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Aerospace Glossary for Human Factors Engineers

RATIONALE

This document has been determined to contain basic and stable terminology which is not dynamic in nature.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE G-10, Aerospace Behavioral Engineering Committee and will no longer be subjected to periodic reviews. Users are responsible for verifying references and continued suitability of technical requirements. Newer terminology may exist.

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1. SCOPE AND PURPOSE:

This Glossary is designed to serve persons who need to know the accepted meanings, within specific contexts, of the terminology used in reports, articles, regulations, and other materials dealing with aviation safety -- with particular reference to terms specific to human factors in aviation safety. It is assumed that some users of the Glossary will be familiar with the nomenclature of aviation, but will need information on the language of human factors in engineering as they apply to aviation safety. Others (for example, engineers and psychologists) will have fairly extensive knowledge of the terminology of their own and related disciplines, but will need authoritative definitions of technical terms specific to aviation.

Within the foregoing general framework, the following guidelines for the inclusion of terms to be defined have been observed:

1.1 Aviation terms have been included insofar as they relate to aviation safety. This means that many terms have been included that refer to aviation rules, regulations, and procedures, and to aviation-related technologies and equipment (especially electronic instrumentation).

1.2 Aviation terms unrelated to aviation safety have been omitted. No attempt has been made to include terms denoting equipment or instrumentation specific to particular aircraft.

1.3 Aviation psychology and human factors terms have been included insofar as they apply to, and appear in the literature dealing with, aviation safety. Generally understood scientific and statistical terms have been omitted except as they have specialized applications to, or unique meanings in the context of, aviation safety.

1.4 Terms referring to the metrics of physical parameters are included if they are specific to human factors in aviation safety.

1.5 For terms that have more than one meaning in different disciplines or applications, or that are defined differently by various authorities, the various definitions are given and the applications of each are indicated.

2. METHODS AND PROCEDURES:

2.1 Collection of Terms: Terms were collected from a broad variety of published and unpublished sources. Published sources include books and periodicals dealing with aviation, books and periodicals on human factors engineering, psychological texts, and Government publications such as Federal Aviation Regulations (FAR), Airman's Information Manual (AIM), and works published by the United States Air Force (USAF) and the Department of Transportation (DOT).

Terms and definitions were also collected by canvassing a number of groups and individuals, including the G-10 Committee of the Society of Automotive Engineers (SAE), the Air Line Pilots Association (ALPA), and the Transportation Systems Center (TSC).

In addition, the Editor has drawn on a substantial private collection of terms and definitions that he has developed over a period of years, derived from their use at professional meetings and comparable occasions.

2.2 Screening Procedures: The collected terms were screened in accordance with the previously established criteria for inclusion. All terms that clearly met the guidelines were included. In those cases where there was some doubt, the terms were generally included on the grounds that the inclusion of a few extra terms would not seriously impair the Glossary, whereas the omission of any term that even a few readers might need to have defined would reduce its usefulness.

2.3 Listing: Once the terms and definitions had been collected and screened for inclusion, they were arranged and presented in accordance with the procedures explained below.

2.3.1 Basic Order: The entries in the Glossary are listed sequentially in alphabetical order, except as noted in 2.3.2 and 2.3.3.

2.3.2 Acronyms and Abbreviations: Many of the terms in the Glossary are acronyms or abbreviations. Acronyms are words formed from the initial letters (or groups of letters) in a series of words (such as RADAR, from RAdio Detection And Ranging, or NAVAID, from NAVigational AID). Because acronyms are pronounced as words and function as words, they are treated as words in the Glossary: that is, each acronym is defined under one listing, in regular alphabetical order.

The abbreviations in the Glossary are expressions formed from the initial letters of phrases where each letter is pronounced separately in sequence (such as "I-L-S" for Instrument Landing System, or "A-T-C" for Air Traffic Control). For most of these items, there are two entries in the Glossary: one for the abbreviation itself, and one for the expanded term for which it stands, with the entry for the abbreviation simply referring the user to the expanded form, under which the definition appears. For example, two entries are provided for the term Minimum Descent Altitude, abbreviated MDA:

MDA: Minimum Descent Altitude

and

Minimum Descent Altitude/MDA: The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided. (AIM)

In some cases, when the expanded form of an abbreviation is self-explanatory, the only definition provided is the expanded form of the term itself. The following entry is an example:

FAR: Federal Aviation Regulations.
(No separate entry is given for Federal Aviation Regulations.)

Also, in a few instances (see the entries under V, for example) the definitions appear under the abbreviations themselves.

2.3.3 Clustered Terms: Several terms were found to be related in such a way that it made sense to define all of them in a single multipart entry. For example, under the heading Attention, Anomalies of, 13 different terms are defined. In most cases, each term within a clustered entry is given a separate alphabetized entry of its own, which refers the reader to the cluster entry. Thus we find:

External Distraction: (See Attention, Anomalies of.)

(The definition for External Distraction is given in the cluster entry under Attention, Anomalies of.)

When a subsumed term in a cluster entry begins with the same word as the cluster entry's heading, a separate alphabetized entry is not provided. For example, see the cluster entry for Acceleration Effects.

2.3.4 Alternative Terms: When multiple terms are used for the same thing, all such terms are listed alphabetically. The definition is given only at the first entry, which also displays alternatives. Subsequent entries refer readers to the first entry, where the definition is given. Thus we have:

Codes/Transponder Codes: The number assigned to particular multiple pulse reply signals transmitted by the transponder. (AIM)

and

Transponder Codes: (See Codes.)

2.3.5 Terms with Two or More Unrelated Meanings: A few terms have two or more applicable meanings which are either unrelated to each other, or differ from one another in different contexts. For example, Threshold may either refer to a physical part of a runway; or (as a psycho-physiological term) denote the range of intensity or duration, or both, required for stimuli to produce effect(s). In such cases, separate numbered entries are provided, as follows:

Threshold (1): The beginning of that portion of the runway useable for landing. (AIM)

and

Threshold (2): An inherent perceptual limitation which requires that stimuli be presented within a certain range of intensity and duration. (USAF)

3. GLOSSARY:

Abort: To terminate a planned aircraft maneuver; for example, an aborted takeoff. (AIM)

Above Ground Level/AGL: Height of an aircraft, clouds, or the top of an obstruction (for example, building, tower, or bridge) above the surface of the earth in the immediate vicinity, usually expressed in feet. (Koonce)

Absolute Angle of Attack: The angle measured between the chord plane of an airfoil and the position that plane would have if the airfoil were producing zero lift, that is, the sum of the geometric angle of attack and the zero-lift angle of attack; also called an aerodynamic angle of attack, (TSI+), (see Angle of Attack, Zero-Lift Angle of Attack, and Critical Angle of Attack).

Absolute Ceiling: The maximum height above sea level in a standard atmosphere at which a given airplane, under specified operating conditions, can maintain horizontal flight. (TSI)

Accelerate-Stop Distance: Runway distance traversed by an aircraft from start to V_1 to stop, assuming failure of the critical engine at V_1. (TSI)

Accelerated Stall: A stall occurring under acceleration, as in a pullout. Such a stall usually produces more violent motions of the airplane than does a stall occurring in unaccelerated flight. (TSI)

Acceleration Effects: Reduction in performance capability due to the effects of acceleration on the cardiovascular system or on the vestibular apparatus, or resulting in the restriction of body movement. (USAF+)

1. Acceleration Cardiovascular Effects: Reduction in performance capability due to grayout or blackout resulting from high positive G. Analogous negative G effects also apply. (USAF+) (See Redout.)

2. Acceleration Displacement Effects: Reduction in performance capability due to the physical displacement or restriction in movement of the operator as a result of ±Gz (head to toe), ±Gy (side to side), or ±Gx (front to back), where G_x, G_y, G_z are the three vector components of the total acceleration to which the operator is being subjected (generally stated in units of the standard value of the gravitational acceleration, at the earth's surface, g = 32fps^2). (USAF+)

3. Acceleration Orienting Effects: Reduction in performance capability due to the effects of acceleration on the vestibular apparatus or visual system. (USAF)

Acceleration Tolerance: The ability to withstand the effects of changing velocity over time on biological processes or spatial orienting mechanisms. (USAF+)

Accident: An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage. (NTSB)

ACLS: Automatic Carrier Landing System.

Active: (See Physical Condition.)

Actual Special Sortie: (See Special Sortie.)

Acute/Transient Fatigue: (See Fatigue.)

ADF: Automatic Direction Finder.

ADI: Attitude Director Indicator.

Adjustable Pitch Propeller/Variable Pitch Propeller: A propeller the pitch setting of which can be changed in the course of field maintenance, but not when the propeller is rotating. (TSI)

Adjustment Error: (See Error.)

Advancing Blade: Any rotor blade or wing on a rotary-wing aircraft in horizontal motion, moving into the relative wind. (TSI)

Advection Fog: Fog resulting from the movement of warm, humid air over a cold surface, especially a cold ocean surface. Also, sometimes, steam fog, which results from the transport of cold air over relatively warm water. (TSI+)

Adverse Yaw: Yaw in the opposite sense to that of the roll of an aircraft, for example, a yaw to the left with the aircraft rolling to the right. (TSI)

Advisory: Advice and information provided to assist pilots in the safe conduct of flight and aircraft movement. (AIM)

Aerobatic Confidence Maneuvers: Aerobatics intended to increase pilot skills. (USAF)

Aerobatic Demonstration: Aerobatics intended to increase or demonstrate pilot skill, or to demonstrate aircraft capabilities. (USAF)

Aerobatics: Preplanned, precisely executed flight maneuvers in which the aircraft exceeds either 60 deg of bank or 30 deg of pitch. (TSI)

Aerodynamic Angle of Attack: (See Absolute Angle of Attack.)

Aerodynamic Stability: (See Stability.)

Aeronautical Beacon: A visual NAVAID displaying flashes of white or colored light, or both, to indicate the location of an airport, a heliport, a landmark, a certain point of a Federal airway in mountainous terrain, or an obstruction. (AIM)

Aerospace Medicine: A medical speciality dealing with standards for selection of flight personnel and the determination of their tolerance for safe participation in flight activities. (TSI)

Affective States: Subjective feelings of different types of pleasantness or unpleasantness that a person has about aspects of his/her environment, other people, or himself/herself. Affective states are subdivided into emotions and moods depending on their duration and intensity. (USAF)

1. Emotions: Affective states which tend to be disruptive of mental, physiological, or behavioral processes. Emotions are relatively brief in duration but strong in intensity. (USAF) A mental state, characterized by strong feeling and accompanied by motor expression, that is related to some object or external situation. (English)

2. Mood: A relatively mild emotional state, enduring or recurrent; an echo of an emotional reaction with or without remembrance of the original stimulus. (English)

AGL: Above Ground Level.

Air Carrier: A corporate entity or person who undertakes directly, by lease, or by other arrangement, to engage in air transportation. (FAR+)

Aircraft: Any machine that can be supported for flight in the air by buoyancy or the effects of the air against its surfaces. (TSI+)

Aircraft Accident: An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and the time when all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage. (NTSB)

Aircraft Approach Category: A grouping of aircraft based on a speed of 1.3 times their stall speed in the landing configuration at maximum gross landing weight. For example, aircraft whose stall speed (with landing gear, flaps, etc., in proper position for landing) multiplied by 1.3 is less than 91 knots are classified as Category A aircraft; those for which 1.3 x stall speed is at least 91 knots but less than 121 knots are Category B aircraft; and so on up to Category E aircraft, for which 1.3 x stall speed is 166 knots or more. (AIM+)

Aircraft Subsystems: Lesser systems which are components of major aircraft systems. For example, subsystems of the hydraulic system include landing gear, brakes, wing flaps, nosewheel steering, and speed brakes. NOTE: The terms "system" and "subsystem" are often used synonymously. (AFFDL)

Aircraft Systems: Major components of the aircraft which operate from a common source of power, provide a common power source to similarly powered components, or perform a major function encompassing lesser functions or components. (Examples include hydraulics, electric, flight control, avionics, engine power, fuel, and all-weather systems.) (AFFDL+)

Airfoil: An aerodynamic surface designed to obtain a reaction from the air through which it moves; for example, aileron, wing, rotor blade, rudder, or similar device. (TSI)

Airframe: The fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces (including rotors, but excluding propellers and rotating airfoils of engines), and landing gear of an aircraft, and their associated accessories and controls. (TSI)

Airline Transport Pilot/ATP: A pilot who has the privileges of a commercial pilot with an instrument rating and is certified to serve as pilot in command for passenger-carrying operations of a turbojet airplane, of an airplane having ten seats or more (excluding the pilot seats), or of a multiengine airplane operated by a commuter air carrier. (FAR)

AIRMET: Acronym for AIRman's METerological information. In-flight weather advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications. AIRMETs concern weather of less severity than that covered by SIGMETs or Convective SIGMETs. AIRMETs cover moderate icing, moderate turbulence, sustained winds of 30 knots or more at the surface, widespread areas of ceilings less than 1000 ft or visibility less than 3 miles, or both, and extensive mountain obscurement. (AIM) (See SIGMET and Convective SIGMET.)

Airplane: An engine-driven, fixed-wing, heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its wings. (TSI)

Airport Advisory Area: The area within ten miles of an airport that does not have a control tower or where there is a tower which is not in operation and on which a flight service station (FSS) is located. In such cases the FSS provides advisory service to arriving and departing aircraft. (AIM)

Airport Marking Aids: Markings used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a holdline, or other designated area. A runway should be marked in accordance with its present usage such as: 1. Visual, 2. Nonprecision Instrument, 3. Precision Instrument. (AIM).

Airport Surveillance Radar/ASR: Approach control radar used to detect and display an aircraft's position in the terminal control area. (AIM+)

Airport Rotating Beacon: A visual NAVAID operated at many airports. At civil airports, alternating white and green flashes indicate the location of the airport. At military airports, the beacons flash alternately white and green, but are differentiated from civil beacons by dual peaked (two quick) white flashes between the green flashes. (AIM)

Airport Traffic Area: Unless otherwise specifically designated in FAR Part 93, that airspace within a horizontal radius of five statute miles from the geographical center of any airport at which a control tower is operating, extending from the surface up to, but not including, an altitude of 3000 ft above the elevation of the airport. (AIM)

Air Route Traffic Control Center/ARTCC: A facility established to provide ATC service to aircraft operating on IFR flight plans within controlled airspace, principally during the en route phase of flight. (AIM)

Airspace: The atmosphere in which aircraft operate, extending upwards from the surface of the earth. (Koonce)

Airspeed Mach Indicator/AMI: An aircraft instrument that displays the vehicle's speed as a ratio of its true airspeed to the speed of sound. (FAR+)

Air Taxi (1): A term used to describe helicopter/VTOL aircraft movement conducted above the surface but normally not above 100 ft above ground level. (AIM)

Air Taxi (2): The carriage in air commerce of persons or property for compensation or hire as a commercial operator in aircraft having a maximum seating capacity of less than 20 passengers or a maximum payload of less than 6000 pounds. (FAR)

Air Traffic Clearance/ATC Clearance: An authorization by air traffic control for an aircraft to proceed within controlled airspace under traffic conditions specified to prevent collisions with known traffic. (See ATC Instructions.) (AIM+)

Air Traffic Control/ATC: A service operated by appropriate authority, military or civil, to promote the safe, orderly, and expeditious flow of air traffic. (AIM+)

Air Traffic Control Radar Beacon System/ATCRBS: A radar system in which the object to be detected is fitted with cooperative equipment in the form of a radio receiver/transmitter (transponder). Radar pulses transmitted from the searching transmitter/receiver (interrogator) site trigger a distinctive transmission from the transponder. This reply transmission, rather than a reflected signal, is then received back at the interrogator site for processing and display at an air traffic control facility. In this way, the responding object (usually an aircraft) can be identified as well as detected. (AIM+)

Air Traffic Control Specialist/Controller: A person authorized to provide air traffic control service. (AIM)

Airway/Federal Airway: A control area or portion thereof established in the form of a corridor through airspace with specified width and height, the centerline of which is defined by radio navigational aids. (AIM) (See Colored Federal Airway.)

Airway Beacon: A visual device used to mark airway segments in remote mountain areas. The light flashes Morse Code to identify the beacon site. (AIM+)

Airworthy: In a condition suitable for safe flight. (TSI)

Airworthiness Certificate: A certificate issued by the FAA, a designee, or the airworthiness authority of another nation certifying that the aircraft met, at the time of inspection, current airworthiness standards. (TSI)

Alert Height: The minimum height above ground level at which the pilot is supposed to make a go-around if a system failure is detected. (Koonce)

ALNOT: Acronym for ALert NOTice. A message sent by a Flight Service Station (FSS) or Air Route Traffic Control Center (ARTCC) requesting an extensive communication search for overdue, unreported, or missing aircraft. (AIM)

ALPA: Acronym for AirLine Pilots Association.

Alphanumeric Display/Data Block: Letters and numerals used to show identification, altitude, beacon code, and other information concerning a target on a radar display as used in Automated Radar Terminal Systems (ARTS). (AIM+)

ALS: Approach Light System.

Altimeter Setting: The barometric pressure reading used to adjust a pressure altimeter for variations in the local mean sea level reference atmospheric pressure or to adjust to the standard altimeter setting (29.92 inHg). (AIM+)

Altitude Restriction: An altitude or altitudes stated in the order they are to be flown which are to be maintained until reaching a specific point or time. Such restrictions are issued by ATC to ensure proper altitude separation of traffic or clearances from other known hazards. (AIM)

Ambient Orientation: A means of maintaining gross orientation in space without "thinking" about it. It is the result of the preconscious level of awareness: keeping track of various sensory inputs, including visual, tactile, kinesthetic, and auditory modes in order to keep the person oriented with respect to the horizon. (USAF)

AMI: Airspeed Mach Indicator.

Angel: In radar meteorology, an echo caused by physical phenomena not discernible to the eye. Such phenomena have been observed when abnormally strong temperature or moisture gradients, or both, were known to exist; they are also sometimes attributed to insects or birds flying in the radar beam. (TSI)

Angle of Attack: The acute angle between the wing chord plane and the relative wind; also referred to as Geometric Angle of Attack. (TSI) (See Absolute Angle of Attack and Critical Angle of Attack.)

Angle of Attack Indicator: An instrument which indicates the angle between the wing chord plane and the relative wind. (TSI)

Angle of Incidence: The acute angle between a fixed reference, usually the longitudinal axis of the aircraft, and the chord of a wing or other airfoil. (Koonce)

ANIP: Army-Navy Instrument Program.

Anoxia: Severe hypoxia which may result in permanent damage to the person or one or more of his/her organs. (Webster+) (See Hypoxia.)

Antecedent Events/Mishap: (See Mishap.)

Anthropometrics: Measurements of the height, weight, build, and other physical dimensions of a person. (USAF)

AOPA: Aircraft Owners and Pilots Association.

APA: Allied Pilots Association.

Approach Clearance: Authorization by ATC for a pilot to conduct an instrument approach. (AIM)

Approach Light System/ALS: An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended centerline of the runway on final approach for landing. (AIM) (See Runway Edge Light System.)

Approach Phase: (See Mishap, Phase of Flight.)

Approach Sequence: The order in which aircraft are positioned while on approach or awaiting approach clearance. (AIM)

Arc: The track over the ground of an aircraft flying at a constant distance from a navigational aid by reference to Distance Measuring Equipment (DME). (AIM)

Area Navigation/RNAV: A method of navigation that permits aircraft operations on any desired course within the coverage of station-referenced navigation signals or within the limits of self-contained system capabilities. (AIM)

1. Area Navigation Low Route: A route of flight using area navigation within the airspace that extends upward from 1200 ft above the surface of the earth to, but not including, 18,000 ft MSL. (AIM+)

2. Area Navigation High Route: A route of flight using area navigation within the airspace extending upward from, and including, 18,000 ft MSL to flight level 450. (AIM+)

3. Random Area Navigation Routes/Random RNAV Routes: Direct routes, based on area navigation capability, between waypoints defined in terms of degree/distance fixes or offset from published or established routes/airways at specified distance and direction. (AIM)

4. RNAV Waypoint/W/P: A predetermined geographical position used for route or instrument-approach definition or for progress reporting purposes that is defined relative to a VORTAC station position. (AIM)

Army-Navy Instrument Program/ANIP: A display research and development program initiated in 1952 that advanced the "contact analog" pictorial display concept, including the "highway in the sky" feature. (Roscoe)

Arrival Time: The time an aircraft touches down on arrival. (AIM)

ARTS: Automated Radar Terminal Systems.

ARTCC: Air Route Traffic Control Center.

Aspect Ratio: The ratio of span to mean chord of a wing or other airfoil. (Koonce)

ASR: Airport Surveillance Radar.

ASR Approach: Surveillance Approach.

ATA: Air Transport Association of America.

ATC: Air Traffic Control.

ATC Advises: A phrase used as a prefix to a message of noncontrol information when it is relayed to an aircraft by someone other than an air traffic controller. (AIM)

ATC Assigned Airspace/ATCAA: Airspace of defined vertical/lateral limits, assigned by ATC, for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic. (AIM)

ATC Clearance: Air Traffic Clearance.

ATC Instructions: Directives issued by air traffic control that require a pilot to take specific actions. (AIM)

ATCRBS: Air Traffic Control Radar Beacon System.

Athletic: (See Physical Condition.)

ATIS: Automatic Terminal Information Service.

ATP: Airline Transport Pilot.

Attention: The active selection of, and emphasis on, one component of a complex experience, and the narrowing of the range of objects to which the organism is responding. (English)

Attention, Anomalies of: Misallocation or untimely interruption of attention to a task. (USAF)

1. Boredom: A psychological state resulting from any activity that lacks motivation, or from enforced continuance in an uninteresting situation. (English)

2. Channelized Attention: The focusing of conscious attention upon a limited number of environmental cues which may lead to the exclusion of others of an objectively higher or more immediate priority. Channelized attention is an active anomaly of attention sometimes referred to as fixation. (USAF)

3. Cognitive Task Saturation- That state in which the cognitive task demands exceed the individual's capacity to respond appropriately to all of them. Under such a situation the individual often focuses attention on a subset of the cognitive demands present. (Koonce) (See Channelized Attention.)

4. Complacency: A state of adjustment, or a dynamic balance between organism and environment, typified by established habits and responses that are in a quiescent stage, (English). Self-satisfaction accompanied by unawareness of actual dangers or deficiencies. (Webster)

5. Distraction (1): An undesired redirection of the focus of attention by an environmental cue or mental process. (USAF+)

   a. External Distraction: Interruption of attention by a nontask related environmental cue. (USAF)

   b. Internal Distraction: Interruption of attention by a nontask related mental process. (USAF)

Distraction (2): A stimulus that causes an undesired shift in attention. The distracting stimulus may be either an environmental cue (external distraction) or a mental process (internal distraction). (English+)

6. Fascination: An anomaly of attention in which a person monitors the relevant environmental cues around him/her but fails to respond to them because of a sense of unreality or detachment from events, as if he/she were viewing them from the outside. Fascination is usually associated with a high-stress or crisis situation. (USAF)

7. Habit-Pattern Interference: Reverting to previously learned response modes which are objectively inappropriate to the task at hand. Habit-pattern interference usually occurs at the preconscious level of awareness. (USAF) (See Transfer of Training.)

8. Habituation: Adaptation and subsequent inattention to an environmental cue after prolonged or repeated exposure to it. (USAF)

9. Inattention: A state of self-reduced conscious attention due to a sense of security, self-confidence, or a perceived absence of threat from the environment. (USAF)

   a. General Inattention: Nonselective inattention typically due to boredom or complacency. (USAF)

   b. Selective Inattention: Insufficient attending to relevant environmental cues due to lack of knowledge or an inappropriate perceptual or attitudinal set. (USAF)

Attention, Level of: The relative proportions of the span, focus, and margin of attention afforded to information processing. (USAF) 1. Focus of Attention - The part of the span of attention directed toward conscious information processing. (USAF) 2. Margin of Attention - The span of attention minus the focus of attention, or a person's remaining capacity to focus conscious attention. (USAF)

Attitude (1): The orientation of the three major axes of an aircraft (longitudinal, lateral, and vertical) with respect to a fixed reference such as the horizon, the relative wind, or direction of flight. (Koonce)

Attitude (2): An enduring, learned predisposition to behave in a consistent way toward a given class of objects; a persistent mental or neural, or both, state of readiness to react to a certain object or class of objects, not as they are but as they are conceived to be. (English)

Attitude Director Indicator/ADI: An integrated flight display in aircraft cockpits which combines the attitude indicator with steering bars (or command bars) that aid the pilot in navigating with VOR or ILS signals. (Koonce)

Attitude Indicator: An instrument that shows the pitch and roll attitudes of the aircraft with respect to the horizon. (Koonce)

Attitudinal Set: A predisposition, rooted in attitude(s), which may cause the individual to respond in a particular manner to a set of stimuli. (Koonce)

Austere Airfields: Those airfields without navigation aids and, in most cases, having short landing areas without paved landing surfaces or other facilities necessary for operation of typical medium/large-size transport aircraft. (AFFDL)

Autokinesis: (See Illusion.)

Automated Radar Terminal Systems/ARTS: A highly automatic radar system that displays, for terminal aircraft controllers, information about aircraft that they are controlling. ARTS gives identification, flight plan data, and other flight-associated information (for example, altitude and speed). (AIM+)

1. ARTS II: A programmable, nontracking, computer-aided display subsystem capable of modular expansion. ARTS II systems provide a level of automated air traffic control capability at terminals having low-to-medium activity. Flight identification and altitude may be associated with the display of secondary radar targets. (AIM)

2. ARTS III: The Beacon Tracking Level (BTL) of the modular programmable ARTS in use at medium- to high-activity terminals. ARTS III detects, tracks, and predicts secondary radar-derived aircraft targets. These are displayed by computer-generated symbols and alphanumeric characters depicting flight identification, aircraft altitude, ground speed, and flight plan data. (AIM)

3. ARTS IIIA: The Radar Tracking and Beacon Tracking Level (RT&BTL) of the modular, programmable ARTS. ARTS IIIA detects, tracks, and predicts primary as well as secondary radar-derived aircraft targets. ARTS IIIA is a more sophisticated computer-driven system that upgrades the ARTS III system by providing improved tracking, continuous data recording, and fail-soft operations. (AIM)

Automatic Altitude Reporting: That function of a transponder which responds to Mode C interrogations by transmitting the aircraft's altitude in 100-ft increments. (AIM)

Automatic Carrier Landing System/ACLS: U.S. Navy final approach equipment, consisting of precision tracking radar coupled to a computer data link, which provides continuous information to the aircraft, monitoring capability to the pilot, and a backup approach system. (AIM)

Automatic Direction Finder/ADF: A radio device that is used to locate the direction (bearing) towards a signal on a selected radio frequency; used in navigation, for instrument approaches to airfields, and for locating lost aircraft or persons who might be transmitting a particular radio frequency. (Koonce)

Automatic Pilot: An aircraft subsystem that automatically flies the airplane, maintaining a specified course or heading and altitude. When the automatic pilot is used it substitutes for the pilot as an active component in the flight control loop, and the pilot takes the role of a monitor of the automatic pilot flying the airplane. (Koonce)

Automatic Terminal Information Service/ATIS: The continuous broadcast of recorded noncontrol information in selected terminal areas. Its purpose is to improve controller effectiveness and to relieve radio frequency congestion by automating the repetitive transmission of essential but routine information. (AIM)

Autopilot: (See Automatic Pilot.)

Autorotation: A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion. (AIM)

Auto Throttle(s): A control system that positions and adjusts the throttle(s) of an aircraft to maintain a constant airspeed, which is set (and can be changed) by the pilot. (Koonce)

Auxiliary Airfoil: A secondary airfoil, such as a slat, flap, or tab, that supplements or aids flight in some manner, as by creating an additional force, or by providing a smooth airflow. (TSI)

Avionics: Electrical and electronic equipment used in aviation, principally for navigation and communication. (Koonce)

Awareness, Level of: The theoretical sources of the mental activity which operates in our behavior, (USAF). The extent to which an organism is conscious of something; the act of "taking account" of an object or state of affairs. (English)

1. Conscious Level: A theoretical level of mental awareness at which active information processing or "thinking" takes place. Only one operation at a time can take place at the conscious level. (USAF)

2. Preconscious Level: A theoretical level of mental awareness which is the repository of short-term and long-term memory and overlearned response modes and habit patterns. Actions controlled by the preconscious allow us to do more than one thing at a time. (USAF)

3. Subconscious Level: The theoretical repository of information and response modes not available at the conscious level. Reflexes and psychological defense mechanisms operate at the subconscious level. (USAF)

Backlash: In an aircraft control system, a looseness or play in the linkage between the cockpit controls and the control surfaces, or between the cockpit controls and a mechanical feel system. (TSI)

Balloon (1): A non-power-driven, lighter-than-air aircraft. (TSI)

Balloon (2): To rise slightly either just before or after touching down (landing). (TSI)

Base Leg: (See Traffic Pattern.)

Basic Empty Weight: The empty weight of an airplane with fixed ballast, hydraulic fluid, and other items required by regulatory standards. (Koonce) (See Empty Weight.)

Basic T: A standardized arrangement of four basic flight instruments in a T pattern. Across the top are the airspeed indicator, attitude indicator, and altimeter; the heading indicator is below the attitude indicator to form the T. (Koonce)

BDHI: Bearing Distance Heading Indicator.

Bearing: The angle, usually expressed in deg (0-360, clockwise) between the direction from an observer (for example, on an aircraft) to an object or point and a reference line, which may be the fore-and-aft axis of an aircraft (Relative Bearing), true north (True Bearing), or magnetic north (Compass Bearing or Magnetic Bearing). (Koonce)

Bearing Distance Heading Indicator: A flight instrument that displays bearing to a station as well as the distance to the station (DME). (Koonce)

Below Minimums: Weather conditions below the minimums prescribed by regulation for the particular action involved (for example, landing minimums and takeoff minimums). (AIM)

Bends: (See Decompression Sickness.)

Blackout: A temporary loss of vision and sometimes even consciousness resulting from stagnant hypoxia, commonly induced by positive G forces of severe intensity or duration, or both. (Koonce) (See Grayout.)

Blade Angle: The acute angle between the chord of a section of a propeller, or of a rotary wing system, and a plane perpendicular to the axis of rotation. (TSI)

Blind Speed: The rate of departure or closing of a target relative to the radar antenna at which cancellation of the primary radar target by moving target indicator (MTI) circuits in the radar equipment causes a reduction or complete loss of signal from that target. (AIM)

Blip: On radar screens, a streak of light caused by an object, vehicle, or some electronic disturbance passing through the path of the radar beam. (TSI)

Boredom: (See Attention, Anomalies of.)

Boundary Layer: The layer of air immediately adjacent to a moving surface, such as an airfoil. The movement of air in the boundary layer relative to the surface is relatively small. (Koonce)

Brake Horsepower: The power of an engine or other motor as calculated from the force exerted on a friction brake or absorption dynamometer applied to the flywheel or the shaft. (Webster) (See Shaft Horsepower.)

Braking Action: A report of conditions on the airport surface area providing a pilot with a degree/quality of braking that might be expected. Braking action is reported as good, fair, poor, or nil. (AIM+)

Business Flying: Flying by an individual in his/her own, company-owned, rented, or leased aircraft in connection with his/her profession or occupation, or in furtherance of company business. (TSI)

Cabin Pressurization: The process of producing pressures in an aircraft that are higher than ambient pressures outside the aircraft. (TSI)

Calibrated Airspeed/CAS: The indicated airspeed of an aircraft corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in standard atmosphere at sea level. (FAR)

Call-up: Initial voice contact between a facility and an aircraft, using the identification of the unit being called and the unit initiating the call. (AIM)

Camber: The maximum distance between the mean line and the chord of an airfoil, (Eshbach+). The convexity or rise of the curve of an airfoil from its chord, and the ratio of the maximum departure of that curve from the chord to the length of the chord. (Webster) (The Eshbach definition is used in rigorously technical contexts.)

Canard: An aerodynamic vehicle in which trim surfaces used for longitudinal (or pitch) control are forward of the main lifting surface. (TSI) Also, more commonly, such a forward-placed control surface itself. (Koonce)

Cardinal Altitudes or Flight Levels: "Odd" or "Even" thousand-foot altitudes or flight levels, for example, 1000 ft, 12,000 ft, or FL 350, as distinct from 1500 ft, 15,276 ft, or FL 355. (AIM) (See Flight Level.)

Cardinal Heading: A heading toward one of the cardinal points of the compass (that is, north, south, east, or west). (TSI)

CAS: Calibrated Airspeed.

Castering Wheel(s): Landing wheel(s) mounted in a frame that can rotate about a vertical axis. Castering wheels are of two types: (a) Free-castering wheels, and (b) those whose vertical alignment is controlled from the cockpit. (Koonce)

CAT: Clear Air Turbulence.

CAT II: Category II. (See Instrument Landing System/ILS Category.)

Category: (See Instrument Landing System/ILS Categories.)

Cathode Burn: The burning sensation of the eyes resulting from prolonged staring at cathode ray tubes (electronic displays). (Koonce)

CCV: Control-Configured Vehicle (aircraft).

CDI: Course Deviation Indicator.

Ceiling (1): The height above the earth's surface of the lowest layer of clouds or other obscuring phenomena that are reported as "broken," "overcast," or "obscuration," and not classified as "thin" or "partial." (AIM)

Ceiling(s) (2): The upper operating limit(s) of an aircraft. (Koonce) (See Absolute Ceiling and Service Ceiling.)

Ceilometer: A device or apparatus for measuring the height of a cloud ceiling or determining the vertical visibility to an obscuration. (TSI)

Central Flow Control Function/CFCF: The air traffic control command center function that is responsible for coordination and approval of all major intercenter flow control restrictions on a system basis in order to obtain maximum utilization of the airspace. (AIM) (See Fuel Advisory Departure, Quota Flow Control.)

Certified Takeoff Weight: The maximum takeoff weight stated on the type certificate data sheet of an aircraft (or, for aircraft manufactured prior to 1957, on the type specification sheet). (FAR+)

CFCF: Central Flow Control Function.

Chain-Link-Fence Illusion: (See Illusion, Visual.)

Channelized Attention: (See Attention, Anomalies of.)

Channel-Wing Airplane: A type of airplane having portions of the wings formed in half circles (as seen from the front or rear), in which the propellers are mounted at the trailing edge, drawing the air through the channels to enable short takeoff and landing. (TSI+)

Chokes: (See Decompression Sickness.)

Chord/Chord Line: In aeronautics, a straight line parallel to the plane of symmetry connecting the leading and trailing edges of an airfoil. The ordinates and angles of the airfoil are measured from the chord line. (TSI)

Circadian Desynchronization: That state in which the body's "normal" 24-h rhythmic biological cycle (circadian rhythm) is disturbed; typically caused by movement across several time zones and generally having an adverse effect upon pilot performance. Colloquially referred to as "Jet Lag." (Koonce)

Circadian Rhythm: The tendency for some biological processes to occur at approximately the same time in each 24-hour period. (USAF+)

Circle-to-Land Maneuver/Circling Maneuver: A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or is not desirable. This maneuver is made only after ATC authorization has been obtained and the pilot has established the required visual reference to the airport. (AIM)

Circling Minimums: (See Landing Minimums.)

Circularvection: (See Illusion, Vection.)

Class (1): With respect to the certification, ratings, privileges, and limitations of airmen, a classification of aircraft within a category having similar operating characteristics, such as single engine, land, water, and free balloon. (FAR)

Class (2): With respect to the certification of aircraft, a broad grouping of aircraft having similar characteristics of propulsion, flight, or landing, such as airplane, rotorcraft, balloon, landplane, and seaplane. (FAR)

Clear-Air Turbulence/CAT: Turbulence encountered in air where no clouds are present. (AIM) (See Wind Shear, Jet Stream.)

Clearance: Authorization by a traffic control facility for an aircraft to proceed within controlled airspace, taking into account the location of other known aircraft. (TSI)

Clearance Limit: The fix, point, or location to which an aircraft is cleared when issued an air traffic clearance. (AIM)

Cleared for Approach: Phrase denoting ATC authorization for an aircraft to execute any standard or special instrument approach procedure for that airport. (AIM)

Cleared for the Option: Phrase denoting ATC authorization for an aircraft to make a touch-and-go, low approach, missed approach, stop and go, or full stop landing at the discretion of the pilot. (AIM)

Cleared to Land: Phrase denoting ATC authorization for an aircraft to land. (AIM)

Clear Icing/Clear Ice: Generally, the formation of a layer or mass of ice which is relatively transparent because of its homogeneous structure and small number and size of air spaces; synonymous with glaze, particularly with respect to aircraft icing. (TSI)

Clearway: An area beyond the takeoff runway under the control of airport authorities within which terrain or fixed obstacles may not extend above certain limits. (AIM)

Climbout Phase: (See Mishap, Phase of Flight.)

Closed-Loop System: A control system that includes feedback, a reference mechanism, a capability to detect error, and a means of correcting error so that the output of the system can be modified in progress. For example, the system of a pilot manually flying an aircraft and adjusting its altitude involves the controller's (pilot's) reception of feedback of his/her performance (altimeter, vertical velocity indicator, and visual perception of height), comparison with desired or commanded altitude, detection of any difference (error), and output to the flight control system to adjust the aircraft's altitude so that the result will be zero error. In this situation the pilot is said to be "in-the-loop." (Koonce) (See In-the-Loop.)

Closed Runway: A runway that is unusable for aircraft operations. (AIM)

Closed Traffic: Successive operations involving takeoffs and landings or low approaches where the aircraft does not depart from the traffic pattern. (AIM)

Cloud Base: The lower surface of a cloud. (TSI)

Cloud Deck: The upper surface of a cloud. (TSI)

Coastal Fix: The navigation aid or intersection where an aircraft transitions between the domestic route structure and the oceanic route structure. (AIM)

Cockpit Voice Recorder: An approved device for recording electronically detected voice communications within the aircraft cockpit and between the aircraft and others. The recorder must operate continuously from the use of the checklist before the flight to completion of the final check at the end of the flight. The device may have erasure features, but the most recent 30 min of recording must be retained. (FAR+)

Codes/Transponder Codes: The number assigned for a particular electronic multiple-pulse reply signal transmitted by the transponder in an aircraft which makes it easier for the air traffic controller to identify that particular aircraft on his/her radar display screen. (AIM+)

Cognitive Disorientation: A situation in which a person has lost proper perspective within his/her environment and which results in confusion as to the sequence or priority of tasks to perform. This is referred to colloquially as "getting behind the power curve" or "losing situational awareness." (USAF)

Cognitive Engineering: The application of knowledge from cognitive psychology (psychology of information processing) to the engineering design of systems. (Koonce)

Cognitive Flexibility: An individual's ability to shift from one mental task to another or to effectively time-share between several tasks while maintaining situational awareness. (USAF)

Cognitive Psychology: The study of human acquisition, storage, and retrieval of information; the processing of that information; and the consequent decisionmaking processes. (Koonce)

Cognitive Task Saturation: (See Attention, Anomalies of.)

Colored Federal Airways: L/MF airways depicted in brown on aeronautical charts and identified by color name and number (for example, Amber One). Green and Red airways are plotted east and west. Amber and blue airways are plotted north and south. (AIM) (The term Colored Airways is no longer used in the U.S.A.)

Command Bars: Needles on the attitude director indicator that assist the pilot in intercepting and maintaining a glide slope or course, or both. The needles present "command" information in that the pilot must fly to the bars to bring them to a neutral position (zero displacement), and keeping the bars in the neutral position the system will cause the pilot to intercept and maintain the course (and the glide slope, if on an ILS approach). Also, known as the steering bars. (Koonce)

Command/Control: The orderly distribution of authority and responsibility designed to systematically accomplish a mission; and the continuous-feed-back-loop communications network connecting all levels of command so that decisions can be made, efforts coordinated, and discipline maintained. (USAF)

Command Post: A place at which the commander of a unit receives orders from his/her superiors and from which command is exercised over a unit. (Webster+)

Commercial Aircraft: Any civilian aircraft being used in the transportation of persons or property for compensation or hire. (FAR)

Compass Bearing: (See Bearing.)

Compass Locator: A low-power, low- or medium-frequency (L/MF) radio beacon installed at the site of the outer or middle marker of an instrument landing system (ILS). It can be used for navigation at distances of approximately 15 miles or as otherwise authorized in the approach procedure. (AIM+)

1. Outer Compass Locator/LOM: A compass locator installed at the site of the outer marker of an instrument landing system. (AIM)

2. Middle Compass Locator/LMM: A compass locator installed at the site of the middle marker of an instrument landing system. (AIM)

Compass Rose: A circle, graduated in deg, printed on some charts or marked on the ground at an airport. It is used as a reference to either true or magnetic direction. (AIM)

Complacency: (See Attention, Anomalies of.)

Composite Flight Plan: A flight plan which specifies VFR operation for one portion of flight and IFR for another portion. (AIM)

Composite Route System: An organized oceanic route structure, incorporating reduced lateral spacing between routes, in which composite separation [of aircraft] is authorized. (AIM)

Composite Separation: A method of managing route and altitude assignments separating aircraft so that a combination of half the lateral and half the vertical minimums specified for the area concerned is applied. (AIM+)

Compulsory Reporting Points: Reporting points, designated on aeronautical charts by solid triangles or filed in a flight plan as fixes selected to define direct routes, which must be reported to ATC as each is reached. (AIM)

Cone of Ambiguity: An inverted cone extending upward from the site of a VOR/TACAN facility in which navigational signals tend to be unreliable. (TSI)

Confidence: An attitudinal set in which a person is predisposed to think that he/she can perform a task. (USAF) 1. Overconfidence - An attitudinal set in which a person assumes that he/she can perform a task even though he/she has not successfully performed it in the past, has not successfully performed it recently, or has performed it in the past but under different circumstances. (USAF) 2. Underconfidence - An attitudinal set in which a person assumes that he/she cannot perform a task, even though he/she has performed it successfully and sufficiently often in the recent past. (USAF)

Conflict Alert: A feature of certain automated air traffic control systems designed to alert radar controllers to existing or pending conflict situations recognized by the computer program parameters. (AIM)

Conflict Situation: A state of affairs that exists when an aircraft comes within certain vertical, lateral, or longitudinal distances from each other. These distances may vary depending on the density of the airspace and the type of aircraft. (Koonce)

Confusion: Loss of situational awareness that is recognized by the individual concerned. (Koonce) A state characterized by bewilderment, emotional disturbance, lack of clear thinking, and (sometimes) perceptual disorientation. (English)

Conscious Level: (See Awareness, Level of.)

Constant-Speed Propeller: A propeller designed to maintain engine speed at a constant RPM, automatically increasing or decreasing pitch as engine speed tends to increase or decrease. (TSI)

Contact (1): To establish communications with a facility and, if appropriate, to specify the frequency that should be used. For example: "Contact departure control." or "Contact tower on one nineteen point niner." (AIM+)

Contact (2): A flight condition wherein the pilot ascertains the attitude of his/her aircraft and navigates by maintaining visual reference (contact) with the surface. (AIM+)

Contact Analog: A flight display that takes the essential visual cues from the contact (2) view that the pilot uses in landing an aircraft and in other ground-referenced maneuvers and incorporates them in a vertical situational display that may present a highly stylized contact (2) view in which the dynamic responses of the pictured elements are analogous to those of their visual-world counterparts in contact (2) flight. A true contact analog display remains pictorial in that all elements obey the same laws of motion perspective as their visual-world counterparts. (Roscoe)

Contact Approach: An approach wherein an aircraft on an IFR flight plan, operating clear of clouds with at least 1 mile flight visibility, having received an air traffic control authorization, may deviate from the prescribed instrument approach procedure and proceed to the airport of destination by visual reference to the surface. (TSI)

Continental Control Area: (See Controlled Airspace.)

Contingency: One or more unplanned occurrences which make the performance of a task more difficult, but are not inherently hazardous (for example, unforecast bad weather, ATC delays, etc.). (USAF)

Control Area: (See Controlled Airspace.)

Control Column: A lever or post having a wheel, half-wheel, or other device which is manipulated in controlling the attitude of the aircraft. (TSI)

Control-Configured Vehicle/CCV: A fixed-wing aircraft designed to allow modulation of positive aerodynamic or reactive forces, or both, along and about all three axes, thereby providing limited independent maneuverability in all six deg of freedom. A control-configured vehicle can be moved vertically without changing pitch and can be moved laterally without changing bank or heading. (Roscoe+)

Control Feel: The "feel," or reaction, that a pilot perceives through the cockpit controls, either from the aerodynamic forces acting on the control surfaces, or from artificial input simulating these aerodynamic forces. (TSI+)

Control-Force Reversal: A reversal or disappearance of the conventional forces acting on the aircraft control system, for example, when, owing to abnormal conditions, a forward movement of the stick or yoke causes the nose of the plane to rise instead of the normal response of dropping. (TSI+)

Controllable-Pitch Propeller/Variable Pitch Propeller: A propeller whose blade angle may be changed from the cockpit while the propeller is rotating. (TSI+)

Controlled Airspace: Airspace designated as a continental control area, control area, control zone, terminal control area, transition area, or positive control area within which some or all aircraft may be subject to air traffic control. (AIM)

1. Continental Control Area: The airspace of the 48 contiguous states, the District of Columbia and Alaska (excluding the Alaska peninsula west of Longitude 160W) at and above 14,500 ft MSL, but not including the airspace less than 1500 ft above the surface of the earth. (AIM+)

2. Control Area: Airspace designated as Colored Federal Airways, VOR Federal Airways, control areas associated with jet routes outside the continental control area, additional control areas, control area extensions, and area low routes. (AIM+)

3. Control Zone: Controlled airspace which extends upward from the surface and terminates at the base of the continental control area. (AIM)

4. Terminal Control Area/TCA: Controlled airspace extending upward from the surface or higher to specified altitudes, within which all aircraft are subject to operating rules and pilot and equipment requirements. (AIM)

5. Transition Area: Controlled airspace extending upward from 700 ft or more above the surface of the earth when designated in conjunction with an airport for which an approved instrument approach procedure has been prescribed, or from 1200 ft or more above the surface of the earth when designated in conjunction with airway route structures or segments. (AIM)

6. Positive Control Area/PCA: Airspace, designated in FAR Part 71, within which there is positive control of aircraft. (AIM)

Controller: (See Air Traffic Control Specialist.)

Control Lock: A securing device that prevents movement of control surfaces. (TSI)

Control Sector: An airspace area of defined horizontal and vertical dimensions for which a controller, or group of controllers, has air traffic control responsibility; normally, such an area is within an air route traffic control center or an approach control facility. (AIM)

Control System: A system consisting of a controller, power source(s), control junction, control effector, and feedback sensor(s) that interact to attain a goal(s). (Koonce) (See Closed-Loop System.)

Control Zone: (See Controlled Airspace.)

CONUS: Acronym for the CONtinental United States.

Convective SIGMET/Convective Significant Meteorological Information: A weather advisory concerning convective weather significant to the safety of all aircraft. Convective SIGMETs are issued for tornadoes, lines of thunderstorms, embedded thunderstorms of any intensity level, areas of thunderstorms greater than or equal to radar weather echo intensity level 4 with an area coverage of 4/10 (40 percent) or more, and hail 3/4 inches or more in diameter. (AIM+) (See SIGMET.)

Copilot: A licensed pilot serving in any piloting capacity other than as pilot-in-command, but excluding a pilot who is onboard the aircraft for the sole purpose of receiving flight instruction. (TSI)

Copilot Syndrome: An attitude resulting in ineffective crew coordination based on the comforting premise that one or more of the other crewmembers have the situation under control and are looking out for one's best interest. Implicit in the term "other crewmembers" are nonflight members such as personnel in the ARTCC, the command post, or a RAPCON facility. (USAF)

Coriolis Illusion: (See Illusion, Vestibular.)

Corporate Aircraft: Aircraft flown by professional pilots and operated by a corporation or business in furtherance of the firm's business. (TSI)

Course (1): The intended direction or path of flight in the horizontal plane measured in deg from north. The actual course or path of an aircraft should be distinguished from its heading. They may coincide, but usually do not, the difference being a function of heading, sideslip, and drift. (AIM+) (See Heading.)

Course (2): The ILS localizer signal pattern usually specified as front course or back course. (AIM)

a. Front Course (ILS): The approach course of the localizer, which is used with other functional parts (for example, glide slope, marker beacons, etc.). Its signal is transmitted from the far end of the runway (opposite from the runway approach threshold) and is adjusted so that the distance between full-scale deflections (left to right) of the course deviation indicator needle should equate to approximately 700 ft of linear width at the runway threshold. (AIM+)

b. Back Course (ILS): The course line along the extended centerline of a runway, in the opposite direction to the front course (ILS). (AIM)

Course Deviation Indicator/CDI: A display device for presenting the magnitude (deg, ft, miles) of displacement that a vehicle is from a selected course. (Koonce)

Course Selector: A manually operated navigation instrument used in conjunction with a VHF omnidirectional radio range to ascertain station direction. (TSI)

Cover the Six: A request to protect a person's or vehicle's vulnerable area(s); those that cannot be monitored by the operator of the system. A phrase generally used by pilots of combat aircraft requesting their wingman to guard the area to their rear (6 o'clock position). (Koonce)

Crewmember: A person assigned to perform duty in an aircraft during flight time. Flight crewmember refers to the pilot, copilot, navigator, or (where applicable) flight engineer. (FAR+)

Crew Coordination: The systematic division of subtasks between or among crew or flight members so as to accomplish a larger task more efficiently. Crew coordination is the most basic level of command/control. (USAF)

Crew Systems: Those portions of aircraft systems/subsystems that are affected by the aircrew, such as the flight control system, flight display system, radar systems, and environmental control systems. (AFFDL+)

Criterion Referenced Instruction/CRI (1): A training system methodology in which an individual's achievement in the instructional program is measured in terms of a predetermined set of absolute criteria rather than relative to the performance of other individuals. (Butler+)

Criterion Referenced Instruction/CRI (2): The concept of using a criterion test to measure the effectiveness of the instruction rather than to measure student proficiency. (Butler+)

Critical Altitude: The maximum altitude in standard atmospheric conditions at which it is possible to maintain a specified engine power or a specified manifold pressure at a specified rotational speed (engine RPM). (FAR+)

Critical Angle of Attack: The minimum angle of attack of a given airfoil or airfoil section at which extensive flow separation occurs, with consequent loss of lift and increase of drag; generally results in stalling of the airfoil. (TSI+)

Critical Engine: The engine whose failure would most adversely affect the performance or handling qualities of an aircraft. (FAR)

Cross Controls: To position aircraft controls in an uncoordinated fashion (for example, to deflect the right aileron downward while holding right rudder). (TSI+)

Cross Feed: The feeding or transfer of fuel or oil from engine to engine or from tank to tank on a multiengine aircraft. (TSI)

Cross-Pointer Indicator: An aircraft instrument having two crossing needles that indicate the position of the aircraft with respect to an instrument landing system localizer and glide slope. (TSI)

Crosswind (1): When used concerning the traffic pattern, the word means "crosswind leg." (AIM) (See Traffic Pattern.)

Crosswind (2): When used concerning wind conditions, the word means a wind not parallel to the runway or the path of an aircraft. (AIM) (See Crosswind Component.)

Crosswind Component: The wind component measured in knots at 90 deg to the longitudinal axis of the runway. (AIM)

Cruise Phase: (See Mishap, Phase of Flight.)

Cumulative/Chronic Fatigue: (See Fatigue.)

CVR: Cockpit Voice Recorder.

Cyclic: Helicopter control mechanism for periodically varying the blade angle of each rotor, producing a tilt in the tip-path plane and effecting motion in a desired direction. (TSI)

Data Block: (See Alphanumeric Display.)

Dead Reckoning/DR: Navigational method for determining the location of an aircraft based upon time, heading, and estimated true airspeed (with allowances made for winds and compass errors) flown since last observed position. (Koonce)

Dead-Stick: Without power, as in dead-stick landing, or into land dead-stick. (TSI)

Decision: The selection of a response designed to achieve a desired goal after having made a judgment as to the significance and priority of available information. (USAF)

1. Decision Delay: Failure to select a response in a timely manner due to an anomaly of attention or motivation. (USAF)

2. Poor Decision: Selection of an inappropriate response (assuming adequate information and time to decide) due to an anomaly of attention or motivation. (USAF)

Decision Delay: (See Decision.)

Decision Height/DH: The height at which a decision must be made during an ILS or PAR instrument approach either to continue the approach or to execute a missed aproach. (AIM)

Decompression Sickness: Effects produced by the evolution of gas (usually nitrogen) from tissues and fluids in the body due to changes in barometric pressure. (USAF)

1. Bends: Manifestations of mild to severe pain, usually in the larger joints, due to nitrogen evolving from the blood. (USAF)

2. Chokes: Deep and sharp pain centrally located under the sternum due to nitrogen evolving from the blood and locating in the smaller blood vessels of the lungs and producing a dry, nonproductive cough. (USAF)

3. Neurological Manifestations: The effects of nitrogen evolving from the blood and locating in the brain or spinal cord. Symptoms may include blurred vision, blind spots, flickering lights, headaches, or unilateral numbness or tingling. (USAF)

4. Skin Manifestations: The effects of nitrogen evolving from the blood and locating in subcutaneous tissue. Symptoms may include itching, hot or cold sensations, tingling, or the appearance of a mottled rash. (USAF)

Deep Stall: A stabilized high angle of attack assumed by an aircraft after it reaches the stall angle. (TSI)

Delayed Perception: (See Perception.)

Delayed Response: (See Response.)

Delta Wing: A symmetrical triangular wing having a low aspect ratio, tapered leading edge, and straight trailing edge. (TSI)

Department of Defense Flight Information Publications/DoD FLIP: Publications used for flight planning, en route, and terminal operations. FLIPs are produced by the Defense Mapping Agency for worldwide use. En route charts and instrument approach procedure charts are incorporated in DoD FLIP for use in the National Airspace System (NAS). (AIM+)

Departure Control: A function of an approach control facility providing air traffic control service for departing IFR (and, under certain conditions, VFR) aircraft. (AIM)

Descent Phase: (See Mishap, Phase of Flight.)

Design Load: A specified load that a structural member or part should withstand without failing. It is determined by multiplying some particular load by an appropriate factor, usually the limit load multiplied by a factor of safety. (TSI)

Design Mission Scenario(s): Those portions of the total mission scenario(s) selected for use in designing a particular system. Segments of the total mission scenario have been eliminated because they are contained within other segments, determined to be noncritical, determined to be redundant or for other similar reasons. The design mission scenario may be described in the same variety of ways as the total mission scenario (that is, summary-of-mission narrative, mission narrative, ribbon-in-the-sky, altitude/timeline curves, or design scenario timeline). Typically, it is described in all of these ways during the process. (AFFDL)

DG: Directional Gyro.

DH: Decision Height.

Dihedral: The spanwise inclination of wing or other surface relative to horizontal. (TSI)

Directional Gyro/DG: A gyroscopically stabilized heading indicator. (Koonce)

Directional Stability: The property of an aircraft, rocket, or other vehicle, causing it to tend to restore itself from a yawing or sideslipping condition. (TSI+)

Discrete Frequency: A particular radio frequency for use in direct pilot-controller ATC communications which is selected to reduce radio frequency congestion by controlling the number of aircraft operating on a particular frequency at one time. (AIM)

Disk Area: The area of the circle described by the blade tips of a rotating propeller or rotor. (TSI)

Disintegrated: Separated or decomposed into fragments; loss of original form. (TSI)

Displaced Threshold: A threshold (1) that is located somewhere other than at the designated beginning of the runway. (AIM)

Distance Measuring Equipment/DME: Equipment (airborne and ground) used to measure, in nautical miles, the slant-range distance of an aircraft from its position at altitude to the DME navigational aid on the ground. (AIM) (See TACAN, VORTAC.)

Distraction: (See Attention, Anomalies of.)

Dive Brake/Speed Brake: Movable aerodynamic devices on aircraft that reduce airspeed during descent and landing. (AIM)

DME: Distance Measuring Equipment. (The abbreviation DME is also used in audio communications to mean simply distance.)

DME Separation: Spacing of aircraft in terms of distances (nautical miles) determined by distance measuring equipment (DME). (AIM)

DoD: Department of Defense.

DoD FLIP: Department of Defense Flight Information Publications.

DoT: Department of Transportation.

Double Standard: A state of affairs in which rules are not applied uniformly to everyone, and violations committed by certain persons or groups are condoned or disregarded. Also, the perception that such a situation exists. (Koonce)

Downwash: A flow of air deflected or forced downward, as by the passage of a wing or by the action of a rotor or a rotor blade. Also referred to as Rotor Wash. (TSI+) (See Wake Turbulence.)

DR: Dead Reckoning.

Drag: A retarding force acting upon a body in motion through a fluid, reacting opposite and parallel to the direction of motion of the body. (TSI)

Drift: The lateral displacement of an aircraft from its intended course or heading induced by the crosswind component of the ambient air movement relative to the earth. (Koonce)

Drugs: Any chemical compound(s) taken for prevention of disease, treatment of disease, weight management, mood alteration, birth control, sleep management or other purposes. The effects may be direct or residual, but either may reduce performance capability. (USAF+)

Dutch Roll: Oscillating motion of an aircraft combining rolling and yawing (roll-induced yaw) so named for the resemblance to the characteristic rhythm of an ice skater. (TSI)

Dynamic Stability: (See Stability.)

Dzus Fastener: A trade name for a quick-release type fastener, designed to permit rapid removal of inspection plates or aircraft cowling. (TSI)

Ear Blocks: (See Trapped Gas Effects.)

EAS: Equivalent Airspeed.

Easily Interpretable: Values or information, or both, displayed that can be perceived and understood with a high degree of accuracy by users without additional measuring devices/scales. (AFFDL+)

Elevator: A movable horizontal airfoil, usually attached to the horizontal stabilizer, that is used to control pitch. (Koonce)

Elevator Illusion: (See Illusion, Vestibular.)

ELT: Emergency Locator Transmitter.

Emergency: A sudden unplanned occurrence which jeopardizes the safe completion of a task and requires specific and timely action to avoid damage or injury. (USAF)

Emergency Locator Transmitter/ELT: A radio transmitter attached to the aircraft structure which operates from its own power source on 121.5 MHz and 243.0 MHz. It aids in locating downed aircraft by radiating a downward-sweeping audio tone between two and four times per second. It is designed to function independently after an accident. (AIM)

Emergency Safe Altitude: (See Minimum Safe Altitude.)

Emotion: (See Affective States.)

Empty Field Myopia: (See Illusion, Visual.)

Empty Weight: The weight of an aircraft with fixed ballast, unusable fuel, and full operating fluids including oil, hydraulic fluid, and other fluids required for normal operation of the airplane's systems. (FAR) (See Basic Empty Weight.)

E-MSAW: En Route Minimum Safe Altitude Warning.

Engineering Psychology: The study of human behavior in using tools and machines and of machine design in relation to the human's behavioral capacities, abilities, and motivations. (English)

Engine Failure: Engine stoppage attributable to the engine structure. (Koonce) (See Power Failure.)

Engine Pod: A streamlined structure or nacelle on an airplane, usually mounted beneath the wing or attached to the wing tip, housing one or more jet engines. (TSI+)

En Route Descent: Descent from the en route cruising altitude which takes place along the route of flight. (AIM)

En Route Flight Advisory Service/Flight Watch: A service specifically designed to provide, upon pilot request, timely weather information pertinent to his/her type of flight, intended route of flight, and altitude. (AIM) (See Flight Watch.)

En Route Minimum Safe Altitude Warning/E-MSAW: A function of the NAS Stage A en route computer that aids the controller by alerting him/her when a tracked aircraft is below (or is predicted by the computer to go below) a predetermined minimum IFR altitude (MIA). (AIM)

Equivalent Airspeed: The calibrated airspeed of an aircraft corrected for adiabatic compressible flow for the particular altitude. Equivalent airspeed is equal to calibrated airspeed in standard atmosphere at sea level. (FAR)

Ergonomics: Human Factors engineering which deals with machine design and workspace environment to make them compatible with human capacities and limitations. (USAF)

Error: An unintended and objectively inappropriate physical or mental operation, (USAF). A deviation from a desired, specified, or standard type of performance. Human error is often the result of omission or untimeliness of the proper action or the commission of an inappropriate action. (Koonce)

1. Adjustment Error: Operating a control too slowly or too rapidly, moving a control/switch to the wrong position, or following the wrong sequence in operating several controls/switches. (USAF)

2. Forgetting Error: Failing to check, set, or operate a control/switch at the proper time. (USAF)

3. Reversal Error: Moving a control/switch in a direction opposite to that necessary to produce the desired result. (USAF)

4. Substitution Error: Confusing one control/switch with another or failing to identify a control/switch when it is needed. (USAF)

5. Unintentional Activation: Accidentally operating a control/switch. (USAF)

Evaluation Scenario: Portions of the Design Mission Scenario that are selected for use in testing/evaluating the system. Segments are chosen to represent most "worst case" uses/operations and to condense the Total Mission Scenario so that less time is required during the testing phase. The evaluation scenario may be described in the same variety of ways as the Total Mission Scenario; however, it is typically only described in the forms of an evaluation scenario timeline and an experimenter's script. (For example, long inflight cruise segments may be eliminated, similar type maneuvers may be flown only once rather than repeatedly, and mission segments may be condensed or combined to test only the portions entailing high workloads for the aircrew.) (AFFDL)

Excessive Motivation: (See Motivation, Anomalies of.)

Expectancy: A mental set in which environmental conditions are assumed prior to their occurrence. This may lead to a perceptual response, or attitudinal set, (USAF). An acquired disposition whereby a response to a certain sign, object, or cue stimulus is expected to bring about a certain other situation. (English+)

Expedite: A command used by ATC when prompt compliance is required to avoid the development of a dangerous situation. (AIM+)

Explosive Decompression: Rapid reduction of air pressure inside an aircraft, coming to a new static condition of balance with the external pressure. (TSI). A change in cabin pressure faster than the lungs can decompress. Generally, any decompression which occurs in less than 0.5 seconds. (FTH)

Extensible Flap: A flap that can be extended and rotated downward, effectively increasing both the area and the camber of the wing. (TSI)

External Distraction: (See Attention, Anomalies of.)

Extremely Improbable: For airworthiness purposes, the likelihood of a failure is less than once in a billion flight hs (10^{-9}). (Koonce)

FAA: Federal Aviation Administration.

FAA Aircraft: Any aircraft used in the service of the FAA. This includes aircraft owned, leased, rented, held under military bailment, or otherwise in possession of the FAA for the purpose of flight, ground test, or school use. It does not include private, club, or rented aircraft used for travel purposes. (TSI)

Face Curtain: A sheet of heavy fabric designed to be pulled in front of the face for protection against wind blast during ejection from an aircraft. (TSI)

FAD: Fuel Advisory Departure.

FAF: Final Approach Fix.

Fail Operational: A design feature that enables a system to continue to operate despite the malfunction or failure of one or more components. (Koonce) (See Redundant Design.)

Fail Safe: A design feature of a system that permits malfunction or failure of the component(s) most at risk without resulting in a dangerous or catastrophic outcome. (Koonce) (See Redundant Design.)

Fail Soft: With reference to electronic equipment, a design feature that enables the equipment to compensate automatically when a partial failure occurs. (Koonce)

Fan Jet: A jet engine having a ducted fan in its forward end that draws in extra air, the compression and expulsion of which provides additional thrust. (Webster)

FAR: Federal Aviation Regulations.

Fascination: (See Attention, Anomalies of.)

Fatal Injury: Any injury which results in death within 30 days of occurrence. (NTSB)

Fatigue: The progressive decrease in performance ability due to prolonged mental or physical activity, extreme mental or physical activity, sleep deprivation, disrupted diurnal cycles, or life-event stress. (USAF)

1. Acute/Transient Fatigue: The type of fatigue associated with physical or mental activity between two regular sleep periods. Acute/transient fatigue is eliminated after a regular sleep period. (USAF)

2. Cumulative/Chronic Fatigue: The type of fatigue resulting from an inadequate recovery from successive periods of acute/transient fatigue. One regular sleep period will not eliminate cumulative fatigue; however, several sleep periods and reduced interim activity will eliminate it. (USAF)

3. Physical Fatigue: The effects of prolonged physical activity or the effects of brief but extreme physical activity, or both, either of which taxes a person's capacity. (USAF)

4. Subjective Fatigue: The type of fatigue associated with the wearing effects of such psychosocial problems as unresolved conflicts, prolonged frustration, or constant worrying. Subjective fatigue is not eliminated by any number of sleep periods without first resolving the conflict or removing the frustrations. (USAF)

Feather Angle: The blade angle setting at which the nonrotating propeller produces the least drag. (Koonce)

Filed: A term normally used in conjunction with flight plans; it means that a flight plan has been submitted to Air Traffic Controller (ATC). (AIM)

Final Approach Fix/FAF: The designated fix from or over which the final approach (IFR) to an airport is executed. It identifies the beginning of the final approach segment of the instrument approach. (AIM+) (See Segments of an Instrument Approach Procedure.)

Final Approach-IFR: (See Traffic Pattern.)

Final Approach Segment: (See Segments of an Instrument Approach Procedure.)

Final Approach-VFR: (See Traffic Pattern.)

Final Controller: The controller providing information and final approach guidance during Precision Approach Radar (PAR) and Surveillance Approach Radar (SAR) approaches utilizing radar equipment. (AIM)

Firewall (1): Also Fire Wall. A fireproof or fire-resistant wall or bulkhead separating an engine from the aircraft structure; designed to prevent the spread of any fire originating at the engine. (TSI)

Firewall (2): To move the throttle forward towards the Firewall (1); this movement produces an increase in power from the engine. (Koonce)

Fix: A geographical position determined by visual reference to the surface, by reference to one or more radio NAVAIDs, by celestial plotting, or by another navigational device. (AIM)

Fixed Wing: A wing, which may be permanently fixed, foldable or adjustable, that is fixed to the airplane fuselage and outspread in flight; that is, a nonrotating wing. (TSI)

Fixed-Wing Special IFR/FW-SIFR: Aircraft operating in accordance with a waiver and a Letter of Agreement within control zones specified in FAR 93.113. These operations are conducted by IFR-qualified pilots in IFR-equipped aircraft, and by pilots of agricultural and industrial aircraft. (AIM)

FL: Flight Level.

Flag/Flag Alarm: A warning device incorporated in certain airborne navigation and flight instruments indicating that:

1. Instruments are inoperative or otherwise not operating satisfactorily, or

2. The signal strength or quality of the received signal falls below acceptable values. (AIM)

Flameout: Unintended loss of combustion in turbine engines resulting in the loss of engine power. (AIM)

Flap: A hinged, pivoted, or sliding airfoil or plate, or a combination of the former, regarded as a single surface, normally located at the trailing edge of the wing, and designed to add camber well aft on the chord or increase wing area, or both, (TSI). (See Fowler Flap, Leading Edge Flap.)

Flap, Split: Unwanted condition where flaps operate asymmetrically as a result of some malfunction within the system. (TSI)

Flare: The increase in pitch angle of an aircraft just before touchdown. This change in pitch attitude on final approach to touchdown attitude allows the airspeed to dissipate and the aircraft to settle down to the runway in the proper attitude. (Koonce)

Flat Spin: A spin in which the longitudinal axis of an aircraft inclines downward at an angle less than 45 deg.

Flettner Tab: (See Servo Tab.)

Flicker Vertigo: (See Illusion, Visual.)

Flight Check (1): In-flight investigation and evaluation of a navigational aid (NAVAID) to determine whether it meets established tolerances. (AIM)

Flight Check (2): An in-flight evaluation of a flight crewmember's ability to perform assigned duties. (Koonce)

Flight Check (3): A call sign prefix used by Federal Aviation Administration (FAA) aircraft engaged in flight inspection/certification of navigational aids and flight procedures. (AIM)

Flight Crewmember: A pilot, copilot, flight engineer, or flight navigator assigned to an aircraft during flight time. (FAR)

Flight Discipline: Adherence to established procedures throughout the course of a sortie. This includes not pursuing irrational or impulsive courses of action, actions that are inconsistent with established procedure, or actions not prebriefed. (USAF)

Flight Inspection: (See Flight Check (1).)

Flight Level: A level of constant atmospheric pressure related to a reference datum of 29.92 in of mercury. It is stated in digits representing hundreds of feet. For example, flight level 250 represents a barometric altimeter indication of 25,000 ft; flight level 255 indicates 25,500 feet. (AIM)

Flight Path: A line, course, or track along which an aircraft is flying or intended to be flown. (AIM)

Flight-Path Angle: The angle between the flight path of the aircraft and the horizontal. (TSI)

Flight Plan: Specified information relating to the intended flight of an aircraft that is filed orally or in writing with a Flight Service Station (FSS) or an Air Traffic Control (ATC) facility. (AIM)

Flight Profile: A graphic vertical-plane portrayal of an aircraft's flight path. (TSI)

Flight Recorder: Any instrument or device that records information about the performance of an aircraft in flight or about conditions encountered during flight. (AIM)

Flight Service Station/FSS: Air traffic facilities which (a) provide pilot briefing, en route communications, and VFR search and rescue services; (b) assist lost aircraft and aircraft in emergency situations; (c) relay ATC clearances; (d) originate Notices To Airmen (NOTAM); (e) broadcast aviation weather and NAS information; (f) receive and process IFR flight plans; and (g) monitor NAVAIDs. Selected Flight Service Stations provide En Route Flight Advisory Service (Flight Watch), take weather observations, issue airport advisories, and advise Customs and Immigration of transborder flights. (AIM)

Flight Visibility: The average forward horizontal distance from the cockpit of an aircraft in flight at which prominent unlighted objects may be seen and identified by day, and prominent lighted objects may be seen and identified by night. (AIM)

Flight Watch: A term for use in air-ground contacts on frequency 122.0 MHz to identify the flight service station providing En Route Flight Advisory Service. (AIM) (See also En Route Flight Advisory Service.)

FLIP: (See DoD FLIP.)

Flow Control: Measures used by ATC to adjust the flow of traffic into a given airspace, along a given route, or bound for a given airport to ensure the most effective utilization of the airspace. (AIM+)

Fly Heading (degrees): A controller command that informs the pilot of the heading that he/she should fly. (AIM)

Flying Tab: (See Servo Tab.)

Focus of Attention: (See Attention, Level of.)

FOD: Acronym for Foreign Object Damage; damage to a jet engine caused by the ingestion of debris (foreign objects); also, the debris which damages a jet engine when it is ingested. (Approach+)

Forgetting Error: (See Error.)

Format: A symbol or group of symbols arranged in a specific manner to portray/display information. (AFFDL)

Formation Flight: More than one aircraft which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation and position reporting, (FAR). Separation between aircraft within the formation is the responsibility of the flight leader and the pilots of the other aircraft in the flight. This includes transition periods when aircraft within the formation are maneuvering to attain separation from each other to effect individual control, and during join-up and breakaway. (TSI)

Forward Slip: A slip in which the airplane's direction of motion continues the same as before the slip was begun. The primary purpose of the forward slip is to dissipate altitude without increasing the airplane's airspeed, particularly in airplanes not equipped with flaps. (FTH)

Forward Thrust: (See Thrust.)

Foveal Visual Cues: Visual stimuli occurring within an approximately 60-degree cone from a person's normal sight line. Visual cues in this region are typically detected phototropically (with cones). Foveal vision is mostly used for discerning fine detail, estimating depth and distance, and differentiating colors. (USAF)

Fowler Flap: (After Harlan D. Fowler (1885-), American aeronautical engineer). A type of extendible trailing-edge flap that effectively increases both the camber and wing area. (TSI)

Free Fall: The fall or drop of a body not under thrust, and not retarded by a parachute or other braking device. (TSI)

FSS: Flight Service Station.

Fuel Advisory Departure/FAD: Procedures (for example, postponement of takeoff) to minimize engine running time for aircraft destined for an airport that is experiencing prolonged arrival delays. (AIM+)

FW-SIFR: Fixed-Wing Special IFR.

G: The basic unit of acceleration, 1G = 32.2 ft/s^2 (9.81 m/s^2).

G-Adaptation Illusion: (See Illusion, Kinesthetic.)

G-Differential Illusion: (See Illusion, Kinesthetic.)

GAAMA: General Aviation Aircraft Manufacturers Association.

Gastrointestinal Gas Expansion: (See Trapped Gas Effects.)

Gate (1): The area from which cargo or persons, or both, are put on or taken off an aircraft. At some airports, fueling also takes place in the gate area; at others, there is a separate area for fueling. (Koonce)

Gate (2): A particular point in the air route structure from which aircraft proceed to enter the terminal control area for approach to an airfield. A limiting point of the en route phase of a flight. (Koonce)

Gate-Hold Procedures: Procedures at selected airports to hold aircraft at the gate or other ground location whenever departure delays exceed or are anticipated to exceed 5 minutes. (AIM)

GCA: Ground-Controlled Approach-Landing.

General Adaptation Syndrome: The heightened physiological state, automatically assumed by the body when faced with a crisis, to prepare for "flight or fight." This heightened physiological state may detract from rational processes and cause a person to overreact, overcontrol, or overlook significant cues. (USAF)

General Aviation: That portion of civil aviation which encompasses all facets of aviation with the exception of air carriers holding a certificate of public convenience and necessity, and large commercial aircraft operators. (AIM+)

General Inattention: (See Attention, Anomalies of.)

Geographic Disorientation: The type of spatial disorientation in which a person is correctly oriented with reference to the horizon, but not oriented in relation to known ground references or navigational fixes. Simply stated, the person is lost. (USAF)

Geometric Angle of Attack: (See Angle of Attack.)

Geometric-Perspective Illusion: (See Illusion, Visual.)

Geometric Pitch: The tangent of the acute angle between the extended chord plane of a propeller airfoil and its plane of rotation. (Koonce) (See Standard Pitch.)

GHz: Gigahertz.

Giant-Hand Illusion: (See Illusion, Vestibular.)

Gigahertz/GHz: One billion cycles per second. (Koonce)

Glaze: A coating of ice, generally clean and smooth, formed by freezing of supercooled water on a surface. (TSI)

Glazed Surface: An undesirable, hard, glossy surface developed where rubbing action (friction) breaks down the parts of the surface or the lubricant. (TSI)

Glide Path, (On/Above/Below): Terms used by ATC to inform an aircraft making a Precision Approach Radar (PAR) approach of its vertical position (elevation) relative to the desired descent profile to the runway. (AIM)

Glide Slope/GS: That which provides vertical guidance for aircraft during approach and landing. The glide slope consists of the following:

1. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS, or

2. Visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing. (AIM)

Glide Slope Intercept Altitude: The minimum altitude of the intermediate approach segment prescribed for a precision approach which assures required obstacle clearance. It is depicted on instrument approach procedure charts. (See Segments of an Instrument Approach Procedure and Instrument Landing System.) (AIM)

GMT: Greenwich Mean Time - The mean solar time of the meridian of Greenwich, England used as the prime basis of standard time throughout the world. Expressed in hs GMT or hs Z (Zulu phonetically). (Webster+)

Go Around (1): Instructions for a pilot to abandon his/her approach to landing. A pilot on an instrument approach should execute the published missed approach procedure or follow instructions provided by ATC. (AIM+) (See Missed Approach.)

Go-Around (2): The discontinuance of the final approach to landing for any reason. (Koonce) (See Missed Approach.)

Graveyard Spin: A sequence of repeated spins occurring because, in the proper recovery from a spin, the pilot's motion-sensing system tends to create an illusion of spinning in the opposite direction. Responding to this somatogyral illusion, the pilot returns the plane to its original spin. (AIM+)

Graveyard Spiral: A progressively steepening spiral resulting from the somatological illusion during a coordinated constant rate turn that has ceased to stimulate the motion sensing system of the pilot. When, in this situation, the pilot observes a loss of altitude, the tendency is to pull back on the controls, thus tightening the spiral and increasing the loss of altitude. (AIM+)

Grayout: A temporary condition in which vision is hazy, restricted, or otherwise impaired, owing to insufficient oxygen supply to the brain commonly induced by positive G forces of moderate intensity and duration. (TSI) (See Blackout.)

Great Circle: A circle on the surface of a sphere, especially the earth, whose plane passes through the center of the sphere. (TSI)

Ground Clutter: A pattern produced on the radar scope by reflections from local ground features. Ground Clutter may make it difficult to detect other radar returns in the affected area. (AIM)

Ground-Controlled Approach/Landing: A radar approach system operated from the ground by air traffic control personnel transmitting instructions to the pilot by radio. (AIM)

Ground Effect: The apparent increase in aerodynamic lift experienced by an aircraft when flying near the ground and observed up to a distance above the ground approximately equal to the wingspan of the aircraft. (Webster)

Ground Loop: An uncontrolled violent turn of an airplane while taxiing, or during the landing or takeoff run. (TSI)

Ground Speed: The speed of an aircraft relative to the surface of the earth, typically expressed in knots or statute miles per hour. (AIM)

Ground Visibility: The prevailing horizontal visibility near the earth's surface as reported in the United States by the National Weather Service or an accredited observer. (AIM)

GS: Glide Slope.

Gust: A sudden brief increase in the wind; according to United States Weather Bureau practice, gusts are reported when the variation in wind speed between peaks and lulls is at least 10 knots. (TSI)

HAA: Height Above Airport.

Habit Pattern Interference: (See Attention, Anomalies of.)

Habit Pattern Substitution: (See Attention, Anomalies of.)

Habituation: (See Attention, Anomalies of.)

HAL: Height Above Landing.

Hammerhead Stall: An abrupt maneuver in which the airplane zooms into a vertical climb, stalls and yaws simultaneously, and goes into a dive from which recovery is made opposite to the direction of entry. (TSI+)

Handoff: An action taken to transfer the radar identification of an aircraft from one controller to another if the aircraft will enter the receiving controller's airspace and radio communications with the aircraft will be transferred to that controller. (AIM)

Hardover: Response or movement of an aircraft control system at the maximum rate toward its maximum deflection. (TSI)

HAT: Height Above Touchdown.

Heading: The direction - usually expressed in deg relative to true or magnetic north - in which the longitudinal axis of an aircraft points. (For example, "Fly heading 270 magnetic"). (Koonce) (See Course (1).)

Head Up Display: (See HUD.)

Height Above Airport/HAA: The height of the Minimum Descent Altitude above the published airport elevation. (AIM) (See Minimum Descent Altitude.)

Height Above Landing/HAL: The height above a designated helicopter landing area used for helicopter instrument approach procedures. (AIM)

Height Above Touchdown/HAT: The height of the Decision Height or Minimum Descent Altitude above the highest runway elevation in the touchdown zone (the first 3000 ft of the runway). (AIM) (See Decision Height, Minimum Descent Altitude.)

Helicopter: A rotorcraft that depends principally on its engine-driven rotors for movement as well as lift. (TSI)

Helipad: A particular location on an airfield, building, or other area specifically designated as the place for helicopter landings and takeoffs. (Koonce)

Heliport: An area of land or water, or a structure, used or intended to be used for the landing and takeoff of helicopters; it includes the helipad and other associated structures and facilities, such as fences, terminal buildings, and fire suppression equipment. (AIM+)

HF/High Frequency: The radio frequency band between 3 and 30 MHz. (AIM)

High-Intensity Runway Light System/HIRL: (See Runway Edge Light System.)

High-Lift Device: Any device, such as a flap, slat, or boundary-layer-control device, used to increase the maximum lifting capacity (or maximum lift coefficient) of a wing. (TSI+)

High Pitch: The setting of a propeller blade at a high angle relative to the plane of rotation other than the feather angle. The specific angle considered as high pitch may vary from one model of propeller to another. High pitch settings are used to conserve fuel by reducing engine rpm when power requirements are low to moderate. (TSI+)

High-Speed Taxiway/Exit/Turnoff: A long-radius taxiway provided with lighting or marking to define the path of aircraft, traveling at speeds up to 60 knots, from the runway center to a point on the center of a nearby taxiway that is clear of the active runway. The high-speed taxiway is designed to expedite aircraft turning off the runway after landing, thus reducing runway occupancy time. (AIM+)

Highway in the Sky: A pictorial representation of the path that the pilot is to fly, generally presented on a forward-looking vertical situation display. (Koonce)

HIRL: High-Intensity Runway Light System. (See Runway Edge Light System.)

Histotoxic Hypoxia: (See Hypoxia.)

Hold/Holding Procedure: A predetermined maneuver which keeps aircraft within a specified airspace while awaiting further clearance from air traffic control. (AIM)

Holding Fix: A specified fix, identifiable to a pilot by NAVAIDs or visual reference to the ground, that is used as a reference point in establishing and maintaining the position of an aircraft while holding. (AIM)

Horizon Misplacement: (See Illusion, Visual.)

Hover: Maintenance of a relatively stable position over a point on the surface at a particular height above that surface; a capability of helicopters, hovercraft, hummingbirds, and many insects. (Koonce)

Hover Check: Term used to indicate that a helicopter/VTOL aircraft requires a stabilized hover to conduct a performance/power check prior to hover taxi, air taxi, or takeoff. The altitude of the hover will vary based on the purpose of the check. (AIM+)

Hover Taxi: Term describing a helicopter/VTOL aircraft movement conducted above the surface and in ground effect at airspeeds less than approximately 20 knots. The actual height may vary, and some helicopters may require hover taxi above 25 ft AGL to reduce ground-effect turbulence or provide clearance for cargo slingloads. (AIM)

HSI: Horizontal Situation Indicator.

HUD: Acronym for Head Up Display. A method of presenting images to the pilot of an aircraft while he/she is looking forward through the windscreen. These images are generated from a device out of the pilot's field of view and reflected from a transparent surface in front of the pilot. Thus, the pilot looks through this transparent surface and sees the information superimposed on his/her vision of the real world. (Koonce)

Human Factors: The study of the physical, physiological, psychological, psychosocial, and pathological variables which affect humans' performance. (TSI+)

Human Factors Engineering: Application of the knowledge of human factors to the design of devices, systems, and environments to optimize the safety, efficiency, and the general well-being of the persons who interact with them. (Koonce)

Hydromatic Propeller: A constant-speed hydraulically operated propeller. (TSI)

Hypemic Hypoxia: (See Hypoxia.)

Hyperventilation: An abnormal increase in the volume of air breathed in and out of the lungs, which can occur subconsciously when a stressful situation is encountered in flight. As pilot "blows off" excessive carbon dioxide from his/her body, symptoms of lightheadedness, suffocation, drowsiness, tingling of the extremities, and coolness may occur. Continued hyperventilation may result in incoordination, disorientation, painful muscle spasms, and, finally, unconsciousness. (AIM+)

Hypoxia: A state of oxygen deficiency in the body sufficient to impair functions of the brain and other organs. (AIM) (See Anoxia.)

1. Histotoxic Hypoxia: Inability of tissues to accept oxygen. (USAF)

2. Hypemic Hypoxia: Inability of the blood to carry sufficient oxygen. (USAF)

3. Hypoxic Hypoxia: Insufficient inspired oxygen. (USAF)

4. Stagnant Hypoxia: Insufficient flow of blood to the brain. (USAF)

Hypoxic Hypoxia: (See Hypoxia.)

IAF: Initial Approach Fix.

IAS: Indicated Airspeed.

ICAO: International Civil Aviation Organization.

Ice-Warning Indicator: An instrument that detects the presence of ice on the aircraft or of icing conditions. (TSI+)

Icing: The formation of any type of ice which adheres to a structure, especially on airfoils or other parts of an airframe. (Koonce)

Ident: A request for a pilot to activate the aircraft transponder identification feature to help the controller identify an aircraft. (AIM+)

Ident Feature: The special feature in the Air Traffic Control Radar Beacon System (ATCRBS) equipment used to immediately distinguish one displayed beacon target from other beacon targets. (AIM)

IF: Intermediate Fix.

IFR: Instrument Flight Rules.

IFR Aircraft/IFR Flight: An aircraft conducting flight in accordance with instrument flight rules. (AIM)

IFR Conditions: Weather conditions below the minimum for flight under visual flight rules. (AIM)

IFR Departure Procedure: (See IFR Takeoff Minimums and Departure Procedures.)

IFR Takeoff Minimums and Departure Procedures: FAR, Part 91, prescribes standard takeoff rules for certain civil aviation users. At some airports, obstructions or other factors require the establishment of nonstandard takeoff minimums, departure procedures, or both, to assist pilots in avoiding obstacles during a climb to the minimum en route altitude. Pilots should be familiar with the departure procedures and must assure that their aircraft can meet or exceed any climb gradients specified by the procedure. (AIM)

Illusion: An erroneous perception of sensory input due to limitations of sensory receptors or the manner in which sensory information is presented, or both, (USAF). The incorrect perception of an object(s). Often, the laws of physics explain the erroneous perception. (English)

1. Kinesthetic Illusions: An erroneous perception of somatosensory stimuli to the ligaments, muscles, or joints of the body. (USAF)

    a. G-Adaptation Illusion: An erroneous perception that motion has ceased after continued exposure to a sustained velocity. For example, movement in an elevator is only perceived at the beginning and end of the ascent or descent.

    b. G-Differential Illusion: An erroneous perception of aircraft attitude based on "seat of the pants" sensations. For example, without other sensory inputs, a 30-deg-bank level turn feels the same as a 60-deg-bank turn.

2. Vection Illusions: Visual illusions of motion, erroneously detected peripherally, in which a person perceives that he/she is moving when in fact an external object is moving. (USAF)

   a. Circularvection: An erroneous sensation of rotation due to movement detected in the visual field, especially peripherally.

   b. Linearvection: An erroneous perception of linear movement due to motion detected in the visual field, especially peripherally.

3. Vestibular Illusions: Erroneous perceptions of orienting stimuli to the semicircular ducts or otolith organs of the vestibular apparatus. (USAF)

   a. Coriolis Illusion: An erroneous sensation of rotation due to the movement of the head into a plane of angular or linear acceleration which induces fluid movement in the semicircular ducts.

   b. Elevator Illusion: An erroneous sensation of pitch-up after level off from a steep descent, or pitch-down after level off from a steep climb, or when in turbulence.

   c. Giant-Hand Illusion: The erroneous sensation that controls will not respond to inputs, even with seemingly great effort, when the source of resistance is in fact the operator himself/herself attempting to respond to conflicting sensory cues.

   d. Leans: An illusion of angular displacement (bank) due to an undetected, subthreshold angular acceleration followed by a detected, transthreshold angular acceleration.

   e. Somatogravic Illusion: An erroneous sensation of tilt in the vertical plane due to linear acceleration. This illusion is most common during rapid acceleration or deceleration.

   f. Somatogyral Illusion: An erroneous perception that rotation has ceased because the semicircular canal fluid has stabilized after angular acceleration. The graveyard spin and graveyard spiral are results of the somatogyral illusion.

4. Visual Illusions: Erroneous perceptions of stimuli to the visual system. (USAF)

   a. Autokinesis: An erroneous perception of movement of a light when stared at for a length of time in a dark visual field.

   b. Chain-Link-Fence Illusion: The blending into the foreground of nearby objects when focusing on a distant object.

   c. Empty Field Myopia: The tendency for the eyes to focus at a distance of about one meter when viewing a visually non-stimulating field.

d. Flicker Vertigo: The disruptive psychological effects of cyclic visual stimulation of about 10 to 15 cycles per second.

e. False Horizon Illusion: An illusion created by sloping cloud formations, an obscure horizon, a dark scene with ground lights and stars, or certain geometric patterns of ground light, which results in the pilot placing the aircraft in a dangerous attitude because of the perception of not being aligned properly with the actual horizon. (AIM+)

f. Geometric-Perspective Illusion: An erroneous perception of being nearer to, or farther away from, an object than one actually is, due to equating retinal image size to distance or angular displacement of familiar objects. For example, an 8000-ft runway viewed from 1000 ft up may appear the same size as a 10,000-ft runway viewed from 1500 ft up; another example is the tendency to flare high on a wider than usual runway.

ILS: Instrument Landing System.

IM: Inner Marker.

IMC: Instrument Meteorological Conditions.

Impact Angle: The angle at which an aircraft or object strikes the terrain relative to the slope of the impact site terrain. (TSI)

Impacted Airport: An airport affected by adverse weather or runway conditions, equipment failure, personnel shortages, or other phenomena which impair its ability to accommodate its normal flow of aircraft traffic. (Koonce)

Impact Ice: Ice which forms when snow, sleet, or supercooled water droplets impinge upon aircraft surfaces, which are at or below freezing temperature. (TSI)

Improbable: For airworthiness purposes, the likelihood of a failure that is equal to or less than once in 1,000,000 flight hours (10^{-6}) but greater than once in a billion flight hours (10^{-9}). (Koonce)

Inactive: (See Physical Condition.)

Inattention: (See Attention, Anomalies of.)

Incident: An occurrence other than an aircraft accident, associated with the operation of an aircraft, which adversely affects or could affect the safety of operations. (NTSB)

Indicated Airspeed: The speed of an aircraft as shown on the aircraft's airspeed indicator. This is the speed used in pilot/controller communications under the general term "airspeed." (AIM)

Induced Drag: In subsonic flow over a finite airfoil or other body, that part of the drag induced by lift. Induced drag is inversely proportional to the airspeed. (TSI) The direct result of the aerodynamic force resulting from the downward velocity imparted to the air as the airfoil moves through the air. (FTH+)

In-Flight Shutdown: Cessation of engine operation during flight for any reason other than training procedure. (TSI)

Information Processing: The mental process of receiving incoming information from the environment, assessing its meaning, and deciding on an appropriate response, (USAF). A general term for the presumed operations whereby the raw sense-data are refashioned into items of knowledge and utilized for decisionmaking that may lead to action(s). Among these operations are perceptual organization, comparison with items stored in memory, and the making of decisions as to the response to be made. (Gleitman+). The mental processes from sensory input to evoked response. (Koonce)

Inherent Stability: (See Stability (2).)

Initial Approach Fix/IAF: The fixes depicted on instrument approach procedure charts that identify the beginning of the initial approach segment(s). (AIM)

Initial Approach Segment: (See Segments of an Instrument Approach Procedure.)

Inner Marker/IM/Inner Marker Beacon: A marker beacon used with an ILS (CAT II) precision approach which is located between the middle marker and the approach end of the ILS runway, transmitting a radiation pattern keyed at six dots per second, and indicating to the pilot, both aurally and visually, that he/she is at the designated decision height (DH) (normally, 100 ft above touchdown zone elevation on the ILS CAT II approach). (AIM+)

Instrument Flight Rules/IFR: Rules governing the procedures for conducting flight by reference to instruments. Also a term used by pilots and controllers to indicate a type of flight plan. (AIM+)

Instrument Landing System/ILS: A precision instrument approach system which normally consists of the following electronic components and visual aids defined under separate alphabetized headings:

1. Localizer.
2. Glide Slope.
3. Outer Marker.
4. Middle Marker.
5. Approach Lights. (AIM) (See Airport Lighting.)

Instrument Landing System/ILS Categories: Instrument Landing Systems (ILS) procedures are classified as follows:

1. ILS Category I: An ILS approach procedure which provides for approach to a height above touchdown of not less than 200 ft and with runway visual range of not less than 1800 feet. (AIM)

2. ILS Category II: An ILS approach procedure which provides for approach to a height above touchdown of not less than 100 ft and with runway visual range of not less than 1200 feet. (AIM)

3. ILS Category III: This category subsumes the following:

   a. IIIA: An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 700 feet. (AIM)

   b. IIIB: An ILS approach procedure which provides for approach without a decision height minimum and with runway visual range of not less than 150 feet. (AIM)

   c. IIIC: An ILS approach procedure which provides for approach without a decision height minimum and without runway visual range minimum. (AIM)

Instrument Meteorological Conditions/IMC: Meteorological (weather) conditions expressed in terms of visibility, distance from cloud, and ceilings that are less than the minima specified for visual meteorological conditions. (AIM)

Intercom: A voice-communication system among different stations in an aircraft. (TSI)

Intermediate Approach Segment: (See Segments of an Instrument Approach Procedure.)

Intermediate Fix/IF: The fix that identifies the beginning of the intermediate approach segment of an instrument approach procedure. The fix is not normally identified on the instrument approach chart as an intermediate fix (IF), (AIM). (See Segments of an Instrument Approach Procedure.)

Internalized Unit Values: A system of values, motives, and prioritized goals held by a unit and adopted by a member of that unit. Such a person is referred to colloquially as a "team player." (USAF+)

International Civil Aviation Organization/ICAO: A specialized agency of the United Nations whose objective is to develop the principles and techniques of international air navigation and to foster planning and development of international civil air transport. (AIM)

Interrogator: The ground-based surveillance radar beacon transmitter-receiver which normally scans in synchronism with a primary radar system. This interrogator transmits signals which cause properly functioning transponders located in aircraft to reply with a unique signal. The reply signals from the interrogated aircraft are mixed with the primary radar returns and displayed on the controller's radar scope. Also applied to the airborne element of the TACAN/DME system. (AIM+)

Intersection Departure/Intersection Takeoff: A takeoff or proposed takeoff on a runway commencing from the intersection of a taxiway with a runway or the intersection of two runways. (AIM+)

In-the-Loop: An expression which indicates that a component is a necessary part of the closed control loop and that its removal, inaction, failure, or malfunction would interrupt the control-action-feedback loop of the system. For example, when an aircraft is flying on autopilot, the autopilot subsystem is in-the-loop, and the pilot is no longer in-the-loop. The pilot is merely monitoring the closed-loop flight control system. If the autopilot fails, the pilot must get back in-the-loop (that is, resort to manual reversion). (Koonce) (See Closed-Loop System.)

Intuitively Obvious: Term applied to that which can be described or operated correctly without training or explanation. (AFFDL)

Inverted Spin: A spin throughout which the airplane is upside down. (TSI)

Jamming: Electronic or mechanical interference which may disrupt the display of an aircraft on radar or the transmission/reception of radio communications/navigation. (AIM)

JATO: Acronym for Jet-Assisted TakeOff. A method of enabling aircraft to take off in a shorter distance than otherwise possible by the use of boosters (rockets) temporarily attached, usually to the underside of the wings. (Koonce)

Jet Engine: An aircraft engine that produces thrust by the rearward expulsion of combustion products from the burning of fuel with air. (Koonce)

Jet Route: A route designed to serve aircraft operations from 18,000 ft MSL on up to and including flight level 450. The routes are referred to as "J" routes with numbering to identify the designated route (for example, J 105). (AIM+)

Jet Stream: A narrow, shallow, meandering river of strong winds which usually extends around the temperate zone of the earth. A jet stream is considered to exist whenever winds of 50 knots or stronger, embedded in the high tropospheric or lower stratospheric general wind flow, are concentrated in a band at least 300 miles long. It is generally found in segments of 1000 to 3000 miles in length, 100 to 400 miles in width, and 3000 to 7000 ft in depth with winds generally between 100 to 150 knots. (AFM 51-12)

Jet Wash: (See Wake Turbulence.)

Job Satisfaction: A person's subjective evaluation of the extent to which he/she is performing and progressing satisfactorily in the occupation of his/her choice and which meets his/her professional needs. (USAF)

Judgment: Assessment of the significance and priority of data from the environment in terms of how they relate to the task at hand. The result of this process forms the basis upon which decisions are made. (USAF) (See Decision.)

1. Judgment Delay: Failure, due to an anomaly of attention or motivation, to assess the significance and priority of information from the environment in a timely manner, assuming adequate quality and quantity of information. (USAF)

2. Judgment, Poor: Failure, due to an anomaly of attention or an anomaly of motivation, to realistically assess the significance and priority of information from the environment, assuming adequate quality and quantity of information. (USAF)

Kinesthetic Illusion: (See Illusion.)

Knot: A velocity of one nautical mile per hour, 1.150779 statute miles per hour; not a measure of distance. Although the term "knot" is defined in some dictionaries (based on lay usage) as "1 nautical mile," this usage (as in "knots per h") is not acceptable in professional aviation or nautical contexts. (TSI+)

Landing-Gear-Extended Speed: The maximum speed at which an aircraft can be safely flown with the landing gear extended. (TSI)

Landing-Gear Operating Speed: The maximum speed at which the landing gear can be safely extended or retracted. (TSI)

Landing Hot: Landing an aircraft at a speed substantially greater than its stalling speed. (Koonce)

Landing Minimums/IFR Landing Minimums: The minimum ceiling and visibility prescribed for landing civil aircraft while using an instrument approach. These minimums apply along with other limitations set forth in FAR Part 91 with respect to the Minimum Descent Altitude (MDA) or Decision Height (DH) prescribed in the instrument approach procedures as follows:

1. Straight-in Landing Minimums: The MDA and visibility, or DH and visibility, required for straight-in landing on a specified runway, or

2. Circling Minimums: The MDA and visibility required for the circle-to-land maneuver.

Descent below the established MDA or DH is not authorized during an approach unless the aircraft is in a position from which a normal approach to the runway of intended landing can be made, and adequate visual reference to required visual cues is maintained. (AIM+)

Landing Phase: (See Mishap, Phase of Flight.)

Landing Roll/Rollout (1): The distance from point of touchdown to the point where the aircraft can be brought to a stop or exit the runway. (AIM)

Large Aircraft: Aircraft having a maximum certified takeoff weight of more than 12,500 pounds. (AIM)

Lateral Axis: An imaginary lateral line at right angles to the longitudinal axis, passing through the center of gravity of the airplane, and lying within a plane normal to the plane of symmetry. Angular movement about this axis is called pitching. (Koonce)

Lateral Separation: The lateral spacing of aircraft at the same altitude which is achieved by requiring operation on different routes or in different geographical locations. (AIM)

Lateral Stability: (See Stability.)

Law of Exception: In the investigation of aircraft accidents, the principle according to which, if all other possible causes have been ruled out, it is concluded that the operative cause was pilot behavior. (Koonce)

Layer: In reference to sky cover, clouds, or other obscuring phenomena whose bases are approximately at the same level. The layer may be continuous or composed of detached elements. The term layer does not imply that a clear space exists between the layers or that the clouds or obscuring phenomena composing them are of the same type. (TSI)

LCVASI: Low Cost Visual Approach Slope Indicator.

LDA: Localizer-type Directional Aid.

Lean Mixture: An insufficient amount of fuel in the fuel-to-air mixture (weight-ratio basis) required by an internal combustion engine; a relatively large amount of air compared to fuel, generally greater than 16:1. (TSI+) (See Rich Mixture.)

Leans: (See Illusion, Vestibular.)

Learning: Long-term adjustments to a person's behavior as a result of reinforcement and practice. These adjustments may be either physical or mental, (USAF). A relatively permanent change in behavior or knowledge which comes as a result of experience and is not the direct result of a body state such as fatigue or illness. (Landy)

1. Learning Ability: The innate capacity to acquire new skills or knowledge and apply them practically. (USAF)

2. Learning Rate: The relative speed at which new information is acquired and permanent adjustments made in one's behavior. (USAF)

3. Learning Reinforcement: The process of strengthening prior experiences through their recall and review (rehearsal) in order to retain them in long-term memory, (USAF+). The strengthening of a response when that response leads to a satisfying state of affairs. (English)

4. Learning Transfer: The ability of a person to apply the experience acquired in learning situations to "real world" situations, (USAF). The change, positive or negative, in the ability of a person to perform a given act as a direct consequence of prior learning of a related kind. (English+)

Letdown: The descent of an aircraft from cruising altitude in preparation for an approach or landing. (TSI)

Letdown Procedure: Procedure used for descending from cruising altitude to the airport. (TSI)

Level-off: To make the flight path of an airplane horizontal after a climb, glide, or dive. (TSI)

LF: Low Frequency.

LFR: Low Frequency Range.

Lift: The force component acting perpendicular to the line of flight (and, in general usage, parallel to the plane of symmetry of the aircraft), and produced primarily by the pressure forces acting on the surfaces of the aircraft. (Koonce)

Liftoff: The initial separation of an aircraft or other vehicle from the ground, especially the vertical takeoff of a rocket or VTOL aircraft. (Webster+)

Lighter-Than-Air Aircraft: Aircraft that can rise and remain suspended by using contained gas such that the total weight of the aircraft including the gas is less than the weight of the total volume of air it displaces at the given altitude. (TSI)

Limit Load: The highest load factors which can be expected in normal operation under various operational situations. FAR requires that aircraft structures be capable of supporting 1-1/2 times the limit load factor without failure. (FTH)

Linearvection: (See Illusion, Vection.)

Line of Sight (1): The straight line between the observer and a target or other observed point. (TSI)

Line of Sight (2): The straight line from a transmitting radar antenna in the direction of the beam, especially toward a target. (TSI)

Line-of-Sight Transmission: Transmissions that follow a straight line rather than the curvature of the earth. UHF and VHF transmissions tend to be more line of sight than LF or MF transmissions. (Koonce)

Line Oriented Flight Training: (See LOFT.)

LIRL: Low Intensity Runway Lights. (See Runway Edge Light System.)

LLWSAS: Low-Level, Wind-Shear Alert System.

L/MF: Low to Middle Frequency.

L/MF Airway(s): Airways whose NAVAIDs utilize low or medium frequencies. (Koonce)

LMM: Compass Locator at the Middle Marker. (See Compass Locator.)

Load (1): The quantity that can be carried at one time (for example, cargo load or passenger load); the total weight of a vehicle (for example, as in the calculation of wing loading--the load supported by the wings). (Koonce)

Load (2): The stress or forces placed upon a structure either by external weights or air pressures. (Koonce)

Load Factor: The ratio of a specified load (2) to the total weight of the aircraft. The specified load (2) is expressed in terms of any of the following: aerodynamic forces, inertia forces, ground or water reactions. (TSI)

Load, Ultimate: The load (2) that should cause destructive failure according to stress analysis; the load (2) that causes failure during a test of strength. (TSI)

LOC: Localizer Only Approach.

Localizer: The component of an ILS which provides course guidance to the runway. (AIM)

Localizer Only Approach/LOC: A nonprecision instrument approach procedure utilizing the localizer signal for course guidance to the runway; the glide slope is not available. (Koonce)

Localizer-Type Directional Aid/LDA: A NAVAID used for nonprecision instrument approaches with utility and accuracy comparable to a localizer but which is not part of a complete ILS and is not aligned with the runway. (AIM)

Local Traffic: Aircraft operating in the local traffic pattern or within sight of the tower; or, aircraft known to be departing for or arriving from flight in local practice areas; or, aircraft executing simulated instrument approaches at the airport. (TSI)

Locator Beacon, Personnel: A portable, lightweight, manually operated beacon, designed to be carried on the person, in the cockpit of an aircraft, or attached to a parachute, which operates from its own power source on 121.5 MHz or 243 MHz, or both, (preferably on both emergency frequencies) transmitting a distinctive downward swept audio tone for homing purposes; which may or may not have voice capability; and which is capable of operation by unskilled persons. (TSI)

Locus of Control: An attitudinal set in which a person believes either that he/she is in control of his/her destiny (internal locus of control), or that outside influences control his/her destiny (external locus of control). (USAF)

LOFT: Acronym for Line Oriented Flight Training. A technique of conducting aircrew flight training in simulators by having the crew fly full mission scenarios together in the simulator as they would in an operational aircraft. This type of flight training emphasizes the whole mission concept and is aimed at developing effective communications among crewmembers, effective human resource utilization, and good crew coordination. (Koonce)

LOM: Outer Compass Locator. (See Compass Locator.)

Longitudinal Axis: An imaginary straight line lying in the plane of symmetry extending from the nose to the tail of an aircraft; and passing through the center of gravity. Movement about this axis is called roll. (Koonce)

Longitudinal Separation: The longitudinal spacing of aircraft at the same altitude by a minimum distance expressed in units of time or miles. The amount of separation required is a function of the availability of radar coverage and the distance the aircraft is from the radar antenna site. (AIM)

Longitudinal Stability: (See Stability.)

LORAN: Acronym for LOng RAnge Navigation. An electronic navigational system by which hyperbolic lines of position are determined by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. The vehicle's position is determined by the intersection of these two hyperbolic lines of position generated by the two transmitters. Loran A operates in the 1750 to 1950 kHz frequency band; Loran C and D operate in the 100 to 110 kHz frequency band. (AIM)

Low Altitude Airway Structure/Federal Airways: The network of airways serving aircraft operation up to but not including 18,000 ft MSL. (AIM)

Low Approach: An approach over an airport or runway following an instrument (IFR) approach, or a Visual Flight Rules (VFR) approach including the go-around maneuver, where the pilot intentionally does not make contact with the runway. Low approaches are often performed during training flights where a landing is not required at the completion of each approach or in those circumstances in which the pilot feels that it would be unsafe to continue the approach for a landing. (AIM+)

Low Cost Visual Approach Slope Indicator/LCVASI: A visual approach slope indicator system consisting of painted plywood panels (normally black and white or fluorescent orange) whose alignment as seen by the pilot indicates the aircraft's relative position with regards to a fixed glide path to a touchdown point on the runway. (Koonce)

Low Frequency/LF: The frequency band between 30 and 300 kHz. (AIM)

Low Frequency Range/LFR: A directional NAVAID, in the frequency band between 30 and 300 kHz, no longer used in the United States. (AIM+)

Low Intensity Runway Light System/LIRL: (See Runway Edge Light System.)

Low-Level, Wind-Shear Alert System: A system of five or six anemometers around the periphery of an airport the readouts of which are automatically compared with that of the center-field anemometer. A wind vector difference of 15 knots or more between the center-field anemometer and any peripheral anemometer is indicative of potential wind shear, and the tower will advise pilots of the potential for wind shear. (AC 00-50A)

Low to Middle Frequency: The frequency band of nondirectional radio beacons between 200 and 1750 kHz. (AIM+)

Low Pitch: A propeller setting in which the chord of the blade is at a relatively acute angle to the plane of rotation, resulting in a high propeller speed. The specific angle considered to be low pitch will vary from one model propeller to another. Low pitch settings are used when very high or maximum power is required at low airspeeds, as in takeoff or go-around. (Koonce)

M: Mach Number.

MAA: Maximum Authorized IFR Altitude.

Mach Meter: An instrument that indicates the ratio of aircraft speed to the speed of sound at a particular altitude and temperature. (TSI)

Mach Number/M: The ratio of true airspeed to the speed of sound. A number expressing the ratio of the speed of a body or of a point on a body with respect to the surrounding air or other fluid, or the speed of a flow, to the speed of sound in the medium; the speed represented by this number. (After Ernst Mach (1838-1916), Austrian Scientist). (TSI)

Magnetic Bearing: (See Bearing.)

Magnetic North: North, as determined by the earth's magnetic lines of force; the reference direction for measurement of magnetic directions. (See True North.) (TSI)

Magnetic Variation: The angular difference between true north and magnetic north. (TSI)

Magneto: A type of electric generator using permanent magnets to supply an electric current for engine ignition. (TSI)

Main Rotor: The rotor that supplies the principal lift to a rotorcraft. (TSI)

Major Alteration: A change not listed in the aircraft, aircraft engine, or propeller specifications that might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other characteristics affecting airworthiness. (FAR+)

Major Repair: A repair that, if improperly done, might adversely affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness. (FAR+)

MALS: Medium intensity Approach Light System. (See Approach Light System.)

MALSR: Medium intensity Approach Light System with Runway alignment indicator lights. (FAR) (See Approach Light System.)

Maneuverability: That property of any vehicle which determines the rate at which its attitude and direction of movement can be changed. (TSI)

Manifold Pressure: Absolute pressure as measured at the appropriate point in the induction system and usually expressed in inches of mercury. (FAR)

Manual Reversion: The action of reverting to manual control because of failure of the automatic or semiautomatic system. (Koonce)

MAP: Missed Approach Point.

Margin of Attention: (See Attention, Level of.)

Marker Beacon: An electronic navigation facility transmitting a 75 MHz vertical fan or bone-shaped radiation pattern. Marker beacons are identified by their modulation frequency and keying code, and when received by compatible airborne equipment, indicate to the pilot, both aurally and visually, that he/she is passing over the facility. (AIM)

Maximum Authorized Altitude (MAA): The highest altitude on a federal airway, jet route, area navigation low or high route, or other direct route for which a minimum en route altitude is designated in FAR Part 95, at which adequate reception of navigation aid signals is assured. (TSI)

MCA: Minimum Crossing Altitude.

MDA: Minimum Descent Altitude.

MEA: Minimum En route IFR Altitude.

Mean Chord: The average length of the chord line from the wing tip to the wing root. (Koonce)

Mean Line: A line lying in a plane parallel to the plane of symmetry that is equidistant from the upper and the lower surfaces from leading edge to the trailing edge of an airfoil. (Koonce)

Mean Sea Level/MSL: Sea level between mean high tide and low water. (Webster)

Mean Time Between Failure/MTBF: Total system operating time divided by the number of system failures that have occurred during that period; the average time one could expect a given system to operate before experiencing a system failure. (Koonce)

Measured Ceiling: In U.S. aviation weather observations, the ceiling (1) classification that is applied when the ceiling value has been determined by means of: (a) a ceiling light or ceilometer, or (b) the known heights of unobscured portions of objects or other natural landmarks within 1.5 nautical miles of any runway of the airport. It applies only to clouds and obscuring phenomena aloft, and is identified by the ceiling designator "M." (TSI)

Medical Certificate: Acceptable evidence of physical fitness on a form prescribed by the Federal Aviation Administrator. (TSI)

Medium Intensity Approach Light System/MALS: (See Runway Edge Light System.)

Memory: The mental activity of recalling past experience. Experience includes any information a person receives through any means, any cognitive functions he/she performed on that information, and any response he/she made as a result of the information. (USAF+) The general function of reviving or reliving past experience, with more or less definite realization that the present experience is a revival. (English)

1. Long-Term Memory: The recall or recognition of experience days, months, or years after its occurrence, (USAF). A system that retains past experiences for long periods, has a very large capacity, and stores items in relatively processed forms. (Gleitman+)

2. Short-Term Memory: The recall or recognition of experience within a few minutes or hours of occurrence, (USAF). A hypothesized memory system that keeps material for intervals of a minute or so, is very dependent upon rehearsal, has a small storage capacity (sometimes said to be 7±2 pieces or chunks of information), and holds material in relatively less processed form than long-term memory. (Gleitman+)

Mental Workload: The total cognitive demands upon a person in a particular time unit. (Koonce) (See Cognitive Psychology.)

Metering: A method of time-regulating the traffic flow into a terminal area so as not to exceed a predetermined terminal acceptance rate (the maximum inbound traffic flow to the field as determined by the FAA). (AIM)

MF: Middle or Medium Frequency.

Metering Fix: A fix along an established route over which aircraft will be metered prior to entering terminal airspace. (AIM)

MIA: Minimum IFR Altitudes.

Microburst: A localized but very severe weather phenomenon resulting in abrupt changes in wind direction and velocity. (Koonce)

Microwave: Sources do not agree on the length of microwaves and their frequency, but it is generally considered to be in the frequency band between approximately 500 MHz and 300 GHz. (Koonce)

Microwave Landing System/MLS: An instrument landing system operating in the microwave spectrum which provides lateral and vertical guidance to aircraft having compatible avionics equipment. This system provides precise, continuous three-dimensional position information anywhere within the landing approach zone, potentially allowing unrestricted choice of approach paths. (AIM)

Middle Compass Locator/LMM: (See Compass Locator.)

Middle Frequency/MF: The frequency band between 300 kHz and 3 MHz. (AIM)

Middle Marker/MM: A marker beacon that defines a point along the glide slope of an ILS normally located at or near the point of decision height (ILS Category I). It is keyed to transmit alternate dots and dashes, with the alternate dots and dashes keyed at the rate of 95 dot/dash combinations per minute, on a 1300 Hz tone, which is received aurally and visually by compatible airborne equipment. (AIM) (See Marker Beacon.)

Mid RVR: (See Runway Visual Range.)

Military Climb Corridor: A restricted area established in the vicinity of certain military bases used by military aircraft to climb out from an airfield to their desired operating altitude. (TSI+)

Minimum Crossing Altitude/MCA: At certain fixes, the lowest altitude at which an aircraft must cross when proceeding in the direction of a higher minimum en route IFR altitude (MEA). For example, when the minimum en route IFR altitude changes from 6000 to 8000 ft at a particular intersection when flying from West to East, the minimum crossing altitude for that intersection Eastbound would be set at 8000 feet. (AIM+)

Minimum Descent Altitude/MDA: The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided. (AIM)

Minimum En Route IFR Altitude/MEA: The lowest published altitude between radio fixes that assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes. (AIM)

Minimum Holding Altitude (MHA): The lowest altitude prescribed for a holding pattern that assures navigational signal coverage and communications, and that meets obstruction clearance requirements. (TSI)

Minimum IFR Altitudes/MIA: Minimum altitudes for IFR operations as prescribed in FAR Part 91. (AIM)

Minimum Obstruction Clearance Altitude/MOCA: The lowest published altitude in effect between radio fixes on VOR airways, off-airway routes, or route segments, that meets obstacle clearance requirements for the entire route segment and that assures acceptable navigational signal coverage only within 25 statute miles of a VOR station. (AIM+)

Minimum Reception Altitude: The lowest altitude at which one can receive signals to determine specific VOR/VORTAC/TACAN fixes. (TSI)

Minimum Safe Altitude/MSA (1): The minimum safe altitude specified in FAR Part 91 for various operations. (AIM)

Minimum Safe Altitude/MSA (2): Any altitude depicted on approach charts which provides at least 1000 ft of obstacle clearance for emergency use within a specified distance from the navigation facility upon which an approach procedure is predicated. MSAs are identified as MINIMUM SECTOR ALTITUDES or EMERGENCY SAFE ALTITUDES and are established as follows:

a. MINIMUM SECTOR ALTITUDES - Altitudes depicted on approach charts which provide at least 1000 ft of obstacle clearance within a 25-mile radius of the navigation facility upon which the approach procedure is predicated. Sectors depicted on approach charts are at least 90 deg in scope radially and extend outward from the facility for 25 miles. These altitudes are for emergency use only and do not necessarily assure acceptable navigational signal coverage. (AIM+)

b. EMERGENCY SAFE ALTITUDES: Altitudes depicted on approach charts which provide at least 1000 ft of obstacle clearance in nonmountainous areas and 2000 ft of obstacle clearance in designated mountainous areas within a 100-mile radius of the navigation facility upon which the approach procedure is predicated. Emergency Safe Altitudes are normally used only in military procedures. (AIM+)

Minimum Safe Altitude Warning/MSAW: A function of the ARTS III computer that alerts the controller when an aircraft equipped with an operating Mode C transponder is being tracked by the radar facility and is below or is predicted by the computer to go below a predetermined minimum safe altitude. (AIM+)

Minimums/Minima: Weather condition requirements established for a particular operation or type of operation. (AIM)

Minimum Vectoring Altitude/MVA: The lowest altitude, expressed in feet above mean sea level, at which aircraft will be vectored by a radar controller. This altitude assures communications and radar coverage, and meets obstruction clearance criteria. (TSI)

MIRL: Medium Intensity Runway Lights. (See Runway Edge Light System.)

Mishap: An unplanned, unintended event that results in damage to equipment or injury to personnel. (USAF)

Mishap, Antecedent Events: Those events or conditions which occurred prior to flight but which relate to the conditions making the mishap more likely (for example, fatigue or "get-home-itis"). (USAF+)

Mishap, Maneuver: A sub-element of the mishap phase of flight described by the sequence of tasks required to perform the maneuver (for example, turnout of traffic, formation crossover, or egress from a weapons delivery pass). Maneuver mishaps may occur in any of the eight phases of flight described below. (USAF+)

1. Approach Phase: From the final approach fix to the missed approach point for an instrument approach; from reaching traffic-pattern altitude until crossing the runway threshold for a visual approach. A go-around is considered part of the approach phase if it occurs prior to the missed approach point for an instrument approach or prior to crossing the runway threshold for a visual approach. (USAF+)

2. Climbout Phase: From crossing the field boundary to attaining cruise altitude. (USAF+)

3. Cruise Phase: From reaching cruise altitude to arriving at the area of range activity; or from leaving the area of the range activity to beginning descent into the base of intended landing. (USAF+)

4. Descent Phase: From the initial approach fix to the final approach fix for an instrument descent; from beginning descent from cruise altitude to arriving at the final approach fix for an en route descent to an instrument approach; from beginning descent from cruise altitude until reaching traffic pattern altitude for an en route descent to a visual approach. Holding is considered part of the descent phase of flight. (USAF+)

5. Landing Phase: From the missed approach point until touchdown for an instrument approach; from crossing the runway threshold until touchdown from a visual approach. A go-around is considered part of the landing phase if it occurs after the missed approach point for an instrument approach or after crossing the runway threshold for a visual approach. After touchdown, a touch-and-go is considered a takeoff. (USAF)

6. Range Phase: From the time the aircraft enters the area designated for practicing/conducting mission activities until completion of those activities and departure from the designated area. This Range Phase may be a low-level route, military operating area, gunnery range, warning area, or a refueling track. (USAF+)

7. Takeoff Phase: From runway holdline to the point when the aircraft is airborne and has passed the field boundaries. (USAF+)

8. Taxi Phase: From engine start to runway holdline, and from clearing the active runway to having parked the aircraft. (USAF+)

Mishap, Point of: That point in the mishap sequence of events at which no preventive or evasive action by the operator would have avoided the mishap. (USAF)

Mishap, Predisposing Events: Those events or conditions more general in nature or more longstanding than mishap antecedent events but which are predisposing to mishap occurrence (for example, risk-taking tendencies, lax supervision, etc.). (USAF)

Mishap, Sequence of Events: Those events or conditions related to the mishap which begin with demonstration of intent for flight as defined in AFR 127-4, and end when damage or injury has occurred and ceased. (USAF+)

Mishap, Task: A sub-element of the mishap maneuver which describes each specific action required of the operator to accomplish that maneuver (for example, switchology, target tracking, or aircraft positioning). (USAF)

Misperception: (See Perception.)

Misplaced Motivation: (See Motivation, Anomalies of.)

Missed Approach (1): A term used by the pilot to inform the ATC that he is executing the missed approach. (AIM) (See Go-Around.)

Missed Approach (2): A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude to be flown in the execution of a missed approach are shown on the instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP. The pilot may climb immediately to the altitude specified in the missed approach procedure but may not alter course until the missed approach point has been crossed. At locations where ATC radar service is provided, the pilot should conform to radar vectors issued by the controller in lieu of the published missed approach procedure. (AIM+) (See Go-Around and Segments of an Instrument Approach Procedure.)

Missed Approach Point/MAP: A point prescribed in each instrument approach procedure at which a missed approach (2) shall be executed if the required visual reference with the outside world does not exist. (AIM)

Missed Approach Segment: (See Segments of an Instrument Approach Procedure)

Mission: A flight operation of an aircraft in the performance of an assigned task. Missions may consist of such tasks as search and rescue of persons from a capsized boat, television coverage of local traffic problem areas, delivery of munitions on/at a target, and the transportation of people or cargo, or both, from one airport to another. (Koonce)

Mission Narrative: A report of the planned use of the system (for example, an aircraft) told in chronological order. Description is presented in terms of the real sequence and describes roles, activities, relations, and events. Example: "The aircraft will depart Boston as leader in a 3-ship formation, carrying a 23-man special forces team, 2 jeeps, and a 1-ton truck. The flight will proceed at an altitude of 27,000 ft to Newfoundland and rendezvous with a KC-135 tanker." (The narrative continues with route, destination, en route weather, en route mission tasks, threat, recovery procedures, etc.) (AFFDL) (See entry for System.)

Mission Scenario (Total, Design, Evaluation) Timeline: A very detailed description of all uses/operations that the system (for example, an aircraft) must be designed to perform in its expected operational environment. It includes tasks performed by the aircraft and each of the crewmembers shown against the time (elapsed, GMT, or local) at which the task occurs. This is one of the methods by which the appropriate mission scenario may be described. Example: "At time 1:28 + 30, pilot adjusts power, begins climb to FL300. Copilot reports to ATC: 'Leaving FL250.' Loadmaster briefs passengers on oxygen mask requirements." (AFFDL) (See entry for System.)

MLS: Microwave Landing System.

MOCA: Minimum Obstruction Clearance Altitude.

Mock-Up (1): The reassembly of an aircraft following its breakup in an accident. This procedure may supply a clue as to accident cause. (TSI)

Mock-Up (2): A structural scale model of an aircraft or other artifact used as part of the design/fabrication process or as part of a simulator system. (Koonce)

Mode: The letter or number assigned to a specific pulse spacing of radio signals transmitted to aircraft or received by ground interrogator from airborne transponder components of the Air Traffic Control Radar Beacon System (ATCRBS). (AIM)

Mode C: The automatic altitude reporting capability which converts the aircraft's altitude in 100-ft increments to coded digital information that is transmitted, together with the aircraft's transponder code, to the interrogating facility. The altitude of Mode C-equipped (and operating) aircraft can be automatically presented on the ATC controller's radar display. (Koonce)

Mood: (See Affective States.)

Motivation: A person's prioritized value system which influences his/her behavior, (USAF). The nonstimulus variables controlling behavior; the general name for the fact that an organism's acts are partly determined in direction and strength by its own nature or internal state, or both. A specific hypothesized personal determiner of the direction and strength of action or of a line of action. (English)

Motivation, Anomalies of: Characteristics of a person's value system which may result in unsafe acts. (USAF)

1. Excessive Motivation: Attributing a higher value to successfully performing the mission than is actually warranted by the importance of the mission. (USAF)

2. Misplaced Motivation: A situation in which the factors that influence a person's selection of a course of action are either remotely related or not related at all to the objective requirements of the mission. (USAF+)

3. Undermotivation: Attributing a lower value to successfully performing the mission than is actually warranted by the importance of the mission. (USAF)

Movement Area: The runways, taxiways, and other areas of an airport which are utilized for taxiing, takeoff, and landing of aircraft (exclusive of loading ramp and parking areas). At those airports with a tower, specific approval for entry onto the movement area must be obtained from ATC. (AIM)

Moving Target Indicator/MTI: An electronic device that permits radar scope presentation only from targets that are in motion. This is done by eliminating signals from nonmoving targets (such as buildings and high terrain), signals from targets at less than a predetermined threshold velocity, and random noise. Use of the Moving Target Indicator is a partial remedy for ground clutter. (AIM+)

MSAW: Minimum Safe Altitude Warning.

MSL: Mean Sea Level. Used in conjunction with an altitude, MSL means "above mean sea level"; for example, "16,000 ft MSL" means "16,000 ft above mean sea level." (Koonce)

MTBF: Mean Time Between Failure.

MTI: Moving Target Indicator.

Mush: To settle or to gain little or no altitude while flying in a semistalled condition or at a relatively high angle of attack. (TSI)

Nacelle: A partially separate streamlined enclosure attached to an aircraft. (Koonce)

Nap Of The Earth (Flight): An operational tactic whereby helicopters are flown as close to the surface of the earth as possible, taking advantage of natural and cultural terrain cover to escape detection or minimize exposure. (Roscoe) Aircraft becomes hidden in the surface irregularities (nap) of the earth.

National Airspace System/NAS: The common network of U.S. airspace; air navigation facilities, equipment and services, airports and landing areas; aeronautical charts, information and services; rules, regulations and procedures; technical information; and manpower and material. Included are system components shared jointly with the military. (AIM)

National Airspace System Stage A/NAS Stage A: The en route ATC system's radar, computers and computer programs, controller plan view displays (PVDs/Radar Scopes), input/output devices, and related communications equipment which are integrated to form the basis of the automated IFR air traffic control system. (AIM)

Nautical Mile: A unit of distance equal to 6076.11549 ft or 1852 meters. (Webster)

NAVAID: Acronym for NAVigational AID: Any visual or electronic device, either airborne or on the surface, which provides point-to-point guidance information or position data to aircraft in flight. NAVAIDs include VOR, VORTAC, and TACAN aids. (AIM+)

NAVAID Classes: VOR, VORTAC, and TACAN aids are classed according to their operational use as follows:

1. T--Terminal

2. L--Low altitude

3. H--High altitude

These classifications assure serviceable signals within specified distances and altitudes from the particular station emitting the navigational signal. (AIM+)

Navigable Airspace: Airspace at and above the minimum flight altitudes prescribed in FAR, including airspace needed for safe takeoff and landing. (AIM)

NDB: Nondirectional Beacon.

Negative G: The opposite of positive G. Negative G occurs when, in a gravitational field or during an acceleration, the human body is so positioned that the force of gravity or inertia, or both, acts in foot-to-head direction, or on an aircraft to decrease or reverse the wing loading. (TSI+)

Negative Thrust: (See Reverse Thrust.)

NESA: Acronym for NonElectroStatically Activated. A term used to describe a particular type of aircraft window designed to prevent the buildup of ice. (Koonce)

Net Thrust: The gross thrust of a jet engine minus the drag imposed by the momentum of the incoming air. (TSI)

Neurological Manifestations: (See Decompression Sickness.)

Neutral Static Stability (of an Airplane): (See Stability.)

Nondirectional Beacon/Radio Beacon/NDB: A low- to middle-frequency (L/MF) or ultra-high frequency (UHF) radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his/her bearing to or from the radio beacon and "home" on, or track to or from, the station. (AIM)

Nonperception: (See Perception.)

Nonprecision Approach Procedure/Nonprecision Approach: A standard instrument approach procedure in which no electronic glide slope is provided (for example, VOR, TACAN, NDB, LOC, ASR, LDA, or SDF approaches). (AIM)

Nonradar Approach Control: An Air Traffic Controlled (ATC) facility providing approach control service without the use of radar. Under this condition, the controller uses radio communications to keep track of the aircraft on approach to the airfield and issues further clearances to aircraft to approach the field based upon his/her knowledge of the location of the other aircraft as determined from these radio communications. (AIM+)

NORDO: Acronym for NO RaDiO. A term used to indicate that an aircraft is unable to communicate because of radio failure. (Approach+)

Normal Axis: (See Vertical Axis.)

Normally Aspirated: Describes an engine that takes its combustion air directly from the atmosphere without the benefit of mechanical devices to increase the pressure of the air. (Koonce) (See Supercharger.)

Normal Rated Power: The maximum horsepower or thrust an engine can deliver for a protracted period of time without damage; specified by the manufacturer or other qualified authority. (TSI)

Noseheavy: The condition of an airplane in which the nose tends to sink when the longitudinal control is released in any given attitude of normal flight. (TSI)

NOTAM: Acronym for NOtices To AirMen: Notices containing information (not known sufficiently in advance to publicize by other means) concerning the establishment of, condition of or change in any component of the National Airspace System, the timely knowledge of which is essential to personnel concerned with flight operations. These notices may be disseminated by teletypewriter or by voice. (AIM)

NOTE: Nap-Of-The-Earth (flight).

NTSB: National Transportation Safety Board.

Numbers, the (1): Digits written on the approach end of a runway to identify the orientation of the runway with respect to magnetic north to the nearest even 10 deg with the last zero deleted. For example, 02 painted on the approach end of a runway indicates that the magnetic orientation of the runway is approximately 020 deg and that an aircraft on final approach to that runway should be heading approximately 020 deg magnetic. (Koonce)

Numbers, the (2): An expression used to indicate the receipt of the current ATIS broadcast. For example, if a pilot tells the controller that he/she has "the numbers," it signifies that he or she is aware of the current ATIS information being broadcast for the destination airfield. (Koonce)

Off-Route Vector: A vector by ATC which takes an aircraft off a previously assigned route. Altitudes assigned by ATC during such vectors provide required obstacle clearance. (AIM)

Oleo or Oleo Strut: A telescoping landing-gear strut consisting essentially of a hollow piston that travels in an oil-filled cylinder; the oil, upon compression of the strut, is forced through a small orifice in the bottom of the piston to provide a shock-absorbing effect. (TSI+)

OM: Outer Marker.

Omnidirectional: With reference to a beacon or radio aid to air navigation, transmitting a signal throughout 360 deg of azimuth. (TSI)

On-Course Indication: An indication on an instrument which provides the pilot with a visual means of determining that the aircraft is located on the centerline of a given navigational track, or an indication on a radar scope that an aircraft is on a given track. (AIM)

Operating Weight: Aircraft weight usually including the weight of the oil, fuel, crew, crew's baggage, emergency equipment, and payload. (TSI+)

Operator (1): Any corporate entity or person who causes or authorizes the operation of an aircraft, such as the owner, lessee, or bailee of an aircraft. (NTSB+)

Operator (2): In a mishap sequence, the person in control of the aircraft at the point of the mishap. Other personnel involved in the mishap sequence of events are considered part of the operator's equipment. (USAF)

Option Approach: An approach requested and conducted by a pilot which will result in either a touch-and-go, missed approach, low approach, stop-and-go, or full stop landing. (AIM)

Outer Compass Locator/LOM: (See Compass Locator.)

Outer Fix: A fix in the destination terminal area, other than the approach fix, to which aircraft are normally cleared by an air route control center or a terminal area traffic control facility, and from which aircraft are cleared to the approach fix or final approach course. (TSI)

Outer Marker/OM: A marker beacon at or near the glide slope intercept altitude of an Instrument Landing System (ILS) approach. It is keyed to transmit a signal consisting of two dashes per second, which is received visually or aurally, or both, (on a 400 Hz tone) by compatible airborne equipment. The OM is normally located between four and seven miles from the runway threshold on the extended centerline of the runway. It serves as an aid to the flight personnel in that it marks a particular distance from the approach end of the runway. (AIM+)

Overcast (Meteorology): In surface aviation weather observations, descriptive of sky cover of 1.0 (95 percent or more) when at least a portion of this amount is attributable to clouds or obscuring phenomena aloft; that is, when the total sky cover is not due entirely to surface-based obscuring phenomena; a predominant opaque cover is implied. (TSI)

Overconfidence: (See Confidence.)

Overcontrol (by a Pilot): To displace or move an aircraft's controls more than is necessary for the desired performance. (TSI)

Overdue Aircraft/IFR: An aircraft operating in accordance with IFR is considered missing or overdue when communications with such aircraft or radar identification cannot be established within 30 min after it: (a) fails to report over an ATC specified reporting point or over a compulsory reporting point along the route of flight, whichever is earlier; or (b) becomes overdue at the point of intended landing. (TSI)

Overdue Aircraft/VFR: A VFR aircraft is considered overdue if the flight plan it is operating on is not closed within one half hour after the aircraft's estimated time of arrival (ETA) at its destination. If a flight plan is not properly closed, search and rescue procedures will be started. (Koonce)

Override: To manually apply a control force which exceeds the authority of an automatic control system or to manually intervene in an otherwise automatic sequence. (TSI)

Pan: The international radio-telephony urgency signal. When repeated three times, it indicates uncertainty or alert, followed by nature of urgency. (AIM)

PAR: Precision Approach Radar.

Parallel Offset Route: A parallel track to the left or right of the designated or established airway/route. Normally associated with Area Navigation (RNAV) operations. Aircraft with RNAV equipment may ask for courses that parallel the airway routes so that they may avoid congestion on the established airway. (AIM+)

Partial Obscuration: A designation of sky cover when (a) part of the sky (0.1 to 0.9) is completely hidden by surface-based phenomena, or (b) the sky is hidden by surface-based phenomena but the vertical visibility is not otherwise restricted. (TSI+)

Partial-Panel Flight: Instrument flight in which one or more of the usual cockpit flight instruments are inoperative or missing. (TSI)

Payload: The revenue-producing or other useful load carried by an aircraft; also, the bomb load. (Koonce)

Peer Pressure: A motivating factor stemming from a person's perceived need to meet peer expectations. (USAF)

Penetration: That portion of a published high altitude instrument approach procedure which prescribes a descent path from the fix on which the procedure is based to a fix or altitude from which an approach to the airport is made. (TSI)

Perceived Special Sortie: (See Special Sortie.)

Perception: The detection and interpretation of transthreshold cues from the environment by one or more of the senses, (USAF). The awareness, or the process of becoming aware, of extraorganic or intraorganic objects or relations or qualities, by means of sensory processes and under the influence of perceptual set and of prior experiences. (English+)

1. Delayed Perception: Failure to detect cues in a timely manner due to an anomaly of attention or motivation. (USAF)

2. Misperception: Failure to detect or correctly interpret cues due to an inappropriate perceptual set. (USAF)

3. Nonperception: Inability to detect cues from the environment because of sensory limitations or the manner in which the cues are presented, or both. (USAF)

Perceptual Set: A cognitive or attitudinal framework in which a person expects to perceive certain environmental cues and tends selectively to search for those cues more actively than others. One extreme of this anomaly is expectancy so strong that the person perceives cues that in fact are not there; the other extreme occurs when he/she does not expect cues to the extent that he/she does not detect cues that are there. Perceptual distortions in the form of illusions may also result. (USAF)

Peripheral Visual Cues: Visual stimuli occurring outside of an approximately 60-degree cone from a person's normal sight line. Visual cues in this region are typically detected scotopically (with rods). Peripheral vision is mostly used for detecting gross movement and aids in maintaining ambient orientation. (USAF)

Personal Flying: Any use other than pleasure flying of an aircraft for purposes not associated with a business or profession, and not for hire. This includes maintaining pilot proficiency. (TSI)

Person Transported for Compensation or Hire: A person who would not be transported unless there were some payment or other consideration, including monetary or services rendered, by or for the person, and who is not connected with the operation of the aircraft or its navigation, ownership, or business. (FAR)

Personality Variables: Those traits of a person which characterize his/her behavior, predispose him/her to certain response patterns, and allow for some generalized predictions as to how he/she will respond in different situations, (USAF). The pattern of motivation and of temperamental or emotional traits of the individual. (English+)

Phase of Flight, Mishap: (See Mishap.)

Phototheodolite: A telescopic instrument or device incorporating one or more cameras (sometimes a motion-picture camera) for taking and recording horizontal and vertical angular measurements. In aeronautics, the phototheodolite (sometimes in conjunction with radar equipment) is used to track airborne craft and to measure and record attitude, altitude, azimuth, and elevation angles. (TSI+)

Phugoid Oscillation: In a flight path, a long-period longitudinal oscillation consisting of shallow climbing and diving motions about a median flight path and involving little or no change in angle of attack. (TSI)

Physical Condition: The physical state of a person in terms of the extent of a regular rigorous exercise program or a physically active life style, or both. (USAF)

1. Athletic: At least 6 hours of rigorous exercise per week and a physically active life style. (USAF)

2. Active: At least 2 hours of rigorous exercise per week or a very active physical life. (USAF)

3. Inactive: Less than 1 hour of rigorous exercise per week or an intermittently physically active life style (for example, occasional sports or yardwork). (USAF+)

4. Sedentary: No rigorous exercise and not physically active. (USAF)

Physical Fatigue: (See Fatigue.)

Physical Task Saturation: A situation in which the number or difficulty of tasks to be performed in a compressed time period exceeds a person's physical capacity to perform all of them. (USAF)

Physical Workload: The total physical task demands upon a person. (Koonce)

Pilot in Command: The pilot responsible for the operation and safety of an aircraft during flight time. (AIM)

Pilotage: Navigation by visual reference to landmarks. (FAR)

Pilot Balloon (Meteorology): A small free balloon tracked with a theodolite to determine the direction and speed of the wind at various altitudes. (TSI+)

Pitch (1): Rotation or oscillation of an aircraft about its lateral axis. (TSI)

Pitch (2): The distance a propeller would advance in one revolution if it were acting in a solid medium. (TSI)

Pitch Attitude: The angle between the longitudinal axis of an aircraft and the horizontal plane. (Koonce)

Pitch-Down: (See Pitchunder.)

Pitch Moment: A moment about a lateral axis of an aircraft, rocket, airfoil, etc. This moment is positive when the angle of attack is increased, or the body is nosed upward. (TSI)

Pitch Setting: The propeller blade setting as determined by the blade angle and measured in a manner and at a radius specified by the instruction manual for the propeller. (FAR)

Pitchunder: An act or instance of an aircraft pitching nose downward; a tendency of an aircraft to pitch nose downward, (TSI). Also called tuck down or pitch-down.

Pitchup: An act or instance of an aircraft pitching nose upward; a tendency of an aircraft to pitch nose upward. (TSI)

Pitot-Static Tube: A combination of a pitot tube and a static port arranged coaxially or otherwise parallel to one another and mounted externally on an aircraft (generally on the wing, the nose, or the vertical stabilizer) in a position to sense the air flow and pressure undisturbed by the flow over or around other structures of the aircraft. It is used principally to determine airspeed from the difference between impact and static pressures; also called pitot-static head. (TSI+)

Pitot Tube: Tube which receives the total pressure including impact pressure created by the forward motion of the aircraft. (TSI+)

Placard: A posted notice on or in an aircraft setting forth a requirement or limiting operational condition. (TSI)

Plane of Symmetry: The vertical fore-and-aft plane that divides an airplane into symmetrical halves. (Webster)

Plan-Position Indicator: A type of radar display that gives a maplike presentation on a circular screen, indicating the range and azimuth of any discernible object with respect to a point on the screen representing the location of the transmitter. Also called Plan View Display/PVD. (TSI+)

Plan View Display/PVD: (See Plan-Position Indicator.)

PLATO: Acronym for Programmed Logic for Automatic Teaching Operations - a system developed at the University of Illinois for developing computer-aided instructional programs. (Roscoe+)

Pleasure Flying: Flying in which the principal purpose is pleasure. (TSI)

Point of Mishap: (See Mishap.)

Poor Decision: (See Decision.)

Poor Response: (See Response.)

Porpoise: To oscillate about the lateral axis in the manner of a porpoise. (TSI+)

Position Error: An error in the reading of an airspeed indicator owing to the difference between the pressure (especially the static pressure) at the pressure-measuring location and the free-stream pressure. (TSI)

Position Light: Any of the three lights used on an aircraft to indicate its position and direction of flight (green on the right wing, red on the left wing, and white on the tail). (TSI)

Position Symbol: A computer-generated indication on a radar display to indicate the mode of tracking. (AIM)

Positive Control: The separation of all air traffic, within designated airspace, by air traffic control. (AIM)

Positive G: In a gravitational field or during an acceleration, the effect that occurs when the human body is normally positioned so that the force of gravity or inertia, or both, acts on it in a head-to-foot direction or on an aircraft to increase the wing loading. (TSI+)

Pound of Thrust: A measurement unit of the reaction force generated and available for propulsion in jet or rocket engine. (TSI)

Power Approach: A landing approach during which the airplane is under power (contrasted to power-off gliding approach). (TSI)

Power Failure: Engine stoppage for a reason not directly attributable to the engine structure. For example, fuel exhaustion usually results in power failures, not engine failure. (TSI+) (See Engine Failure.)

Power Loading: The ratio of the gross weight of a propeller-driven aircraft to its power, usually expressed as the gross weight of the aircraft divided by the rated horsepower of the powerplant corrected for air of standard density; with turboprop engines, the equivalent shaft horsepower is used. (TSI)

Power Stall: A flight condition in which an airplane may be stalled despite the existence of a given amount of power. (TSI)

Practice Instrument Approach: An instrument approach procedure conducted by a Visual Flight Rules (VFR) or Instrument Flight Rules (IFR) aircraft for the purpose of pilot training or proficiency demonstrations. (AIM)

Precision Approach Procedure/Precision Approach: A standard instrument approach procedure in which an electronic glide slope is provided (for example, ILS and PAR). (AIM)

Precision Approach Radar: Radar equipment in some ATC facilities operated by the FAA or the military services, or both, to detect and display azimuth, elevation, and range of aircraft on the final approach course to a runway. Primarily used to conduct a precision instrument approach to a runway. (AIM)

Preconscious Level: (See Awareness, Level of.)

Predisposing Events, Mishap: (See Mishap.)

Pre-Existing Defect: A hereditary or traumatic medical discrepancy, existing prior to the mishap sequence of events, which either has been resolved or has been medically waived for flying. This differs from an illness or disease in that it is asymptomatic. (USAF+)

Pressure-Demand Oxygen System: A demand oxygen system that furnishes oxygen at a pressure higher than atmospheric pressure above a certain altitude. (TSI)

Prevailing Visibility: The greatest horizontal visibility equaled or exceeded throughout at least half (not necessarily continuous) of the horizon from a particular observation point. (AIM+)

Primary Control Surfaces: Movable surfaces, such as ailerons, elevators, rudders, or spoilers, which move the aircraft about its three axes. (TSI)

Prime: To introduce fuel directly into the induction system or cylinders of an engine as an aid in starting the engine. (TSI)

Prioritized Significant Events and Conditions: A dynamic hierarchy of environmental events and conditions which determines what tasks need to be performed, and in which order, to safely accomplish the assigned mission. (USAF)

Private Aircraft: Any civilian aircraft not being used to transport persons or property for compensation or hire. (FAR)

Procedure Turn/PT: The maneuver prescribed when it is necessary to reverse direction to establish an aircraft on the intermediate approach segment or final approach course. The outbound course, direction of turn, distance within which the turn must be completed, and minimum altitude are specified in the procedure. However, unless otherwise restricted, the point at which the turn may be commenced, and the type and rate of the turn, are left to the discretion of the pilot. (AIM)

Procedural Knowledge: Knowledge of the capabilities and limitations of the system (and of the tactics used to employ it in various environmental conditions) that has been acquired through formal training. (USAF+)

Proficiency Flight: A flight made by a pilot or other aircrew member or members to develop or improve proficiency in flying duties. (TSI)

Profile Descent: An uninterrupted descent (except where level flight is required for speed adjustment) from cruising altitude/level to interception of a glide slope or to a minimum altitude specified for the initial or intermediate approach segment of a nonprecision instrument approach. The profile descent normally terminates at the final approach fix or where the glide slope or other appropriate minimum altitude is intercepted. (AIM)

Proof-of-Concept Testing: The evaluation of the feasibility of new concepts during the development of a system. (Koonce)

Propeller Wash: (See Wake Turbulence.)

PT: Procedure Turn.

Public Aircraft: Aircraft used only in the service of a government or a political subdivision. This does not include any government-owned aircraft engaged in carrying persons or property for commercial purposes. (FAR)

Pullout: A maneuver in which an aircraft is brought to (or toward) level flight from a diving attitude or a steep glide. (Koonce)

Pullup: A maneuver, in the vertical plane, in which the airplane is forced into a short climb, usually from approximately level flight. (TSI)

Pusher Propeller: A propeller mounted aft of an engine; a propeller mounted behind the lateral axis or center of gravity of an aircraft. (TSI)

Pylon (1): A rigid structure protruding from the wing or fuselage to support an engine. (TSI+)

Pylon (2): A tower that marks a turning point in a race or is used for precision flying exercises. (Koonce)

PVD: Plan View Display.

Q Flow: Quota Flow Control.

Quick Look: A feature of NAS Stage A and ARTS which provides the controller with the capability to display full data blocks of tracked aircraft from other controller positions. (AIM)

Quota Flow Control/Q Flow: A flow control procedure by which the Central Flow Control Function (CFCF) restricts traffic to an ARTC Center area having an impacted airport, thereby avoiding sector/area saturation. May be implemented to prevent air traffic saturation in a sector/area serving an airport having weather or some facility problems that prevent it from accepting its normal flow of aircraft. (AIM+)

RADAR: Acronym for RAdio Detection And Ranging, (generally printed in lower-case). A device which, by measuring the time interval between transmission of radio pulses and reception of their echoes and correlating the angular orientation of the radiated antenna beam or beams in azimuth or elevation, or both, provides information on range, azimuth, or elevation of objects in the path of the transmitted pulses. (AIM+)

Radar Altimeter: (See Radio Altimeter.)

Radar Altitude: The altitude of an aircraft or spacecraft as determined by a radio altimeter; thus, the actual vertical distance from the terrain. (TSI)

Radar Approach Control Facility: (See RAPCON Facility.)

Radar Contact: The term air traffic controllers use to indicate that an aircraft is identified on the radar display and that radar service can be provided until radar identification is lost or radar service is terminated. When the pilot is informed of radar contact, he/she is no longer required to report over compulsory reporting points. (TSI+)

Radar-Controlled Departure: Use of surveillance radar (ASR) vectors to establish an aircraft on the en route track, expediting the departure by using radar traffic separation standards. (TSI)

Radar Flight Following: The observation of the progress of a radar-identified aircraft, whose primary navigation is being provided by the pilot, wherein the controller retains and correlates the aircraft identity with the appropriate target or target symbol displayed on the radar scope. (AIM)

Radar Handoff: The action whereby radar identification of an aircraft is made known from one controller to another without interruption of the radar flight following. (TSI)

Radar Identification: The process of ascertaining that an observed radar target is the radar return from a particular aircraft. (AIM)

Radar-Identified Aircraft: An aircraft whose position has been correlated with an observed target or symbol on the radar display. (AIM)

Radar-Monitored Departure: Use of ASR to monitor departing aircraft, with advisories given concerning other radar-observed traffic, which might come into a conflict situation with the departing aircraft. (TSI)

Radar Monitoring: (See Radar Service.)

Radar Navigation Guidance: The vectoring of aircraft to provide course guidance. (TSI)

Radar Point Out/Point Out: The term used between controllers to indicate radar handoff action where the initiating controller plans to retain communications with an aircraft penetrating the other controller's airspace and additional coordination is required. (AIM)

Radar Scope: The viewing screen (generally a cathode-ray tube) portion of radar equipment upon which electronic pulses represent the distance and bearing of radar target returns. In modern radar systems, computer-generated displays represent the aircraft and necessary information about it (such as altitude or call sign). (Koonce)

Radar Separation: (See Radar Service.)

Radar Service: A term which encompasses one or more of the following services based on the use of radar which can be provided by a controller to a pilot of a radar identified aircraft:

1. Radar Separation: The use of radar to maintain spacing between aircraft in accordance with established minimums.

2. Radar Navigational Guidance: Radar vectoring of aircraft to provide course guidance.

3. Radar Monitoring: The radar flight following of an aircraft (whose primary navigation is being performed by the pilot) to observe and note deviations from its authorized flight path, airway, or route. Radar Monitoring may include the monitoring of instrument approaches as well as en route Radar Flight Following. (AIM)

Radar Traffic Advisories: (See Traffic Advisories.)

Radar Traffic Information Service: (See Traffic Advisories.)

Radar Vectoring: The use of radar to provide navigational or traffic separation guidance. In vectoring, the controller uses his/her radar display to ascertain the aircraft's position and track with respect to the target of concern and gives the pilot the heading to fly in order to make the desired track or separation from other aircraft. (Koonce)

Radar Weather Echo Intensity Level: Because radar echo intensities have a direct correlation with the degree of turbulence and other weather features associated with thunderstorms, the National Weather Service has categorized the intensities of radar weather echos into the following levels:

1. Level 1 (WEAK) and Level 2 (MODERATE). Light to moderate turbulence is possible with lightning.

2. Level 3 (STRONG). Severe turbulence possible, with lightning.

3. Level 4 (VERY STRONG). Severe turbulence likely, with lightning.

4. Level 5 (INTENSE). Severe turbulence, with lightning and organized wind gusts. Hail likely.

5. Level 6 (EXTREME). Severe turbulence with large hail, lightning, and extensive wind gusts. (AIM+)

Radial: A magnetic bearing extending from a VOR/VORTAC/TACAN navigation facility. (AIM)

Radial Engine: An internal-combustion reciprocating engine, the cylinders of which are disposed radially about the crankshaft in circular rows of five or more cylinders to a row, the row(s) being in a plane perpendicular to the crankshaft, which rotates while the cylinders remain stationary (TSI+) (See Rotary Engine.)

Radio Altimeter: A device that measures the altitude of a craft above the terrain by measuring the elapsed time between the transmission of radio waves from the craft and the reception of the same waves reflected from the terrain; also called Radar Altimeter. (TSI)

Radio Beacon: (See Nondirectional Beacon.)

Radio Direction Finder/RDF: A radio receiving set, together with its associated equipment, including a directional antenna that can be rotated. The position of the antenna when the peak signal is received indicates the direction to the transmitting station. (Koonce)

Radio Magnetic Indicator/RMI: An aircraft navigational instrument coupled with a gyro compass or similar compass that indicates the direction of a selected NAVAID and indicates bearing with respect to the heading of the aircraft. (AIM)

RAIL: Runway Alignment Indicator Light System.

Ramp: The area of an airport in which aircraft are loaded and unloaded. (Koonce)

Ramp Weight: The weight of an airplane before engine start; includes the takeoff weight plus a fuel allowance for engine start, taxi, runup, and takeoff ground roll to liftoff. (Koonce) (See Takeoff Weight.)

RAPCON: Acronym for Radar APproach CONtrol.

RAPCON Facility: A terminal ATC facility that uses radar and nonradar capabilities to provide approach control services to aircraft arriving, departing, or transiting airspace controlled by the facility. (AIM)

RBN: Radio Beacon.

RCAG: Remote Communications Air/Ground Facility.

RCLM: Runway Centerline Marking.

RCLS: Runway Centerline Light System.

RCO: Remote Communications Outlet.

RCR: Runway Condition Reading.

Reaction Time: In human engineering, the interval between an input signal (physiological) or a stimulus (psychophysiological) and the response elicited by the signal, (TSI). An inherent perceptual limitation which requires an individually specific amount of time for information processing before action is taken. (USAF)

Redout: A temporary condition in which vision is obscured by a reddishness, or in which objects appear to have a reddish color. This condition, sometimes followed by unconsciousness (not considered a part of redout), is caused by blood rushing to the head. Redout is generally caused by the presence of negative G forces. (TSI+)

Redundant Design: A technique of incorporating into a system two or more components that perform the same function(s) so that if one fails or malfunctions the other(s) will perform the necessary functions to enable the system to continue to operate safely. (Koonce) (See Fail Safe and Fail Operational.)

Refusal Speed: The highest speed attained during takeoff acceleration from which the aircraft may be decelerated to a stop within the remaining runway length. (TSI)

Regular Sleep Period: That period of a 24-hour day that a person usually spends in continuous sleep. (USAF) (See Circadian Rhythm.)

REIL: Runway End Identification Lights.

Relative Bearing: (See Bearing.)

Relative Wind: The direction and velocity in which the ambient air moves relative to an aircraft or airfoil. (Koonce)

Remote Communications Air/Ground Facility/RCAG: An unmanned VHF/UHF transmitter/receiver facility which is used to expand ARTCC air/ground communications coverage and to facilitate direct contact between pilots and controllers. (AIM)

Remote Communications Outlet/RCO: An unmanned air/ground communications facility remotely controlled by air traffic personnel. The RCO may be UHF or VHF and is intended to extend the communication range of the air traffic facility. (AIM)

Reporting Point: A geographical location in relation to which the position of an aircraft is reported. (AIM)

Response: The execution of a selected course of action. This may include taking no action if that is the selected response, (USAF). Any muscular or glandular process that depends upon stimulation. (English)

1. Delayed Response: The execution of a selected course of action so long after the decision was made that the selected course of action is no longer appropriate. (USAF+) An adaptive or goal-seeking response evoked a considerable time after the disappearance of its usual stimulus. (English)

2. Poor Response: Ineffective execution of a selected course of action due to cognitive or physical task saturation, an anomaly of attention, an anomaly of motivation, or lack of sufficient procedural knowledge. (USAF)

Response Set: A cognitive framework of expectations which predisposes a person to a certain course of action regardless of the environmental cues perceived. (USAF)

Restricted Area: (See Special Use Airspace.)

Retreating Blade: On a rotary-wing aircraft in horizontal motion, any rotor blade or wing moving with the relative wind. (TSI) (See Advancing Blade.)

Retrofit: Acronym for RETROactive FIT; a modification of an aircraft, aircraft component, or other object that duplicates a change or modification made in later models of the same type. (TSI)

Revenue Passenger: A person receiving air transportation from an air carrier for which remuneration is received by the air carrier. Air carrier employees or others receiving air transportation against whom token service charges are levied are considered nonrevenue passengers. Infants for whom a token fare is charged are not counted as revenue passengers. (TSI)

Reversal Error: (See Error.)

Reverse Pitch: The angle of a propeller blade which produces reverse thrust; a negative pitch angle on the propeller blade. (Koonce)

Reverse Thrust: The thrust, or a large component of the thrust, of a propeller or jet directed opposite to the usual direction, providing braking action or backwards movement of the aircraft on the ground. Sometimes called negative thrust. Propellers are turned to a negative pitch to direct the air blast forward; deflectors or other devices are used to direct the blast of jets forward. (TSI+)

Ribbon-In-The-Sky: An artist's concept sketch, used in briefings and discussions, that provides a pictorial representation of the total flight path for a mission. The sketch includes three-dimensional data and notations of specific task objectives (for example, orbits, refuel). (AFFDL)

Rich Mixture: A fuel-air mixture in which the ratio of fuel to air is higher than that required for efficient operation of the engine, generally with an air to fuel ratio from 12:1 to 15:1. (Koonce) (See Lean Mixture.)

Rime Icing/Rime Ice: A white or milky and opaque granular deposit of ice formed by the rapid freezing of supercooled water drops as they impinge upon the exposed aircraft; formation is favored by small drop size, slow accretion, a high degree of supercooling and rapid dissipation of latent heat of fusion. The white appearance results from numerous relatively large air pockets that form because one particle freezes before the next one strikes. Rime ice weighs less than clear ice, but may seriously distort airfoil shape and diminish aerodynamic efficiency. (TSI+)

RMI: Radio Magnetic Indicator.

RNAV: Partial acronym for ARea NAVigation.

RNAV Way Point (W/P): A predetermined geographical position, used for route or instrument approach definition or progress reporting purposes, that is defined relative to a VORTAC station position. (FAR)

Roll (1): Angular displacement about the longitudinal axis of an airplane. (Webster)

Roll (2): A complete (360 deg) rotation of an aircraft about its longitudinal axis while maintaining approximately level flight. (Webster+)

Roll (3): (See Takeoff Roll.)

Rolling Moment: A moment about the center of gravity of an airplane which tends to cause the airplane to roll about its longitudinal axis. (TSI)

Rollout (1): (See Landing Roll.)

Rollout (2): An act or instance of recovering from a banked attitude. (TSI)

Rollout (3): The first showing of a prototype. (TSI)

Rollout RVR: (See Runway Visual Range.)

Rotary Engine: An engine in which the cylinders rotate around a stationary crankshaft. (Webster+) (See Radial Engine.)

Rotation: The nose-up pitch rotation (pitch) of the aircraft by the pilot, increasing the angle of attack to generate additional lift for takeoff. (Koonce) (See V_r.)

Rotorcraft: An aircraft which in all of its usual flight attitudes is supported in the air wholly or in part by a rotor or rotors; that is, by airfoils rotating or revolving about an axis. The term rotorcraft is commonly applied to a helicopter, autogyro, or the like, in which the sustaining airfoils rotate about a substantially vertical axis. (TSI)

Rotorcraft-load Combination: The combination of a rotorcraft and an external load, including the external-load-attaching means. Rotorcraft-load combinations are designated as Class A, Class B, and Class C, as follows:

1. Class A: A combination in which the external load cannot move freely, cannot be jettisoned, and does not extend below the landing gear.

2. Class B: A combination in which the external load is jettisonable and is lifted free of land or water during the rotorcraft operation.

3. Class C: A combination in which the external load is jettisonable and remains in contact with land or water during the rotorcraft operation. (FAR)

Rotor Wash: (See Downwash and Wake Turbulence.)

Route: A defined path, consisting of one or more courses in a horizontal plane, which aircraft traverse over the surface of the earth. (AIM)

Ruddevator/Ruddervator: One of a pair of control surfaces set in a V, each of which combines the functions of both a rudder and an elevator, (TSI). (See Stabilizer.)

Runway Centerline Light System/RCLS: Flush centerline lights spaced at 50-ft intervals beginning 75 ft from the landing threshold and extending to within 75 ft of the opposite end of the runway. (AIM)

Runway Condition Reading/RCR: Numerical decelerometer readings relayed by air traffic controllers at USAF and certain civil bases for use by the pilot in determining runway braking action. (See Braking Action.) (AIM)

Runway Edge Light System: Lights used to outline the edges of runways during periods of darkness and restricted visibility conditions. These light systems are classified according to the intensity or brightness they are capable of producing: High Intensity Runway Lights (HIRL), Medium Intensity Runway Lights (MIRL), and Low Intensity Runway Lights (LIRL). (AIM)

Runway End Identification Lights/REIL: Two synchronized flashing lights, one on each side of the runway threshold facing the approach area, which provide rapid and positive identification of the approach end of a particular runway. They are effective for: (1) identification of a runway surrounded by a preponderance of other lighting, (2) identification of a runway which lacks contrast with surrounding terrain, and (3) identification of a runway during reduced visibility. (AIM)

Runway Markings: (See Airport Marking Aids.)

Runway Profile Descent: An instrument flight rules (IFR) air traffic control arrival procedure to a runway published for pilot use in graphic or textual form, or both. It may be associated with a Standard Terminal Arrival Route (STAR) procedure. Runway Profile Descents provide routings, and may depict crossing altitudes, speed restrictions, and headings to be flown from the en route structure to the point where the pilot will receive clearance for and execute an instrument approach procedure. (AIM)

Runway Visibility Value/RVV: The visibility determined for a particular runway by a transmissometer. A meter provides a continuous indication of the visibility (reported in miles or fractions of miles) for the runway. RVV is used in lieu of prevailing visibility in determining minimums for a particular runway. (AIM)

Runway Visual Range/RVR: An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end. It is based on the sighting of either high intensity runway lights or on the visual contrast of other targets, whichever yields the greater visual range. RVR, in contrast to prevailing or runway visibility, is based on what a pilot in a moving aircraft should see looking down the runway. RVR is horizontal visual range, not slant visual range. It is based on the measurement of a transmissometer made near the touchdown point of the instrument runway and is reported in hundreds of feet (for example, RVR 52 equals approximately one mile). RVR is used in lieu of RVV or prevailing visibility, or both, in determining minimums for a particular runway. (AIM)

a. Touchdown RVR: The RVR visibility readout values obtained from RVR equipment serving the runway touchdown zone. (AIM)

b. Mid-RVR: The RVR readout values obtained from RVR equipment located midfield of the runway. (AIM)

c. Rollout RVR: The RVR readout values obtained from RVR equipment located nearest the rollout end of the runway. (AIM)

RVR: Runway Visual Range.

RVV: Runway Visibility Value.

Safety: To secure against loosening or rotating, as, to safety a bolt by passing a restraining wire through its head. (TSI)

SALS: Short Approach Light System.

Scenario: An outline of a mission flight plan giving the particulars of each mission phase. (Koonce) (See Design Mission Scenario and Total Mission Scenario.)

SDF: Simplified Directional Facility.

Sedentary: (See Physical Condition.)

See and Avoid: A visual procedure wherein pilots of aircraft flying in visual meteorological conditions (VMC), regardless of type of flight plan, are charged with the responsibility to observe the presence of other aircraft and to maneuver their aircraft as required to avoid collisions. (AIM)

Segmented Circle: A system of visual indicators laid upon the ground, generally surrounding the wind sock or tetrahedron, designed to provide traffic pattern information at airports which do not have operating control towers. (AIM+)

Segments of an Instrument Approach Procedure: An instrument approach may have as many as four separate segments, depending on how the approach procedure is structured. (AIM)

1. Initial Approach Segment: The segment between the initial approach fix and the intermediate fix or the point where the aircraft is established on the intermediate course or final approach course. (AIM)

2. Intermediate Approach Segment: The segment between the intermediate fix or point and the final approach fix. (AIM)

3. Final Approach Segment: The segment between the final approach fix or point and the runway, airport, or missed approach point. (AIM)

4. Missed Approach Segment: The segment between the missed approach point, or point of arrival at decision height, and the missed approach fix at the prescribed altitude. (AIM)

Selective Inattention: (See Attention, Anomalies of.)

Self Overcommitment: A response set in which a person commits to a task for which he/she is knowingly ill prepared and which presses him/her or his/her aircraft, or both, beyond reasonable limits. (USAF)

Sense Indicator: An aircraft radio indicator that shows whether the aircraft is flying toward or away from an omnirange station. Sometimes called a to-from indicator. (TSI)

Separation: Spacing of aircraft to achieve their safe and orderly movement in flight and while landing and taking off. (TSI)

Separation Minima: The minimum longitudinal, lateral, and vertical distances by which aircraft are spaced through the application of air traffic control procedures. (TSI) (See Composite Separation.)

Sequence of Events: (See Mishap.)

Sequence Report: The weather report transmitted hourly to all teletype stations, and available at all Flight Service Stations. (TSI)

Serious Injury: Any injury which: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date of the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, or severe nerve-, muscle-, or tendon-damage; (4) involves any internal organ; or (5) involves second-or third-degree burns, or any burns affecting more than 5 percent of the body surface. (NTSB)

Service Ceiling: The height above sea level, under standard atmospheric conditions, at which a given airplane is unable to climb faster than 100 ft/min. (TSI)

Servo Tab/Servotab: A tab directly actuated by the aircraft control system and which, when deflected, causes the control surface or other surface to which it is attached to be deflected or moved by the air forces acting on the tab. Sometimes called a Flettner tab or flying tab. (TSI)

Severe Weather Avoidance Plan/SWAP: A plan to minimize the effect of severe weather on traffic flows in impacted terminal or ARTCC areas, or both. SWAP is normally implemented to provide the least disruption to the ATC system when flight through portions of airspace is difficult or impossible due to severe weather. (AIM)

Shaft Horsepower: The horsepower delivered to the driving shaft of an engine as measured by a torsion meter. (Webster) (See Brake Horsepower.)

Shimmy Damper: Any of various devices attached to a castering wheel to damp oscillation about the castering axis. (TSI)

SHORAN: An acronym for Short Range Navigation; a precision electronic position-fixing system using a pulse transmitter and receiver and two transponder beacons at fixed points. (TSI)

Short Range Clearance: A clearance issued to a departing IFR flight which authorizes IFR flight to a specific fix short of the destination while air traffic control facilities are coordinating and obtaining the complete clearance. (AIM)

Short Takeoff and Landing Aircraft: (See STOL.)

Short-Term Memory: (See Memory.)

Shroud Line: In a parachute, any one of a number of lines that attach the harness or load to the canopy. Also called a shroud, or a suspension line. (TSI)

SID: An acronym for Standard Instrument Departure (route). A preplanned instrument flight rule (IFR) air traffic control departure procedure printed for pilot use in graphic or textual form, or both. (AIM)

Sideslip: A slip in which the airplane's longitudinal axis remains parallel to the original flight path, but in which the actual flight path changes direction according to the steepness of the bank. A sideslip is used to make the airplane move sideways through the air to counteract the drift which results from a crosswind. (FTH) (See Slip.)

Side-Step Maneuver: A VFR maneuver accomplished by a pilot at the completion of an instrument approach to permit a straight-in landing on a parallel runway not more than 1200 ft to either side of the runway to which the instrument approach was conducted. Landing minimums for a side-step maneuver will be higher than those to the primary runway, but normally will be lower than the published circling minimums. (AIM+)

Sidetone: Feature which enables speaker to hear his/her own transmission in the headset. (TSI)

SIGMET: An acronym for SIGnificant METeorological information; a weather advisory concerning weather significant to the safety of all aircraft. SIGMET advisories cover severe and extreme turbulence, severe icing, and widespread dust or sandstorms that reduce visibility to less than 3 miles. (AIM)

Significant Meteorological Information: (See SIGMET above.)

Simplified Directional Facility/SDF: A NAVAID used for nonprecision instrument approaches. The final approach course is similar to that of an ILS localizer except that the SDF course may be offset from the runway, generally not more than 3 deg, and the course may be wider than the localizer, resulting in a lower degree of accuracy. (AIM)

Simplified Short Approach Light System/SSALS: Similar to the Approach Light System, but the installation consists of fewer light fixtures. (Koonce) (See Approach Light System.)

Simulator: A device or facility that provides a representation of the essential elements of a system out of their normal setting in such a manner that the representation is a valid analog of the system. A commmon type of simulator is a device, such as a Link trainer or cockpit mock-up, that simulates flight or some other activity that is used in the training and maintenance of pilots' skills. (Koonce)

Single Frequency Approach/SFA: A service provided to military single-piloted turbojet aircraft which permits use of a single UHF frequency during approach for landing so that pilots will not normally be required to change frequency from the beginning of the approach to touchdown. (AIM)

Single-Piloted Aircraft: Any aircraft possessing one set of controls, or one with more than one set of controls but having only one pilot at the controls. Military single-piloted aircraft qualify for certain air traffic services such as single frequency approaches. (Koonce)

Sinus Block: (See Trapped Gas Effects.)

Situational Awareness: Keeping track of the prioritized significant events and conditions in one's environment. (USAF)

Skin Manifestations: (See Decompression Sickness.)

Slant-Range Distance: The distance from an aircraft directly to an airfield, a navigational fix, or another aircraft which is at a different elevation. The slant range distance between two objects when they are at different elevations is greater than the horizontal distance. (Koonce)

Slash: An elongated mark (slash, virgule) on a radar presentation screen indicating the radar beacon reply of an aircraft. (AIM+)

Slat: A section of the wing leading edge which is free to move fore and aft on tracks. At high angles of attack, the local suction at the wing leading edge creates a chordwise force forward and displaces the slat from the contour of the designed wing leading edge. A slat is a high lift device designed to increase the maximum lift coefficient for low-speed flight. (TSI)

Slip: A descent with one wing lowered and the airplane's longitudinal axis at an angle to the flight path. (FTH) (See Forward Slip and Sideslip.)

Slipping Turns: A flight maneuver which consists of a turn in which the aircraft is allowed to slip. (TSI)

Slipstream: The flow of air pushed back by a revolving propeller or rotor. (Koonce) (See Wake Turbulence.)

Snap Roll: A maneuver in which an airplane is made, by a quick movement of the controls, to complete a full rotation about its longitudinal axis while maintaining an approximately level line of flight. (Webster)

Small Aircraft: Aircraft of 12,500 lb or less, maximum certified takeoff weight. (TSI)

Soar: To fly without propulsive power, as in a glider. It is called dynamic soaring unless it is done on ascending air currents; then it is called up-current soaring. (TSI)

Solo Flight Time: Flight time during which a pilot is the only occupant of the aircraft. (TSI)

Somatogravic Illusion: (See Illusion, Vestibular.)

Somatogyral Illusion: (See Illusion, Vestibular.)

Sortie: A term specifically used to refer to flight on a combat mission, but also commonly used to identify any flight, from takeoff to landing, that is part of a larger mission which may contain several flights. A flight from takeoff to landing that remains in the traffic pattern is not considered a sortie. (Koonce)

Spatial Disorientation (Type I): Unrecognized incorrect orientation in space. It may result from an illusion, an anomaly of attention, or an anomaly of motivation, but it is not accompanied by discomfort or confusion because it is not noticed. Also referred to as Spatial Misorientation. (USAF)

Spatial Disorientation (Type II): Recognized incorrect orientation in space typified by a discrepancy between sensory information and cognitive expectancy. The illusory sensory source may be visual, kinesthetic, or vestibular and the effect of the cognitive conflict may range from mild discomfort or confusion to incapacitation. (USAF)

Spatial Misorientation: (See Spatial Disorientation (Type I).)

Spatial Unorientation: Lack of knowledge as to orientation in space due to the inability to detect orienting cues, as in a rapidly spinning or tumbling aircraft. In this situation, the lack of orientation is recognized but there are neither usable orienting cues nor a cognitive expectancy of true orientation. (USAF)

Special IFR: (See Fixed-Wing Special IFR.)

Special Observation: A category of aviation weather observations taken to report significant changes in one or more of the observed elements since the last preceding record or special observation. (TSI)

Special Sortie: A sortie which is singularly urgent or a measure of capability. (USAF)

1. Actual Special Sortie: A sortie which is objectively urgent or a measure of capability such as combat, medical evacuation, weather evacuation, or search and rescue. (USAF)

2. Perceived Special Sortie: A sortie which is subjectively perceived to be urgent or is a measure of capability such as a checkride, an Operational Readiness Inspection (ORI), or higher headquarters exercise. (USAF)

Specification: A detailed, precise description of a weapon system, its hardware, software, geometry, or other design parameter. (AFFDL)

Special Use Airspace: Airspace of defined dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature or wherein limitations may be imposed upon aircraft operations that are not part of those activities, or both. Special use airspace includes such areas as military operating areas, prohibited areas, and restricted areas. (AIM)

Special VFR Conditions: Weather conditions in a control zone which are less than basic VFR but in which some aircraft are permitted flight under Visual Flight Rules. (AIM)

Special VFR Operations: Aircraft operating in accordance with clearances within control zones in weather conditions less than the basic VFR weather minima. Such operations must be requested by the pilot and approved by ATC. (AIM)

Speed Brakes: (See Dive Brakes.)

SPIFR: An acronym for Single Pilot IFR; this term is generally used to describe a general aviation aircraft operated in instrument flight conditions with only one pilot at the controls. (Koonce)

Spin: A maneuver, either deliberate or inadvertent, of a stalled airplane in which the airplane descends in a helical path at an angle of attack greater than the angle of maximum lift. The nose of the aircraft in a spin is usually, though not necessarily, pointed sharply downwards. In a normal spin, the longitudinal axis of the aircraft inclines downward at an angle greater than 45 deg. (TSI+) (See also Flat Spin and Inverted Spin.)

Spiral: A maneuver or performance, especially of an airplane, in which the craft ascends or descends in a helical (corkscrew) path, distinguished from a spin in that the angle of attack is within the normal range of flight angles; also, the flight path of an aircraft so ascending or descending. (TSI)

Split Flap: (See Flap; Split.)

Split S: A flight maneuver consisting of a half snap roll followed by a pullout and accomplishing a 180 deg change in direction accompanied by a loss of altitude. (Webster)

Spoiler: A plate, series of plates, comb, tube, bar, or other device that projects into the airstream about a body to break up or spoil the smoothness of the flow, especially such a device that projects from the upper surface of an airfoil, giving an increased drag and a decreased lift. Spoilers are normally moveable and consist of two basic types: the flap spoiler, which is hinged along one edge and lies flush with the airfoil or body when not in use, and the retractable spoiler, which retracts edgewise into the body. (TSI)

Squawk (Mode, Code, Function): Request to a flight crew person to activate specific modes/codes/functions on the aircraft transponder: for example, "Squawk three/alpha, two one zero five, low." (AIM)

SSALS: Simplified Short Approach Light System.

SSALSR: Simplified Short Approach Light System with Runway Alignment Indicator Lights.

Stability (1): In meteorology, a state in which the vertical distribution of temperature is such that a parcel of air will resist displacement from its initial level. (TSI)

Stability (2): In aerodynamics, the inherent flight characteristic of an aircraft tending to restore it to its original condition when disturbed by an unbalancing force or moment, (TSI+). (See Inherent Stability and Aerodynamic Stability.)

a. Aerodynamic Stability: The stability of a body with respect to aerodynamic forces. (TSI)

b. Directional Stability: The stability of a vehicle about its yaw axis. (TSI)

c. Dynamic Stability: That characteristic of an aircraft that determines the nature of its subsequent motion when displaced from its normal flight attitude(s) by an external force or by movement of the control surfaces. (Koonce)

1. Positive Dynamic Stability: The characteristic of an aircraft that causes the amplitude of an oscillatory motion to decrease with time. (TSI+)

2. Negative Dynamic Stability: The characteristic of an aircraft that causes the amplitude of an oscillatory motion to increase with time. (TSI+)

d. Inherent Stability: Stability of an aircraft due solely to the disposition and arrangement of its fixed parts; that is, that characteristic which causes it, when displaced, to return to its normal attitude of flight without the use of controls or the interposition of any mechanical devices. (TSI)

e. Lateral Stability: The characteristic of an aircraft that causes it to remain stable or regain stability when caused to roll or sideslip. (TSI+)

f. Longitudinal Stability: The characteristic of an aircraft that causes it to right itself or retain stability with respect to vertical displacement of the nose and tail of the aircraft about the center of lift (that is, pitching motion). (Koonce)

g. Static Stability: The initial tendency that an aircraft displays after its equilibrium has been disturbed. (FTH)

(1) Static Stability, Negative: The characteristic of an aircraft which causes it, when disturbed from equilibrium, to continue to change attitude in the direction of disturbance (also called static instability). (TSI+)

(2) Static Stability, Neutral: The characteristic of an aircraft that, when disturbed from equilibrium, neither causes it to continue in the direction of displacement nor causes it to return to its original attitude. A neutrally stable airplane is one which, if once disturbed from a state of steady flight, will not return to its original flight attitude but may seek any new flight attitude and state of steady flight. Dynamically, such an airplane is neither stable or unstable. (TSI+)

(3) Static Stability, Positive: The characteristic of an aircraft which causes it, when disturbed, to return to its previous attitude of equilibrium. (Koonce)

Stabilizers: The fixed surfaces (airfoils) at the rear of an aircraft that give it stability about the longitudinal axis. The vertical stabilizer supports the rudder, and the horizontal stabilizer supports the elevator. On some aircraft the functions of the vertical and horizontal stabilizers, together with those of the rudder and elevator, are integrated into two surfaces in the form of a shallow "V" (See Ruddevator.) (Koonce)

Stage I/II/III Service: (See Terminal Radar Program.)

Stagnant Hypoxia: (See Hypoxia.)

Stall: A condition wherein the airflow separates from the airfoil surface, or the airflow around the airfoil becomes turbulent. The result of a stall is that the force or lift effect of the airfoil is lost or severely reduced. (TSI+)

Stall Speed: Speed at which an aircraft will stall under given flight conditions. (TSI)

Standard Atmospheric Pressure: A standard unit of atmospheric pressure defined as that pressure exerted by a 760 mm column of mercury at standard gravity (980.665 centimeters per second or 9.8066 cm/sec^2) at temperature zero deg Centigrade. One standard atmosphere = 760 mm of mercury or 29.9213 in of mercury or 1013.250 millibars. (TSI)

Standard Instrument Arrival Route: (See STAR.)

Standard Instrument Departure: (See SID.)

Standard Pitch: The geometrical pitch of a propeller taken at two-thirds of its radius. (TSI) (See Geometric Pitch and Pitch (Propeller).)

Standard Rate Turn: A turn of 3 deg per second. (AIM)

STAR: An acronym for STandard Instrument Arrival Route, a preplanned instrument flight rule (IFR) air traffic control arrival procedure published for pilot use in graphic or textual form. STARs provide transitions from the en route structure to an outer fix or an instrument approach fix/arrival waypoint in the terminal area. (AIM)

Standard Terminal Arrival: Synonymous with Standard Instrument Arrival Route. (See STAR.)

State-Dependent Learning: A learning anomaly in which a learned task is best remembered when the conditions exist that were present at the time of learning. Thus, procedural knowledge gained in a classroom setting may not be recalled in an operational setting if it was too dependent upon its environmental cues for retrieval. (USAF+)

Static Port: A opening used as a source of ambient (static) pressure in the pitot-static system. One static port can generally be found on each side of an aircraft in an area where there is usually no dynamic (positive or negative) pressure due to the motion of the airplane through the air. Static air pressure is used to determine altitude and vertical velocity of an aircraft, and when compared with dynamic or impact pressure from the pitot tube, it is used in determining airspeed. (Koonce) (See Pitot-Static Tube and Static Tube.)

Static Stability, Negative: (See Stability.)

Static Stability, Neutral: (See Stability.)

Static Stability, Positive: (See Stability.)

Static Tube: A tube vented to the atmosphere used in measuring ambient (static) air pressure for comparison with impact air pressure to determine airspeed. (Koonce) (See Pitot-Static Tube and Static Port.)

Statute Mile: A unit of distance equal to 5280 feet. (Webster)

STC: Supplemental Type Certificate.

Steering Bars: (See Command Bars.)

Stepdown Fix: A fix permitting additional descent within a segment of an instrument approach procedure by identifying a point at which a controlling obstacle has been safely overflown. (AIM)

Step Turn: A maneuver used to put a float plane in planing configuration prior to entering an active sea lane for takeoff. (AIM)

Stereo Route: A routinely used route of flight established by users and ARTCCs identified by a coded name; for example, ALPHA 2. These routes minimize flight plan handling and communications. (AIM)