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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.

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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- 2.1 Collection of Terms: Terms were collected from a broad variety of published and unpublished sources.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 $\pm G_z$ (head to toe), $\pm G_y$ (side to side), or $\pm G_x$ (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, $g = 32\text{fps}^2$). (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 approach. (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)