operations.' See **Special Weapons Command.**

weaponeer, *n.* **1.** A person who puts an atomic bomb into readiness for release from an aircraft. **2.** A person who devises a nuclear bomb. Also called 'nuclear weaponeer.'

weapon of mass destruction. Any atomic, bacteriological, or other weapon capable of causing widespread death or destruction.

weapon recommendation sheet. A sheet or chart giving, in summary form, the types of weapons, aiming points, attack intervals, and other information for various altitudes and types of attack against a target. Also called 'weapons recommendation sheet.'

weapons carrier. Any vehicle used to carry light weapons, such as rifles, mortars, or recoilless weapons.

A particular vehicle may be, or may not be, also adapted to carrying personnel or equipment.

weapon system. Also **weapons system. 1.** In logistic use: A total entity consisting of an instrument of combat (a single unit of striking power), such as a bomber or a guided missile, together with all related equipment, supporting facilities, and services, required to bring the instrument

upon its target or to the place where it carries out the function for which built: See note. **2.** In weapons analysis: Any single combat instrument that incorporates in itself a complex assembly of functional parts.

Use of the term in sense 1 arose because of the extremely complicated nature of measures required to create and deliver certain weapons to their targets. Different systems may be conceived, but they usually involve measures for coordinated action in training, logistic planning, strategic operations, tactical operations, air defense, and transport. Each system begins with the concept of the instrument of combat itself, leading through to its manufacture, then to its testing, then to its passing through logistic channels, then finally to its use against the enemy, each step in this movement being provided with services and facilities. Creation and delivery consist of four essential ingredients: (1) determining the nature of the instrument itself, (2) providing for it a carrier or vehicle, (3) providing the facilities and services so that its use may be timed with the march of events, and (4) providing the instrument with armor. See **armor,** *n.*, sense 3, **vehicle,** *n.*, sense 3, and **weapon,** *n.*

In logistic practice, each weapon system is identified by reference to the designation of the combat instrument, as in 'the B-52 weapon system,' or 'the TM-61 weapon system,' but it is not implied in this practice that anything other than the total entity as defined is meant.

In weapons analysis, however, the term is applied to a particular instrument of combat by itself, for such instruments as the guided missile or the ballistic missile incorporate within themselves their own vehicles and armor. In this developing sense, the term strongly implies that the instrument is manufactured by a single manufacturer.

In sense 1, cf. **supporting system, lead air materiel area.**

Weapon System Project Office. An office of the Air Materiel Command charged with the responsibility of management control of weapon system programs so as to achieve proper phasing of actions related to development, procurement, production, maintenance, and supply.

Weary Willie. A name applied to any of certain B-17 or B-24 bombers loaded with TNT and piloted by radio control after becoming airborne.

Weary Willies were tried out operationally in WW II, but without any notable success. They were taken aloft by a human pilot, who later bailed out, leaving the craft to be flown into the target by remote control.

weasel, *n.* A popular name for a certain type of tracked amphibian for carrying personnel.

weather, *n.* (wea) **1.** The state or condition of the atmosphere with respect to temperature, humidity, winds, etc. **2.** Bad weather, as in 'we ran into some weather.' **3.** Meteorological information, as in 'give me the weather.' **4.** Sometimes *capitalized.* An office or person that is responsible for meteorological predictions, as in 'what does weather have to say?'

Attrib., esp. in sense 1, as in *weather briefing, weather conditions, weather detachment, weather mission, weather report, weather station,* etc.

weather, *v. tr. To be weathered in,* to be forced to stay on the ground by bad weather.

weather abort. An abort caused by weather conditions.

weather analysis. An analysis of the characteristics and behavior of the atmosphere for a specific time and over a specific area. See **air-mass analysis.**

The Weather Bureau, Air Force, and Navy cooperate in operating a weather analysis center.

Weather Bureau. (WB) A bureau in the Department of Commerce that collects reports on weather conditions for purposes of forecasting and keeping records.

The Weather Bureau was authorized in Oct 1890. Before that the Signal Service, a former bureau of the War Department, collected the reports.

weather central. An office or organization that collects and disseminates weather information for a larger area than that covered by a base weather office.

weather chart. A weather map.

weathercock, *v. intr.* Of an airplane, rocket, or similar body: To align, or attempt to align, its longitudinal axis with the direction of the wind. Hence, **weathercocking,** *n.*

weather code. A code for the transmission of weather information.

weather flight. A flight made for the primary purpose of collecting meteorological data.

weather forecast. A prediction of weather conditions expected to prevail over an area or place for a specified period of time.

See **area forecast, flight forecast, long-range weather forecast, medium-range weather forecast, route forecast, short-range weather forecast, specialized forecast, terminal forecast.**

weather forecaster. One who forecasts weather. Often shortened to 'forecaster.'

weather front. A frontal surface.

weatherman, *n.* **1.** A popular name for a weather forecaster. **2.** A person who flies a weather reconnaissance flight. *British.*

weather map. A map or chart showing the weather conditions prevailing over a considerable area by means of figures and symbols.

A weather map usually shows such weather conditions as temperature, pressure, precipitation, wind, air masses, and fronts.

weather minimums. The minimum conditions of ceiling and visibility established by the Civil Aeronautics Administration for landing at a given runway or landing field either under conditions of visual flying or under conditions of instrument flying.

The weather minimums for VFR are standard, i.e., a ceiling of 1,000 feet and visibility of 3 miles. Weather minimums for IFR vary according to the equipment installed at the landing field and the obstructions in the area.

weather observer. A person who observes, records, and reports on details regarding the weather, such as those of atmospheric pressure, temperature, humidity, visibility, etc., and performs other related duties, as the making of weather maps.

weather officer. An officer qualified as a weather forecaster or weather observer, esp. one serving on a commander's staff.

weather reconnaissance. Reconnaissance undertaken to secure information regarding weather conditions, such as those prevailing along a route to a target. In combinations, as in *weather reconnaissance aircraft, flight, mission*, etc.

weather service. A service that provides weather information, esp. short for 'Air Weather Service.'

weather track. A round-trip weather reconnaissance flight.

weather type. Any set of large-scale meteorological conditions identifiable by prominent characteristics, which occurs frequently enough to be recognized as a particular type and which allows future developments to be anticipated from it.

weathervane, *v. intr.* To weathercock (which see).

weaver, *n.* An escort aircraft that flies a zigzag path above or below the escorted aircraft to look for, and give warning of, enemy aircraft. Originally *British.* See **spotter,** *n.*, sense 1.

web, *n. Rocketry.* **1.** The wall of a tubular grain with holes cut through it to suggest webbing. **2.** Also the thickness of the powder charge in either a tubular or perforated grain, measured at its thickest point.

Webb Air Force Base. An AF base at Big Springs, Texas, named for Lieutenant James L. Webb, Jr., killed in an airplane crash in Japan in 1949.

Wed (*auth abbr*). 'Wednesday.'

Wehrmacht, *n.* [German 'defense force.'] The German armed forces of the Third Reich. Sometimes used restrictively, to refer only to German ground forces.

weigh, *v. To weigh in:* **a.** *tr.* To obtain the weight of a *passenger* or his *baggage* prior to flight so as to guard against excessive or unbalanced load, or, in the case of commercial aviation, to provide a basis for a surcharge. **b.** *intr.* To weigh one's baggage or oneself to provide data for loading.

weight, *n.* **1.** The force with which a body is attracted to the earth, being equal to the mass of the body multiplied by the acceleration of the body due to gravity. **2.** The quantity of this force as it resides in a given body, as in 'to distribute the weight in an aircraft.'

In sense 1, weight is not an inherent property but depends upon the position of the body relative to the earth. An object weighing a pound at sea level would weigh little in outer space. Cf. **mass,** *n.*, sense 1.

weight and balance. A factor in loading an aircraft involving a proper distribution of weight so that the aircraft will maintain its essential flight characteristics. Used in combination, as in *weight-and-balance officer.*

weight per horsepower. *Specif.* The proportion of the weight of an aircraft engine to the horsepower developed, found by dividing the dry weight of the engine by its rated horsepower. Cf. **power loading.**

welfare activity. In AF usage, an activity contributing to the physical and mental well-being of AF personnel.

welfare fund. A nonappropriated fund accrued from authorized sources, such as voluntary contributions, and used for welfare activities.

well, *n. Specif.* A hollow recess in a wing or fuselage, into which a landing-gear wheel retracts. Also called a 'wheel recess.'

Wellington, *n.* A British, twin-engine heavy bomber of WW II, developed by Vickers in the mid-1930's.

The Wellington had several modifications, identified variously as *Wellington I, II*, etc. In addition to bombing, it was used for reconnaissance, mine-laying, and other duties.

WEM (*abbr*). 'Welfare of enlisted men.'

Wendover Air Force Base. An AF base at Wendover, Utah.

W engine. An in-line engine with three banks of cylinders above the crankshaft, suggesting the letter 'W' from the end view.

West, *n.* The nations of Western Europe and America, esp. the NATO nations.

Western Air Defense Force. (WADF) A major component of the Air Defense Command, providing air defense for the Western US.

The WADF covers the eleven westernmost states.

Westinghouse, *n.* [*Westinghouse* Electric Corporation, Aviation Gas Turbine Division.] Used in the names of gas turbines, as in *Westinghouse J34, Westinghouse J40*, etc.

Westland, *n.* [*Westland* Aircraft, Ltd., a British firm.] Used in the names of aircraft, as in *Westland Lysander, Westland Sikorsky S-55, Westland Wyvern*, etc.

WestLant (*auth abbr*). 'Western Atlantic area.'

Westover Air Force Base. An AF base at Chicopee Falls, Massachusetts, named for Major General Oscar Westover, killed in 1938 when Chief of the Air Corps.

West Point. The popular designation for the United States Military Academy, located at West Point, New York. Hence, **West Pointer,** a graduate of, or cadet in, this academy.

wet adiabat. A pseudoadiabat.

wet and dry hookup. A psychrometer. *Slang.*

wet-bulb thermometer. The wet thermometer used in the psychrometer (which see).

wet engine. An engine with its oil, liquid coolant (if any), and trapped fuel inside.

Cf. **dry weight of an engine.**

wet float. A float on the underside of each wing of a seaplane or amphibian, designed to carry engine fuel, as well as to lend stability during takeoffs and landings on water. Cf. **outboard stabilizing float.**

wet fog. A fog having a high water content. Cf. **dry fog.**

wet hookup. An air-refueling procedure, in which fuel is actually transferred, as distinguished from a practice procedure in which no fuel is transferred.

wet-sump engine. A reciprocating engine in which the oil collects in a pool at the bottom of the crankcase.

wet takeoff power. The power at takeoff available with water injection.

WEX (*code*). A code or symbol for 'aircraft delay due to weather.'

WFCMV (*auth abbr*). 'Wheeled fuel consuming motor vehicle.'

wg (*auth abbr*). 'Wing.'

wh (*auth abbr*). 'When' or 'where.'

w/h (*auth abbr*). 'Withholding.'

whap (*auth abbr*). 'When or where applicable.'

wheel, *n.* **1.** A circular frame that turns on a central axis. **a.** A wheel on the steering column of certain aircraft for aileron control. **b.** A landing wheel (which see). Usually *pl.* **2.** An important person; one of the brass. *Slang* and often *derisive.* **3.** *Wheels down, wheels up* (in sense 1b), expressions used to indicate the position of the landing wheels.

Attrib. in sense 1b, as in *wheel assembly, wheel block, wheel chock, wheel fairing, wheel landing, wheel recess, wheel well,* etc.

wheel control. Control over the attitudes and movements of an aircraft by use of a control column.

wheeled aircraft. An aircraft, esp. an airplane, that has wheels on its landing gear.

This term is used esp. in arctic operations to distinguish an aircraft with wheels from one with skis or skids.

Wheeler Air Force Base. An AF base at Wahiawa, Territory of Hawaii, named for Major Sheldon H. Wheeler, A.S., who was killed in a plane accident 13 July 1921.

wheel load. The load supported by the wheels, or by a wheel, of an aircraft under given conditions.

The load may be a static load, measured by the weight of the aircraft, or a resultant load that includes dynamic load. Cf. **equivalent single-wheel load.**

wheel pants. A set of streamlined fairings around each wheel in certain fixed landing gears.

wheel-ski, *n.* A landing gear with a combination wheel and ski, either of which can be adjusted to use without the other.

wheel spat. One of the wheel pants on a fixed landing gear.

wheels-up, *a.* Having the wheels on an airplane retracted, as in *wheels-up landing.* See **wheel,** *n.,* sense 3.

Wheelus Field. An air base at Tripoli, Libya, named in honor of Lt Richard Wheelus, an ATC pilot, killed in 1945 in Iran.

whipstall, *n.* A type of stall in which an airplane goes into a vertical or almost vertical climb or zoom, pauses, slips backward momentarily, and drops suddenly nose downward.

This type of stall is usually done as an intentional performance.

whipstall, *v. tr.* and *intr.* To put an *airplane* into a whipstall; to do a whipstall.

whirlibird, *n.* A helicopter. *Slang.*

whirling wing. A rotary wing.

Whirlwind, *n.* **1.** A British, twin-engine fighter and fighter-bomber of WW II, developed by Westland. **2.** A type of radial aircraft engine developed by the Wright Aeronautical Corporation.

Whisky (*code*). An authorized word for the letter 'W.' See **Alfa** (*code*).

white alert. The condition of getting back to normal after a red or yellow alert has ended; also the all-clear signal.

Used chiefly in an air defense sector.

white instrument card. A white instrument certificate. *Popular.*

white instrument certificate. An instrument certificate (AF Form 8) issued on a white card, certifying that its holder has had at least ten hours of instrument flight time within the previous six months, and met certain requirements for instrument flying, instrument landings, etc.

See **green instrument certificate.**

Whiteman Air Force Base. An AF base at Knob Noster, Missouri, named for Second Lieutenant George A. Whiteman, killed at Pearl Harbor under fire 7 December 1941.

whiteout, *n.* An atmospheric and surface condition in the arctic in which no object casts a shadow, the horizon being indiscernible, and only very dark objects being seen. Also called 'milky weather.'

This condition is brought on when snow cover is complete and the clouds so thick and uniform that light reflected by the snow is of about the same intensity as the light of the sun after passing through the clouds.

white phosphorus. A nonmetallic element that readily inflames. Used in certain incendiary bombs.

white propaganda. Overt propaganda.

white raid. A propaganda raid.

White Sands. Short for 'White Sands Proving Ground.'

White Sands Proving Ground. A proving

ground in New Mexico under the control of the Army; used esp. for testing missiles.

This installation has been in use since Jul 1945.

Whitley, *n.* A British heavy bomber and reconnaissance plane with twin in-line engines, developed by Armstrong Whitworth in the 1930's and used in WW II. Hence, *Whitley bomber.*

Whittle engine. Any of certain jet-propulsion engines developed by Power Jets, Ltd. of Great Britain, and named after Air Commodore F. Whittle, Ret. (1907–), engineer.

The first British jet aircraft to fly (15 May 1941) was powered by a Whittle engine. The aircraft was the Gloster E.28/39. Cf. **F-59, Heinkel 178.**

whs (*auth abbr*). 'Warehouse.'

wi (*auth abbr*). 'Within.'

WIA (*auth abbr*). 'Wounded in action.'

wide, *adv. Wide open,* with maximum speed or power. Used in reference to the throttle.

width, *n.* The dimension of an object from side to side. Not used in reference to an airplane.

Cf. **beam,** *n.,* sense 3, **span,** *n.,* sense 2.

Wiesbaden Air Base. An air base at Wiesbaden, Germany, named for the city.

wilco, *adv.* Used laconically for 'I will comply,' esp. in radio communication.

Wildcat, *n.* An American popular name for the F4F. Attrib., as in *Wildcat fighter, Wildcat Grumman, Wildcat squadron,* etc.

Wilkins Air Force Station. An AF depot located at Shelby, Ohio, formerly the 831st AF Depot, renamed for Major Raymond H. Wilkins, Medal of Honor, killed 2 November 1943 over Rabaul, New Britain.

will, *n.* A mental or spiritual capacity to exert continued effort or to endure hardship or punishment in order to achieve a desire or purpose. Used in such phrases as 'the capacity and the will to make war,' 'the will to resist,' 'the will to fight,' etc.

Although this term is normally in reference to the will of an individual person, it is also often used to refer to the composite will of a group or nation, as in 'the British will to resist.' This usage is similar to that of 'morale' (which see, sense 2).

will, *v.* Used as an auxiliary followed by an infinitive without the sign 'to,' to indicate a commander's desire, expectation, or order, as in 'all service caps will be worn with the grommet,' or 'each flight will observe radio security,' or 'all officers will report at 0600.'

William (*code*). A word formerly authorized for the letter 'W.' See **Able** (*code*).

Williams Air Force Base. An AF base at Chandler, Arizona, named for Lieutenant Charles L. Williams, a bomber pilot, who was killed in Hawaii in 1927.

williwaw, *n.* A violent wind sweeping down the leeward side of a mountain and outward from the mountain, resulting from a buildup of air on the windward side. Found esp. in the Aleutians and in the Strait of Magellan.

Wimpey, *n.* Also **Wimpy.** A popular name for the British Wellington.

winch suspension. A system of rigging the tow line of a kite balloon so as to keep the balloon almost above the tracting unit by proper use of a winch to which the ground end of the tow line is attached.

winco, *n.* A wing commander. *British slang.*

wind, *n.* Air in motion, esp. in a horizontal or approximately horizontal flow. Cf. **air current.**

windage, *n.* **1.** The deflection of a bullet or other projectile due to wind. **2.** The correction made for such deflection.

windchill, *n.* The chilling or cooling effect of wind, esp. on exposed surfaces of the human body. Hence, *windchill factor,* a factor that takes wind velocity into account in determining the chilling effect of wind.

wind cone. A windsock shaped like a cone.

wind direction. The direction from which the wind blows.

wind drift. Drift caused by wind. See **drift,** *n.,* sense 1.

wind-flow pattern. The pattern made by the flow of the prevailing winds, particularly in the upper atmosphere. Cf. **atmospheric circulation.**

wind load. The load or pressure exerted on a surface by wind, usually expressed in pounds per square foot.

windmill, *n.* **1.** An air-driven propeller used to drive auxiliary equipment on an aircraft. **2.** In *slang* usage. **a.** A helicopter. **b.** A propeller.

windmill, *v. intr.* Of a propeller: To rotate by the force of air acting upon it, without power from the engine.

window, *n.* A type of confusion reflector, consisting essentially of metal foil ribbon, but sometimes metalized only on one side. Also known as 'chaff' (which see). Attrib., as in *window dispenser, window-loaded rocket.*

Original use of the word 'window' appears to have been strictly a matter of code.

wind pattern flying. Pressure pattern flying.

wind rose. A diagram showing the relative frequency and average strength of the winds blowing from different directions in a given area, and sometimes showing the average relation between wind direction and the occurrence of other meteorological phenomena.

windrow cloud. A billow cloud.

winds aloft. 1. Winds at high altitudes, unaffected by surface features. **2.** The direction and

speed of such winds, as in 'data was gathered on winds aloft.'

windscreen, *n.* A windshield (sense 1). *British.*

windshield, *n.* **1.** Anything that serves to shield against wind; on an airplane, a pane or surface area of glass or other transparent material ahead of the cockpit or in the front part of the pilot's cabin, affording protection from the wind and allowing forward vision. **2.** A false ogive.

windsock, *n.* Also **wind sock.** A tapered sleeve-like device made of cloth, pivoted at one end from a standard so that the wind catches it, showing the wind direction. See **wind cone.**

wind speed. The speed with which a wind is blowing. See **wind velocity.**

windstream, *n.* **1.** The flow of air in a wind tunnel. **2.** The flow of wind in a given direction.

wind tee. A large weather vane, shaped either like a T or like an airplane, located on a landing field to indicate to aircraft the direction of the wind. Also called a 'landing tee' or 'T.'

wind triangle. A triangle used in finding the effect of wind on the flight of an aircraft.

The sides of the wind triangle consist of the air vector, the ground vector, and the wind vector (which see under separate entries). Calculations may be made by trigonometry, but they are normally calculated on the vector face of a computer.

wind tunnel. A chamber through which air is forced at controlled velocities, up to several thousand miles an hour, and in which airfoils, airplanes, missiles, scale models of airplanes, or other objects are mounted in order to observe and study the airflow about such objects, as well as the aerodynamic effects upon them.

Hence, *wind-tunnel test, wind-tunnel velocity* (the velocity of the wind in a wind tunnel).

wind vector. In air navigation, a vector representing the direction and velocity of the wind, and forming part of the wind triangle. See **wind triangle.**

wind velocity. 1. The speed and direction in which a wind blows, used as a factor in air navigation. See **wind vector. 2.** Wind speed. See **Beaufort's scale.**

windward, *a.* Pertaining to the part or side of an object that catches the wind; toward the wind. The opposite of 'leeward.'

wing, *n.* (wg) **A. 1.** An airfoil on either side of an airplane's fuselage or cockpit, paired off by one on the other side, the two providing the principal lift for the airplane. In this sense, a monoplane has two wings, as in 'his left wing struck the ground,' or 'he elevated his right wing.' **2.** Both of these airfoils considered as a single unit, as in 'flying wing,' 'delta wing,' or 'the wing had to be redesigned.' **3.** A section of one of these airfoils, esp. in contexts where distinctions are made for the locations of nacelles or controls: See note. **4.** A rotor blade in a rotary-wing aircraft. **5.** Either of the two airfoils or supporting surfaces attached to certain missiles or bombs, giving lift or giving support for gliding. **6.** A fuel tank located in an airplane's wing, as in 'his left wing was punctured.' **7.** A gun located in an airplane's wing, as in 'the Thunderbolt's wings were not firing.' **8.** In an aircraft formation, a position to the side and slightly to the rear of another airplane, as in 'Col Anderson was on his wing.' **9.** A flank formation of any sort, as of bombers. **10.** *pl.* A metal emblem or badge resembling the wings of a bird, esp. a pilot's wings. See **aviation badge.**

B. 11. An AF unit or establishment on a level of command below the level of an air force or of an air division (if such exists) and above a group, in which the structure of organization provides for a primary mission group or its equivalent, but is otherwise kept flexible to permit adaptation to particular requirements and situations: See note. **12.** In a restricted sense, a combat wing, esp. in the phrase 'an Air Force of 145 wings.' See **combat wing. 13.** The headquarters of any such wing described in sense 11, as in 'he was transferred from group to wing.' **14.** In the RAF: **a.** A mobile tactical unit, always designated by number, as in 'the 234th wing,' roughly equivalent to a combat wing in the USAF, commanded by a group captain. Cf. **group,** *n.*, sense 2. **b.** One of the major units at a station, such as a flying wing, a technical wing, or an administrative wing. **c.** One of the units to which an apprentice airman is assigned for training. **15.** In the AAF of WW II, any of variously conceived units, some purely administrative entities that served various purposes, such as to unify two or more operational groups, or to provide an intervening level of command between a command headquarters and certain operating units. Cf. **group,** *n.*, sense 1c. **16.** In the Navy, a mobile unit to which aircraft squadrons and tenders are assigned for administrative control. **17.** In the Marine Corps, a balanced air task organization required for the air support of a Marine division.

In sense 3, 'wing' is always modified by a distinguishing attributive, as in *inboard wing, inner wing, outboard wing, outer wing, stub wing.* See separate entries.

In sense 11, the wing is reasonably self-sufficient, and is commonly organized for combat, training, transport, or service, with all necessary equipment assigned. It provides for a headquarters and normally for four groups. These groups consist of the primary mission group, the direct support group, the air base group, and the medical group. However, the breakdown into groups is not rigid. Within the concept, provision is made for a wing at a base to serve a command headquarters, where the wing functions as a

housekeeping unit. See **air base wing, air depot wing, combat wing.**

Attrib. in sense 1 or 2, as in *wing camera, wing cell, wing chord, wing cover, wing curvature, wing deicer, wing efficiency, wing flap, wing jack, wing lift, wing light, wing nacelle, wing panel, wing rack, wing skin, wing strut, wing wake,* etc. In sense 8, as in *wing position.* In senses 11 or 12, as in *wing adjutant, wing bulletin, wing headquarters, wing leader, wing motor-pool, wing operation, wing regulation, wing staff, wing unit,* etc.

wing, *v.* **1.** *intr.* Of an airplane or of the people within: To move through the air, as in 'to wing across Africa.' **2.** *tr.* To go one's *way* through the air in an airplane.

wing-and-a-half plane. A sesquiplane.

wing area. The area of an airplane's wing or wings, measured on the plane of the chords from the projection of the plan-view outline, without deduction for the areas within the fuselage and nacelles, and including, unless otherwise stated, the area of the ailerons.

For purposes of this calculation, the wing is considered to extend uninterrupted through the fuselage and nacelles. The wing area of a biplane is the sum of the areas of the two wings.

wing axis. 'The locus of the aerodynamic centers of all the wing sections' (NACA).

wing-base, *n.* A wing conceived as the basic operational unit of the AF, normally located on a base and organized around a primary mission group which is supported, as the situation may dictate, by whatever other groups are needed.

Use of 'base' in this word is not only in reference to a physical installation, but to the notion that the basis of AF organization is the wing, a self-sufficient unit. At first used to distinguish the AF wing (see **wing,** *n.,* sense 11) from the wing of the AAF (see **wing,** *n.,* sense 15), 'wing-base' is now being displaced by the simpler 'wing.'

Attrib., as in *wing-base commander, wing-base organizational concept, wing-base unit,* etc.

wing-base inspector. Sometimes *capitalized.* A base inspector on the staff of a wing commander.

wing-base organization. The organization of a wing upon the concept of the wing-base, as distinguished from a wing organization of the AAF. See **wing,** *n.,* sense 15.

wing commander. 1. The commander of a wing. **2.** A commissioned rank or person in the RAF or RCAF, equivalent to lieutenant colonel in the USAF.

wing drag. 1. The sum of the induced drag and the profile drag upon a wing. **2.** This drag plus the parasite drag of objects, such as nacelles, attached to the wing.

winged, *a.* **1.** Of a missile or other object: Provided with wings so as to provide lift. **2.** Of a force or organization: Airborne, as in 'winged fleet.' **3.** Of a facility: Located in an aircraft, as in 'winged hospital.'

winged artillery. A functional name for an air force, used, for example, when the concept of air power is tied to land warfare.

winged missile. A missile that has wings, esp. a wing that provides lift, such as the TM-61. Distinguished from wingless missiles, such as bullets, artillery shells, certain rockets, etc.

wing fence. A surface on the top of a wing to control spanwise flow; a stall fence.

wing flap. A flap (sense 1) attached to a wing.

wing folding. The turning backward or upward of an airplane's wing, done esp. with a carrier plane. See **folding wing.**

wing gun. A fixed gun mounted in the wing of an airplane.

wingheavy, *a.* Of an airplane: Having one wing that tends to drop during flight unless corrected by aileron or trim-tab control. Hence, **wing-heaviness,** *n.*

wing inspector. Sometimes *capitalized.* An inspector on the staff of a wing commander.

Although 'wing inspector' is normally used as a short for 'wing-base inspector,' it is sometimes used advisedly to designate a wing inspector having no base inspection duties whenever two or more wing inspectors are located on the same base.

wing load. 1. The load (which see, sense 3) imposed upon the wings of an aircraft by the basic weight of the aircraft plus any other weight that may be imposed, as by an increase in payload or in dynamic load. **2.** Wing loading.

wing loading. In stress analysis, the gross weight of an airplane divided by the wing area.

wingman, *n.* A pilot who flies at the side and to the rear of an element leader, commonly in a two-plane or three-plane formation; also the airplane flown in this position.

wing mate. A flyer, esp. the pilot of a fighter, associated with one or two other flyers working together in combat.

wingover, *n.* An aerial maneuver in which a half-roll is executed; *specif.,* an aerial stunt or maneuver in which an airplane is put into a climbing turn until almost stalled, the nose then being allowed to fall, followed by a half-roll, but returning to normal flight after the ensuing dive in an approximately reverse direction from that in which the maneuver was begun.

The wingover in its specific sense is a reversement, distinguished from the hammerhead stall in that the attention is on the wingover instead of the stall.

wing pod. A streamlined nacelle slung beneath an airplane's wing, esp. for the installation of a jet engine or engines.

wing profile. The outline of a wing section.

wing rib. A rib in an airplane wing, as distinguished from a rib in any other airfoil. See **rib,** *n.*

wing root. The very base of an airplane's wing, where it joins and is faired into the fuselage.

wing section. A cross section of a wing parallel

to a specified reference plane, or, if not specified, parallel to the plane of symmetry.

wing skid. A skid placed near the wingtip of early airplanes to protect the wing from contact with the ground.

wingspan, *n.* The span of a wing, measured or taken between the tips or outermost extremities of either a single-piece wing or a wing that is separated by other aircraft components.

Wingspan is considered to include ailerons projecting beyond the wingtips.

wing spar. The spar of a wing, as distinguished from that of any other airfoil. See **spar,** *n.*

wingspread, *n.* The extent to which an airplane's wings spread; an airplane's wingspan.

'Wingspread' and 'wingspan' differ slightly in connotation.

wingstub, *n.* A stub wing (which see, esp. in sense 2).

wing surgeon. A surgeon performing medical services for an AF wing.

The wing surgeon is the commander of the wing medical group.

wing tank. 1. An integral fuel tank that lies within an airplane wing. **2.** An auxiliary fuel tank attached to a wing. See **wingtip tank.**

wing taper. A feature of a wing marked by a gradual decrease in chord length from the root to the tip.

wingtip, *n.* Also **wing tip.** The outer end of a wing. See **tip,** *n.*

Attrib., as in *wingtip assembly, wingtip flare, wingtip turret, wingtip vortex,* etc.

wingtip float. An outboard stabilizing float. See separate entry. Also see **stabilizing float.**

wingtip rake. The slant of a wingtip as seen in plan view.

The rake is considered positive when the trailing edge of the wing is longer than the leading edge.

wingtip tank. A fuel tank mounted at the tip of an airplane's wing. Also called 'tiptank.'

wingwalker, *n.* **1.** A person who walks at the wing of an aircraft while it is taxiing in a congested area to guard against collision. **2.** An aerial acrobat who walks about on a wing. See **walk,** *v.,* sense 1.

wing-warp, *n.* The warp of a wing effected for banking or turning.

wing-warping, *n.* The action of warping a wing. See **warp,** *v.* Attrib., as in *wing-warping device, wing-warping system.*

winter, *n.* The cold season of the year. Used attrib., as in *winter flying shoe, winter uniform.*

winterization, *n.* The process of converting equipment, esp. by changes in accessories, instruments, or special installations, for use in cold or very cold weather, as in the arctic. Attrib., as in *winterization check list, winterization shroud.*

winterize, *v. tr.* To fit out or modify an *aircraft* or other *piece of equipment* for operation in cold weather.

wipe, *v. tr.* To annihilate or destroy *something.* Used with the adverb *out.*

wire, *n.* A flexible thread of metal. **a.** Used in structures, as in an aircraft, for bracing or tying. **b.** Used as a carrier of electricity or electric impulses, as in the transmission of power or in communications. Attrib., as in *wire antenna, wire circuit.*

wire communication. Communication over a wire, as distinguished esp. from radio communication.

wireless, *n.* **1.** The transmission or reception of electric impulses or signals without benefit of a connecting wire; radio communication. **2.** A radio sending or receiving set. **3.** Wireless telegraphy.

Use in senses 1 and 2 is chiefly British, applying to the radios in the home, the broadcasting stations, and the radio equipment in an aircraft.

Attrib., as in *wireless aerial, wireless broadcast, wireless installation, wireless operator, wireless signal, wireless silence,* etc.

wireless telegraphy. Telegraphy that employs no wire or wires between the transmitter and receiver; radiotelegraphy.

wiresonde, *n.* An apparatus for gathering meteorological data at low altitudes, in which meteorological data such as temperature and humidity are transmitted over wire to ground-recording devices from a sensing and sending apparatus carried aloft by a captive balloon. Cf. **radiosonde,** *n.*

wiresounding, *n.* Air sounding by means of a wiresonde. See **air sounding.**

Wirraway, *n.* A single-engine, two-place, general-purpose, low-wing military airplane, like the T-6, built or developed by the Commonwealth Aircraft Corporation of Australia and used during WW II.

wit (*auth abbr*). 'Witness.'

withdrawal, *n.* **1.** The act of breaking contact with the enemy and drawing back one's forces—except for security and reconnaissance forces. **2.** In a bombing operation, that phase of the action immediately after the assault, during which the bombers depart the target area and fend off attackers while returning to friendly territory. Attrib., as in *withdrawal cover, withdrawal support.*

wk (*auth abbr*). 'Week.'

wkr (*abbr*). **1.** *auth.* 'Wrecker.' **2.** 'Worker.'

WL (*abbr*). 'Water line.'

WLD (*auth abbr*). 'West longitude date.'

wldr (*abbr*). 'Welder.'

WMO (*abbr*). 'World Meteorological Organization.'

WMS (*auth abbr*). 'Women's Medical Specialist.'

WMSC (*auth abbr*). 'Women's Medical Specialist Corps.'

WNB (*auth abbr*). 'Will not be.'

wng (*auth abbr*). 'Warning.'

WO (*auth abbr*). **1.** 'Warrant officer.' **2.** 'Warning order.'

In sense 1, often written 'W/O.'

wo (*auth abbr*). 'Without.' Often written 'w/o.'

wobble plate. A swashplate on a helicopter.

wobble pump. An emergency fuel pump operated by wobbling the handle or moving it back and forth.

WOHC (*auth abbr*). 'Warrant officer, Hospital Corps.'

WOJG (*auth abbr*). 'Warrant officer, junior grade.'

Wolters Air Force Base. An AF base at Mineral Wells, Texas, formerly known as Camp Wolters, named for Brigadier General Jacob F. Wolters, died in 1935.

Women in the Air Force. (WAF) A corps of enlisted, warrant, and commissioned women in the AF, including all women except those of the Nurses' Corps and of the USAF Medical Specialist Corps.

The WAF superseded that part of the Women's Army Corps (WAC) which had been with the AAF. The WAF was so designated by AF Letter, dated 24 Jun 1948.

Women's Airforce Service Pilots. A civilian corps of women pilots who in WW II performed certain noncombat military flying operations for the AAF. Abbreviated 'WASP.' *Hist.*

The word 'Airforce' in this combination is considered correct, but 'Air Force' was also used.

The WASP began training in Nov 1942; it served until near the end of 1944.

Women's Army Auxiliary Corps. In WW II, an auxiliary corps of women, authorized by Public Law 554, 14 May 1942, the members of which were principally recruited to serve *with*, but not *in*, the Army in clerical positions or in such services as the Aircraft Warning Service.

A part of the WAAC came under the operational control of the AAF in May 1943. During the period July through September 1943, when the Women's Army Corps was being planned for, enlisted members of the WAAC were given opportunity to convert to the WAC. Officers in the WAAC who desired to continue service in the WAC converted in September. The WAAC was disbanded, effective 30 Sep 1943.

Women's Army Corps. (WAC) An Army Corps the members of which are the women of the Army except for women nurses and for women members of the Army Medical Specialist Corps.

The WAC, provided for by Public Law 110, 1 Jul 1943, superseded the WAAC in Sep 1943. Members of WAC in the AAF were given opportunity to join the WAF in 1948 when the latter was established.

Women's Army Corps Service Medal. A US military decoration awarded to members of the Women's Army Corps for honorable service in the Women's Army Auxiliary Corps.

This medal, established by Executive Order 9365, 29 Jul 1943, in anticipation of the disbandment of the WAAC, was, in effect, an award to an individual in the WAAC for accepting service in the WAC.

Women's Auxiliary Air Force. The British equivalent of the Women in the Air Force.

Women's Auxiliary Ferrying Squadron. A WW II organization of women pilots, who undertook to ferry airplanes for the Air Transport Command.

This organization was auxiliary in character, and operated between Sep 1942 and the spring of 1944.

Women's Medical Specialist Corps. (WMSC) A corps of female AF officers specializing in the fields of dietetics, occupational therapy, and physical therapy.

This corps, as such, is historical, since provision was made in Dec 1955 for men to become members. Its successor is the USAF Medical Specialist Corps.

The Army has a similar corps, known as the 'Army Medical Specialist Corps.'

W. Op. (*abbr*). 'Wireless operator.' *British.*

WOQT (*auth abbr*). 'Warrant Officer Qualification Test.'

work, *n.* **1.** *Mechanics.* The transference of energy by a process of applying force to a point so as to displace the point, measured as the product of force exerted times the distance of displacement. **2.** That on which a person or persons exert their strength or exercise their faculties so as to perform a task or to achieve a serious objective, esp. in the combinations 'airwork' and 'pattern work' (which see).

work flow. The flow or movement of things being worked on when passing from one operation to another. Measured by quantity, rate of movement, and smoothness in performance.

working stress. A stress to which a structure or machine is subjected under actual working or operating conditions.

workload, *n.* The amount of work imposed upon, or assumed by, a person or organization to be disposed of in a given amount of time. Attrib., as in *workload data*, *workload factor*, etc.

A workload may be greater or less than capacity to perform.

work measurement. The measurement of work, a factor in determining an optimum workload.

work order. An order for the performance of specific work.

World Aeronautical Chart. (WAC) One of a series of aeronautical charts covering the entire world, designed for use in landmark navigation, radio navigation, dead reckoning, and celestial navigation.

Except for those of the polar regions and areas within 4 degrees of the Equator, World Aeronautical Charts are

produced on Lambert conformal conic projections. The scale is 1:1,000,000.

World Geographic Reference System. A geographic reference system for the world, used in the AF for aircraft position reports and target designation, and for the control and direction of air units engaged in air defense, air-sea rescue, and tactical air operations.

The short title for this system is 'Gcoref.' See **Georef grid.**

World Island. *Geopolitics.* The continents of Eurasia and Africa considered to be an island, the control of which being regarded as necessary to that nation which would seek world domination. Cf. **heartland,** *n.*

This term was given this meaning by H. J. Mackinder.

World Meteorological Organization. A specialized agency of the United Nations, made up of the meteorological services of many states and territories of the world.

The World Meteorological Organization (WMO) was established in 1950, taking the place of the International Meteorological Organization. The WMO facilitates worldwide cooperation in the establishment of networks of stations for meteorological and related observation, promotes the establishment and maintenance of systems for rapid exchange of meteorological information, encourages research and training in meteorology, promotes standardization of meteorological observations, etc.

world polyconic grid. A military grid superimposed on polyconic projections of the earth's surface, each segment of the grid covering 9 degrees of longitude with 1 degree of overlap between segments, and extending to 72 degrees north and south latitude.

world war. A general war that involves nations all over the world. Cf. **general war.**

World War I. (WW I) A war (28 July 1914–11 November 1918) between the Central Powers and the Allies.

The Central Powers consisted of Germany, Austria-Hungary, Turkey, and Bulgaria. The Allies consisted of the British Commonwealth, France, Russia, Italy, United States, Japan, Rumania, Serbia, Belgium, Greece, Portugal, and Montenegro. The United States entered the war on 6 Apr 1917.

World War I Victory Medal. A US service medal for military service between 1917 and 1920.

World War II. (WW II) A war (1 September 1939 to 2 September 1945) between the Axis Powers and the Allies.

The Axis Powers consisted of Germany, Italy, Japan, Rumania, Bulgaria, Hungary, Finland, and Siam. The Allies consisted of 46 nations, chief among which were the United Kingdom, France, the USSR, China, United States, India, Poland, Turkey, Canada, Australia, Belgium, Greece, Norway, the Netherlands, and Yugoslavia. The United States entered the war on 8 Dec 1941.

World War II Victory Medal. A US military decoration awarded for any period of service between 7 December 1941 and 31 December 1946.

wound, *n.* An injury to the body of a person or animal, in which the skin or other membrane is broken. Cf. **injury,** *n.*

Wounds sustained in combat or battle are sometimes classified as *slight,* in which case the casualty may sit or walk; as *serious,* in which case the casualty requires a stretcher for moving; and as *critical,* in which case the casualty cannot be evacuated.

wound chevron. In WW I, a decoration given a person who was wounded in action. See **Purple Heart.**

wounded, *a.* **1.** Of a person or animal: Suffering from a wound or wounds. **2.** *Wounded in action* (WIA), wounded as a result of enemy action while in action in the face of the enemy.

In sense 2, 'WIA does not include self-inflicted wounds, accidental injuries, disease, or injuries incurred on purely training flights or missions' (*Dict. US Mil Terms for Joint Usage* (1955)).

woxof, *a.* [See note.] Socked in. *Slang.*

This word was coined by combining teletype code letters used in weather reporting, meaning 'ceiling zero.'

WP (*abbr*). **1.** *auth.* 'Will proceed.' **2.** 'White phosphorus.'

WPAFB (*auth abbr*). 'Wright-Patterson Air Force Base.'

WPB (*abbr*). 'War Production Board.' *Hist.*

WPM (*auth abbr*). 'Words per minute.'

wpn (*auth abbr*). 'Weapon.'

WPS (*auth abbr*). 'With prior service.'

WPWOD (*auth abbr*). 'Will proceed without delay.'

WR (*auth abbr*). 'Water-rail.'

Wraf, *n.* A member of the Women's Royal Air Force of the United Kingdom, organized in 1918 but disbanded after WW I.

WRAMA (*auth abbr*). 'Warner-Robins Air Materiel Area.'

wrap, *v. To wrap up.* **1.** To smash or damage an *aircraft. Slang.* **2.** To finish or end an *undertaking. Slang.*

wrapper indorsement. An indorsement attached temporarily to a basic letter, but not becoming a part of it, used to secure information which may be removed and retained before the basic letter with indorsements is returned to the sender.

wreck, *n.* **1.** Any accident involving damage to an aircraft or other piece of equipment so that it has no value except for salvage of usable parts. **2.** The object of damage in such an accident. **3.** In less exact usage, any machine that is dilapidated, worn out, and hard to repair.

WREN (*abbr*). 'Women's Royal Naval Service.' *British.*

Wright, *n.* [After Orville and Wilbur *Wright:* See note.] **1.** Used in the names of airplanes invented by the Wright brothers, as in *Wright Flyer.* **2.** Used in the names of certain aircraft companies, as in *Dayton-Wright Company, Curtiss-Wright Corporation,* etc. **3.** Used in the

names of aircraft engines, esp. radial engines, developed by the Wright Aeronautical Division of the Curtiss-Wright Corporation, as in *Wright Cyclone, Wright Whirlwind.* **4.** Used in the names of certain awards, as that of the *Wright Brothers Memorial Trophy*, given annually since 1948 by the National Aeronautic Association to an American 'for significant public service of enduring value to aviation in the United States.' **5.** Used in the names of certain AF installations, such as *Wright-Patterson Air Force Base.*

Orville Wright (1871–1948) and Wilbur Wright (1867–1912) flew the first powered airplane at Kitty Hawk, North Carolina, Dec 1903. The airplane was their own invention. See **Kitty Hawk.**

Wright Air Development Center. (WADC) An air development center at Wright-Patterson Air Force Base, Ohio.

Wright Brothers Medal. A medal given annually since 1928 by the Dayton Section of the Society of Automotive Engineers for a meritorious contribution to aeronautical engineering through a paper on aerodynamics, structural theory, research, airplane design or construction.

Wright Field. 1. An earlier name for Wright-Patterson Air Force Base. Now *popular.* **2.** One of the component airfields of Wright-Patterson Air Force Base. *Hist.* See **Wright-Patterson Air Force Base.**

Wright flyer. [See **Wright,** *n.*, note.] Any one of the early airplanes built and flown by the Wright brothers, esp. the biplane flown at Kitty Hawk on 14 and 17 December 1903, or the biplane flown at Fort Meyer, Virginia, in 1908. See **Kitty Hawk.**

The word 'flyer' was used uncapitalized at first to distinguish the flyer from the Wright glider. Later it was capitalized, and referred specifically to one of the airplanes indicated. The 1908 version of the 'Flyer' differed from the 1903 version in the horsepower of its engine, and in the provision for two persons to fly in a seated position instead of one person flying in a prone position.

Wright glider. [See **Wright,** *n.*, note.] Any one of the gliders built and flown by the Wright brothers preparatory to their powered flight of 1903.

Wright-Patterson Air Force Base. An AF base at Dayton, Ohio, formerly two separate bases known as Wright Field and Patterson Field, named for Orville and Wilbur Wright, and for Lieutenant Frank S. Patterson, killed during the first tests of synchronized machine-gun firing in 1918.

write, *v. To write off*, to consider or declare an *airplane* or other piece of equipment damaged beyond repair; also to consider something that has failed or proved of little value to be better forgotten or dropped from further consideration. *Colloq.*

wrnt (*auth abbr*). 'Warrant.'

wrtr (*auth abbr*). 'Writer.'

WS (*auth abbr*). 'Water supply.'

WSEG (*auth abbr*). 'Weapons Systems Evaluation Group.'

WSP (*auth abbr*). 'Water supply point.'

WSPG (*abbr*). 'Weapon System Phasing Group.'

WSPO (*abbr*). 'Weapon System Project Office.'

WSup (*auth abbr*). 'Water supply.'

W/T (*abbr*). Also written **w.t.** 'Wireless telegraph' or 'wireless telegraphy.' Chiefly *British.*

wt (*auth abbr*). 'Weight.'

Wurtsmith Air Force Base. An AF base at Oscoda, Michigan, formerly known as Oscoda Air Force Base, renamed for Major General Paul B. Wurtsmith, killed in an aircraft crash in 1946.

Wurzburg, *n.* Code for any one of a series of German AA gun-laying and warning radars used in WW II.

WV-1. A modified version of the four-engine Lockheed Constellation for the US Navy, used to test airborne electronic systems.

WV-2. A production version of the WV-1, designed as an early-warning aircraft.

wvd (*auth abbr*). 'Waived.'

WW (*auth abbr*). 'World wide' or 'World War.'

WW I (*auth abbr*). 'World War I.'

WW II (*auth abbr*). 'World War II.'

Wx (*code*). 'Weather,' as used in teletype communication.

WXD (*abbr*). 'Meteorological radar station,' as authorized for usage among NATO nations.

WXR (*abbr*). 'Radiosonde station,' authorized for usage among NATO nations.

Wyvern, *n.* A British, single-seat, naval fighter with contrarotating propellers driven by a turboprop engine, developed by Westland.

X

X (*letter*). See **Xray** (*code*).

X (*abbr*). **1.** *auth.* 'Experimental,' in combinations only, as in 'XH-15 Helicopter,' an aircraft designation. **2.** 'Extracted,' in supply usage to designate an item being extracted, as in 'X-AMC.'

X-1. A rocket-powered airplane developed by Bell, the AAF, and the National Advisory Committee for Aeronautics.

This airplane, developed for testing supersonic speeds, was first flown in 1946.

X-4. A twin-jet, single-seat, sweptwing research monoplane developed by Northrop.

The sweptwings are fitted with elevons.

X-axis, *n.* **1.** The longitudinal axis in a coordinate system of axes, esp. the longitudinal axis of an aircraft, about which the aircraft rolls. See **axis,** *n.*, note. **2.** The horizontal axis in a system of rectangular coordinates used on a map, chart, or the like, on which distances to the right and left, or east and west, of a reference line are measured.

XB (*abbr*). 'Experimental bomber.' Used in aircraft designations, as in 'XB-29,' 'XB-36,' 'XB-46,' etc.

X band. A designation formerly given to a band of radio frequencies between 5,200 and 11,000 megacycles.

Use of this designation is no longer authorized in the AF.

XC (*abbr*). 'Experimental cargo.' Used in aircraft designations, as in 'XC-120.'

XCG (*abbr*). 'Experimental cargo glider.' Used in aircraft designations, as in 'XCG-18.'

X engine. An in-line engine with the cylinder banks so arranged around the crankshaft that they resemble the letter 'X' when the engine is viewed from the end.

XF (*abbr*). 'Experimental fighter.' Used in aircraft designations, as in 'XF3H-1,' 'McDonnell XF-85,' etc.

xfmr (*auth abbr*). 'Transformer.'

XFV-1. An experimental midwing monoplane developed by Lockheed for the Navy, and designed to take off and land vertically, the tail assembly being cross-shaped to bear the weight of the airplane.

This airplane, like the Convair XFY-1, is powered by the Allison T-40 turboprop engine.

XH (*abbr*). 'Experimental helicopter.' Used in aircraft designations, as in 'XH-16,' etc.

xmit (*auth abbr*). 'Transmit.'

xmsn (*auth abbr*). 'Transmission.'

xmtr (*auth abbr*). 'Transmitter.'

XO (*auth abbr*). 'Executive officer.'

xpd (*auth abbr*). 'Expedite.'

xplt (*auth abbr*). 'Exploit.'

X radiation. An electromagnetic radiation of very short wave length, produced by bombardment of a substance by electrons, as in certain vacuum tubes. Used esp. in medicine to photograph internal body growths, structures, etc.

X ray. Any one of the radiations emitted in X radiation.

Xray (*code*). **1.** 'Accord no honors, provide transportation only,' as formerly used on a flight plan when a very important person or persons were on the flight. See **VIP code. 2.** A word authorized for the letter 'X.' See **Alfa** (*code*).

xtal (*auth abbr*). 'Crystal.'

xylidine, *n.* Any of certain isomeric hydrocarbon compounds having the formula $C_6H_3(CH_3)_2NH_2$, used esp. in fuels.

Y

Y (*letter*). See **Yankee** (*code*). **1.** Used to designate an AF aircraft developed beyond the experimental stage, but procured only in limited numbers for service testing, as in 'YC-97,' 'YB-60.' **2.** Used as a symbol meaning 'Consolidated Vultee Aircraft Corporation' in designations of Navy aircraft, as in 'PBY.'

YAK (*abbr*). Variant of 'Yak.'

Yak, *n.* [After Aleksandir S. *Yak*ovlev (1906–), Russian aircraft designer.] Used in the names of Russian airplanes, as in *Yak-1*, a single-seat fighter of WW II; *Yak-16*, a medium-size passenger transport; *Yak-18*, a training monoplane; and others.

Yak-15. A Russian single-seat jet fighter designed by Aleksandir Yakovlev.

See **Feather,** *n.*, **Flora,** *n.*, and **Magnet,** *n.*

Yak-17. An improved version of the Yak-15.

Yak-23. A Russian single-seat jet fighter which superficially resembles the *Yak-17*, but which is entirely different in construction, power plant, and performance. See **Flora,** *n.*

Yale, *n.* A popular name for the BT-9.

Yankee (*code*). An authorized word for the letter 'Y.' See **Alfa** (*code*).

yaw, *n.* The movement of an aircraft, projectile, or the like about its vertical axis; the extent of this movement, measured in degrees. See **angle of yaw.**

yaw, *v. intr.* Of an aircraft or projectile: To turn about the vertical axis. Hence, **yawing,** *n.*

yaw axis. The vertical axis.

yaw damper. A control system or device that reduces the yaw of an aircraft, guided missile, or the like.

yawmeter, *n.* An instrument that measures the yaw of an aircraft.

Y-axis, *n.* **1.** The lateral axis in a coordinate system of axes, esp. the lateral axis of an aircraft, about which the aircraft pitches. See **axis,** *n.*, note. **2.** The vertical axis in a system of rectangular coordinates on a map, chart, or graph, on which distances above and below, or north and south, of a reference line are measured.

YC-131-C. A twin-engine, turboprop transport version of the C-131.

yellow alert. A term applied to the circumstance existing when hostile or apparently hostile aircraft are over, or enroute to, a defended territory. Cf. **red alert.**

yield, *n. Specif.* The amount of explosive force expended in an atomic explosion, measured or expressed in kilotons of TNT that would produce an explosion of the same power.

YOB (*auth abbr*). 'Year of birth.'

Yogi, *n. Electronics.* A code or popular name for a type of end-fire antenna array.

Yoke (*code*). A word formerly authorized for the letter 'Y.' See **Able** (*code*).

yoke, *n. Specif.* A control column, esp. a dual control column.

Yokota Air Base. An air base at Fussa, Japan.

Youngstown Municipal Airport. A municipal airport near Youngstown, Ohio, at which certain accommodations are provided for USAF units.

yr (*auth abbr*). 'Year.'

Y service. A code or popular term for radio intercept service.

YSP (*auth abbr*). 'Years service for severance pay purposes.'

YT-35. A tandem two-seat, single-engined trainer developed by the Texas Engineering and Manufacturing Company. Popularly called the 'Buckaroo.'

Yuma County Municipal Airport. A municipal airport near Yuma, Arizona, at which certain accommodations are provided for USAF units.

Z

Z (*letter*). See **Zulu** (*code*). **1.** Used as a classification symbol, for obsolete AF aircraft, as in 'Z-54.' **2.** A symbol for 'azimuth angle.' **3.** A code or symbol for Navy lighter-than-air aircraft. See **LZ** (*abbr*), sense 2. **4.** A code or symbol for administrative versions of Navy aircraft. **5.** 'Zero meridian time.' See **Greenwich mean time, Z time.**

Z (*auth abbr*). 'Zone,' in combinations only.

Z-axis, *n.* The vertical axis in a coordinate system of axes, esp. the vertical axis of an aircraft, about which the aircraft yaws. See **axis,** *n.*, note.

Z correction. In air navigation, the correction made for errors caused by directional gyro precession (or wander) and coriolis acceleration.

Zebra, *n.* **1.** A code word formerly authorized for the letter 'Z.' See **Able** (*code*). **2.** A master sergeant, in reference to his stripes. *Slang.*

Zebra time. Mean time at the Greenwich meridian. Used in communications and for synchronized reckonings, as in 'he arrived in New York 2400 Zebra time.'

The hour 2400 Zebra time is 1900 EST, 1800 CST, 1700 MST, 1600 PST, 1400 Hawaiian standard time, 1000 Sydney standard time, 0900 Tokyo standard time, 0800 Manila standard time, 0300 Moscow standard time, 0100 Berlin standard time. See **international date line.**

zed-zed, *n.* A US Navy instrument approach system that uses VHF direction-finding stations to take bearings on aircraft, and to give instructions on when to make standard turns to bring the aircraft in for landing.

Zeke, *n.* An allied code or popular name for the Japanese Zero naval fighter.

Different versions of the Zeke were sometimes designated by a following number, as in 'Zeke 22.'

zenith, *n.* The point in the celestial sphere directly overhead.

zenith distance. In celestial navigation, the shorter angular distance of a celestial body from the zenith measured along the vertical circle that passes through the body. Also called 'co-altitude.'

This is equivalent to the angular distance between the observer and the subpoint of the body, and may be expressed in nautical miles. When so expressed, it is not called 'co-altitude.'

zenith-nadir axis. A line connecting the zenith and nadir of an observer.

Zeppelin, *n.* **1.** Any rigid airship designed by, or of a type designed by, Ferdinand von Zeppelin (1838–1917). **2.** A general term applied to any rigid airship, or, often loosely, to any airship. Cf. **ZR** (*abbr*).

Zerk fitting. A special type of fitting on a hub, axle, joint, or other place through which grease may be applied under pressure.

Zero, *n.* One or other of various Japanese fighter airplanes used in WW II.

Strictly speaking, the Zero was an airplane produced in the year 2600 (Japanese calendar), but since the only airplane at first encountered by Americans bearing this designation was the Mitsubishi type 0, single-engine fighter, the term at first came to apply only to this airplane. This airplane was used by both the Japanese army and navy. When in 1942, other type 0 airplanes were encountered, different code names were invented for specific reference, and the name 'Zero' either fell into disuse, or became a generic name for any fighter aircraft, esp. the Hamp and the Zeke.

zero, *v. To zero in.* **a.** To adjust the sight settings of a gun by calibrated results of firings. **b.** To adjust any device to another so that automatic synchronization results. See **Selsyn zeroing.** **c.** To bring an aircraft exactly into a desired position, as over a target or into a landing position. Used *tr.* and *intr.*

zero, *a.* Without value; involving no measurable departure or change.

For usage, see **hover,** *v.*, note, and following entries.

zero azimuth. 1. The azimuth of an object lying along a grid north, magnetic north, or true north line. **2.** The direction ahead of an airplane, along the line of flight.

zero ceiling. The term sometimes applied when the ceiling is at, or near, the ground. See **ceiling zero.**

zero hour. The hour or time at which something is scheduled to be done or at which something takes place.

zero-length launcher. A short mobile launcher, designed essentially to hold the object launched in position for launching, not to give it guidance.

One design is used to launch the TM-61.

zero-lift angle of attack. An angle of attack of an airfoil at which it delivers no lift.

Zero Reader. [A trade name.] A gyroscopic instrument that combines the functions of gyro

horizon, directional gyro, magnetic compass, sensitive altimeter, and cross-pointer indicator.

zero-thrust pitch. The distance a propeller would advance in one revolution so as to deliver no thrust.

zero-torque pitch. The distance that a propeller would advance in one revolution so that the torque would be zero.

zero visibility. Visibility on the ground considered limited to a few feet.

zero-zero weather. Weather conditions in which the ceiling and visibility are nil.

ZF (*auth abbr*). 'Zone of fire.'

ZH (*code*). A Navy designation for lighter-than-air search and rescue aircraft. See **Z** (*letter*), sense 3.

ZI (*auth abbr*). 'Zone of interior.' Used attrib., as in *ZI command*, *ZI installation*, etc.

Z marker. Short for next.

Z marker beacon. [From 'zone marker.'] A transmitter installed at certain radio-range stations to aid in identifying the cone of silence directly above the station. Also called 'cone marker beacon.'

Zn (*code*). A code or symbol for 'true azimuth.' Also written 'Z_n.'

zonal depot. An area or specialized depot considered in its capacity as a specialized depot for the air materiel zone in which located. See **area depot.**

A zonal depot stores, distributes, and sometimes performs maintenance on specific property classes.

zone, *n.* **1.** One of the two geographical areas into which the continental US has been divided under the two-zone system of supply and maintenance. See **two-zone system. 2.** Any place that is more or less marked off and distinguished from its surroundings by virtue of some particular use or function. **a.** In reference to an area on the surface, as in the combinations, 'drop zone,' 'landing zone,' etc. **b.** In reference to airspace, as in 'equisignal zone.' **c.** In reference to both surface space and airspace, as in 'combat zone.' **3.** A time zone. Cf. **zone time.**

zone marker. A Z marker beacon.

zone of action. Any surface area or airspace where action, esp. offensive action, against the enemy is being conducted or contemplated.

This term is used esp. in connection with air-ground operations, in which the zone of action for air forces may be far-removed from the battle area.

zone of interior. (ZI) **1.** That part of a national territory held intact against the enemy, in which the main manpower, weapons, and equipment are generated for use of the armed forces. **2.** By inference, the continental United States.

Historically, the zone of interior for the US during and after WW I and WW II has been the entire continental United States. In a future war, should it come, it is conceivable that the ZI would be contracted, or that it would be a part of a theater of operations. In WW II, the American Theater of War extended to territory considered to be the zone of interior for the US.

zone of the interior. Variant of 'zone of interior.'

zone time. In navigation, the time used throughout a zone of 15° of longitude, based on the local mean time for the central meridian of the zone. See **time zone.**

zoom, *n.* A steep, fast, and usually brief climb in an airplane. Attrib., as in *zoom bombing.*

zoom, *v.* **1.** *intr.* To move or travel at great speed as if by some explosive power, esp. to fly upward in a zoom. **2.** *Specif.* To climb briefly at an angle greater than normal climbing angle, momentum being expended in the process. Said of an airplane or of a person flying an airplane. **3.** *tr.* To put an *aircraft* into a zoom.

zorch, *a.* Excellent. *Slang.*

ZP (*code*). A Navy designation for lighter-than-air patrol and escort aircraft. See **Z** (*letter*), sense 3.

ZPM (*code*). A Navy designation for a class of patrol airship some 310 feet in length, and noted for its flight endurance.

ZPN (*code*). A Navy designation for a class of airship some 324 feet in length.

ZR (*abbr*). 'Zeppelin Rigid.' Also written 'Z.R.' See **Los Angeles.**

z-score, *n.* **1.** A sigma score. **2.** *Capitalized.* A standard score that has been modified.

ZT (*code*). A Navy designation for lighter-than-air training aircraft. See **Z** (*letter*), sense 3.

Z time. Zebra time.

ZTO (*auth abbr*). 'Zone transportation office.'

ZU (*code*). A Navy designation for lighter-than-air utility aircraft. See **Z** (*letter*), sense 3.

Zulu (*code*). An authorized word for the letter 'Z.' See **Alfa** (*code*).

ZZ (*abbr*). 'Zed-zed.' Attrib., as in *ZZ approach.*

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Recommending Changes

Users of the Air Force Dictionary are invited to recommend changes, corrections, and additions.

Send recommendations to Chief, Documentary Research Division, Research Studies Institute, Air University, Maxwell Air Force Base, Alabama.

Please submit recommendations on 4″ × 6″ slips of paper, as shown below. A separate slip should be used for each entry dealt with.

aerial mine

A. Recommend another sense: '3. A modified mine adapted for suspension from a balloon against airplanes or guided missiles.'

B. Example of usage: "Several clusters of aerial mines were suspended along expected paths of the rocket" (1953 John Smith, Air Defense, p. 43).