A Glossary of Terms, Definitions, Acronyms, and Abbreviations Related to the National Airspace System (NAS)

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16. Abstract

The following terms, definitions, acronyms, and abbreviations are defined for the purpose of clarifying their meaning. This unofficial glossary was compiled to provide a common understanding of terms related to the National Airspace System (NAS). The terms contained in this glossary are primarily defined in an operational sense, and are applicable to users, operators and maintainers of the NAS. This document is not intended to be an arbiter of the "official" definition. Rather, it is intended to be a general listing of terms, definitions, acronyms and abbreviations related to NAS projects, system programming, to contractors' documents and terminology, and to miscellaneous topics.

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A-data

Flight plan information preceding the route and remarks (comments) portions of a flight plan. A-data includes: Message Prefix, Aircraft Identification, Aircraft Type, and Special Equipment; Filed Speed; Beacon Mode and Code; Altitude.

A-line

An adapted line segment that causes a program search for an applicable PAR when intersected by a direct route segment for an arriving flight.

AAIS-data

Non-control information, other than weather, required by pilots operating within a non-tower airport area. This data is manually entered by an FSS specialist.

abandoned tank

Any underground storage tank, regardless of age, which is not intended to be returned to service or is unfit for use.

abbreviated airways

Adaptation capability available in the ARTCC for designating a class/type function for displaying the normal airway data for a sector display. Those airways not normally used for traffic control in the particular sector may be displayed by activating the additional airways class/type key. See geographic map data.

abbreviated dialing

A feature permitting certain designated calls to be completed with a reduced number of digits.

abbreviated IFR flight plans

An authorization by ATC requiring pilots to submit only that information needed for the purpose of ATC. It includes only a small portion of the usual IFR flight plan information. In certain instances, this may be only aircraft identification, location, and pilot request. Other information may be requested if needed by ATC for separation/control purposes. It is frequently used by aircraft which are airborne and desire an instrument approach or by aircraft which are on the ground and desire a climb to VFR-on-top. See VFR-on-Top. (Refer to AIM)

abeam

An aircraft is "abeam" a fix, point, or object when that fix, point, or object is approximately 90° to the right or left of the aircraft track. Abeam indicates a general position rather than a precise point.

abort

To terminate a preplanned aircraft maneuver; e.g., an aborted takeoff.

absolute altimeter

An instrument designed to indicate the actual height of an aircraft above the terrain. It works on the principle of measuring the time interval between transmission of a signal and the return echo from the earth's surface, or by measuring the phase difference between the transmitted signal and echo.

absolute instability

A state of a layer within the atmosphere in which the vertical distribution of temperature is such that an air parcel, if given an upward or downward push, will move away from its initial level without further outside force being applied.

absolute temperature scale

See Kelvin temperature scale.

absolute vorticity

See vorticity.

absorption loss

The loss of power in a transmission circuit that results from coupling to a neighboring circuit or conductor.

1. absorption peak -- Abnormally high attenuation at a particular frequency as a result of absorption loss.

accept

A response to an originating controller or computer that the receiving controller has received or observed the aircraft data being coordinated and assumes complete responsibility for the action as appropriate.

acceptable quality level/AQL

The quality standard associated with a given producer's risk, which is prescribed by the customer or quality engineer for the products on order, usually expressed in percent defective per hundred units.

acceptance sampling

A procedure in which decisions to accept or reject are based on the examination of samples.

1. acceptance sampling plan -- A procedure which specifies the number of units of a product which are to be inspected (sample size or series of sample sizes) and the criteria for determining acceptability (acceptance and rejection numbers).

acceptance tests

Tests to determine conformance to design or specifications as a basis for acceptance. They may apply to components, equipment, systems or sub-systems.

access

(1) The ability and opportunity to obtain knowledge or possession of classified information. (An individual does not have access to information merely by being in a place where it is kept, provided the security measures in effect prevent him/her from gaining knowledge or possession of the information.) (2) The ability and means to approach, store or retrieve data, to communicate with or make use of any resources of a computer system.

1. access category -- One of the classes to which a user, a program or a process in a computer system may be assigned on the basis of the resources or groups of resources that each user, program, or process is authorized to use.

2. access control -- The process of limiting access to the resources of a computer system or communications network only to authorized users, programs, processes or other systems in a computer network. This is accomplished through the use of appropriate physical, procedural and hardware/software controls.

3. access control mechanism -- Hardware/software features, operating procedures,management procedures or various combinations of these designed to detect and prevent

unauthorized access and to permit authorized access to a computer system.

4. access list -- A catalogue of users, programs or processes and the specifications of access categories to which each is assigned.

5. access period -- A segment of time, generally expressed on a daily or weekly basis, during which access might prevail.

6. access type -- The nature of an access right to a particular device, program or file: for example, read, write, execute, append, modify, delete, create.

access time

The time it takes a computer to locate data or an instruction word in its storage section and transfer it to its arithmetic unit where the required computations are performed.

accountability

The quality or state which enables violations or attempted violations of computer system security to be traced to individuals who may then be held responsible.

accounting system

A system established to assist in the financial management functions of budget formulation and execution, proprietary accounting and financial reporting. It is the total structure of methods and procedures used to record, classify and report information on the financial position and operation of an organizational unit or of any of its funds, balance account groups and organizational components. Accounting systems are comprised of the various operations involving the authorizing, recording, classifying and reporting of financial data related to revenues, expenses, assets, liabilities and equity.

accreditation

The authorization and approval granted an automated information system or network to process sensitive data in an operational environment, and made on the basis of a certification by designated technical personnel of the extent to which design and implementation of the system meet pre-specified technical requirements for achieving adequate data security.

acknowledge

(1) A response to a request, without further commitment, as to what action will be taken. (2) A query from a controller meaning "let me know that you have received my message."

acknowledge (ICAO)

Let me know that you have received and understood this message.

acrobatic flight

An intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration not necessary for normal flight. (Refer to FAR Part 91)

acrobatic flight (ICAO)

Maneuvers intentionally performed by an aircraft involving an abrupt change in its attitude, an abnormal attitude, or an abnormal variation in speed.

active air defense mission

The scramble of one or more interceptors in the interest of national security or flight safety, the purpose of which is recognition and determination of the intentions of an airborne object.

active account

Classified documents held by a classified account custodian, which change periodically due to updating, addition or deletion.

active element

A part that converts or controls energy; e.g., transistor, diode, electron tube, relay, valve, motor, hydraulic pump, etc.

active flight plan

All flights for which an actual departure time has been entered, whether the flight originates inside or outside the control area. (Cannot be amended or cancelled via TTY.) See flight plan activity status.

active repair time

That portion of downtime during which one or more technicians are working on the system to effect a repair.

active sector

A WSEC which has its mating (i.e., like numbered) GSEC paired with it. A sector providing air traffic control in one or more assigned fix posting areas. See sector.

active time

An actual arrival time, an actual departure time, or an estimated arrival time included in the flight plan as part of R-data.

actual calculated landing time/ACLT

ACLT is a flight's frozen calculated landing time. An actual time determined at freeze calculated landing time (FCLT) or meter list display interval (MLDI) for the adapted vertex for each arrival aircraft based on runway configuration, airport acceptance rate, airport arrival delay period, and other metered arrival aircraft. This time is either the vertex time of arrival (VTA) of the aircraft or the tentative calculated landing time (TCLT)/ACLT of the previous aircraft plus the arrival aircraft interval (AAI), whichever is later. This time will not be updated in response to the aircraft's progress.

adaptation

Unique site-dependent data/functions required by the operational program to provide the flexible capability necessary for individual site performance determined during implementation.

adaptation assembler

See assembler, adaptation data.

adaptation data

A portion of the data base available to the operational computer program that contains permanent type data which define the characteristics of the operating system environment at a unique location. Geographical data (e.g., radar site locations, fix and airway data), aircraft characteristics, design parameters, initial conditions, and other system parameters are included in adaptation. Provision is made for modifying adaptation data whenever the

real world represented by the stored data changes. See stereo.

adapted

Contained or present in adaptation.

adapted direct routes

Provide rigidly controlled fix posting for often used flight paths between two consecutive filed fixes.

adapted sectorization plan

Up to five sectorization plans may be adapted on any one NAS system tape. Any one of the five plans may be activated by a re-sector message by specifying the plan number. See sectorization plans.

add-on security

The retrofitting of protection mechanisms, implemented by hardware or software, after a system has become operational.

additional airways

Adaptation capability available in the ARTCC for designating a class/type function for displaying airway data which normally is not observed at the particular position. For example, low altitude sector desires to observe the high altitude airways which would be displayed by dashed lines instead of the usual solid lines. See abbreviated airways, geographic map data.

additional services

Advisory information provided by ATC which includes but is not limited to the following: traffic advisories; vectors, when requested by the pilot, to assist aircraft receiving traffic advisories to avoid observed traffic; altitude deviation information of 300 feet or more from an assigned altitude as observed on a verified (reading correctly) automatic altitude readout (Mode C); advisories that traffic is no longer a factor; weather and chaff information; weather assistance; bird activity information; and holding pattern surveillance.

Additional services are provided to the extent possible contingent only upon the controller's capability to fit them into the performance of higher priority duties and on the basis of limitations of the radar, volume of traffic, frequency congestion, and controller workload. The

controller has complete discretion for determining if he/she is able to provide or continue to provide a service in a particular case. The controller's reason not to provide or continue to provide a service in a particular case is not subject to question by the pilot and need not be made known to him/her. See traffic advisories. (Refer to AIM)

address

An identification represented by a name, label, or number, for a register, port or a location where data or programming instructions are sent or stored. For example in a microprocessor, a bit number that identifies a memory location. Addresses are also part of an instruction which specifies an operant for the instruction.

addressor field

Field 00 of a message from an area B TTY or from adjacent Phase 1 or NAS center, and ARTS containing the identifier of the sending facility.

adiabatic process

The process by which fixed relationships are maintained during changes in temperature, volume, and pressure in a body of air without heat being added or removed from the body.

adjacent center

A center whose area is adjacent to that of the center being discussed.

adjacent facility

A facility whose assigned airspace borders that of the facility being discussed.

adjust

Indicates a changing or fine tuning of the data base, adaptation, display, and/or communication controls.

administrative security

The management constraints, operational procedures, accountability procedures and supplemental controls established to provide an acceptable level of protection for sensitive data. Synonymous with procedural security.

Administrator

The Federal Aviation Administrator or any person to whom he/she has designated his/her authority in the matter concerned.

advection

The horizontal transport of air or atmospheric properties. In meteorology, sometimes referred to as the horizontal component of convection.

1. advection fog -- Fog resulting from the transport of warm, humid air over a cold surface.

advise

To offer advice or counsel to another person with information and/or data that the originating controller deems necessary to pass to the receiver.

advise intentions

Control instructions meaning, "tell me what you plan to do."

advisory

(1) Advice and information provided to assist pilots in the safe conduct of flight and aircraft movement. (2) A message given to the pilot containing information relevant to collision avoidance. See advisory service.

advisory frequency

The appropriate frequency to be used for Airport Advisory Service. See airport advisory service, UNICOM. (Refer to Advisory Circular No. 90-42 and AIM)

advisory service

Advice and information provided by a facility to assist pilots in the safe conduct of flight and aircraft movement. See airport advisory service, traffic advisory alerts, additional services, radar advisory, en route flight advisory service. (Refer to AIM)

aerial refueling/in flight refueling

A procedure used by the military to transfer fuel from one aircraft to another during flight. (Refer to VFR/IFR Wall Planning Charts)

aerodrome

A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure, and movement of aircraft.

1. aerodrome lighting -- Various lighting aids that may be installed on an aerodrome. See airport lighting.

2. aerodrome elevation (ICAO) -- The elevation of the highest point of the landing area. See airport elevation.

aerodrome beacon (ICAO)

Aeronautical beacon used to indicate the location of an aerodrome.

aerodynanic coefficient(s)

Non-dimensional coefficients for aerodynamic force(s) and moment(s).

aerodrome control service (ICAO)

Air traffic control service for aerodrome traffic.

aeronautical advisory station

A private aeronautical advisory communication facility operated for purposes other than air traffic control.

aeronautical and meteorological data

Any combination of aeronautical and weather information.

aeronautical beacon

A visual NAVAID displaying flashes of white and/or colored light to indicate the location of an airport, a heliport, a landmark, a certain point of a Federal airway in mountainous terrain, or an obstruction. See airport rotating beacon. (Refer to AIM)

aeronautical chart

A map used in air navigation containing all or part of the following: Topographic features, hazards and obstructions, navigation aids, navigation routes, designated airspace, and airports. Commonly used aeronautical charts are:

1. Sectional Charts -- 1:500,000 -- Designed for visual navigation of slow or medium speed aircraft. Topographical information on these charts features the portrayal of relief and a judicious selection of visual check points for VFR flight Aeronautical information includes visual and radio aids to navigation, airport, controlled airspace, restricted areas, obstructions, and related data.

2. VFR Terminal Area Charts -- 1:250,000 -- Depict Terminal Control Area (TCA) airspace which provides for the control or segregation of all the aircraft within the TCA. The chart depicts topographic information and aeronautical information which includes visual and radio aids to navigation, airport, controlled airspace, restricted areas, obstructions, and related data.

3. World Aeronautical Charts/WAC -- 1:1,000,000 --Provide a standard series of aeronautical charts covering land areas of the world at a size and scale convenient for navigation by moderate speed aircraft. Topographic information includes cities and towns, principal roads, railroads, distinctive landmarks, drainage, and relief Aeronautical information includes visual and radio aids to navigation, airports, airways, restricted areas, obstructions, and other pertinent data.

4. En Route Low Altitude Charts -- Provide aeronautical information for en route instrument navigation (IFR) in the low altitude stratum. Information includes the portrayal of airways, limits of controlled airspace, position identification and frequencies of radio aids, selected airports, minimum en route and minimum obstruction clearance altitudes, airway distances, reporting points, restricted areas, and related data. Area charts which are part of this series, furnish terminal data at a larger scale in congested areas.

5. En Route High Altitude Charts -- Provide aeronautical information for en route instrument navigation (IFR) in the high altitude stratum. Information includes the portrayal of jet routes, identification and frequencies of radio aids, selected airports, distances, time zones, special use airspace, and related information.

6. Instrument Approach Procedures/IAP Charts -- Portray the aeronautical data which is required to execute an instrument approach to an airport. These charts depict the procedures, including all related data, and the airport diagram. Each procedure is designed for use with a specific type of electronic navigation system including NDB, TACAN, VOR, ILS/MLS, and RNAV. These

charts are identified by the type of navigational aid(s) which provide final approach guidance.

7. Standard Instrument Departure/SID Charts -- Designed to expedite clearance delivery and to facilitate transition between takeoff and en route operations. Each SID procedure is presented as a separate chart and may serve a single airport or more than one airport in a given geographical location.

8. Standard Terminal Arrival/STAR Charts -- Designed to expedite air traffic control arrival procedures and to facilitate transition between en route and instrument approach operations. Each STAR procedure is presented as a separate chart and may serve a single airport or more than one airport in a given geographical location.

9. Airport Taxi Charts -- Designed to expedite the efficient and safe flow of ground traffic at an airport. These charts are identified by the official airport name; e.g., Washington National Airport.

aeronautical chart (ICAO)

A representation of a portion of the earth, its culture and relief, specifically designated to meet the requirements of air navigation.

aeronautical fixed circuit

Part of the aeronautical fixed service.

Aeronautical Fixed Service/AFS

Telecommunications service between specified fixed points, provided primarily for the safety of air navigation and for the regular efficient, and economical operation of air services.

Aeronautical Fixed Telecommunications Network/AFTN

An integrated worldwide system of aeronautical fixed circuits provided, as part of the AFS, for the exchange of messages between the aeronautical fixed stations within the network.

aeronautical information

Aeronautical information generally refers to NOTAMs, but may consist of any of the following: (a) information concerning the establishment, condition or change in any component of the NAS (e.g., airports, NAVAIDs); (b) information regarding

the boundaries and effective times of restricted or special use airspace; (c) information regarding preferred or fuel efficient routes; or (d) traffic management information.

aeronautical information publication (ICAO)

A publication issued by or with the authority of a state and containing aeronautical information of a lasting character essential to air navigation.

aeronautical and meteorological/A&M-data

Any combination of air traffic control and weather information.

affected units of local government

Each public agency and planning agency whose jurisdiction or responsibility is either wholly or partially within the yearly Day-Night average sound Level/LDN 65 boundary.

affirmative

Yes.

AFOS products

Automation of field operations and services mnemonics are used by the National Weather Service in the generation of weather charts, graphs and plots. These will also be incorporated in weather graphics generation in various NAS equipment. The AFOS system is scheduled to be replaced by the AWIPS-90 system, but the weather products produced will be similar.

agency

Any executive department, military department, government corporation, government controlled corporation or other establishment in the executive branch of the government (including the Executive Office of the President) or any other regulatory agency.

1. agency component -- A major organization, program or functional subdivision of an agency having one or more separate systems of internal control.

agonic line

A line on a chart joining points of no magnetic variation.

AI radar

An airborne interceptor radar system.

air almanac

A joint publication of the U.S. Naval Observatory and the British Royal Observatory covering a four month period. It contains tabulated values of the Greenwich hour angle and declination of selected celestial bodies, plus additional celestial data used in navigation.

air carrier

(1) An aircraft certified by the FAA for the purpose of carrying persons or goods for hire on an established airway. (2) All civil aviation activities certificated in accordance with FAR Parts 121, 123, 127, and 135. (3) Any citizen of the United States who undertakes, whether directly or indirectly or by lease or any other arrangement, to engage in air transportation.

1. air taxi -- An air carrier certificated in accordance with FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally, such operations involve the operation of small aircraft "for hire" for specific trips.

2. air travel club -- An operator certified in accordance with FAR Part 123 to engage in the carriage of members who are qualified for that carriage by payment of an assessment, dues, membership fees, or other similar remittance.

3. all-cargo carrier -- An air carrier certificated in accordance with FAR Part 121 to provide scheduled air freight, express, and mail transportation over specified routes, as well as the conduct of non-scheduled operations which may include passengers.

4. charter air carrier -- An air carrier holding a certificate of public convenience and necessity authorizing it to engage in charter air transportation.

5. commercial air carriers -- An air carrier certificated in accordance with FAR Parts 121 or 127 to conduct scheduled services on specified routes. These air carriers may also provide non-scheduled or charter services as a secondary operation. Four carrier groupings have been designated for statistical and financial data aggregation and analysis.

a. majors -- Air carriers with annual operating revenues greater than $1 billion.

b. nationals -- Air carriers with annual operating revenues of between $100 million and $1 billion.

c. large regionals -- Air carriers with annual operating revenues

6. commuter air carrier -- An air carrier certificated in accordance with FAR Part 135 which operates with a maximum of 60 seats, and provides at least five scheduled round trips per week between two or more points, or caries mail.

7. foreign flag air carrier -- An air carrier other than a U. S. flag air carrier in international air transportation. "Foreign air carrier" is a more inclusive term than "foreign flag air carrier," presumably including those non-U. S. air carriers operating solely within their own domestic boundaries. In practice, the two terms are used interchangeably.

8. supplemental air carrier -- An air carrier certificated in accordance with FAR Part 121, and providing non-scheduled or supplemental carriage of passengers or cargo, or both, in air transportation. They are also referred to as non-scheduled or charter air carriers.

air carrier B

Low-speed (100 wpm) multi-point teletypewriter communication circuits connecting ARTCCs with air carrier operations offices located within the geographic area of each center. See service B.

Air Carrier District Office/ACDO

This FAA organizational element conducts air safety programs relating to the certification, inspection, and surveillance of operations and maintenance programs and facilities of air carriers and commercial operators; certification and surveillance of air carrier airmen; surveillance of airports used for training of air carrier or commercial operator operations; and recurring certification of air craft (in excess of 12,500 lbs.) used by air carriers or commercial operators.

air carrier operations

Arrivals and departures performed by air carriers certificated in accordance with FAR Parts 121 and 127.

1. commuter/air taxi operations -- Those arrivals and departures performed by air carriers certificated in accordance with FAR Part 135.

2. domestic operations -- All air carrier operations having destinations within the 50 United States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands.

3. general aviation operations -- Arrivals and departures of all civil aircraft, except those classified as air carrier and commuter/air taxi.

4. international and territorial operations -- The operation of aircraft flying between the 50 United States and U. S. possessions and territories, and between two foreign points. Includes both the combined passenger/cargo and the all-cargo carriers engaged in international and territorial operations.

5. itinerant operations -- All aircraft operations other than local operations.

6. local operations -- Operations performed by aircraft which: (a) operate in the local traffic pattern or within sight of the airport; (b) are known to be departing for or arriving from flights in local practice areas located within a 20 mile radius of the airport; or (c) execute simulated instrument approaches or low approaches at the airport.

7. military operations -- All arrivals and departures performed by aircraft not classified as civil.

8. total operations -- All arrivals and departures performed by military, general aviation, commuter/air taxi and air carrier aircraft.

air combat maneuvers/ACM

One or a combination of basic ACT flight maneuvers calculated to provide an offensive tactical advantage over another aircraft.

air combat training/ACT

Flight involving basic flight maneuvers, air combat maneuvers or defensive combat maneuvers, singly or in combination.

air commerce

Interstate, overseas, or foreign air commerce or the transportation of mail by aircraft or any operation or navigation of aircraft within the limits of any Federal airway or any operation or navigation of aircraft which directly affects, or which may endanger safety in, interstate, overseas, or foreign air commerce.

Air Defense Control Facility/ADCF

A military radar unit primarily used for air defense.

air defense emergency

A military emergency condition declared by a designated authority. This condition exists when an attack upon the continental U.S., Alaska, Canada, or U.S. installations in Greenland by hostile aircraft or missiles is considered probable, is imminent, or is taking place. (Refer to AIM)

Air Defense Identification Zone/ADIZ

The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security.

1. Domestic Air Defense Identification Zone -- An ADIZ within the United States along an international boundary of the United States.

2. Coastal Air Defense Zone -- An ADIZ over the coastal waters of the United States.

3. Distant Early Warning Identification Zone/DEWIZ -- An ADIZ over the coastal waters of the State of Alaska.

ADIZ locations and operating and flight plan requirements for civil aircraft operations are specified in FAR Part 99. (Refer to AIM)

air density

The mass density of the air in terms of weight per unit volume.

air derived

Information generated about an aircraft from the data received by radar and/or by voice from an airborne aircraft. See ground derived.

air distance/AD

Distance that is measured relative to the mass of air through which an aircraft passes; the no wind distance flown in a given time (TAS x time).

air-filed flight plan

A flight plan filed by an aircraft which is already airborne and operating under VFR conditions. See radio file.

air mass

In meteorology, an extensive body of air within which the conditions of temperature and moisture in a horizontal plane are essentially uniform.

air mass classification

A system used to identify and to characterize the different air masses according to a basic scheme. The system most commonly used classifies air masses primarily according to the thermal properties of their source regions: "tropical" (T); :polar" (P); and "Arctic" or "Antarctic" (A). They are further classified according to moisture characteristics as "continental" (c) or "maritime" (m).

air navigation facility

Any facility used in, available for use in, or designated for use in, aid of air navigation, including landing areas, lights, any apparatus or equipment for disseminating weather information, for signaling, for radio-directional finding, or for radio or other electrical communication, and any other structure or mechanism having a similar purpose for guiding or controlling flight in he air or the landing and takeoff of aircraft. See navigational aid.

air parcel

See parcel.

air position/AP

The no wind position of an aircraft at a given time.

air refueling control point

The geographical point over which the receiver arrives in the observation/ refueling position with respect to the assigned tanker.

air refueling initial point

The geographical point at which the receiver aircraft enters the refueling track, initiates radio contact with the tanker and begins maneuver to rendezvous.

Air Route Surveillance Radar/ARSR

Air route control center (ARTCC) radar used primarily to detect and display an aircraft's position while en route between terminal areas. The ARSR enables controllers to provide radar air traffic control service when aircraft are within the ARSR coverage. In some instances, ARSR may enable an ARTCC to provide terminal radar services similar to but usually more limited than those provided by a radar approach control.

Air Route Traffic Control Center/ARTCC

A facility established to provide air traffic control service to aircraft operating on instrument flight rules (IFR) flight plans within controlled airspace, and principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to aircraft flying under visual flight rules (VFR). See NAS Stage A, en route air traffic control service. (Refer to AIM)

air sovereignty test

An aircraft on a NOPAR flight plan or ALTRV that is designed to test the detection, identification and reporting functions of air defense forces (ADCF and interceptor/fighter units).

air taxi

Used to describe a helicopter/VTOL aircraft movement conducted above the surface but normally not above 100 feet AGL. The aircraft may proceed either via hover taxi or flight at speeds more than 20 knots. The pilot is solely responsible for selecting a safe airspeed/altitude for the operation being conducted. See hover taxi. (Refer to AIM)

air temperature

The temperature of the air immediately surrounding an aircraft.

1. basic air temperature/BAT -- Indicated air temperature corrected for the instrument error.

2. corrected mean temperature/CMT -- The average between the target temperature and the true air temperature of flight level.

3. indicated air temperature/IAT -- The uncorrected reading from the free air temperature gage. Also known as outside air temperature/OAT.

4. true air temperature/TAT -- Basic air temperature corrected for the heat of compression error.

air traffic

Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

air traffic (ICAO)

All aircraft in flight or operating on the maneuvering area of an aerodrome.

air traffic clearance/ATC clearance

An authorization by air traffic control, for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace. See ATC instructions.

air traffic control/ATC

(1) A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic. (2) A generic term for a joint civil-military system for controlling traffic within a specified area.

air traffic control clearance (ICAO)

Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

Air Traffic Control Command Center/ATCCC

An Air Traffic Operations Service facility consisting of four operational units.

1. Central Flow Control Function/CFCF -- Responsible for coordination and approval of all major inter-center flow control restrictions on a system basis in order to obtain maximum utilization of the airspace. See fuel advisory departure, quota flow control.

2. Central Altitude Reservation Function/CARF -- Responsible for coordinating, planning, and approving special user requirements under the altitude reservation/ALTRV. See altitude reservation.

3. Airport Reservation Office/ARO -- Responsible for approving IFR flights at designated high density traffic airports (John F. Kennedy, LaGuardia, O'Hare, and Washington National) during specified hours. (Refer to FAR Part 93 and Airport/Facility Directory)

4. ATC Contingency Command Post -- A facility which enables the FAA to manage the ATC system when significant portions of the system's capabilities have been lost or are threatened.

5. ATCCC specialist -- Traffic management specialist resident at the air traffic control command center who coordinates with local traffic management specialists at ARTCC's and manages flow control operations.

air traffic control facility

A facility that provides air traffic control service. Air Traffic Control Radar Beacon System/ATCRBS See radar.

air traffic control service

A service provided for the purpose of promoting the safe, orderly, and expeditious flow of air traffic including airport, approach, and en route air traffic control service.

air traffic control service (ICAO)

A service provided for the purpose of: preventing collisions between aircraft, and on the maneuvering area between aircraft and obstructions, and expediting and maintaining an orderly flow of air traffic.

Air Traffic Control Radar Beacon System/ATCRBS

A secondary surveillance radar system having ground-based interrogators and airborne transponders capable of operation on Modes A and C. See secondary radar.

air traffic control service (ICAO)

A service provided for the purpose of; preventing collisions between aircraft, on the maneuvering area between aircraft/ obstructions, and expediting and maintaining an orderly flow of air traffic.

Air Traffic Control Specialist/ATCS

A duly authorized person providing air traffic control service.

air traffic control system

All components, human and otherwise, of a system providing ATC service.

air traffic hub

Air traffic hubs are not airports; they are the cities and Metropolitan Statistical Areas requiring aviation services and may include more than one airport. Communities fall into four classes as determined by each community's percentage of the total enplaned passengers by scheduled air carriers in the 50 Contiguous United States, the District of Columbia, and other U. S. areas designated by the FAA.

1. large -- 1.00 percent (4,000,080 passengers and over in CY 1986).

2. medium -- 0.25 percent to 0.999 percent (between 1,000,020 and 4,000,079 passenger in CY 1986).

3. small -- 0.05 percent to 0.249 percent (between 200,005 and 1,000,019 passengers in CY 1986).

4. non-hub -- Less than 0.05 percent (under 200,004 passengers in CY 1986).

Air Traffic Representative/ATREP

An FAA air traffic representative at a military facility which provides approach control service to civil aircraft.

air transportation

Interstate, overseas, or foreign air transportation or the transportation of mail by aircraft.

airborne delay

Amount of delay to be encountered in airborne holding. This delay is identified by an "R" in the remarks section of the en route flight progress strip; i.e., R015.

airborne order

A command and authorization for an air defense flight requiring time, of more than five minutes, to become airborne.

airborne radar unit

A radar unit mounted on an aircraft which is used as an extension of a military radar system during planned exercises and daily training missions.

aircraft

Device(s) that are used or intended to be used for flight in the air, and when used in air traffic control terminology, may include the flight crew (exception: ultra-light vehicles described by FAR Part 103).

1. aircraft (ICAO) -- Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

aircraft accident

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

1. destroyed -- Damage to an aircraft, to the extent that it would be impracticable to return the aircraft to an airworthy condition.

2. fatal injury -- Any injury which results in death within 30 days of the accident.

3. mild-survivable (accident) -- An accident in which all occupants received either minor or no injuries.

4. substantial damage -- Damage or failure which adversely affects the structural strength, performance or flight characteristic of the aircraft, and which would

normally require major repair or replacement of the affected component (exceptions: engine failure or damage limited to an engine, if only one engine fails or is damaged; fairings or cowlings; dented skin; small puncture holes in the skin or fabric; ground damage to rotor or propeller blades; damage to landing gear, wheels, brakes, tires, flaps, engine accessories or wing tips are not considered "substantial damage.").

5. serious injury -- Any injury which: requires hospitalization for more than 48 hours, commencing within 7 days from the date an injury was received; results in a fracture of any bone (except simple fractures of fingers, toes or nose); causes severe hemorrhages, nerve, muscle, or tendon damage; involves any internal organ; or involves second or third degree burns, or burns affecting more than 5 percent of the body surface.

6. severe-survivable (accident) -- An accident in which at least one occupant received a serious or fatal injury.

7. substantial damage -- Damage or failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component(s). Engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, damage to landing gear, wheels, tires, flaps, engine accessories, brakes or wing-tips are not normally considered "substantial damage."

8. survivable (accident) -- An accident in which the forces transmitted to the occupant(s) through the seat and restraint system do not exceed the limits of human tolerance to abrupt accelerations and in which the structure in the occupant's immediate environment remains substantially intact to the extent that a livable volume of space is provided for the occupant throughout the crash sequence.

aircraft approach category

A grouping of aircraft based on a speed of 1.3 times the stall speed in the landing configuration at maximum gross landing weight. An aircraft shall fit in only one category. If it is necessary to maneuver at speeds in excess of the upper limit of a speed range for a category, the minimums for the next higher category should be used. For example, an aircraft which falls in Category A, but is circling to

land at a speed in excess of 91 knots, should use the approach Category B minimums when circling to land. The categories are as follows:

1. Category A -- Speed less than 91 knots.

2. Category B -- Speed 91 knots or more but less than 121 knots.

3. Category C -- Speed 121 knots or more but less than 141 knots.

4. Category D -- Speed 141 knots or more but less than 166 knots.

5. Category E -- Speed 166 knots or more

(Refer to FAR Part 1 and 97)

Aircraft Certification Field Office/ACFO

Manufacturing Inspection District Office (MIDO): This FAA organizational element provides for original and supplemental airworthiness certification or approval of civil aircraft, engines, propellers, parts, and appliances including surplus military products and parts. This element also conducts inspection surveillance of manufacturing facilities producing civil aircraft, engines and propellers to determine compliance with prescribed safety standards.

aircraft classes

For the purposes of Wake Turbulence Separation Minima, ATC classifies aircraft as Heavy, Large and Small, as follows:

1. heavy -- Aircraft capable of takeoff weights of 300,000 pounds or more whether or not they are operating at this weight during a particular phase of flight.

2. large -- Aircraft of more than 12,500 pounds, maximum certificated takeoff weight, up to 300,000 pounds.

3. small -- Aircraft of 12,500 pounds, maximum certificated takeoff weight.

aircraft contacted

Aircraft with which the flight service stations have established radio communications contact. One count is made for each en route, landing or departing aircraft contacted by a flight service station, regardless of the number of contacts made with an individual aircraft during the same

flight. A flight operation containing radio contact with five FSS's would be counted as five aircraft contacted.

1. aircraft contact report -- Information generated by an FSS specialist reporting contact with an aircraft that is using the flight-following service.

aircraft engine

An engine that is used or intended to be used for propelling aircraft. It includes turbochargers, appurtenances and accessories necessary for its functioning, but does not include propellers.

Aircraft Maintenance Base/AMB

Agency facilities performing scheduled and unscheduled aircraft and avionics maintenance of FAA aircraft.

aircraft movement areas

Those areas which encompass the runways, taxiways and other areas of the airport utilized for taxiing, takeoff and landing of aircraft, excluding aprons and parking areas.

Aircraft Movement Information Service/AMIS

A service provided by an ARTCC, to provide for the acquisition, processing and dissemination of aircraft movement information for use by the air defense facilities, whether or not such air defense facilities are associated with an ADIZ. Such information pertains to friendly aircraft and airborne objects which are or will be operating in the air defense facilities area(s).

aircraft operations

The airborne movement of aircraft in controlled or non-controlled airport terminal areas, and counts at en route fixes or other points where counts can be made. There are two types of operations: local and itinerant.

aircraft separation assurance/ASA

The prevention of collisions between aircraft.

aircraft trajectory alert

An alert generated by comparing flight plan projections of aircraft in a given airspace. The alert will warn the specialist of aircraft that, if the aircraft continue

according to their flight plans they would come within a system parameter distance of one another.

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 accessories and controls.

airline B TTY

A teletypewriter circuit (network) to which airline operations offices are connected.

airman

Any individual who engages, as the person in command or as pilot, mechanic, or member of the crew, in the navigation of aircraft while under way; and in charge of the inspection, maintenance, overhauling, or repair of aircraft, aircraft engines, propellers, or appliances; and any individual who serves in the capacity of aircraft dispatcher or air traffic control tower operator.

Airman's Information Manual/AIM

A publication containing Basic Flight Information and ATC Procedures designed primarily as a pilot's instructional manual for use in the National Airspace System of the United States.

Airman's Meteorological Information/AIRMET

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 1,000 feet and/or visibility less than 3 miles, and extensive mountain obscurement.

Airmen Advisory/AIRAD

(1) A Notice to Airmen normally given only local dissemination, during pre-flight or in-flight briefing, or otherwise during contact with pilots. (2) Airman advisories are in reference to phenomena imposing hazardous flight

conditions, not necessarily directly pertaining to weather. Airman advisories may include, NOTAMs, SIGMETs or AIRMETs.

AIRMET/WA/Airmans Meteorological 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. AIRMET's concern weather of less severity than that covered by SIGMET's or Convective SIGMET's. AIRMETS cover moderate icing, moderate turbulence, sustained winds of 30 knots or more at the surface, widespread areas of ceilings less than 1,000 feet and/or visibility less than 3 miles, and extensive mountain obscurement. See SIGMET, Convective SIGMET, and CWA. (Refer to AIM)

airplane

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

airplot/AP

A continuous plot of the graphic representation of true heading and air distance.

airport

An area on land or water that is used or intended to be used for the landing and takeoff of aircraft and any appurtenant areas which are used, or intended for use for buildings and facilities located thereon.

1. major -- An airport facility which handles a high volume of IFR air traffic.

2. satellite -- An airport facility in which a low volume of IFR air traffic is handled, and which is near a major airport.

3. air carrier airport -- An existing public airport regularly served, or a new airport which will be regularly served by a certificated air carrier (other than a supplemental air carrier).

4. commuter service airport -- An air carrier airport which is regularly served by one or more air carriers (certificated under section 401 of the FAA Act) at which not less than 2,500 passengers were enplaned in

the aggregate by all such carriers during the preceding calendar year.

5. general aviation airport -- A public airport, which is not an air carrier airport, used primarily for general aviation operations.

6. reliever airport -- A general aviation airport designated as having the primary function of relieving congestion (by diverting general aviation traffic) at an air carrier airport.

airport acceptance negotiations

Negotiations of airport acceptance rates between central flow specialists and ACF/TCF controllers.

airport acceptance rate/AAR

The maximum number of aircraft which can land at an given airport for a given time period, usually specified in aircraft per hour. This dynamic input parameter specifies the number of arriving aircraft which an airport or airspace can accept from the ARTCC per hour. The AAR is used to calculate the desired interval between successive arrival aircraft.

airport advisory area

The area within ten miles of an airport without a control tower or where the tow is not in operation, and on which a Flight Service Station is located. See airport advisory service. (Refer to AIM)

Airport Advisory Service/AAS

A service provided by flight service stations located at airports not serviced by a control tower. This service consists of providing information to arriving and departing aircraft concerning wind direction and speed, favored runway, altimeter setting, pertinent known traffic, pertinent known field conditions, airport taxi routes and traffic patterns, and authorized instrument approach procedures. This information is advisory in nature and does not constitute an ATC clearance. See airport advisory area.

airport control zone

Airspace within a five mile radius up to 2,000 feet around airport is designated as the airport control zone. Traffic usually avoids entry unless the nature of the flight demand

it. Two-way radio is required within the control zone of tower-equipped airports. See positive control area.

airport development

Any work involving construction, improvement or repair to a public airport or portion thereof (excluding routine maintenance and the construction, improvement, repair of airport hangars or public parking facilities for passenger automobiles); the removal,lowering, relocation marking and lighting of airport hazards; navigation aids used by aircraft landing at, or taking off from, a public airport; safety equipment required by regulation for certification of the airport; security equipment required of the sponsor by rule or regulation for the safety and security of persons and property on the airport; snow removal equipment; the purchase of noise suppressing equipment, the construction of physical barriers and landscaping for the purpose of diminishing the effect of aircraft noise on any area adjacent to a public airport; acquisition of land or of any interest therein, or of any easement through or other interest in airspace, including land for future airport development which is necessary to permit any such work or to remove or mitigate or prevent or limit the establishment of airport hazards or to insure that such land is used only for purposes which are compatible with noise levels of the operation of a public airport; and terminal development.

Airport District Office/ADO

These FAA offices are outlying units or extensions of regional Airports Divisions. They advise and assist public agencies and their agents with the submission of project requests for establishing, improving, equipping, and financing of airports under the Airport Development Aid Program and in obtaining surplus airport property under the Surplus Property Disposal Program. They also provide advisory services to the owners and operators of both public and private airports regarding the operation and maintenance of their airports.

airport environment data

Any current, dynamic information concerning an airport's condition that may be of importance to a pilot, flight service specialist or controller which has not already been included in a NOTAM.

airport elevation/field elevation

The highest point of an airport's usable runway measured in feet from mean sea level. See touchdown zone elevation.

airport facility directory

A publication designed primarily as a pilot's operational manual containing all airports, seaplane bases, and heliports open to the public including communications data, navigational facilities, and certain special notices and procedures. This publication is issued in seven volumes according to geographical area.

airport hazard

Any structure or object of natural growth located on or in the vicinity of a public airport, or any use of land near such airport, which obstructs the airspace required for the flight operations of aircraft landing or taking off or which might otherwise be hazardous to the operation of such aircraft.

Airport Information Desk/AID

A local airport unmanned facility designed for pilot self-service briefing, flight planning and filing of flight plans. (Refer to AIM)

airport lighting

Various lighting aids that may be installed on an airport. Types of airport lighting include:

1. 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 his final approach for landing.

   Condenser-Discharge Sequential Flashing Lights/Sequenced Flashing Lights may be installed in conjunction with the ALS at some airports. Types of Approach Light Systems are:

   a. ALSF-1 -- Approach Light System with Sequenced Flashing Lights in ILS Cat-I configuration.

   b. ALSF-2 -- Approach Light System with Sequenced Flashing Lights in ILS CAT-II configuration. The ALSF-2 may operate as an SSALF when weather conditions permit.

   c. SSALF -- Simplified Short Approach Light System with Runway Alignment Indicator.

d. SSALR -- Simplified Short Approach Light System with Runway Alignment Indicator Lights.

e. MALSF -- Medium Intensity Approach Light System with Sequenced Flashing Lights.

f. MALSR -- Medium Intensity Approach Light System with Runway Alignment Indicator Lights.

g. LDIN -- Sequenced Flashing Lead-in Lights.

h. RAIL -- Runway Alignment Indicator Lights (Sequenced Flashing Lights which are installed only in combination with other light systems).

i. ODALS -- Omni-directional Approach Lighting System consists of seven omni-directional flashing lights located in the approach area of a non-precision runway. Five lights are located on the runway centerline extended with the first light located 300 feet from the threshold and extending at equal intervals up to 1,500 feet from the threshold. The other two lights are located, one on each side of the runway threshold, at a lateral distance of 40 feet from the runway edge, or 75 feet from the runway edge when installed on a runway equipped with a VASI. (Refer to FAA Order 6850.2A)

2. Runway Lights/Runway Edge Lights -- Lights having a prescribed angle of emission used to define the lateral limits of a runway. Runway lights are uniformly spaced at intervals of approximately 200 feet, and the intensity may be controlled or preset.

3. Touchdown Zone Lighting -- Two rows of transverse light bars located symmetrically about the runway centerline normally at 100 foot intervals. The basic system extends 3,000 feet along the runway.

4. Runway Centerline Lighting -- Flush centerline lights spaced at 50-foot intervals beginning 75 feet from the landing threshold and extending to within 75 feet of the opposite end of the runway.

5. Threshold Lights -- Fixed green lights arranged symmetrically left and right of the runway centerline, identifying the runway threshold.

6. Runway End Identifier Lights/REIL -- Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive

identification of the approach end of a particular runway.

7. Visual Approach Slope Indicator/VASI -- An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he is "on path" if he sees red/white, "above path" if white/white, and "below path" if red/red. Some airports serving large aircraft have three-bar VASIs which provide two visual glide paths to the same runway.

8. Boundary Lights -- Lights defining the perimeter of an airport or landing area. (Refer to AIM)

airport marking aids

Markings used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, etc. A runway should be marked in accordance with its present usage such as: visual, non-precision instrument, precision instrument. (Refer to AIM)

airport master planning

Information and guidance needed to determine the extent, type and nature of development needed at aa specific airport. It may include the preparation of feasibility studies, including the potential use and development of land surrounding an actual or potential airport site, as well as associated studies, surveys and planning actions necessary to determine the short, intermediate and long range aeronautical demands required to be met by a particular airport as part of a system of airports.

airport noise compatibility program

Any program developed in accordance with FAR Part 150 which includes the measures taken or proposed by the airport operator to reduce existing non-compatible land uses and to prevent the introduction of additional non-compatible land uses within that area.

airport noise exposure map

A scaled, geographic depiction of an airport, its noise contours, and surrounding area developed in accordance with FAR Part 150.

airport operator

Any person(s) having the operational control of an airport.

airport operator use restriction

Actions taken by an airport operator which establishes limits on the use of the airport in terms of the number, noise level, manner or time of aircraft operations at that airport.

Airport Radar Service Area/ARSA

An area of land or water that is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any. A fix name adapted in airport adaptation with complete airport data. This airport may have one or more satellite airports associated with it. See controlled airspace.

airport reservation negotiations

The communications, via telephone, between ATC Command Center personnel and an airline dispatch office, military base operations or FSS personnel concerning airport reservations. This negotiation process may result in a shifting of allocations. See airport reservation request.

airport reservation request

A request for the allocation of a time-slot at a high density airport.

airport reservation response

The response to an airport reservation request (approval or rejection of the requested time-slot at a high density airport).

airport rotating beacon

A visual NAVAID operated at operated at many airports. At civil airports, alternating white and green flashes indicate the location of the airport. At military airports, the beacon flashes alternately white and green, but are differentiated from civil beacons by dual peaked (two quick) white flashes between the green flashes. See Special VFR operations, instrument flight rules. (Refer to AIM, Rotating Beacons)

Airport Surface Detection Equipment/ASDE

Radar equipment specifically designed to detect all principal features on the surface of an airport, including vehicular traffic, and to present the entire picture on a radar indicator console in the control tower. ASDE has a maximum range of four miles, though its 16 inch diameter scope usually displays an area of only one mile radius about the control tower.

1. ASDE display -- Information displayed to a controller or other operator showing the position of aircraft and other vehicles on the airport surface.

Airport Surveillance Radar/ASR

FAA short-range radar for terminal air traffic control. Radar providing position of aircraft by azimuth and range data without elevation data. Various models are designed for ranges of from 30 to 60 miles.

airport system plan

Information and guidance to determine the extent, type, nature, location and timing of airport development needed in a specific area to establish a viable and balanced system of public airports. IT includes the identification of the specific aeronautical role of each airport within the system, development of estimates of system wide development costs and the conduct of such studies, surveys and other planning actions as may be necessary to determine the demands required by a particular system of airports.

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 3,000 feet above the elevation of an airport. Unless otherwise authorized or required by ATC, no person may operate an aircraft within an airport traffic area except for the purpose of landing at or taking off from an airport within that area. ATC authorizations may be given as individual approval of specific operations or may be contained in written agreements between airport users and the tower concerned. (Refer to FAR, Parts 1 and 91)

airport traffic control service

A service provided by a control tower for aircraft operating on the movement area and in the vicinity of an airport. See movement area, tower.

Airport Traffic Control Tower/ATCT

A terminal facility which through the use of air/ground communications, visual signaling, and other devices, provides air traffic control (ATC) services to airborne aircraft operating in the vicinity of an airport and to aircraft operating on the movement area.

airport utilization report

A report from the ATC Command Center containing information pertaining to traffic flow at high traffic density airports.

airport utilization request

A request for information from the traffic management system pertaining to the traffic flow at high traffic density airports.

airspeed/AS

The speed of an aircraft relative to it's surrounding air mass. The unqualified term "airspeed" means one of the following:

1. calibrated airspeed/CAS -- Indicated airspeed corrected for pitot static installation and/or the altitude of the aircraft.

2. equivalent airspeed/EAS -- Calibrated airspeed corrected for compressibility of air error.

3. indicated airspeed/IAS -- The uncorrected reading shown on the aircraft airspeed indicator. This is the speed used in pilot/controller communications under the general term "airspeed." (Refer to FAR Part 1)

4. true airspeed -- The airspeed of an aircraft relative to undisturbed air. Used primarily in flight planning and en route portions of flight. When used in pilot/controller communications, it is referred to as "true airspeed" and not shortened to "airspeed."

airspeed indicator/ASI

An instrument which gives a measure of the rate of motion of an aircraft relative to the surrounding air.

airship

An engine-driven lighter-than-air aircraft that can be steered.

airspace

The earth's layer of surrounding air, from the surface to at least 70,000 feet. See special use airspace.

airspace management

A term invoked to replace air traffic control and airspace control in recognition of the philosophy of "service" versus "control."

airspace user

Operating entities who cause air vehicles to occupy elements of the airspace.

airstart

The starting of an aircraft engine while the aircraft is airborne, preceded by engine shutdown during training flights or by actual engine failure.

airway/federal airway

(1) A control area or portion thereof established in the form of a corridor, the centerline of which is defined by radio navigational aids. (2) An abbreviation for a sequence of fixes defining an air route which is used when filing flight plans. A named, adapted route defined as a series of adapted fixes and junctions. (Refer to FAR Part 71, AIM)

airway (ICAO)

A control area or portion thereof established in the form of corridor equipped with radio navigational aids.

airway beacon

Used to mark airway segments in remote mountain areas. The light flashes Morse Code to identify the beacon site. (Refer to AIM)

Airway Facilities Sector/AFS

Airway Facilities Sectors (AFS) are major FAA organizational elements operating in the field environment. They handle system maintenance operations and provide engineering services on a day-to-day basis under the general direction of the regional AF Division having purview. These organizations conduct a maintenance and certification program to assure the continued operation, accuracy and reliability of all air traffic control, air navigation, communication facilities and ancillary equipment assigned to them.

Airway Facilities Sector Field Office/AFSFO

An FAA organizational element that is subordinate to the Airways Facilities Sector which is located away from the sector headquarters. It is sometimes the reporting point for one or more technical units called Airway Facilities Field Office Units (AFSFOU).

Airway Facilities Sector Field Unit/AFSFU

A remote FAA organizational unit directly subordinate to an Airway Facilities Sector Office but with responsibilities similar to an Airway Facilities Sector Field Office Unit.

alarm

(1) When sub-system critical parameter exceeds established operational limits causing a loss of service to the operator or user. (2) An aural signal to the pilot containing information relevant to collision avoidance. This term is synonymous with advisory.

albedo

The ratio of the amount of electromagnetic radiation reflected by a body to the amount incident upon it, commonly expressed in percentage; in meteorology, usually used in reference to insolation (solar radiation); i. e. the albedo of wet sand is 9, meaning that about 9% of the incident insolation is reflected. Albedos of other surfaces range upward to 80-85 for fresh snow cover. The average albedo for the earth and it's atmosphere has been calculated to range from 35 to 43.

alert

(1) The notification of others to the fact that a critical situation may be approaching or impacting the receiver, as in alerting airport facilities of an aircraft having in-

flight difficulties. (2) A sub-system performance parameter which exceeds a predetermined threshold but does not cause loss of service to the operator or user.

alert area

Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity. See special use airspace.

alert notice/ALNOT

A Message sent by a flight service station/FSS or an air route traffic control center/ARTCC that requests an extensive communication search for overdue, unreported, or missing aircraft.

algorithm

A set of well defined rules for the solution of a problem in a finite number of steps.

alien

Any person not a citizen or national of the United States. See immigrant alien, foreign national.

align

(1) To adjust. (2) To form a line. (3) To set to equivalent specifications.

alpha-numeric(s)

Characters which may be either letters of the alphabet or numbers. Symbolic characters and punctuation marks found on the alphanumeric keyboard are also considered alphanumerics.

1. alpha-numeric data -- Letters and numerals used to show identification, altitude, beacon code, and other information concerning a target on a radar display. See Automated Radar Terminal Systems, NAS Stage A.

2. alpha-numeric display -- A display on a CRT which is composed of alphanumeric data in either tabular or non-tabular form.

3. alpha-numeric display/data block -- Letters and numerals used to show identification, altitude, beacon code, and other information concerning a target on a radar display. (See Automated Radar Terminal Systems, NAS Stage A)

4. alpha-numeric keyboard/keypack -- A device for entry of data into the Central Computer Complex; consists of individual alphanumeric and special symbol keys, keys to control device operation, and lamps to indicate device and input message status.

alpha particle

A particle emitted spontaneously from the nuclei of some radioactive elements. It is identical with a helium nucleus and consists of two protons and two neutrons; it has an electric charge of two positive units.

alter course

A term which means a change in course to a destination or a turning point.

alter heading

A term which means a change in heading to make good the intended course.

alternate

A backup device or mode to be utilized in lieu of other primary units or mode.

alternate airport

An airport at which an aircraft may land if a landing at the intended airport becomes inadvisable.

alternate airport (ICAO)

An aerodrome specified in the flight plan to which a flight may proceed when it becomes inadvisable to land at the aerodrome of intended landing.

alternate entry track

A track along which en route descent is made to an intermediate point on a military training route.

1. alternate penetration fix -- The fix from which a military training route alternate entry track begins. This fix is described by reference to a ground based navigational aid.

altimeter

An instrument that measures the elevation of an aircraft above a given datum plane.

altimeter setting

(1) Station pressure reduced to sea level, expressed in inches of mercury or millibars. (2) The value of atmospheric pressure to which the scale of a pressure altimeter is set. When this value is set into the altimeter, the instrument reading is indicated true altitude. (After United States practice, the setting represents the pressure required to make the altimeter indicate zero altitude at an elevation of ten feet above mean sea level. Thus, at the height of ten feet above airport elevation (approximate cockpit height), the altimeter should indicate the airport elevation.) (Refer to FAR Part 91, AIM)

1. altimeter setting indicator -- A precision aneroid barometer calibrated to indicate directly the altimeter setting.

altitude

(1) The height of an aircraft above a given datum. (2) The height of a level, point, or object measured in feet above an implied reference level. See flight level.

1. absolute altitude/AA -- True altitude corrected for terrain elevation (i.e. the vertical distance of an aircraft above the terrain).

2. AGL altitude -- Altitude expressed in feet measured above ground level.

3. basic pressure altitude/BPA -- Indicated pressure altitude corrected for instrument error. Also known as flight level pressure altitude/FL PA.

4. corrected altitude -- Indicated altitude of an aircraft altimeter corrected for the temperature of the column of air below the aircraft. The correction is based on the estimated departure of existing temperature from standard atmospheric temperature; an approximation of true altitude.

5. density altitude/DA -- (1) The altitude in the standard atmosphere at which the air has the same density as the air at the point in question. An aircraft will have the same performance characteristics as it would have

in a standard atmosphere at this altitude. (2) Basic pressure altitude corrected for temperature (i.e. the vertical distance of an aircraft above a standard datum plane).

6. indicated altitude -- The altitude above mean sea level indicated on a pressure altimeter set at current local altimeter setting.

7. indicated pressure altitude/IPA -- The altitude as shown by an altimeter. On a pressure or barometric altimeter it is altitude as shown uncorrected for instrument error and uncompensated for variation from standard atmospheric conditions (i.e. 29.92 set in the Kollsman window).

8. MSL altitude -- Altitude expressed in feet measured from mean sea level.

9. pressure altitude -- The altitude in the standard atmosphere at which the pressure is the same as at the point in question. Since an altimeter operates solely on pressure, this is the uncorrected altitude indicated by an altimeter set at standard sea level pressure of 29.92 inches or 1013 millibars.

10. radar altitude -- The altitude of an aircraft determined by radar-type radio altimeter; thus the actual distance from the nearest terrain or water feature encompassed by the downward directed radar beam. For all practical purposes, it is the "actual" distance above ground or inland water surface or the true altitude above an ocean surface.

11. true altitude/TA -- The density altitude corrected for pressure altitude variation/PAV (i.e. the vertical distance above mean sea level).

altitude (ICAO)

The vertical distance of a level , a point or an object considered as a point, measured from mean sea level.

altitude delay

A controlled delay applied to the start of the (electronic) trace to eliminate the altitude hole on a PPI type display. See altitude hole.

altitude engine

A reciprocating aircraft engine having a rated takeoff power that is producible from sea level to an established higher altitude.

altitude hole

The blank area in the center of a PPI display, the outer edge of which represents the point on the ground immediately beneath the aircraft.

altitude readout/automatic altitude report

An aircraft's altitude, transmitted via the Mode C transponder feature, that is visually displayed in 100 foot increments on a radar scope having readout capability. See Automated Radar Terminal Systems, NAS Stage A, alphanumeric display. (Refer to AIM)

altitude reservation/ALTRV

Airspace utilization under prescribed conditions, normally employed for the mass movement of aircraft or other special user requirements which cannot otherwise be accomplished. ALTRV's are provided by the central altitude reservation function (CARF). Although predominantly military in nature, ALTRVs may be obtained by other organizations. See Air Traffic Control Command Center.

1. altitude reservation negotiation -- Discussions by phone between ARTCC personnel and an airline dispatch office, military base operations, or FSS personnel concerning altitude reservation requests.

2. altitude reservation request -- A request for airspace utilization under prescribed conditions normally employed for the mass movement of aircraft or other special user requirements which cannot otherwise be accomplished. These requests are approved by the ARTCCC.

3. altitude reservation response -- The response (approval, modification or rejection) of an altitude reservation request by the ATCCC.

4. altitude utilization report -- Information from the traffic management system concerning approved reservation of airspace.

5. altitude utilization request -- The request for information from the traffic management system concerning approved reservations of airspace.

altitude restriction

An altitude or altitudes, stated in the order flown, which are to be maintained until reaching a specific point or time. Altitude restrictions may be issued by ATC due to traffic, terrain, or other airspace considerations.

altitude restrictions are canceled

Adherence to previously imposed altitude restrictions are no longer required during a climb or descent.

altocumulus

White or gray layers or patches of clouds, often with a waved appearance. Cloud elements appear as rounded masses or rolls; composed mostly of liquid water droplets which may be super cooled. They may also contain ice crystals at subfreezing temperatures.

1. altocumulus castellanus -- A species of middle cloud of which at least a fraction of its upper part presents some vertically developed, cumuliform protuberances (some of which are taller than they are wide, as castles) and which give the cloud a crenelated or turreted appearance. Clouds of this type are especially evident when seen from the side; elements usually have a common base arranged in lines. This cloud indicates instability and turbulence at the altitude of occurrence.

ALTRV formations

See formation flights.

amber warning

An air defense term that postures (prepares and/or positions) aircraft prior to being launched for survival. It may precede a flush order.

amplitude jitter

Undesired amplitude modulation on a received signal. Amplitude jitter is the summation of incidental amplitude modulation (sidebands symmetrically located around a carrier) and random or quantizing noise encountered on the facility.

analyze

To examine individual items to make sure a judgement on the entire situation, such as conditions which influence the ability to provide flight following. (Similar to "review" but suggests a one time effort rather than a more repetitious action.)

analog

(1) A quantity which is infinitely precise. (2) The representation of numerical quantities by means of physical variables; e.g., translation, rotation, voltage, or resistance.

analog video, raw

Unprocessed video from a radar receiver.

analysis

See cost-risk analysis, cryptanalysis, risk analysis.

anchor area

A defined area encompassing both a racetrack shape aerial refueling track and its protected airspace.

1. anchor point -- A designated reference point upon which an anchor refueling track is oriented.

anemometer

An instrument used for measuring wind speed.

aneroid barometer

A barometer which operates on the principal of having changing atmospheric pressure bend a metallic surface which, in turn, moves a pointer across a scale graduated in units of pressure.

angel

In radar meteorology, an echo caused by physical phenomena not discernible to the eye; they have been observed when abnormally strong temperature and/or moisture gradients were known to exist. The phenomena is sometimes attributed to insects or birds flying in the radar beam.

angle of convergence

The angle formed between a converging flight track, radial or bearing and a great circle route. The ideal angle of convergence for computing intersections along a great circle route is an angle of 90°.

angle of divergence (minimum)

The smaller of the angles formed by the intersection of two courses, radials, bearings, or combinations thereof.

Anomalous Propagation/AP

In radar meteorology, the greater than normal bending of the radar beam such that echos are received from ground targets at distances greater than normal ground clutter.

annotations

Manual additions to various automatically generated information, an example of which would be annotated to weather products by meteorologists, to enhance, supplement, or draw attention to special data, or to create additional new products.

annually

A scheduling term, meaning once every calendar year, and at approximately twelve month intervals (10 to 14 months).

annulling network

An arrangement of impedance elements connected in parallel with a filter to annul or cancel captive or inductive impedance at the extremes of a filter's passband.

anticyclone

An area of high atmospheric pressure which has a closed circulation that is anticyclonic, i.e., as viewed from above, the circulation is clockwise in the Northern Hemisphere, counter-clockwise in the Southern Hemisphere, undefined at the Equator.

anvil cloud

A popular name given to the top portion of a cumulonimbus cloud having an anvil like formation.

aperture card

A tabulating card with a rectangular hole specifically prepared for the mounting of a frame of 35 mm microfilm.

aperture diameter

The diameter of a radar main beam at its point of origin. Because of the properties of electromagnetic radiation, the angle of spread of a projected beam is related in an inverse manner to the size of the aperture.

APOB

A sounding (meteorological) made by an aircraft.

appearances

As applied to communications key equipment, service outlets which are additional to the primary termination.

appliance

Any instrument, mechanism, equipment, part, apparatus, appurtenance or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, engine or propeller.

application

A problem or task which a computer is assigned to perform.

applique circuit

A circuit that can be added to a complete basic circuit to increase, or change, the possible applications of the basic circuit. For example, some carrier telephone equipment designed for dial signaling can be converted to ring-down signaling through the use of an applique circuit.

approach clearance

Authorization by ATC for a pilot to conduct an instrument approach for which a clearance and other pertinent information is provided in the approach clearance when required. See instrument approach procedure, cleared for approach. (Refer to FAR Part 91 and AIM)

approach control

The control process which delivers aircraft to the final approach course or landing system properly spaced for their landing. This process is also called final spacing control.

approach control area/approach control air space

One or more contiguous fix posting areas controlled by an approach control facility. Approach control air space may overlie or underlie air space controlled by ARTCC sectors or adjacent approach control facilities.

approach control facility

An air traffic control facility exercising control within a delegated block of air space and providing approach control service.

approach control service

Air traffic control service, provided by an approach control facility for arriving and departing VFR/IFR aircraft and on occasion, en route aircraft. At some airports not served by an approach control facility, the ARTCC provides limited approach control service. (Refer to AIM)

approach control service (ICAO)

Air traffic service for arriving or departing controlled flights.

approach fix

The fix form or over which final approach (IFR) to an airport is executed.

approach gate

An imaginary point used within ATC as a basis for vectoring aircraft to the final approach course. The gate is established along the final approach course 1 mile from the outer marker (or the fix used in lieu of the outer marker) on the side away from the airport for precision approaches and 1 mile from the final approach on the side away from the airport for non-precision approaches. In either case when measured along the final approach course, the gate is no closer than 5 miles from the landing threshold.

approach light system

See airport lighting.

approach sequence

The order in which aircraft are positioned while awaiting approach clearance or while on approach. See landing sequence.

approach sequence (ICAO)

The order in which two or more aircraft are cleared to approach to land at the aerodrome.

approach specific data

Information about a specific runway/airport where an approach terminates. This could include runway visual range, weather conditions, runway conditions, etc.

approach speed

The recommended speed contained in aircraft manuals used by pilots when making a approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration.

appropriate data

This term refers to data that has already been defined in earlier sections of a document as normally flowing between specific pieces of equipment.

appropriate voice

This term is used in a similar way to the term appropriate data and refers to voice information passing from processor (voice generated) to people or person to person.

approve

To respond favorably to a request, as in approving a clearance request.

approved

Unless used with reference to another person, means approved by the Administrator.

approved circuit

Synonym for protected wire-line distribution system.

approved software modifications

Computer code which has been developed, thoroughly tested and approved prior to field implementation.

apron/ramp

A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.

apron (ICAO)

A defined area, on land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking or maintenance.

APULS

An automatic device used to transmit in sequence the two letter T/D (Transmitter/Distributor Unit) "start'' functions of the stations on multi-terminal teletypewriter circuits. It can also be programmed to send relay check messages to the circuit. See Transmitter/Distribute Unit (T/D).

arc

The track over the ground of an aircraft flying at a constant distance form a NAVAID by reference to distance measuring equipment (DME).

architecture

The overall conceptual design of a system.

Arctic air

An air mass with characteristics developed mostly in winter over Arctic surfaces of ice and snow. Arctic air extends to great heights, and the surface temperatures are basically, but not always, lower than those of polar air.

Arctic front

The surface of discontinuity between very cold (Arctic) air flowing directly from the Arctic region and another less cold and, consequently, less dense air mass.

area

A specified geographical location. The term includes both land and water.

area B

Low-speed (100 wpm) multi-point teletypewriter communication circuits connecting certain FAA facilities within each ARTCC area boundary. Each Area B circuit consists of a loop of TTY terminals. Transmission from individual stations is in sequence, controlled by an APULS. See Loop, service B.

1. area B TTY -- A teletypewriter circuit (network) to which FAA Flight Service Stations are connected.

Area Control Facility/ACF

A facility which resulted from the consolidation of ARTCC and TRACON/TRACAB facilities. An ACF may be formed from an existing ARTCC or may be created in a new building. The number, location, and implementation dates of ACFs will be in accordance with the NAS Plan.

1. ACF support meteorologist -- A meteorologist stationed at each ACF with equipment organized for the purpose of detecting, displaying and disseminating weather information in a timely manner.

area knowledge

The knowledge of current procedures, operation of equipment, letters of agreement and any other subject pertinent to an ATC facility or area of specialty

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 capability. Random Area Navigation routes are direct routes, based on area navigation capability, between waypoints defined in terms of latitude/longitude coordinates, degrees/distance fixes, or offsets from published or established routes/airways at a specified distance and direction. See RNAV.

1. Area Navigation (ICAO) -- A method of navigation which permits aircraft operating on any desired flight path within the coverage of stations-referenced navigation aids or within the limits of the capability of self-contained aids or a combination of these.

The major types of equipment are:

1. VORTAC referenced or Course Line Computer/CLC systems which account for the greatest number of RNAV units in use. To function, the CLC must be within the service range of a VORTAC.

2. OMEGA/VLF, although two separate systems, can be considered as one operationally. A long-range navigation system based upon Very Low Frequency radio signals transmitted from a total of 17 stations worldwide.

3. Inertial/INS systems, which are totally self contained and require no information from external references. They provide aircraft position and navigation information in response to signals resulting from inertial effects on components within the system.

4. MLS Area Navigation, which provides area navigation with reference to MLS ground facilities.

5. LORAN-C is a long-range radio navigation system that uses ground waves transmitted at low frequency to provide user position information at ranges of up to 600 to 1200 nautical miles at both en route and approach altitudes. The usable signal coverage areas are determined by the signal-to-noise ratio, the envelope-to-cycle difference, and the geometric relationship between the positions of the user and the transmitting stations.

area route

Each area low route is based on a centerline that extends from one waypoint to another waypoint (or through several waypoints) specified for that area low route. An area low route does not include the airspace of a prohibited area. All mileage specified in connection with area low routes are nautical miles and are normally limited to that airspace within parallel boundary lines 4 or more nautical miles on each side of the route centerline defined by a line from a reference facility to a tangent point on the centerline plus the additional airspace outside of those parallel lines and within lines drawn outward from those parallel lines at an angle of 3.25°, beginning at a specified distance from the tangent point.

Each area low route includes that airspace extending upward from 1,200 feet above the surface of the earth to but not including 18,000 feet MSL, except that area low routes for

Hawaii have no upper limits. Variations of the lower limit of an area low route are expressed in digits representing hundreds of feet above the surface (AGL) or mean sea level (MSL) and, unless otherwise specified, apply to the route segment between adjoining waypoints used in the description of the route. The airspace of an area low route within the lateral limits of a transition area has a floor coincident with the floor of the transition area.

1. Area Navigation/RNAV route, designated -- An RNAV route, based on the current high altitude or low altitude VOR/DME coverage, as designated by the Administrator.

2. Area Navigation/RNAV route, established -- A predefined en route segment, arrival or departure route (including RNAV SIDS and STARS).

Area Positive Control/APC

Exists in the continental U. S. above 24,000 feet (18,000 feet in the Northeast corridor). Only IFR operations, with the required increased level of avionics and pilot proficiency (IFR rating), are allowed at these altitudes. See positive control airspace, airport control zone, positive control area.

Aries, first point of

That point on the equinoctial where the sun moving along the ecliptic passes from south to north declination. Also known as vernal equinox.

ARINC (Aeronautical Radio Incorporated)

An independent corporation which provides high speed data and radio communication services to it its subscribers.

arithmetic, fixed point

(1) A method of calculation in which operations take place in an invariant manner, and in which the computer does not consider the location of the radix point. This is illustrated by desk calculators or slide rules, with which the operator must keep track of the decimal point. Similarly with many automatic computers, the location of the radix point is the programmer's responsibility. Contrasted with (arithmetic, floating point). (2) A type of arithmetic in which the operantes and results of all arithmetic operations must be properly scaled, so as to have a magnitude between certain fixed values.

arithmetic, floating point

A method of calculation which accounts automatically for the location of the radix point. This is usually accomplished by handling the number as a signed mantissa multiplied by the radix raised to an integral exponent; e.g., the decimal number + 88.3 might be written as $+.883 \times 10^2$; the binary number - .0011 as $-.11 \times 2$. Synonymous with floating decimal arithmetic.

Armed Forces

The Army, Navy, Air Force, Marine Corps and Coast Guard, including their regular and reserve components and members serving without component status.

Army Aviation Flight Information Bulletin/USAFIB

A bulletin that provides air operation data covering Army, National Guard, and Army Reserve aviation activities.

arresting system

A safety device consisting of two major components, namely, engaging or catching devices and energy absorption devices for the purpose of arresting both tail-hook and/or non-tail-hook equipped aircraft. It is used to prevent aircraft from over-running runways when the aircraft cannot be stopped after landing or during aborted takeoffs. Arresting systems have various names; e.g., arresting gear, hook device, wire barrier cable. See abort. (Refer to AIM)

arrival aircraft interval/AAI

An internally generated program in hundredths of minutes based on AAR. AAI is the desired optimum interval between successive arrival aircraft over the vertex.

arrival center

The ARTCC having jurisdiction for the impacted airport.

arrival delay/ADLY

A parameter which specifies a period of time in which no aircraft will be metered for arrival at the specified airport.

arrival flow model

A narrative and graphical representation of arrival routes and associated procedures that will be used as a base to develop a local flow traffic management program.

arrival message

A message stating the actual arrival times of aircraft at a particular airport.

arrival sector

An operational control sector containing one or more meter fixes.

arrival sector advisory list

An ordered list of data on arrivals displayed at the PVD of the sector which controls the meter fix.

arrival time

The time an aircraft touches down on a runway.

ARTCC

See Air Route Traffic Control Center.

artificial constraints

Any imposed procedural limitations to the physical capacity of a facility, including allowances for blunders, weather conditions or gross errors.

artificial line

A series of electrical networks whose characteristics approximate those of a transmission line.

artificial radars

See compartmentalized radars.

as required

Used as a scheduling term, meaning whenever the need has been detected.

ASCII

An acronym for American Standard Code for International Interchange. It is the accepted term, although a more recent title is USA Standard Code for Information Interchange/USASCII. It has 128 possible information and function combinations and is pronounced "askee." See eight-level code.

1. ASCII code -- An 8-bit code (7 bits plus parity). There are 128 code positions, 95 for graphics and 33 for control. Accepted as the international data code, with the Name International Standard Code for Information Interchange (ISCII). ASCII and ISCII are identical except for some bits for national code.

aspect ratio

The ratio of the video (display) frame width to the frame height.

ASR approach

See surveillance approach.

asset class

A classification of in-use personal property which generally identifies and groups like items.

assembler

Translates and assembles programs written in symbolic language into the machine language code of the computer and produces a symbolic listing of the program including a listing of all tags used in the program together with all references.

assembler, adaptation

The Adaptation Controlled Environmental System (ACES) which is a data assembly program which formats input environmental data into the proper tables for use by the Operational Computer Program.

assembly

Two or more parts or sub-assemblies joined together to perform one or more elementary functions not normally subject to disassembly without losing designed function.

assembly language

A machine oriented language used for programming a computer.

assessable unit

A major program or function of an organization, or a subdivision of that program/function, which is to be the subject of a vulnerability assessment.

assessment

A determination of the amount of reliability and maintainability existing within an item, i.e., system, equipment, component.

assigned altitude

The currently authorized altitude for an active flight.

assigned magnetic variation

THe magnetic variation assigned to a VOR facility, and to which it is aligned. It is not necessarily the same as the actual value of magnetic variation at the VOR facility location. Therefore, the charted radials emanating from the facility will not necessarily coincide with a magnetic bearing of the same value.

assistance request

A request for assistance, normally by a pilot to ATC, but it could also be from an FSS specialist or controller.

1. assistance request transmission -- The transmission of an assistance request over a radio frequency link that uses air (free space) as the communications medium.

association

Current positional agreement between a track and its paired flight plan. Association is measured in coordinates based on the flight plan position and velocity. Longitudinal association and lateral association are measured in nautical miles.

1. associated tracks -- Military training route alternate entry, primary entry, climb-out and re-entry tracks.

2. association area -- Area of parametrically controlled dimensions, bi-symmetrically located about the flight plan position.

3. association status determination -- A process which measures the degree of association between a track and its paired flight plan by determining whether or not the track position is within the association area.

4. association status indicator -- Association status is determined by the Association Checking task for all matched flight plans. The Association Status is set to one of the following: (a) Inside, (b) Out laterally, (c) Out longitudinally and (d) None

assumed position/AP

The geographical position upon which a celestial solution is based.

assurance

The relative confidence or certainty that specific program objectives will be achieved.

astrodome

A transparent bubble mounted on the top of an aircraft fuselage through which celestial observations are taken.

astronomical triangle

A triangle on the celestial sphere bounded by the observer's celestial meridian, the vertical circle, and the hour circle through the body, and having as its vertices the elevated pole, the observer's zenith and the body.

astronomical twilight

See twilight.

asynchronous

Having a variable time interval between successive bits, characters or events. The term asynchronous is usually applied to serial start-stop transmission.

ATC advises

Used to prefix a message of non-control information when it is relayed to an aircraft by other than an air traffic controller. See advisory.

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. See military operations area, alert area.

ATC clears

Used to prefix an ATC clearance when it is relayed to an aircraft by other than an air traffic controller.

ATC instructions

Directives issued by air traffic control for the purpose of requiring a pilot to take specific actions; e.g., "Turn left heading two five zero," "Go around," "Clear the runway." (Refer to FAR Part 91)

ATC requests

Used to prefix an ATC request when it is relayed to an aircraft by other than an air traffic controller.

ATC special list

A series of automatically generated reference items which are required to be readily available to the controller for the conduct of ATC. Examples would be arrival aircraft lists, departure aircraft lists and assigned beacon code lists.

atmospheric pressure

(1) pressure exerted by the atmosphere as a consequence of gravitational attraction exerted upon the column of air lying directly above the point in question (barometric pressure). (2) Air pressure.

atmospherics

(1) Disturbing effects produced in radio receiving apparatus by atmospheric electrical phenomena such as electrical storms. (2) Static.

attempt

To try a course of action without predicting the results, as when trying to establish communications with an aircraft.

attenuation

In radar, any process which reduces power density in radar signals.

1. attenuation distortion -- The difference in loss at one frequency (radio) with respect to the loss at another frequency. Attenuation distortion is specified by placing a limit on the frequencies, in a specific band of frequencies with respect to the loss at a reference frequency (1004 Hz).

2. precipitation attenuation -- Reduction of power density because of absorption or reflection of energy by precipitation.

3. range attenuation -- Reduction of radar power density because of the distance from the antenna. It occurs in the outgoing beam at a rate proportional to $1/range^2$. THe return signal is also attenuated at the same rate.

audit

(1) To conduct the independent review and examination of records and activities in order to test for adequacy of system controls, to ensure compliance with established policy and operational procedures and to recommend any indicated changes in control, policy or procedures. (2) Examination and verification of the documentary evidence, or any part thereof, supporting an item of project cost for which a sponsor has applied for payment.

1. audit trail -- A chronological record of system activities which is sufficient to enable the reconstruction, review and examination of the sequence of environments and activities surrounding or leading to each event in the path of a transaction from its inception to output of final results.

audio-visuals

All preparation, production and distribution of copy, film, tape and other material intended for use by electronic public broadcast (radio and Television) media.

aural null

The determination by ear of the point of zero or minimum audio signal from a radio compass, which occurs when the receiver radio signal picked up by the two sides of the rotatable loop antenna cancel one another. This point indicates that the plane of the loop is perpendicular to the

direction of the transmitted signal and is used as a means of determining radio bearing in flight.

aurora

A luminous, radiant emission over middle and high latitudes confined to the thin air of high altitudes and centered over the earth's magnetic poles. Called "aurora borealis," "northern lights," or "aurora australis" according to its occurrence in the Northern or Southern Hemisphere, respectively.

authentication

(1) The act of identifying or verifying the eligibility of a station, originator or individual to access specific categories of information. (2) A measure designed to provide protection against fraudulent transmissions by establishing the validity of a transmission, message, station or originator.

1. authenticator -- (1) The means used to identify or verify the eligibility of a station, originator or individual to access specific categories of information. (2) A symbol, a sequence of symbols, or a series of bits that are arranged in a predetermined manner and are usually inserted at a predetermined point within a message or transmission for the purpose of an authentication of the message or transmission.

authorization

The granting to a user, a program or a process the right of access.

1. authorized persons -- Those persons who have a need-to-know for the classified information involved and who have been determined to be trustworthy by an official authorized to make such a determination.

2. authorizing organization -- An organizational element which is responsible for the approval, implementation (including funding), and documentation of an action.

auto-boot

The process of automatically loading an operating system into a computer's memory at power up or after resetting the computer. See boot.

auto-land approach

A precision instrument approach to touchdown and in some cases, through landing roll-out. An auto-land approach is performed by the aircraft autopilot which is receiving position information and/or steering commands from on-board navigation equipment. Auto-land and coupled approaches are flown in VFR and IFR. See coupled approach.

Automated Flight Service Station/AFSS

A station that provides interactive alphanumeric and graphic work stations for the flight service specialists.

automated mode

Flight data processing as accomplished with the use of the NAS computer.

Automated Airport Information System/AAIS

1. AAIS messages -- Messages generated by FSS specialists for broadcast at non-tower airports. THese messages could include information such as preferred runway, runway closures, recommended traffic patterns, airport common traffic advisory frequency plus other useful information such as availability of fuel, how to turn on runway lights, etc.

automated data processing

Data processing performed largely by automatic means; for example, by a system of electronic or electrical machines, including input, processing and output operations.

Automated Information System/AIS

An assembly of computer equipment, facilities, personnel, software and procedures configured for the purpose of storing, calculating, computing, summarizing, storing and retrieving data and information with a minimum of human intervention. Automated Information Systems are generally of two types: general purpose systems; which support the management of resources, perform administrative data processing functions or facilitate internal administrative communications, and special purpose systems; which include systems used in the actual or simulated control of air traffic, those used for the development of ATC software and those which support ATC operations by performing communications processing and message switching functions.

1. AIS activity -- Any facility, installation, room, area or building housing AIS equipment and where computer processing activities occur. See central computer complex.

2. AIS security -- The hardware/software functions, characteristics and features; operational procedures, accountability procedures and access controls at a central computer facility, remote computer and terminal facilities; and the management constraints, physical structure, and devices; personnel and communications controls needed to provide an acceptable level of protection for a computer system.

Automated Radar Terminal System/ARTS

The generic term for the ultimate in functional capability afforded by several automation systems. Each differs in functional capabilities and equipment. ARTS plus a suffix roman numeral denotes a specific system. A following letter indicates a major modification to that system. In general, an ARTS displays for the terminal controller aircraft identification, flight plan data, other flight associated information; e.g., altitude, speed, and aircraft position symbols in conjunction with a radar presentation. Normal radar co-exists with the alphanumeric display. In addition to enhancing visualization of the air traffic situation, ARTS facilitates intra/inter-facility transfer and coordination of flight information. These capabilities are enabled by specially designed computers and sub-systems tailored to the radar and communications equipment and operational requirements of each automated facility. Modular design permits adoption of improvements in computer software and electronic technologies as they become available while retaining the characteristics unique to each system.

1. ARTS I -- A system originally installed at Atlanta Tower, by UNIVAC (UNISYS) under contract to FAA. The genesis of this system, which is no longer operational, was the Navy Tactical Data System/NTDS.

2. ARTS IA -- A system, which is no longer operational, was installed in the New York Common IRF Room. It was a multi-radar version of the ARTS I.

3. ARTS II -- A programmable non-tracking, computer aided display sub-system 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.

The system has the capability of communicating with ARTCC's and other ARTS II, IIA, III and IIIA facilities.

4. ARTS IIA -- A programmable radar-tracking computer subsystem capable of modular expansion. The ARTS IIA detects, tracks, and predicts secondary radar targets. The targets are displayed by means of computer-generated symbols, ground speed, and flight plan data. Although it does not track primary radar targets, they are displayed coincident with the secondary radar as well as the symbols and alphanumerics. THe system has the capability of communicating with ARTCC's and other ARTS II, IIA, III, and IIIA facilities.

5. ARTS III -- The Beacon Tracking Level/BTL of the modular programmable automated radar terminal system in use at medium to high activity terminals. ARTS III detects, tracks, and predicts secondary radar-derived aircraft targets. These are displayed by means of computer-generated symbols and alphanumeric characters depicting flight identification, aircraft altitude, ground speed, and flight plan data. Although it does not track primary targets, they are displayed coincident with secondary radar as well as the symbols and alphanumerics. The system has the capability of communicating with ARTCC's and other ARTS III facilities.

6. ARTS IIIA -- The Radar Tracking and Beacon Tracking Level/RT&BTL of the modular programmable automated radar terminal system. ARTS IIIA detects, tracks, and predicts primary as well as secondary radar-derived aircraft targets. This more sophisticated computer driven system upgrades the existing ARTS III system by providing improved tracking, continuous data recording, and fail-soft capabilities.

automated security monitoring

The use of automated procedures to ensure that the security controls implemented within an Automated Information System are not circumvented.

Automated Traffic Information Service/ATIS

1. ATIS broadcast -- A continuous broadcast of ATIS messages will be provided using (RF) signals transmitted through the air (free space). Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive message broadcasts.

2. ATIS data -- Non-control information, other than weather, required by pilots operating within a tower-controlled airport area which is manually entered by a controller.

3. ATIS message -- Complete non-control message, including weather required by pilots operating within a tower-controlled airport area.

Automated Weather Observing System/AWOS

The system is composed of meteorological sensors, a computer processor with appropriate software, voice synthesizer, and a communication link. The basic sensors provide wind, temperature, dew point, pressure (altimeter setting), precipitation intensity, visibility and cloud height.

1. airport surface weather broadcast -- The continuous (computer synthesized voice) broadcast of a combination of AWOS and other weather messages using RF signals transmitted through the air (free space).

2. airport surface weather message -- An electronic or hard copy message that contains a combination of AWOS and other surface aviation weather information.

3. alphanumeric weather information -- Any non-graphic weather data (surface weather observations, forecasts, advisories, etc.).

4. AWOS data -- Information such as ceiling, visibility, wind direction and speed, temperature, dew point, barometric pressure, and precipitation occurrence and accumulation which is automatically sensed and gathered.

5. AWOS voice message -- A computer generated voice message containing AWOS data.

automatic altitude reporting

That function of a transponder which responds to Mode C interrogations by transmitting the aircraft's altitude in 100 foot increments.

Automatic Carrier Landing System/ACLS

U. S. Navy final approach equipment consisting of precision tracking radar coupled to a computer data link to provide continuous information to the aircraft, monitoring capability to the pilot, and a backup approach system.

Automatic Dependent Surveillance/ADS

Surveillance of an aircraft based on position data obtained and reported automatically by the aircraft.

Automatic Direction Finder/ADF

(1) An aircraft radio navigation system which senses and indicates the direction to a L/MF non-directional radio beacon/NDB ground transmitter. Direction is indicated to the pilot as a magnetic bearing or as a relative bearing to the longitudinal axis of the aircraft depending on the type of indicator installed in the aircraft. In certain applications, such as military, ADF operations may be based on airborne and ground transmitters in the VHF/UHF frequency spectrum. (2) The airborne receiving equipment which utilizes non-directional beacons. The ADF used with an NDB is a radio receiver that determines the bearing from the aircraft to the transmitting station. Use of the "H" facility requires a directional antenna for reception of the signal. A directional antenna is one that conducts radio signals more efficiently in one direction than in others. A single-wire vertical antenna ("sense" antenna) is non-directional in that it conducts received or transmitted signals with equal efficiency in all directions. A loop of wire, or two wires suitably connected, have important directional characteristics for transmission or reception. ADF Directional antennas normally are loops which sense direction by comparison of voltages. Such antennas cannot sense whether the station is behind or ahead, or to the left or right. This characteristic of loop reception is called ambiguity. By combining the properties of the loop antenna with those of a sense antenna, the direction of the incoming signal is resolved so that the ADF indicator continuously shows the relative bearing of the transmitting station. See bearing, Non-Directional Beacon, low/medium frequency.

Automatic Overload Control/AOC

Transponder circuits that limit the reply rate to a preset level to control system performance.

automatic program unit

A device used primarily to control teletypewriter circuit traffic. Control is accomplished through electronic transmission of groups of characters which actuate equipment locally and at remote stations. Low-speed units (APULS) are used for polling 100 wpm circuits and high speed units (APUHS) are used for polling certain high traffic interchange circuits. See Loop.

automatic relay installation

A teletypewriter installation where automatic equipment is used to transfer messages from incoming to outgoing circuits.

automatic send-receive set/ASR

As applied to a teletypewriter set, consists of a printer, keyboard, tape handling equipment, and line relay group (selective signaling) equipment. The ASR is a complete message center and is the standard telecommunication device for administrative, weather, AUTODIN, AMOS,CCC and ARTS application. Most often used in half-duplex circuits.

automatic tape relay

A method of communicating whereby messages are received and transmitted in teletypewriter tape form without manual intervention.

Automatic Terminal Information Service/ATIS

The continuous broadcast of recorded non-control information in selected high activity terminal areas. Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive transmission of essential but routine information; e. g., "Los Angeles information Alpha. One three zero Coordinated Universal Time. Weather, measured ceiling two thousand overcast, visibility three, haze, smoke, temperature seven one, dew point five seven, wind two five zero at five, altimeter two niner niner six, ILS Runway Two Five Left approach in use, Runway Two Five Right closed, advise you have Alpha." (Refer to AIM)

Automatic Terminal Information Service (ICAO)

The provisions of current, routine information to arriving and departing aircraft by means of continuous and repetitive broadcasts throughout the day or a specified portion of the day.

automatic track initiation

The programmed initiation of a track upon receipt of a discrete beacon radar datum matching a code assigned to an aircraft.

automatic track life

A measure of the time that correct, automatic tracking of a radar data trail is maintained relative to the total control life of the flight, i.e., the amount of time under the center's control. See track life.

automatic tracking

See tracking.

automatic update

An update of time information in a flight plan carried out automatically by the computer as a result of its having detected an "out of association longitudinally" condition. See update.

Automatic Voice Network/AUTOVON

A military voice communications switching system.

automation documentation

Test programs, exercise/checkout data and other information used as part of system/equipment technical performance data.

autorotation

A rotocraft flight condition in which the lifting rotor is driven entirely by action of the air while the rotor craft is ion motion.

1. autorotative landing/touchdown autorotation Used by a pilot to indicate that he will be landing without applying power to the rotor.

2. low level autorotation -- Commences at an altitude well below the traffic pattern, usually below 100 feet AGL and is used primarily for tactical military training.

3. 180 degree autorotation -- Initiated from a downwind heading and is commenced well inside the normal traffic pattern. "Go around" may not be possible during the latter part of this maneuver.

auxiliary rotor

A rotor that serves either to counteract the effect of the main rotor torque on a rotocraft or to maneuver the rotocraft about one or more of its three principal axes.

auxiliary station line filter

A line filter for use at repeated points to separate frequencies of different carrier systems that are using the same line pair. For example, such a filter might be used at a high-frequency carrier system repeater to bypass low-frequency carrier systems and voice frequencies around the repeater.

availability

(1) The probability that a material, component, equipment, system or process is in its intended functional condition at a given time and therefore is either in use or capable of being used under a stated environment. (2) A measure of the probability that an end item is in an operable state and capable of performing its required functions during any and all required operating times. Equipment availability (A) includes Mean-Preventive-Maintenance Time (MPMT) in some instances, and in others it only includes unscheduled maintenance. Both definitions are generally accepted provided they are used separately and in context. The two definitions being referred to are inherent availability (AIR) and operational availability (AO). See maintainability, mean up time, reliability.

1. availability achieved/A_a -- The probability that a system is operating satisfactorily at any point in time when used under stated conditions, where the time considered includes operating and active repair time along with preventive maintenance downtime.

2. availability allocation -- The inherent availability values of the specification were developed to: establish quantitative system requirements, allocate or apportion to lower levels (i.e.. Sub-systems or projects); i) Identify functional services that include specific sub-systems as: critical, essential or routine; operationally, ii) Evaluate comparative sub-system complexities, iii) Utilized functional string diagrams and basic source of reliability block diagrams and iv) Evaluate each functional string backups, adjust allocations to use or minimize changes to sub-system/projects availabilities that are fielded or on contract.

3. inherent availability/AIR/A_i -- (1) A measure of availability that includes only the effects of an item design and its application. and assumes an ideal operation and support environment (i.e.. no logistics travel time). (AIR is considered to be the design requirement.) (2) The probability that a system or

equipment when used under stated conditions, without consideration for any scheduled or preventive maintenance in an ideal support environment (that is, available tools, parts, manpower, manuals, etc.), shall operate satisfactorily at any given time, supply down time, and waiting or administrative down time. It may be expressed as AIR = MTBF/(MTBF + MTTR). (3) The availability potential of a given design configuration under ideal support conditions i.e., no logistics waiting time. See below and mean time to repair.

4. operational availability/AO/A_o -- (1) A measure of availability that includes the combined effect of item designs, application, operation, maintenance, and repair (including logistics travel time etc.). (2) The probability that a system or equipment when used under stated conditions and in actual supply environment shall operate satisfactorily at any time. It may be expressed as A = MTBM/(MTBM + MDT); where MTBM is the mean-time-between-maintenance and ready time during the same interval, and MDT is the mean-down-time, including supply down time, administrative maintenance down time, etc., during the same interval. When preventive maintenance down time is zero or not considered, MTBM becomes MTBF. Ready time is defined as the period of time that an item is available for operation, but is not required. (2) The probability that a system is operating satisfactorily at any point in time when used under stated conditions, where the time considered included operating, active repair time, preventive maintenance downtime and an additional term which is the time accumulated by those circumstances that combine to delay the active repair process.

5. mean down time/MDT -- The amount of mean time that it takes to do a repair of a failure on an item that is not redundant. This time includes any logistical (i.e., travel time) and the MTTR to return the item to an operational state.

6. mean switch-over time/MST -- The amount of mean time that an item can take to transfer from a non-operating to an operating side of redundant portions of the item.

7. mean-time-between-failure/MTBF -- A basic measure of reliability for repairable items: the mean number of life units during which all parts of the item perform within their specified limits, during a particular measurement interval under stated conditions.

8. mean-time-to-repair/MTTR -- A basic measure of maintainability: the sum of corrective maintenance times,

divided by the total number of failures within an item. Corrective maintenance is all actions performed as a result of a failure in an end item. Corrective maintenance can include any or all of the following steps: localization, isolation, disassembly, interchange, reassembly, alignment, and checkout.

9. reliability -- The probability or duration that a unit, element or function will perform, failure free, under specified operational stress and environmental conditions during a specified period of time. This includes hardware and software elements.

10. service/achieved availability -- A measure of availability obtained as a result of measured field operating data (i.e., for identifying projected availability requirements, the service/achieved availability can be considered synonymous with operational availability).

11. unavailability -- When a failure event, inoperable state or system degradation, has occurred in which any end item or part thereof does not, or would not, perform per specified operating requirements.

available seat miles/ASM

The aircraft miles flown in each flight stage multiplied by the number of seats available on that stage for revenue passenger use.

availability state

A set of mutually exclusive descriptors which determines (a) under whose control changes in a module's configuration assignment are made and (b) the configuration (operational or non-operational) to which the module currently is assigned. A module or unit may exist in any one of the following mutually exclusive states:

1. inactive -- A module which is logically, if not electrically, isolated from all other modules; it is not configured. Manual intervention is required to configure it to other modules.

2. operational -- A module whose configuration assignment is under the control of the operational executive program and whose current assignment is in the operational configuration.

3. redundant -- A module whose configuration assignment is under the control of the operational executive program,

but which is not required to perform some operational function. The module may be used in some non-operational task and may be preempted without manual intervention if the redundant module is required by the operational configuration.

4. test -- A module whose configuration assignment is not under the control of the operational executive progran and which is available to perform some non-operational function. Manual intervention is required to make the module available to the operational configuration.

availability status

A classification scheme for monitoring the functional capacity of a sub-system and for indicating how quickly spare capacity can be utilized. The status categories of this scheme are:

1. available -- Modules in the redundant, test, or inactive states which could be assigned to the operational configuration through normal re-configuration procedures (manual, semi-automatic, and/or automatic).

2. operational -- Modules currently in the operational state.

3. unavailable -- Modules in the test or inactive states which require more than normal reconfiguration procedures to use them in the operational configuration. Such status arise because of: actual or suspected internal failure, module power off, or physical disconnection.

AVANA

A term used by ATC to advise an aircraft that the ALTRV is automatically canceled at a specified time (ALTRV APVL void for aircraft not airborne by (time)).

Aviation Weather Service/AWS

A service provided by the National Weather Service/NWS and FAA which collects and disseminates weather information for pilots, aircraft operators, and ATC. Available aviation weather reports and forecasts are displayed at each NWS office and FAA FSS. See En Route Flight Advisory Service, Transcribed Weather Broadcast, weather advisory, Pilots Automatic Telephone Weather Answering Service. (Refer to AIM)

azimuth

A magnetic bearing extending from a navigational facility. Note: azimuth bearings are described as magnetic and are referred to as "azimuth" in radio telephone communications.

azimuth angle/Z

The interior angle of the astronomical triangle at the zenith measured from the observer's meridian to the vertical circle through the body.

azimuth change pulse

Least quantum value of azimuth converted from angular displacement in degrees to binary value in CD output (4096 ACP's = 360°).

azimuth information

Information, used by a pilot making an approach, that indicates where the aircraft is horizontally relative to the approach runway centerline.

azimuth reference pulse

True north (zero'th) azimuth change pulse.

azimuth stabilization

Orientation of the picture on a radar scope so as to place true north at the top of the scope.

B-line

An adapted line segment that may generate a fix posting when intersected by a direct route segment.

babble

The aggregate crosstalk from a large number of disturbing channels.

back lobe

The lobe of a radar signal that extends in the opposite direction from the main lobe. The back lobe is usually stronger than the side lobe.

back-to-back connections

Normally refers to a direct connection from the voice-frequency drop of one carrier channel to the voice-frequency drop of another.

backbone network

That portion of a telephone communication system which provides access to, and distribution of, local circuits to a number of geographical locations.

backing

Shifting of the wind in a counter-clockwise direction with respect to either space or time; opposite of veering. Commonly used by meteorologists to refer to a cyclonic shift (counter-clockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.

backscatter

(1) Pertaining to radar, the energy reflected or scattered by a target. (2) An echo.

backup

A copy of data or a computer program which is maintained (external to the computer system) in the event the original is damaged or destroyed.

1. backup device -- The physical device adapted as backup to another physical device; manually or automatically reconfigured. See reconfiguration.

basegroup

A term designating a number of carrier channels in a particular frequency range that forms a basic unit for further modulation to a final frequency band. In a Lenkurt 45-class carrier system, a basegroup is 12 voice channels occupying a frequency range from 40 to 88 kHz.

baseline

(1) The standard configuration on which a system is based. It assures commonality and compatibility of like systems from facility to facility. (2) The shorter arc of the great circle joining the master and slave Loran stations.

baseline configuration

The identification of the National Airspace System (NAS) and the program elements by technical description, detailed specifications, applicable engineering drawings, and other documentation which governs those aspects that are independent of site locations.

basic data

Data transmitted by the ground equipment which is associated directly with the operation of the landing guidance system, and advisory data on the MLS ground equipment performance level.

basic flight maneuvers/BFM

The maneuvers in which a combat pilot must be skilled in order to effectively employ his weapons system in air combat or defensive combat maneuvering.

basic input/output system/BIOS

A program in a computers ROM which provides control procedures for all system hardware and peripherals, including the keyboard, video display, disk drives and printer.

Basic Sector plan

Basic Sector plan is Sector Plan 00, the plan in which each FPA is assigned to the sector identified by the first two digits of the FPA number.

batch processing

The computer processing environment characterized by the submission of program(s) and data of jobs along with computer control information describing what the system is designed to perform. The computer stores this information in files in a queue for processing. After a delay for the processing of other jobs in the queue, the processing of the job is completed, and the output of the job is distributed according to the user's instructions. Batch processing is typified by a very low degree of user interaction with the job.

baud

(1) A unit of modulation rate. This unit of signaling speed is an equal length code, one baud corresponds to a rate of one signal element per second. (2) A data communications speed equal to the number of code elements transmitted per second per character. The unit of signalling speed equal to twice the number of Morse code dots continuously sent per second. For TTY, the speed in bauds is the number of code elements per second. Thus, bits/character x characters/seconds = bauds e.g., 7.42 bits/char. x 10.1 char./sec. = 75 baud. S

1. baud rate -- The rate at which information is transmitted between a computer and an external device such as a printer modem or other serial device.

2. baudot code -- A 5-level teletypewriter code consisting of a start impulse and five character impulses, all of equal length, and a stop impulse whose length is 1.42 times that of each other impulse. Also known as the 7.42 unit code or the 5-level code. Used in Model 28 teletype equipments. See bit, five-level.

bay

One of the major storage sub-divisions in a stockroom, separately identified from other bays and outlined by markings on columns, posts or floor.

beacon

(1) A ground navigational light, radio or radar transmitter used to provide aircraft in flight with a signal to serve as a reference for the determination of accurate bearings or positions. (2) Secondary radar.

1 beacon antenna -- An antenna system that radiates radio or radar energy in such a way as to act as a beacon for navigation purposes. See radio beacon, radar beacon.

2. beacon altitude -- A mode C derived altitude.

3. beacon interrogation -- A signal, transmitted by a ground based beacon radar sensor, that causes transponders to transmit a reply.

4. beacon radar surveillance data -- Information, received by a beacon radar receiver, consisting of transponder replies that are used to determine the location of transponder equipped aircraft. This information could also include beacon code and aircraft altitude.

5. beacon replies -- Signals generated by a beacon transponder in response to a beacon interrogation signal. This signal consists of a pulse train transmitted from the aircraft transponder that is received by the beacon radar sensor on the ground.

6. beacon video -- The analog output from a beacon radar receiver containing the pulse coded responses from replying transponders.

See non-directional beacon, marker beacon, airport rotating beacon, aeronautical beacon, airway beacon.

beam

Focused electro-magnetic radiation, i.e., radar beam.

1. beam sharpening -- An effective reduction in the width of the main beam of an interrogator due to the use of side lob suppression.

2. beam splitting -- In the Common Digitizer, a technique for computing the center-of-target azimuth utilizing the normal detector and special detector data.

beam resolution

See resolution.

beam width

The effective width in azimuth of radiation from an antenna.

1. beam width error -- An azimuth distortion of a radar display caused by the width of the radar beam.

bearing

(1) The horizontal angle at a given point, measured clockwise from a specific reference datum (true north, magnetic north, or some other reference point through 360°) to a second point. (2) The direction of an object relative to a line between the airplane and north (magnetic or true).

1. magnetic bearing/MB -- The horizontal angle at a given point, measured from magnetic north, clockwise, to the great circle through an object or body and the given point.

2. relative bearing/RB -- The horizontal angle at the aircraft measured clockwise from the true heading of the aircraft to the great circle containing the aircraft and the object or body.

3. true bearing/TB -- The horizontal angle at a given point measured from true north clockwise to the great circle passing through the point and the object or body.

Beaufort scale

A scale of wind speed.

bellamy drift

The net drift angle of an aircraft calculated between any two pressure soundings.

below minimums

Weather conditions below the minimums prescribed by regulation for the particular action involved; e. g., landing minimums, takeoff minimums.

bellcrank

(1) A bent lever, having its fulcrum at the bend and used to change direction of motion. (2) A lever having arms, which form an angle, and which has its fulcrum at the apex of the angle. It is normally used to change the direction of linear motion.

bent

A term indicating equipment is inoperative or unserviceable.

"best fit" return

The primary/beacon radar datum within the search area that is closest to the predicted track position; the datum with the smallest deviation.

beta particle

A charged particle emitted from the nucleus of an atom. It has the same mass and negative electric charge as an electron.

between the lines entry

Access, obtained through the use of active wire-tapping by an unauthorized user, to a momentarily inactive terminal of a legitimate user assigned to a communication channel.

bias

The effect of distortion whereby one type of pulse becomes longer while the opposite type of pulse is shortened.

1. bias distortion -- A form of teletypewriter distortion which displaces the space-to-mark transition.

biennially

A scheduling term, meaning every two calendar years (22 to 26 months).

bimonthly

A scheduling term, meaning every two calendar months, and at approximately sixty-day intervals (50 to 70 days).

binary/binary system

A characteristic, property, or condition in which there are but two possible alternatives; e.g., the binary number system using 2 as its base and only the digits zero (0) and one (1).

1. binary coded decimal/BCD -- A method of describing a decimal notation in which the individual decimal digits are represented by a pattern of 1 and 0's; for example, in the 8-4-2-1 code decimal notation, the number 12 is represented as 0001 0010 for 1 and 2 respectively, whereas in pure or straight binary notation it is represented as 1100.

bit

(1) An abbreviation of "binary digit," it is the smallest unit of information used by a computer, expressed as either a 0 or a 1. (2) A single character in a binary number. (3) A single pulse in a group of pulses. (4) A unit of information capacity of a storage device. The capacity in bits is the logarithm to the base two of the number of possible states of the device. One impulse, or the time interval normally occupied by one impulse. Five bits, plus a start bit and a stop bit, compose one character or function in baudot code.

1. bit, parity -- A check bit that indicates whether the total number of binary "1" digits in a character or word (excluding the parity bit) is odd or even. If a "1" parity bit indicates an odd number of "1" digits, then a "0" bit indicates an even number of them. If the total number of "1" bits, including the parity bit, is always even, the system is called an even parity system. In an odd parity system, the total number of "1" bits, including the parity bit is always odd.

2. bit, stream -- Referring to a binary signal without regard to grouping by characters.

bi-weekly

A scheduling term, meaning once every two calendar weeks, and at approximately fourteen day intervals (12 to 16 days).

black blizzard

Popular term for a dust storm.

blanking

The substitution for the picture signal, during prescribed intervals, of a signal whose instantaneous amplitude is such as to make the return trace invisible.

1. blanking level -- The level of the signal during the blanking interval. It coincides with the level of the base of the synchronizing pulse.

blast fence

A barrier that is used to divert or dissipate jet or propeller blast.

blind

Concealed or hidden.

1. 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.

2. blind video (ICAO) -- A radial velocity of a moving target such that the target is not seen on primary radars fitted with certain forms of fixed echo suppression.

3. blind spot/blind zone -- (1) An area from which radio transmissions and/or radar echoes cannot be received. (2) The term used to describe portions of the airport not visible from the control tower.

blinding

The automatic suppression of unwanted functions or selective calling signals (e.g. address codes of other than the local station) from appearances in printer copy or punched tape.

blip

(1) The display of a received pulse on a CRT (i.e. a spot of light representing a target). (2) An upward deflection of the trace representing a received signal. Also know as a pip..

1. blip/scan ratio -- Ratio of radar scans during which a target is detected to total number of radar scans during which a target is within the radar coverage. See radar input B/S.

blizzard

A severe weather condition characterized by low temperatures and strong winds bearing a great amount of snow, either falling or picked up from the ground.

blocked altitude

A range of altitudes encompassed by the lower and upper limits of the filed altitude (e.g., 280B310).

blockstacking

Stacking of similar containers in a block or in rows, with each container snugly positioned against the adjacent ones.

blowing dust

A type of lithometeor composed of dust particles picked up locally from the surface and blown about in clouds or sheets.

blowing sand

A type of lithometeor composed of sand picked up locally from the surface and blown about in clouds or sheets.

blowing snow

A type of hydrometeor composed of snow picked up from the surface by the wind and carried to a height of six feet or more.

blowing spray

A type of hydrometeor composed of water particles picked up by the wind from the surface of a large body of water.

blunder

Occurrence where, as a result of equipment malfunction or pilot error, an aircraft has exceeded safe tolerance from cleared route.

board

A printed circuit assembly which is mounted onto the chassis of a computer or other electronic device. Printed circuit cards may be plugged into a board. See card.

boot

The process of loading or transferring an operating system from a storage medium into a computers memory. See auto-boot.

boresight

The center of the main beam of a radar signal.

boundary

A limiting or dividing demarkation, i.e., airspace boundary.

1. boundary crossing point -- The point at a flight's altitude where a boundary crossing between two centers occurs.

2. boundary crossing time -- The time at which a flight is calculated to intersect the boundary crossing point.

boundary lights

See airport lighting.

bounds checking

Testing of computer program results for access to storage outside of its authorized limits. Synonymous with memory bounds checking.

bounds register

A hardware register which holds an address specifying a storage boundary.

bracket decoding

A type of decoding that provides a single-pulse display whenever a pair of bracket pulses are received regardless of the information pulses that lie between the bracket pulses. When this method of decoding is used, all aircraft using Mark X SIF and ATCRBS transponders in the coverage area will be displaying. See bracket pulses, Mark X SIF, Transponder.

bracket pulse pairs

Two pulses, uniquely spaced in time, between which are contained the beacon code pulses transmitted from an airborne beacon transponder. The first and last pulses of a transponder reply group that are present in all replies. When transmitted without the normal information pulses, the bracket pulses are designated Code 0-0-0-0. See bracket decoding.

brake horsepower

The power delivered at the propeller shaft (main drive or main output) of an aircraft engine.

braking action advisories

When tower controllers have received runway braking action reports which include the term "poor" or "nil" or whenever weather conditions are conducive to deteriorating are rapidly changing runway braking conditions, the tower will include on the ATIS broadcast the statement "BRAKING ACTION ADVISORIES ARE IN EFFECT." During the time braking action advisories are in effect, ATC will issue the latest braking action report for the runway in use to each arriving and departing aircraft. Pilots should be prepared for deteriorating braking conditions and should request current runway condition information if not volunteered by controllers. Pilots should also be prepared to provide a descriptive runway condition report to controllers after landing.

break

The process of interrupting or temporarily halting the execution of a computer program.

brevity lists

A code system that is used to reduce the length of time required to transmit information by the use of a few characters to represent long, stereotyped sentences.

bridging connections.

A connection across (in shunt with) a circuit. It is generally a connection of a high impedance device across a circuit so that the circuit is not loaded by the device.

bright band

In radar meteorology, a narrow, intense echo on the range height indicator scope resulting from water covered ice particles of high reflectivity at the melting level.

brightness

The attribute of visual perception in accordance with which an area appears to emit more or less light.

1. brightness control -- THe manual bias control of a CRT. The brightness control affects both the average brightness and the contrast of the picture.

brief

When one controller gives concise preparatory information concerning all sector activities to another controller.

BRITE

A vertical display mounted in an ATCT cab, which is used by air traffic personnel to assist them in the control of aircraft. The display operates in an ambient light environment.

broadband

The use of a wide frequency operation for the band pass of electronic commemoration equipment; usually in the megahertz range (as opposed to narrowband).

broadcast

Transmission of information for which an acknowledgement is not expected.

broadcast (ICAO)

A transmission of information relating to air navigation that is not addressed to a specific station or stations.

browsing

Searching through storage to locate or acquire information, without necessarily knowing of the existence or the format of the information being sought.

buffer

(1) An internal portion of a data processing system serving as intermediary storage between two storage or data handling systems with different access times or formats; usually to connect an input or output device with the main or internal high speed storage. (2) An isolating component designed to eliminate the reaction of a driven circuit on the circuits driving it; e.g., a buffer amplifier.

bug

The cause of a computer malfunction. The term "bug" refers to hardware faults as well as to errors in software and firmware programs which prevent the proper execution of a computer program.

bulk processing

A function which provides the capability to start or to end automatic input of flight data from the bulk store file of daily flight data.

1. bulk store file -- A storage medium, other than core, on which regularly scheduled flight plans are retained, in order of proposed departure time.

2. bulk store flight plans -- Flight plans for flights which are repetitive in nature, demonstrate a reasonable amount of stability in the flight's planned route, are scheduled to become operational at least one day each week and are stored in bulk for use by cardatype (off-line) or computer (on-line or off-line) equipped ARTCCs.

bulletin

A name given to a single publication covering description, operation, parts or maintenance.

burn in

A common form of a reliability screen where items (parts, assemblies or products) are operated prior to their ultimate application to stabilize their characteristics and to identify early failures.

burner

A term indicating that an aircraft is flying at maximum power (USAF).

burst

A code word signifying chaff drops at intervals long enough to appear on radar displays as individual target returns.

bushing

A metallic sleeve or cylinder inserted in a larger component of a machine. The bushing receives the wear caused by the moving part it supports and it is replaceable.

busy

A condition which exists when the position circuit(s) dialed by the calling party is in use.

1. busy line -- The condition of a signal line that is carrying intelligent pulses.

Buys Ballot's law

If an observer in the Northern Hemisphere stands with his back to the wind, lower pressure is to his left.

bypass filter

A filter that provides a low attenuation path for a particular frequency band around a piece of equipment. For example, a carrier frequency filter is used to bypass a physical telephone repeater.

byte

In computer usage, a generic term to indicate a measurable portion of consecutive binary digits (e.g., an 8-bit or 6-bit byte). or a group of binary digits usually operated upon as a unit. Address, instruction and data words are made up of bytes. In teletype usage, a group of characters/symbols, such as a code group or station address, which is recognized as a unit message or designation.

C-data

The comment (or "remarks") portion of a flight plan.

C-type conditioning

Conditioning for additional control of attenuation distortion and envelope delay distortion. Some kinds of C-type conditioning may be applied to a channel but may be combined with D-type conditioning.

calculated

To ascertain beforehand using arithmetical means.

1. calculated delay interval/CDI -- The period of time that a flight is calculated to hold or delay at a fix.

2. calculated time of arrival/CTA -- A calculated time of arrival for a flight over a fix based on filed true airspeed, stored winds, and the present location of the flight.

3. calculated landing time/CLT -- A term that may be used in place of tentative or actual calculated landing time, whichever applies.

calculation

The process of mathematical computation.

1. calculation, fixed point -- A calculation made with fixed point arithmetic.

2. calculation, floating point -- A calculation made with floating point arithmetic.

call

Voice tele-communications.

1. call back -- A procedure established for positively identifying a terminal dialing into a computer system by disconnecting the calling terminal and reestablishing the connection by the computer system's dialing the telephone number of the calling terminal.

2. call directing code/CDC -- An identifying call, usually three letters, which is transmitted to an outlying teletypewriter receiver and automatically turns its printer on (selective calling).

3. call forwarding -- In an ARTCC, it is the transferring of incoming calls to another position in the center.

call sign

The unique identification of an aircraft or air traffic facility. For aircraft it is the identification as filed in the flight plan and for a facility it is the facility name followed by it's type or function (i.e. Washington Center, Boston Departure).

call up

(1) Initial voice contact between a facility and an aircraft, using the identification of the unit being called and the unit initiating the call. (Refer to AIM) (2) The process of entering a command or series of commands which start a particular computer program.

calm

The absence of wind or of apparent motion of the air.

cam

A surface on a shaft or wheel, which is not a true circle; there being one or more areas of the surface which are either raised or lowered from the average circumference line.

camera tube

An electron-beam tube in which an electron current or charge-density image is formed from an optical image and scanned in a predetermined sequence to provide an electrical signal.

Canadian Airspace Reservation Unit/CARU

A function established by the Ministry of Transport of Canada, responsible for the processing of altitude reservation requests in Canadian airspace.

cap cloud

A standing or stationary cloud crowning a mountain summit.

capacitor

A device for accumulating and holding a charge of electricity which consists of conducting surfaces separated by a dielectric.

1. small capacitor -- A capacitor which contains less than 1.36 kg (3 lbs) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kg of dielectric fluid and a capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) musty be considered to contain more than 1.36 kg of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs).

2. large high voltage capacitor -- A capacitor which contains 1.36 kg or more of dielectric fluid and which operates at 2,000 volts (a.c. or d.c.) or above.

3. large low voltage capacitor -- A capacitor which contains 1.36 kg or more of dielectric fluid and which operates below 2,000 volts (a.c. or d.c.).

cancel

To remove data from the computer or rescind information passed to another (comparable to "delete").

capacity

The maximum number of digits that can be handled or processed by a computer unit; also, the upper and lower limits of the numbers which can be handled by the computer.

capitalization

The selective recording, in an appropriate general ledger account, of the monetary value of in-use personal property items that are above a defined dollar value.

card

(1) A printed circuit assembly which plugs into a printed circuit board.

card input

A method of introducing information into a computer by means of punch cards.

cardinal altitudes/cardinal flight levels

"Odd" or "even" thousand-foot altitudes or flight levels. Examples: 5000, 6000, 7000, FL250, FL260, FL270.

carriage return/CR

A function performed by a teletypewriter, when initiated by the carriage return character which causes the machine to return the printing mechanism to the left hand margin. Also, used as part of certain control codes.

carrier

A form of communication using waves that can be modulated by changing their amplitude, frequency, or phase so that they "carry" intelligence. Carrier communication is used as a means of transmitting one or more messages over a single open-wire pair, cable pair or radio circuit.

1. carrier equipment -- A radio frequency communication subsystem for multichannel service. Carrier subsystems are invariably used in long lines (telephone) service. Either coaxial cable, spiral four or other types of transmission media, including microwave link, are used with carrier equipment.

2. carrier frequency interconnection -- In the formation of carrier networks, groups of channels are transferred between terminals of wire-line, cable or radio system at carrier frequencies. This transfer is known as carrier frequency interconnection.

3. carrier leak -- The electrical balance of suppressed carrier modulators is never perfect. THe carrier frequency power remaining in the output of the modulator as a result of this imbalance is called carrier leak.

4. carrier line -- Any physical transmission circuit used for multiple channel communication by utilizing carrier transmission.

5. carrier loading -- The intersection of additional lump inductance in a cable section of a transmission line used for carrier transmission up to about 35 kHz. Loading minimizes impedance mismatch between cable and open wire line and reduces the cable attenuation.

6. carrier repeater -- An assembly of amplifiers and other equipment designed to raise attenuated carrier signal levels to such a value that they may transverse a

succeeding line section at an amplitude that preserves an adequate signal-to-noise ratio and maintains minimum crosstalk.

7. carrier signaling -- The method by which necessary supervision (busy signals, ringing, or dial signaling) is provided by the transmission of a carrier frequency tone. The frequency for carrier signaling may lie inside the range assigned to the speech channel or may lie between channels. Or a group of such tones for a number of channels may be put in a voice band or part of a band assigned for that purpose.

8. carrier system -- A radio frequency/RF communication method for multi-channel service. The carrier terminals have transmitter and receiver modems in which multiplexing takes place by frequency, phase, or time division processes. Carrier terminals operate over both short and long distances. The longer routes have repeaters along the route to amplify the carrier rf signals as they undergo attenuation. Carrier and repeaters are interconnected via coaxial cable, microwave links, or lower frequency radio links, or a combination of these.

9. carrier transfer filters/sets -- A group of filters arranged to provide carrier frequency interconnection between two transmission circuits.

10. carrier wave -- A wave that can be modulated by changing its amplitude, frequency or phase so that it can "carry" intelligence.

cartridge

A single core container enclosing roll microfilm designed to be inserted into readers, reader/printers, retrieval devices and cameras.

cassette

A double core container enclosing roll microfilm designed to be inserted into readers, reader/printers, retrieval devices and cameras.

cat track

Aircraft movement information service provided by an ARTCC on all IFR flight plan aircraft classified as SAC Y, NORAD special interest flights and those flights specified in 4-70 via voice reporting over interphone circuits in lieu of the ROCC teletypewriter network.

categories

Radar controller input actions grouped under fairly broad headings, such as: tracking, radar handoff, etc.

1. category/function panel -- A control panel which enables the controller to indicate to the computer, by push button selection, the particular action requested in conjunction with an alpha-numeric message entry.

categories of testing

1. category A: element/sub-system integration -- Element/sub-system integration will integrate the equipment part of the system to ensure that the equipment system functions as an entity and is capable of the level of operation required for ATC operations. An intermediate objective is to bring the equipment system to a state of readiness for use in Program Shakedown and System Shakedown.

2. category B: program shakedown -- Program shakedown will ensure that the computer programs meet the intent of the Computer Program Functional Specifications, and will integrate the programs with the equipment.

3. category C: system shakedown -- System shakedown will integrate the personnel with the equipment and computer programs. It will establish confidence in system operation, leading to acceptance of the system for Operations Changeover.

4. category D: operations changeover -- Operations changeover will convert the operations of an existing facility to one with an advanced design.

See completion criteria, operational shakedown

category

(1) With respect to certification, ratings, privileges and limitations of airman, means a broad classification of aircraft. Examples include: airplane; rotorcraft; glider; and lighter-than-air. (2) With respect to the certification of aircraft, means a grouping of aircraft based upon intended use or operating limitations. Examples include: transport; normal; utility; acrobatic; limited; restricted; and provisional.

category, landing

Category	I	II*	IIIA	IIIB	IIIC
Decision Height, feet	200	100	0**	0**	0**
Visibility, feet	2400	1200	700	150	0

(Runway Visual Range)

* Each air carrier is first authorized to a DH of 150' and an RVR of 1600' to gain experience.

** The decision height (DH), strictly speaking, should be listed as "not applicable" rather than "0".

The above categories may have to be redefined in length of V/STOL operating characteristics. See Decision Height.

Cathode-Ray Tube/CRT

The television-like screen used as a display, computer terminal or video monitor.

cathodic protection

Through the medium of sacrificial anodes, the protection of an underground storage tank from rapid metallic deterioration by directing the electrical deterioration to more susceptible metals intentionally positioned and engineered to protect the buried tank.

caution area

Airspace within which military activities are conducted that are not hazardous but are of interest to nonparticipating pilots.

ceiling

(1) The height above the earth's surface of the base of the lowest layer of clouds or obscuration phenomena that hides more than half of the sky (reported as "broken", "overcast", or "obscuration" and not classified as "thin" or "partial"). (2) The vertical visibility into an obscuration. See summation principle.

1. ceiling (ICAO) -- The height above the ground or water of the base of the lowest layer of clouds below 6,000 meters (20,000 feet) covering more than half of the sky.

ceiling balloon

A small balloon used to determine the height of a cloud base or the extent of vertical visibility.

ceiling light

An instrument which projects a vertical light beam onto the base of a cloud or into surface based obscuring phenomena; used at night in conjunction with a clinometer to determine the height of the cloud base or as an aid in estimating the vertical visibility.

ceilometer

A cloud height measuring system. It projects light on the cloud, detects the reflection by a photoelectric cell, and determines height by triangulation.

celestial altitude

The angular distance of a celestial body above the celestial horizon, measured along the vertical circle.

1. computed altitude/Hc -- A mathematical computation of the correct celestial altitude of a body at a specific geographical position, for a given date and time.

2. observed altitude/Ho -- The sextant altitude corrected for sextant and observation errors.

3. pre-computed altitude/Hp -- Computed celestial altitude corrected for all known observational errors and adjusted to the time of the observed altitude.

4. sextant altitude/Hs -- A celestial altitude measured with a sextant (i.e. the angle measured in a vertical plane between an artificial or sea horizon and a celestial body).

celestial coordinates

1. equinoctial system (celestial 1) -- Involves the use of sidereal hour angle and declination to locate a point on the celestial sphere with reference to the first point of Aries and the equinoctial.

2. horizon system (celestial 2) -- Involves the use of azimuth and altitude to locate a point on the celestial sphere for an instant of time from a specific geographical position on the earth.

3. Greenwich system (celestial 3) -- Involves the use of Greenwich hour angle and declination to locate a point on the celestial sphere with reference to the Greenwich meridian and the equinoctial for a given instant of time.

celestial equator

The great circle formed by the intersection of the plane of the earth's equator with the celestial sphere. Also known as equinoctial.

celestial meridian

(1) A great circle on the celestial sphere formed by the intersection of the celestial sphere and any plane passing through the North and South poles. (2) Any great circle on the celestial sphere which passes through the celestial poses.

celestial navigation

The determination of geographical position by reference to celestial bodies. Normally used in aviation as a secondary means of position determination.

celestial observation errors (sextant)

Those positional errors associated with celestial navigation.

1. acceleration error -- An error caused by the deflection of the liquid in the bubble chamber due to any change in speed or direction of the aircraft.

2. index error -- An error caused by the misalignment of the sighting mechanism of a sextant.

3. parallax error -- The difference between a body's altitude above an artificial or visible horizon and above the celestial horizon. The error is present because of the fact that the body is not at an infinite distance.

4. personal error -- Errors in celestial observations caused by sighting limitations of the observer, or

visual interpretation which he/she uses in collimating the body during observations.

5. refraction error -- An error caused by the bending of light rays in passing through the various layers of the atmosphere and/or astrodome of the aircraft.

6. rhumb line correction -- The correction applied for the bubble acceleration error caused by the rhumb line path of the aircraft.

7. wander error -- The bubble acceleration error caused by a change of track during the celestial shooting period.

celestial poles

The points of intersection of the extension of the earth's axis with the celestial sphere.

celestial sphere

An imaginary sphere of infinite radius whose center coincides with the center of the earth, on which all celestial bodies except the earth are imagined to be projected.

cell

Computer memory section wherein radar return or transponder response information is stored and periodically updated - usually after each sweep or interrogation. Sometimes called bin.

Celsius temperature scale/Centigrade temperature scale/C

A temperature scale with zero degrees as the melting point of pure ice and 100 degrees as the boiling point of pure water at standard sea level atmospheric pressure.

center

An Air Route Traffic Control Center (ARTCC).

1. center area/center airspace -- That geographical area for which an ARTCC has air traffic control responsibility and which is defined in adaptation. The air space within a center area is sub-divided into fix posting areas that may be controlled by sectors within the center or delegated to approach control facilities. Center air space may overlie or underlie the adapted air space of an adjacent center or an approach control

facility. See Air Route Traffic Control Center. (Refer to AIM)

center B

A low-speed (100 wpm) teletypewriter system, connecting all ARTCC's within the United States. Consists of two circuits, Eastern and Western, which are interconnected via an Automatic Low Speed Switching Unit located at Kansas City. Used primarily for handling emergency messages. See service B.

Center Radar Approach Control/CERAP

A combined air route traffic control center and terminal radar approach control facility.

center weather advisory/CWA

An unscheduled weather advisory issued by Center Weather Service Unit meteorologists for ATC use to alert pilots of existing or anticipated adverse weather conditions within the next 2 hours. A CWA may modify or redefine a SIGMET. See SIGMET, Convective SIGMET, AIRMET. (Refer to AIM)

centicycle/CEC

A cycle refers to the wavelength of the transmitted signal, which is approximately 16 nautical miles at 10.2kHz. A CEC is therefore approximately 0.16NM.

centilane/CEL

A lane is defined as the distance between loci of equal hyperbolic phase difference. On the baseline between two stations a 10.2kHz lane is approximately 8NM, hence, a CEL is approximately 0.08NM.

Central Altitude Reservation Facility/CARF

An Air Traffic Service facility established to conduct the volume of coordination, planning and approval of special user requirements under the altitude reservation concept.

central computer complex

The location in a single controlled room or area of one or more computers and their associated peripheral and storage units, central processing units and communications equipment and other related supporting resources essential to the operation of the system. Synonymous with central computer room, computer equipment room or central computer facility.

Central Computing Complex/CCC

The IBM 9020 computer which consists of the Modified IBM System 360/50 equipment elements and peripheral modules. The 9020A/9020D which have been replaced by the IBM 3083 computer, were used for processing flight data and radar data at ARTCCs.

Central Flow Control/CFC

That function which manages the flow of air traffic.

1. central flow data -- Flight data, traffic flow data, traffic situation reports, traffic capacity reports, airport utilization information, and altitude utilization information.

2. central flow data request -- A request for central flow data.

3. central flow processing parameter -- Entries, made by ATCCC personnel, containing specific information for running simulations. These parameters could include input defining the size and location for a particular traffic scenario, the number and types of aircraft, routes to be used, weather conditions. etc.

4. central flow processing request -- A request for central flow processing results.

5. central flow processing results -- Strategy simulation and analysis, system performance and trends analysis, traffic flow status and projections.

Central Flow Control Facility/CFCF

Located in the ATCCC, the role of the CFCF is to continuously predict, monitor and maintain command and control of the day to day NAS en route and terminal facility demand, capacity and delays. The CFCF Adjust the aircraft flow into and out of high density airports and along high-density routes on a national basis, accepts reservations and maintain a dynamic list of all IFR aircraft with reservations that operate in these areas.

1. CFCF delay factor -- The amount of delay calculated to be assigned prior to departure and, when appropriate, the airborne holding delay required in the arrival center's area. Shown as a "P" in box 28 of the en route flight progress strip; i.e., P000 or P008.

2. Central Flow Control Computer/CFCC -- The principal hardware and software element for the CFCF. It manages the CFCF data base, provides data base updates and provides the simulations of future demands at pacing airports.

Central Processing Unit/CPU

The circuitry that processes information, performs arithmetic functions and controls the operation of a computer system.

Central Weather Processor/CWP

A near real time system which disseminates weather information to ATC and FSS facilities. The system also supports Center Weather Service Unit meteorologist's in analyzing weather.

1. CWP weather products -- Includes weather analyses, selected/edited alphanumeric weather, graphic weather portrayals and other aeronautical and meteorological data.

2. CWP requests -- A request for CWP weather products.

centrifugal

(1) Acting away from the center. (2) Usually used to describe a force created by the rotation of a body.

certification

The technical evaluation, made as part of and in support of the accreditation process, that establishes the extent to which a particular computer system or network design and implementation meet a pre-specified set of security requirements.

certification (system/subsystem/equipment)

(1) The technical verification that a system, subsystem or equipment is providing the required or advertised services to a user at any given time subsequent to commissioning followed by the insertion of the prescribed written entry in the official facility maintenance log. It includes independent determination as to when a system, subsystem or equipment should be continued in, restored to or removed from service.

1. certification parameter -- Selected critical indicators of the quality of the required or advertised services

being provided to the users of a system, subsystem or equipment.

2. certification, personnel -- Confirmation that an employee possesses the necessary minimum knowledge and skills to determine operational status of a particular system/subsystem/equipment.

3. interim certification -- Certification authority granted to cover new systems/subsystems/equipment, pending establishment of a mandatory certification date, or conversion to regular certification.

Centronics-type interface

A parallel connector which has been accepted as a standard printer interface through common usage.

chaff

(1) Thin, narrow metallic reflectors of various lengths and frequency responses, used to reflect radar energy. These reflectors when dropped from aircraft and allowed to drift downward result in large targets on the radar display. (2) Applied loosely to (radar) echos resulting from chaff

change of state

In meteorology, the transformation of water from one form, i.e., solid (ice), liquid, or gaseous (water vapor), to any other form. There are six possible transformations designated by five terms:

1. condensation -- The change of water from vapor to liquid.

2. evaporation -- The change of liquid water to a vapor.

3. freezing -- The change of liquid water to ice.

4. melting -- The change of ice to liquid water.

5. sublimation -- The change of ice to water vapor or water vapor to ice. See latent heat.

changeover points

These points are established on VOR airways in order to alert pilots on a Victor airway that the aircraft receiver should be tuned to the station ahead. Pilots operating via the Low Altitude Victor airways system obtain track guidance

by reference to the closest VHF source forming the airway route segment, with exceptions.

channel

(1) A path along which information, particularly a series of digits or characters, may flow. (2) One or more parallel tracks treated as a unit. (3) In a circulating storage, a channel is one recirculating path containing a fixed number of words stored serially by word. Synonymous with (band). (4) A path for electrical communication. (5) A specific band of frequencies assigned for a particular purpose; for example, signaling channel, tone channel or voice channel.

character

(1) One symbol of a set of elementary symbols such as those corresponding to the keys on a typewriter. The symbols usually include the decimal digits 0 through 9, the letters A through Z, punctuation marks, operation symbols, and any other single symbols which a computer may read, store, or write. (2) The electrical, magnetic, or mechanical profile used to represent a character, presented by a group of other elementary marks, such as bits or pulses. (3) A code sequence representing a letter or function. For example a baudot code sequence, consists of a start pulse (space), five variable pulses (mark or space), and a stop pulse (mark), which can represent a letter or function.

characteristic distortion

A form of teletypewriter distortion which results in the impulses being either shortened or lengthened. This is a normal and predictable distortion of data bits produced by characteristics of a given circuit at a particular transmission speed. It is, therefore, a fixed distortion which generally does not change in degree from day to day.

chart

A graphic representation of a section of the earth's surface specifically designed for navigational purposes. A chart may also be referred to as a map. Although a chart is usually specifically designed as a plotting medium for marine or aeronautical navigation, it may be devoid of cultural or topographical data.

charted visual flight procedures/CVFP

An approach wherein a radar controlled aircraft on an IFR flight plan, operating in VMC conditions and having an ATC authorization, may proceed to the airport of intended

landing via visual landmarks and altitudes depicted on a charted visual flight procedure.

1. charted VFR Flyways -- Charted VFR Flyways are flight paths recommended for use to bypass areas heavily traversed by large turbine-powered aircraft. Pilot compliance with recommended flyways and associated altitudes is strictly voluntary. VFR Flyway Planning charts are published on the back of existing VFR Terminal Area charts.

chase/chase aircraft

An aircraft flown in proximity to another aircraft normally to observe its performance during training or testing.

check

To visually examine a hardware item for its operational state or condition.

checked flight

That flight whose route segments will be compared against the qualifying route segments of all other qualifying flights during the operation of the conflict detection process.

checkout

Tests or observations of an item to determine its condition or status.

chemical waste landfill

Any approved landfill, in which protection against risk of injury to health or environment from the migration of hazardous/toxic chemicals/materials to land, water, or the atmosphere is provided from items deposited therein by locating, engineering and operating the landfill as specified in 40 CFR Part 761.

Chinook

A warm, dry foehn wind blowing down the eastern slopes of the Rocky Mountains over the adjacent plains in the U. S. and Canada.

chip

An integrated circuit or the package that contains an integrated circuit. A chip is frequently referred to as an IC.

choose

To make a decision on a course of action, such as in choosing a desired sequence.

cipher

A cryptographic system in which cryptography is applied to plain text elements of equal length.

1. cipher-text -- Unintelligible text or signals produces through the use of cipher systems.

circle(s)

A circular course, circuit or orbit used for navigational purposes.

1. circles of equal altitude -- A circle on the earth which is the locus of all points equidistant from the sub-point of a celestial body. The altitude of a celestial body is the same measured from any point on the circle.

2. diurnal circle -- The daily apparent path of a body on the celestial sphere caused by the rotation of the earth.

3. hour circle -- A great circle on the celestial sphere passing through the celestial poles and a given celestial body.

   a. lower branch -- Half of an hour circle opposite from the upper branch.

   b. upper branch -- That half of an hour circle or meridian which contains the celestial body or the observer's position.

4. small circle -- Any circle on a sphere whose plane does not pass through the center of that sphere.

5. vertical circle -- A great circle on the celestial sphere which passes through the observer's position and is perpendicular to the horizon.

circling approach

1. circling approach area -- The area in which aircraft circle to land under visual conditions after completing an instrument approach.

2. 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 required visual reference to the airport.

3. circle to runway (runway number) -- Used by ATC to inform the pilot that he must circle to land because the runway in use is other than the runway aligned with the instrument approach procedure. When the direction of the circling maneuver in relation to the airport/runway is required, the controller will state the direction (eight cardinal compass points) and specify a left or right downwind or base leg as appropriate; e.g., "Cleared VOR Runway Three Six Approach circle to Runway Two Two," or "Circle northwest of the airport for a right downwind to Runway Two Two." See circle-to-land maneuver, landing minimums. (Refer to AIM)

4. circling minima -- See landing minimums.

circuit

A path for electrical transmission of data, voice, facsimile and other intelligence between two or more points. THe term "circuit" may be used interchangeably with "channel," "line," "facility," or "path."

1. circuit number -- Alpha-numeric identification symbol of a circuit, channel, line, etc.

2. circuit terminals -- The two points on a communications circuit which are most widely separated from each other.

cirriform

All species and varieties of cirrus, cirrocumulus, and cirrostratus clouds. Descriptive of clouds composed mostly or entirely of small ice crystals, usually transparent and white; often producing halo phenomena not observed with other cloud forms. The average height ranges upward from 20,000 feet in middle latitudes.

cirrocunulus

A cirriform cloud appearing as a thin sheet of small white puffs resembling flakes or patches of cotton without shadows. They are sometimes confused with altocumulus.

cirrostratus

A cirriform cloud appearing as a whitish veil. Usually fibrous, sometimes smooth, they often produces halo phenomena. This form may totally cover the sky.

cirrus

A cirriform cloud in the form of thin, white feather like shapes in patches or narrow bands. They have a fibrous and/or silky sheen. Large ice crystals often trail downward a considerable vertical distance in fibrous, slanted, or irregularly curved wisps called mares' tails.

citizen/user participation

Methods by which any member of the general public or airport users can participate in Government decision making, including exchange of information, opinions and recommendations.

civil aircraft

Any aircraft other than a public aircraft.

1. civil aircraft of the United States -- Any aircraft registered under the provisions of the FAA Act.

civil authority

Any government body that exercises control over the affairs of a governmental jurisdiction, including but nit limited to city, county, state or local governmental organizations.

Civil Aviation Security Field Office/CASFO

These offices administer and monitor the FAA's civil aviation security programs designed to combat hijacking and sabotage; and maintain liaison with airlines, airport operators, government, industry, and law enforcement officials on air transportation security matters.

civil twilight

See twilight.

class

(1) With respect to the certification, ratings, privileges and limitations of airmen, means a classification of aircraft within a category having similar operating characteristics. Examples include: single engine; multi-engine; land; water; gyroplane; helicopter; airship; and free balloon. (2) With respect to the certification, rating, privileges and limitations of airmen, means a classification of aircraft having similar characteristics of propulsion, flight or landing. Examples include: airplane; rotorcraft; glider; balloon; landplane; and seaplane.

class B

One of two classes established by the Federal Communications Commission/FCC for regulating the maximum amount of radio frequency interference/RFI a computer is allowed to radiate.

class mark

A mark in a computer program to permit (or inhibit) access to certain features.

classify

To determine that official information requires, in the interests of national security, a specific degree of protection against unauthorized disclosure, coupled with a designation signifying that such a determination has been made.

1. classified information -- Official information which requires protection against unauthorized disclosure in the interests of the national security of the United States.

2. classifier -- An individual who makes a classification determination and applies a security classification to information or material. A classifier may be an original classification authority or a person who derivatively assigns a security classification based on a properly classified source.

clear

To restore a storage or memory device to a prescribed state, usually that denoting zero or blank.

clear air turbulence/CAT

Turbulence encountered in air where no clouds are present; more popularly applied to high-level turbulence associated with wind shear; often encountered in the vicinity of the jet stream. See wind shear, jet stream.

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, it is synonymous with glaze, particularly with respect to aircraft icing. Compare with rime icing. Factors which favor clear icing are large drop size, such as those found in cumuliform clouds, rapid accretion of supercooled water, and slow dissipation of latent heat of fusion.

clearance

(1) An authorization by air traffic control, for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace. See ATC instructions. (2) A determination by an official and specified authority that an individual is considered trustworthy to have access to any and all classified information within a designated classification category for which he/she may have a need-to-know.

1. air traffic control clearance (ICAO) --Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

2. clearance limit -- The fix, point, or location to which an aircraft is cleared when issued an air traffic clearance.

3. clearance limit (ICAO) -- The point of which an aircraft is granted an air traffic control clearance.

4. clearance void if not off by (time) -- Used by ATC to advise an aircraft that the departure clearance is automatically cancelled if takeoff is not made prior to a specified time. The pilot must obtain a new clearance or cancel his IFR flight plan if not off by the specified time.

5. clearance void time (ICAO) -- A time specified by an air traffic control unit at which a clearance ceases to be valid unless the aircraft concerned has already taken action to comply therewith.

6. **cleared as filed** -- Means the aircraft is cleared to proceed in accordance with the route of flight filed in the flight plan. This clearance does not include the altitude, SID, or SID Transition. See request full route clearance. (Refer to AIM)

7. **cleared for (type of) approach** -- ATC authorization for an aircraft to execute a specific instrument approach procedure to an airport; e.g., "Cleared for ILS Runway Three Six Approach." See request full route clearance. (Refer to AIM)

8. **cleared for approach** -- ATC authorization for an aircraft to execute any standard or special instrument approach procedure for that airport. Normally, an aircraft will be cleared for a specific instrument approach procedure. See Instrument Approach Procedure, cleared for (type of) approach. (Refer to AIM, FAR Part 91)

9. **cleared for takeoff** -- ATC authorization for an aircraft to depart. It is predicated on known traffic and known physical airport conditions.

10. **cleared for the option** -- 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. It is normally used in training so that an instructor can evaluate a student's performance under changing situations. See option approach. (Refer to AIM)

11. **cleared through** -- ATC authorization for an aircraft to make intermediate stops at specified airports without refiling a flight plan while en route to the clearance limit.

12. **cleared to land** -- ATC authorization for an aircraft to land. It is predicated on known traffic and known physical airport conditions.

clearway

Generally, an area within which terrain or fixed obstacles may not extend above specified limits. These areas are required for certain turbine-powered operations, the size and upward slope of which differ depending on when the aircraft was certified. (1) An area beyond the takeoff runway, not less than 500 feet wide, centrally located about the extended centerline of the runway, and under the control of airport authorities. The clearway is expressed in terms

of a clearway plane, extending from the end of the runway with an upward slope not exceeding 1.25 percent, above which no object nor any terrain protrudes. However, threshold lights may protrude above the plane if their height above the end of the runway is 26 inches or less and if they are located to each side of the runway. (This definition applies to turbine engine powered airplanes certificated after August 29, 1959.) (2) An area beyond the takeoff runway extending no less than 300 feet on either side of the extended centerline of the runway, at an elevation no higher than the elevation of the end of the runway, clear of all fixed obstacles, and under the control of airport authorities. (This definition applies to turbine engine powered airplanes certificated after September 30, 1958 but before August 30, 1959.)

climate

The statistical collective of the weather conditions of a point or area during a specified interval of time (usually several decades); it may be expressed in a variety of ways.

climatology

The study of climate.

climb completion time/CCT

The time a departing flight is expected to reach en route altitude.

climb to VFR

ATC authorization for an aircraft to climb to VFR conditions within a control zone when the only weather limitation is restricted visibility. The aircraft must remain clear of clouds while climbing to VFR. See Special VFR. (Refer to AIM)

climbout

That portion of flight operations between takeoff and initial cruising altitude. In the event of two way communications failure, it also provides altitude.

1. climbout fix -- The point in space where en route operation is resumed after climbout from MTR. THis fix is described by reference to a ground based navigational aid.

2. climbout track -- An MTR associated track beginning at the route exit point and permitting a climbout departure from the exit point to the climbout fix.

clinometer

An instrument used in weather observing for measuring angles of inclination. It is used in conjunction with a ceiling light to determine cloud height at night.

clock

A device for measuring/indicating time.

1. clock, real-time -- A clock which indicates the passage of actual time, in contrast to a fictitious time set up by the computer program; such as, elapsed time in the flight of a missile, wherein a 60-second trajectory is computed in 200 actual milliseconds, or a 0.1 second interval is integrated in 100 actual microseconds.

2. clock, simplex -- A timing sequence that has no redundant capability.

3. clock, slave -- An identical timing sequence driven by the primary timing source.

4. clock time -- (1) Time as maintained internally by a computer. (2) A 4-digit number specifying Greenwich mean time in hours and minutes. Leading zeros are required for input to the computer.

5. clock, Wickes -- A digital readout device driven by a central clock, and generally located at each controller's console.

closed

Restricted or secure.

1. closed area --An area normally established to safeguard classified information and/or material.

2. closed runway -- A runway that is unusable for aircraft operations. Only the airport management/military operations office can close a runway.

3. closed traffic -- Successive operations involving takeoffs and landings or low approaches where the aircraft does not exit the traffic pattern.

cloud bank

Generally, a fairly well defined mass of cloud observed at a distance. It normally covers an appreciable portion of the horizon sky, but does not extend overhead.

cloudburst

In popular terminology, any sudden and heavy fall of rain, almost always of the shower type.

cloud detection radar

A vertically directed radar which is used to detect cloud bases and tops.

clutch

A device for mechanically engaging and disengaging parts for the transfer of motion.

clutter

In radar operations, clutter refers to the reception and visual display of radar returns caused by precipitation, chaff, terrain, numerous aircraft targets, or other phenomena. Such returns may limit or preclude ATC from providing services based on radar. See ground clutter, chaff, precipitation, target.

1. radar clutter (ICAO) -- The visual indication on a radar display of unwanted signals.

2. clutter counter -- A count of primary radar data falling within the large search area and small search area of a track within one operation of MRDP. If the count exceed certain limits, data is not stored for the automatic tracking function.

3. clutter density outlines -- Lines on a plan view display outlining weather or clutter areas.

co-altitude/co-alt

(1) The small arc of a vertical circle between the observer's position and the body (90° altitude). (2) Two objects at the same altitude.

co-declination/co-dec

See polar distance.

co-latitude/co-lat

The small arc of the observer's celestial meridian, between the elevated pole and the body (90° latitude).

co-processor

An auxiliary micro-processor dedicated to a particular function.

coastal fix

A navigation aid or intersection where an aircraft transitions between the domestic route structure and the oceanic route structure.

coasted track

A radar track that is continued based on previous track characteristics in the absence of surveillance data reports.

code(s)

(1) Given a set of elements in an initial system, a code is a representation of the elements in a second system which may be obtained with a logical translation rule. The standard data handling codes include USASCII and Baudot. The former is an eight-level code with a parity bit and start-stop bits, and the latter is a five level code using start-stop bits in addition to the five intelligence bits. (2) The language used to translate key-switch depressions into signal logic output. (3) The number assigned to a particular multiple pulse signal transmitted by a transponder (ATCRBS and SIF transponders). Codes are "discrete" or ''non-discrete'' according to the manner in which used. A code becomes non-discrete when it is assigned to more than one aircraft in a given airspace during the same period and the last two numerals are zero.

1. ASCII -- An 8 bit code (7 bits plus parity). There are 128 code positions, 95 for graphics and 33 for control. Accepted as the international data code, with the name International Standard Code for Information Interchange (ISCII). ASCII and ISCII are identical except for some bits for national code.

2. baudot code -- Five level binary code commonly used for the transmission of data in printing telegraph systems. It is a five level start-stop code in which each current impulse is of equal length; by different combinations of the five impulses, it is possible to form 31 letters or characters. Each character is

represented by five bits, plus a start pulse and a stop pulse. Synchronization must be maintained over only one character. The most serious problem is an error causing a false start pulse, which will cause an erroneous character to be printed. See baud.

3. EBCDIC -- An 8 bit plus parity code adopted by many computer manufacturers for internal use. The character set is essentially the same as for ASCII, but there are differences in control characters.

code system

(1) Any system of communication in which groups of symbols are used to represent plain text elements of varying length. (2) In the broadest sense, a means of converting information into a form suitable for communications or encryption, for example, coded speech, Morse Code, teletypewriter codes. (3) A cryptographic system in which cryptographic equivalents (usually called code groups) typically consisting of letters, digits or both in meaningless combinations are substituted for plain text elements which may be words, phrases or sentences. See brevity lists.

1. code establishment -- A process in the automatic tracking function whereby the successive correlation of beacon data having the same code establishes that beacon data as representative of the track.

2. code garbling -- False code information or cancellation of a desired code which occurs when a replay from a second (spurious) transponder is found or received at a position in the pulse train reply from the desired transponder.

3. code reliability index/CRI -- The ratio of the correct beacon codes to the total beacon codes for a simulation flight (approximate percentage of correct returns).

4. identity code -- A Mode 2 or 3/A beacon code.

coded route

A whole or partial flight plan route which is repeatedly used and stored in adaptation. The pre-filed route is identified by a code name. The information stored may include fixes, altitude, and cumulative elapsed time.

cold front

Any non-occluded front which moves in such a way that colder air replaces warmer air.

cold start

With respect to a computer, an establish/initiate mode of start-up at a time other than the initial start-up time, e.g., if the CCC system is established/initiated and the method is an initial program load without recovery data, a cold start exists.

collapse

With respect to an aircraft accident, the inward movement of the floor, ceiling, walls or instrument panel in a manner which violates the livable area around the occupant/seat.

collector

An electrode that collects electrons which have completed their functions within an electron tube such as a CRT.

collimation

(1) The alignment of search and beacon radar returns from the same radar. The search radar is moved to the beacon position. (2) The correct alignment of the images of the bubble of a sextant and the object being observed.

1. collimation error -- The difference in range and azimuth between search and beacon signals from the same target using a common radar pedestal.

collision

The in-flight contact of two or more aircraft. See near-midair collision.

1. Collision Avoidance System/CAS -- A device installed on aircraft for the purpose of: (1) Detecting the presence of other aircraft. (2) Automatically assessing the potential collision hazard represented by other aircraft. (3) Providing advance warning to the pilot if a threat is predicted by the equipment. (4) Providing appropriate command signals indicating the proper evasive maneuver. The CAS device performs its function continuously and automatically in all types of weather conditions without requiring visual assessment of collision risk by the pilot. Collision avoidance replaces see-and-be-seen protection by more efficient

means of protection and provides more functions than does PWI: it senses the presence of an intruder, evaluates the degree of danger, and commands a specific climb or dive avoidance maneuver. In common with a station-keeper, it will work in both IFR and VFR weather, while PWI effectiveness is often limited to VFR.

2. collision avoidance maneuver coordination messages -- Coordination messages that are transferred between two or more TCAS-II-equipped aircraft that are a potential collision threat to each other. These messages inform the other TCAS-II equipment of the intended avoidance maneuvers.

column

A vertical series of data.

Combined Approach Control/International Station/CAPIS

A combined approach control facility and international flight service station.

Combined Center-RAPCON/CERAP

An air traffic facility which combines the functions of an ARTCC and a radar approach control facility. See Air Route Traffic Control Center/ARTCC, Radar Approach Control Facility.

combining/de-combining

Adapting to traffic loading. At least two sectors, but usually not more than three sectors, are combined when converting from day to night watches. This is a short termed operational rearrangement of sectors and does not involve any change in wiring to the positions.

command

A letter, word or series of symbols that direct the computer to perform a particular or sequence of operations.

commercial operator

A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier or foreign air carrier or under the authority of FAR Part 357. Where it is doubtful that an operator is for "compensation or hire," the test applied is whether the carriage by air is merely incidental to the

person's other business or is, in itself, a major enterprise for profit.

commissioning

The formal exercise of incorporating a new facility, system, subsystem or equipment into the NAS. This term has legal and budgetary significance and has been used to justify logistic and manpower operational support as an FAA obligation under public law.

1. commissioned -- A facility, system, subsystem or equipment is considered to be commissioned if it has been formally accepted and placed into operational use or service in the NAS, and its controlling Airway Facilities sector has assumed formal maintenance responsibility.

common answer

The capability of queuing and answering indirect access calls.

common digitizer

Equipment suitable for the automatic detection, correlation and transfer of aircraft target information derived from long range primary surveillance radars and radar beacon systems (SIF/ATCRBS). This device converts analog radar and beacon returns, at the radar site, into a digitized form that is transmitted via landlines for use by the central computer complex. See Weather Video Digitizer/WVD.

Common IFR Room/Common I

A highly automated terminal radar control facility. It provides terminal radar service in an area encompassing more that one major airport which accommodates instrument flight operations.

common path

The Instrument Landing System (ILS) along which arrivals approach their runway.

common route/common portion

That segment of a North American Route between the inland navigation facility and the coastal fix.

Common Traffic Advisory Frequency/CTAF

A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an uncontrolled airport. The CTAF may be a UNICOM, Multicom FSS, or tower frequency and is identified in appropriate aeronautical publications. (Refer to AC-90-42C)

communications

The service which enables voice and/or data transmission between and/or among properly equipped airborne platform(s) and one or more ground stations.

1. full service communications -- Service required without access delay within a given airspace at any time, without prior arrangement.

2. limited service communications -- Service required without access delay within a given airspace, but only designated periods of time; or is required at all times, but some access delay is acceptable.

communications security

(1) The isolation of the operating system, user programs and data files from one another in main storage in order to provide protection against unauthorized or concurrent access by other users or programs. (2) The breaking down of sensitive data into small, isolated blocks for the purpose of reducing risk to the data.

1. Communications Security/COMSEC -- (1) Commonly applied to equipment and/or systems for encryption, transmission and decryption of classified messages or data. (2) The protection resulting from any measure taken to deny unauthorized persons information related to national security that might be derived from telecommunications, or to ensure the authenticity of such telecommunications.

communication tag/symbolic tag

A tag common to or used by two or more computer sub-programs of a program system to identify a portion of information which must be communicated between computer sub-programs.

compandor

A device consisting of an intensity range compressor and expander that is used on speech circuits to improve transmission quality by reducing the effect of noise.

compared flight

Any flight, any of whose route segments are compared with the route segments of the checked flight during the operation of the conflict detection process.

compartmentalized radars

A technique for reducing the amount of radar data that is filtered in the display system for each plan view display. This reduction is accomplished by defining more radar sites (artificial radar) for the CDC than actually exists. The additional radar sites divide the total radar data into smaller geographic areas than exist with the actual radar sites. Each PVD will be paired with a smaller geographic area, and consequently a smaller amount of radar data is filtered in the display system for each PVD.

compass

An instrument which indicates direction measured clockwise from true north or grid north.

1. direct indicating compass -- A magnetic compass in which the dial, scale or index is carried on the sensing element.

2. magnetic compass -- An instrument which indicates direction measured clockwise from magnetic north.

3. remote indicating compass -- A magnetic compass, the magnetic sensing unit of which is installed in an aircraft in a position as free as possible from causes of deviation. A transmitter system is included so that the compass indication can be read on a number of repeater dials suitably placed throughout the aircraft.

compass direction

The direction measured clockwise from a particular compass needle which is more often than not displaced from the magnetic meridian by local deviating magnetic fields.

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 authorized in approach procedures.

1. compass locator (ICAO) -- An LM/MF NDB used as an aid to final approach.

2. Outer Compass Locator/LOM A compass locator installed at the site of the outer marker of an instrument landing system. See Outer Marker.

3. Middle Compass Locator/LMM A compass locator installed at the site of the middle marker of an instrument landing system. See Middle Marker.

compass rose

A circle, graduated in degrees, printed on some charts or marked on the ground at an airport. It is used as a reference to either true or magnetic direction.

compass swing

A procedure for determining compass deviation on various aircraft headings for use in compensating or calibrating the compass. This can be done either on the ground or in the air.

compatible land use

The use of land that is identified as normally compatible with the outdoor noise environment (or an adequately attenuated noise level reduction for the indoor activities involved) at that location, because the yearly day-night average sound level is at or below that identified for that or similar use under Appendix A of FAR Part 150.

compiler

Utilizing the compool, translates and assembles programs written in source language into an assembly language which is subsequently assembled by the assembler into the machine language code of the computer.

completion criteria

Guidance which stipulates an approved level of system, subsystem, equipment or component completion.

1. Level I -- All functional go/no-go tests on the units required by the specific test area of Program Shakedown have been successfully completed while the required number of units are operating at the same time.

2. Level II -- All functional and performance tests have been successfully completed on the sub-systems required

by a specific test area of System Shakedown, and these sub-systems are integrated into a working whole, within the existing integrated equipment system.

3. Formal Category A -- All sub-systems of the equipment system have successfully completed all functional and performance tests, and all sub-systems are integrated into a working whole within the complete system environment.

See categories, testing.

complexity level

A measure of the number of active elements required to perform a specific system function.

compool

A central dictionary of all sub-programs, tables, and item (individual pieces of information) tags in the system. It is composed of a series of tables which make up a directory containing information pertaining to all the communication tags used in the operational programs. The information contained in the compool is used during the program assembly process wherever a communication tag has been used as the operand of an instruction. The information in these tables includes absolute address information, table length, sub-program length, item size, and item location within a data word.

1. compool documentation -- A function which analyzes an assembled Compool and produces various printouts for programmer reference. The output is used by the programmer for program design, production, modification, and maintenance.

compose/enter

The act of making up a message, including all required elements of the message, and providing the message, as in composing and entering a flight plan amendment to the computer.

composite flight plan

A flight plan which specifies VFR operations for one portion of flight and IFR for another portion. It is used primarily in military operations. (Refer to AIM)

composite picture signal

A video signal consisting of: a picture signal (including horizontal and vertical components of the blanking signal), and a synchronizing signal (horizontal and vertical components).

composite route system

An organized oceanic route structure, incorporating reduced lateral spacing between routes, in which composite separation is authorized.

1. composite separation -- A method of separating aircraft in a composite route system where, by management of route and altitude assignments, a conbination of half the lateral minimum specified for the area concerned and half the vertical minimum is applied.

compressor

The part of a compandor that is used to compress the intensity range of signals at the transmitting end of a circuit. It amplifies weak signals and attenuates strong signals.

compromise

(1) An unauthorized loss of sensitive information. (2) The disclosure of classified information to persons not authorized access thereto.

1. compromising emanations -- Electromagnetic emanations that may convey data and that, if intercepted and analyzed, might compromise sensitive information being processed by an AIS.

compromise net

A network, used in conjunction with a hybrid junction, to balance a connected circuit such as a subscriber's loop, other lines, or equipment. It is designed for an average loop length or an average subscriber's set, or both, to secure compromise between the extremes of impedance balance.

compulsory reporting points

Mandatory reporting points for the pilot. The points are given on aeronautical charts and in the Federal Register; Title 14, Aeronautics and Space, Part 71, Designation of Federal Airways, Area Low Routes, Controlled Airspace, and Reporting Points.

computed delay interval

See stored fix time.

computed time of arrival/CTA

See stored fix time.

computer

A mechanical or electronic apparatus which, by means of stored instructions and information, performs rapid, often highly complex, mathematical calculations or compiles, correlates and selects data. Computers can be digital, analog or hybrid.

1. analog computer -- A computer which uses coded physical quantities, such as electrical resistance, voltage, etc., to solve problems, especially differential equations, and usually gives the solution in the form of a graphic display, such as an oscilloscope pattern.

2. digital computer -- A computer which uses numbers, symbols, etc., consisting of coded digits to solve problems by means of arithmetic, especially in a binary system.

3. hybrid computer -- A computer using both analog and discrete representation of data. Also, it can be a digital and analog computer combined.

Computers can be broken down into various categories, which are generally recognized to be:

1. micro-computer -- A category of stored program digital computers which are suitable for general purpose application and are moderately priced. Additional characteristics include an individual power supply and enclosure, capability for attaching output peripherals such as video screen and/or printer, as well as storage devices such as floppy diskettes, tape cassettes or fixed disks. This category of computer is programmable in BASIC or equivalent level language.

2. mini-computer -- The term applies to the whole class of stored-program digital computers which are suitable for general purpose application and are priced under $100,000 in a minimum configuration. The typical minicomputer is a parallel, binary processor with a 16-bit word length (though 8-bit, 12-bit, 18-bit, 24-bit and 32-bit word lengths are also fairly common). It uses integrated circuits and is housed in a compact

cabinet suitable for either tabletop use or mounting in a standard 19-inch rack. It offers from 4,096 to 32,768 words of magnetic core or semi-conductor storage with a cycle time of 0.8 to 1.5 micro-seconds. Today's typical minicomputer uses a one address instruction format and has two accumulators, a single index register and a multi-level indirect addressing facility. Floating point arithmetic requires the use of software subroutines.

3. super mini-computer -- A computer that is distinguished by a word length of more than 16-bits and a main storage capacity of one million bites or more. An architecture that represents an extension of the architecture used in a smaller minicomputer and a purchase price for the basic CPU and minimum main storage of under $300,000. The great majority of the current super-minis use a 32-bit word length. A 32 - bit word neatly holds four 8-bit bytes or two of the 16-bit words used in most of the smaller minicomputers. The 32-bit word length has been shown to yield an attractive balance between performance and cost in a broad range of applications. As a result, this word length has become so nearly universal among super mini designers that the terms "super minis" and "32-bit minicomputers" have become virtually synonymous.

4. memory typewriters -- A type of micro computer that permanently or temporarily stores data on tape or disk.

5. large mainframe computers -- The mainframe of a computer is the cabinet tat houses the Central Processor Unit/CPU and main memory. It is, therefore, separate from the peripheral devices (card readers, printers, tape drives, etc.) and device controllers. Typically, it is the largest component in size and cost, but modern electronics have allowed great reduction to both in recent years. The term "mainframe" comes from the use of "frame" as a device to hold electronics (rack is also frequently used); and the frame holding the electronics that do the computing might reasonably be the mainframe. In modern systems with very large main memory, some memory modules are housed in cabinets separate from the mainframe. Frequently, they are attached and thus become part of the mainframe cabinet. Multi-processor systems with more than one CPU are referred to as two or three mainframe systems, in which case the mainframe refers only to the CPU and not the main memory. The name central processor or central processing unit/CPU, is used to describe elements that carry out a variety of essential data manipulations and controlling tasks at

the heart of the computer. Probably the most obvious element is the one required to carry out arithmetic and other operations on data, which is usually called the "arithmetic unit." The other obvious element is the control unit, required to supervise the functioning of the machine as a whole, calling into operation the various units as required by the program. It receives the program instructions one by one in sequence, interprets them and sends appropriate control signals to the various units. Different levels of storage (or memory) are usually employed in a computer system. Two important characteristics of main memory are: (a) the main memory is a read/write (RW or R/W) memory permitting data to be stored or retrieved at comparable intervals, and (b) the main memory is a random access memory (RAM); i.e., the time to access each stored word is constant, independent of the sequence in which words were stored. This can be contrasted with several serial memories such as disks, drums, tapes and shift registers in which data is available only in the same sequence as originally stored.

5. plug-compatible mainframe -- Computer mainframes that can directly execute all application programs and system software written for the IBM system 370, 303X Series, 308X Series and or 4300 Series computers and can utilize the peripheral equipment available for these computers.

computer based system

A term which refers to any system utilizing a computer for the execution of specified functions. Included, but are not limited to such systems are the following: area navigation systems, flight management systems, flight planning (operations) systems, flight/ATC simulators, modeling, analysis and design systems, ATC navigation systems, ATC surveillance systems, communications systems, etc.

1. computer based instruction/CBI -- A overall term which refers to any generalized use of computers in the training process.

Computer Display Channel/CDC

The CDC is the Display Channel (DC) based upon the Raytheon 730 Computer.

computer entry devices

Devices located at the D and A controller consoles which are used to enter data into the CCC; the devices of the alphanumeric keyboard and quick action keys.

computer identification number

A 3-digit numerical code, automatically assigned by the computer, that can be used to identify flight information to the computer. Each aircraft will have an individual computer identification number.

computer program

A plan or routine for solving a problem on a computer, as contrasted with such terms as fiscal program, military program and development program.

1. computer program production -- The set of software activities which begin with the initiation of the computer program design activity and terminate with the delivery of a tested, deliverable computer program product. Activities included in computer program production are design, coding, assembly, sub-program testing, assembly testing, and the preparation of all required documentation. The deliverable computer program product includes the following: sub-program card decks, program tapes, sub-program and table listings, sub-program design and coding specifications, sub-program and assembly test specifications, and acceptance test specifications.

computer program sub-system

That portion of the National Airspace System which is made up of the complete set of computer program components: operational, utility, support, and data reduction. See program component.

Computer Readout Device/CRD

The computer readout device displays tabular information as a result of a display request action or a computer readout.

COMSEC

A contraction for communication security commonly applied to equipment and/or systems for encryptment, transmission and decryptment of classified messages or data.

concealment system

A method of achieving confidentially in which the existence of sensitive information is hidden by embedding it in irrelevant data.

condensation

See change of state.

1. condensation level -- The height at which a rising parcel or layer of air would become saturated if lifted adiabatically.

2. condensation nuclei -- Small particles in the air on which water vapor condenses or sublimates.

3. condensation trail/contrail/vapor trail -- A cloud like streamer frequently observed to form behind aircraft flying in clear, cold, humid air.

condition code

This code conditions all receiving equipment on the circuit to monitor the station select code, which follows, to see if its station is being selected.

conditionally unstable air

Unsaturated air that will become unstable on the condition it becomes saturated. See instability.

conditioning

The process of receiving certain code characters, which will in turn allow a station to copy only those messages intended for that station.

1. conditional output -- A response to a given input which will not occur until all requirements for its release have been satisfied.

conduct

A series of related actions, designed to achieve a result, as in conducting a radio/radar search.

conduction

The transfer of heat by molecular action through a substance or from one substance in contact with another. The transfer is always from warmer to colder temperature.

confer

Holding a discussion without necessarily negotiating.

conference

The capability of simultaneous telephone connection to several parties.

confidence

Assurance or certainties.

1. confidence level -- Statistical boundaries limiting an estimate with a specified risk.

2. confidence limits -- Extremes of a confidence interval within which the true value has a designated chance (confidence level) of being included.

3. guaranteed confidence signals -- Signals indicating proper equipment operation.

confidentiality

(1) A concept that applies to information. It is the state afforded to information which requires protection against unauthorized disclosure. (2) A concept that applies to data that must be held in confidence and that describes the status and degree of protection that must be provided for such data about individuals as well as organizations.

configuration

(1) The specific number and type of major components and peripheral devices which make up a computer system. (2) A group of modules or unit which are inter-connected to perform a set of tasks. The following independent, co-existing configurations may exist:

1. operational configuration -- The configuration which forms the hardware environment for that set of programs that performs the operational ATC tasks.

2. non-operational configuration -- Any configuration which forms the hardware environment for any set of programs other than that set which performs the operational ATC tasks. Non-operational tasks include maintenance and data reduction.

configuration control

The systematic evaluation, coordination, approval, or disapproval of all changes to a NAS baseline configuration.

1. configuration control directive -- Record of a decision of the NASPO approving a baseline configuration and all sub-sequent changes thereto.

2. configuration control register -- A register in each system element and control unit of the IBM 9020 (except the 2821), which controls communication between system components.

configuration management phase

That period from assignment of responsibility to NASPO until all retrofits approved prior to commissioning the final site installation have been completed and all sites have been commissioned.

configuration status

The accounting for, and documenting of, changes made to end items subsequent to establishing the NAS baseline configuration.

confirm

To make certain that what should have occurred, did in fact occur, as in confirming computer action during transition stages.

conflict

The recognition of the predicated loss of separation minima.

1. conflict alarms -- Visual and/or aural alarms generated by a collision avoidance system to inform the flight crew of a threat or a possible collision with another aircraft.

2. conflict alert -- A function of certain air traffic control automated systems designed to alert controllers of an existing or pending situations recognized by the program parameters that require immediate attention/action.

3. conflict detection -- A function which provides an indication of an imminent air collision. See collision avoidance.

4. conflict resolution -- The resolution of potential conflicts between IFR aircraft and VFR aircraft that are radar identified and in communication with ATC by ensuring that radar targets do not touch. Pertinent traffic advisories shall be issued when this procedure is applied. Note: This separation procedure will not be provided utilizing fully digitized radar systems. See controlled airspace-Airport Radar Service Area/ARSA, Outer Area.

5. conflicting flight -- A compared flight which is found to be in conflict with the checked flight.

conformance

An agreement check between two quantities. An example is the time agreement between a reported time of arrival for a fix and the stored fix time for the same fix.

consolan

A low frequency, long-distance NAVAID used principally for transoceanic navigation.

constant ratio code

A code in which all characters are represented by combinations having a fixed ratio of ones and zeros.

constant pressure chart

A chart of a constant pressure surface. It may contain analyses of height, wind, temperature, humidity, and/or other elements.

constellation

(1) A recognizable group of stars by means of which individual stars may be identified. (2) A group of three to five orbiting satellites.

consumer(s)

Final users and/or purchasers of aviation goods and/or services (e.g., airline passengers) as well as those people directly affected by aviation (i.e., aircraft noise).

1. consumer's decision risk -- The risk, or probability, that a product will be accepted by a reliability/maintainability test when it should properly be rejected.

contact

(1) To establish communications via radio with another, informing or discussing matters of concern, as in contacting an overdue aircraft. (2) An instruction issued by a controller to establish communications with (followed by the name of the facility and, if appropriate, the frequency to be used). (2) A flight condition wherein the pilot ascertains the attitude of his aircraft and navigates by visual reference to the surface. See contact approach, radar contact.

1. **contact approach** -- An approach wherein an aircraft on an IFR flight plan, having an air traffic control authorization, operating clear of clouds with at least 1 mile flight visibility and a reasonable expectation of continuing to the destination airport in those conditions, may deviate from the prescribed instrument approach procedure and proceed to the airport of destination by visual reference to the surface. This approach will only be authorized when requested by the pilot and the reported ground visibility at the destination airport is at least 1 statute mile. (Refer to AIM)

Conterminous U. S./Continental U. S.

The forty nine States located on the continent of North America. The original 48 states, Alaska and the District of Columbia.

Continental Control Area/CCA

Airspace at and above 14,500 feet within the 48 contiguous states including the District of Columbia and Alaska south of latitude 68° 00' N., excluding the Alaska peninsula west of 160° 00' W. Does not include prohibited areas or most restricted areas. See controlled airspace.

continual monitoring

The capability of the remote monitoring sub-system (RMS) portion of each NAS sub-system to continually (recurring in rapid succession) monitor its sensors in the determination of the sub-systems condition such as status, alarms and alerts.

contour

(1) In meteorology, a line of equal height on a constant pressure chart; analogous to contours on a relief map. (2)

In radar meteorology, a line on a radar scope of equal echo intensity.

contour lines

(1) Lines drawn on maps and charts joining points of equal elevation. (2) Lines connecting points of equal altitude on a constant pressure chart.

contouring circuit

On weather radar, a circuit which displays multiple contours of echo intensity simultaneously on the plan position indicator or range height indicator scope. See contour.

contract

1. contract acceptance inspection/CAI -- The formal acceptance (by an appropriate agency) of a constructed facility from the construction contractor or an installed system or equipment from the installation contractor.

2. contract data requirements List/CDRL -- In contract form, listing all data items selected from an authorized data list (ADL), required to be delivered under the contract.

Contracting Officer/CO

A person having the legal responsibility for contact (as a representative of an agency/company) with a contractor. Only the contracting officer has the authority to issue directions or enter into agreements which may constitute new assignment of work or change the expressed terms, conditions or specifications incorporated into the contract or delivery schedule.

1. Contracting Officer's Representative/COR, Resident Engineer/RE -- The field representative of the agency (FAA) office that has contract responsibility for a contractor's task. The RE is primarily responsible for field agency-contractor liaison. The RE also represents the office during the JAI with other FAA groups.

2. Contracting Officer's Technical Representative/COTR, Technical On-site Representative/TOR -- The COTR/TOR is the field representative of the agency (FAA) that has contract responsibility for a contractor's system/equipment installation task.

contrast

The ratio between the maximum and minimum brightness values.

1. contrast control -- The manual gain control for a video signal. The contrast control affects both brightness and contrast of the display.

control area

See controlled airspace.

1. control area extension -- Designated airspace over the high seas within which the U.S. has accepted the responsibility of providing air traffic services. THis service is provided in a manner consistent with that adopted for airspace under its domestic jurisdiction. While state aircraft may operate on a "due regard" basis in such areas, it is the Department of Defense policy to comply with the provisions of such service to the extent that the military mission permits.

control objective

A desirable goal or condition for a specific event cycle that reflects the application of the overall objectives of internal control to that specific cycle. Control objectives are not absolute. Since the achievement of control objectives can be and often is affected by such factors as budget constraints, staffing limitations, consideration of other workload priorities, statutory and regulatory restrictions and cost-benefit considerations, the lack of achievement of control objectives does not necessarily represent a defect or deficiency requiring correction. Such limiting factors should be considered in determining whether there is reasonable assurance that resources are properly managed and safeguarded.

control office/point

The location designated as having the responsibility for maintaining the overall telephone circuit. Inmost cases this is the office which coordinates all activities on a circuit with a customer.

control point

The position an aircraft must reach at a predetermined time.

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 within an air route traffic control center or an approach control facility. Sectors are established based on predominant traffic flows, altitude strata, and controller workload. Pilot-communications during operations within a sector are normally maintained on discrete frequencies assigned to the sector. See discrete frequency.

control slash

A radar beacon slash representing the actual position of the associated aircraft. Normally, the control slash is the one closest to the interrogating radar beacon site. When ARTCC radar is operating in narrowband (digitized) mode, the control slash is converted to a target symbol.

control unit

Any unit in a computer system which is used to adapt a physical device to the I/O interface or to a general purpose adapter interface. See I/O path.

control zone

The space expressed in feet of radius, that surrounds equipment that is used to process sensitive information and which is under sufficient physical and technical control to preclude an unauthorized entry or compromise. Synonymous with a security perimeter.

Control Zone/CZ

See controlled airspace.

controllable isolation

Controlled sharing in which the scope or domain of authorization can be reduced to an arbitrarily small set or sphere of activity.

controlled access/controlled accessibility

See access control.

controlled aircraft

Aircraft that are participating and receiving traffic separation service from the ATC system.

controlled airspace

Airspace designated as a control zone, airport radar service area, terminal control area, transition area, control area, continental control area, and positive control area within which some or all aircraft may be subject to air traffic control. (Refer to AIM, FAR Part 71)

1. Control Zone/C2 -- Controlled airspace which extends upward from the surface of the earth and terminates at the base of the continental control area. Control zones that do not underlie the continental control area have no upper limit. A control zone may include one or more airports and is normally a circular area of 5 statute miles in radius with extensions where necessary to include instrument approach and departure paths.

2. Airport Radar Service Area/ARSA -- Regulatory airspace surrounding designated airports wherein ATC provides radar vectoring and sequencing on a full-time basis for all IFR and VFR aircraft. The service provided in an ARSA includes: IFR/IFR - standard IFR separation; - IFR/VFR traffic advisories and conflict resolution; and VFR/VFR - traffic advisories and, as appropriate, safety alerts. The AIM contains an explanation of ARSA. The ARSA's are depicted on VFR aeronautical charts. See conflict resolution, outer area.

3. 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 specified in FAR Part 91. TCA's are depicted on Sectional, World Aeronautical, En Route Low Altitude, DOD FLIP and TCA charts. (Refer to FAR Part 91, AIM)

4. Transition Area -- Controlled airspace extending upward from 700 feet 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 1,200 feet or more above the surface of the earth when designated in conjunction with airway route structures or segments. Unless otherwise limited, transition areas terminate at the base of the overlying controlled airspace. Transition areas are designed to contain IFR operations in controlled airspace during portions of the terminal operation and while transiting between the terminal and en route environment.

5. control area -- Airspace designated as Colored Federal airways, VOR Federal airways, control areas associated with jet routes outside the continental control area (FAR 71.163), additional control areas (FAR 71.163), control area extensions (FAR 71.165) and area low routes. Control areas do not include the continental control area, but unless otherwise designated, they do not include the airspace between a segment of a main VOR Federal airway and its associated alternate segments with the vertical extent of the area corresponding to the vertical extent of the related segment of the main airway. The vertical extent of the airspace extends upward from 700 feet above the surface (until designated from 1,200 feet above the surface or from at least 300 feet below the MEA, whichever is higher) to the base of the continental control area. See FAR Part 71.

6. Continental Control Area/CCA -- Airspace at and above 14,500 feet within the 48 contiguous states including the District of Columbia and Alaska south of latitude 68° 00' N., excluding the Alaska peninsula west of 160° 00' W. It does not include airspace less than 1500 feet above terrain and prohibited and restricted areas (except certain specified restricted areas).

7. Positive Control Area/PCA -- Airspace designated in FAR, Part 71 within which there is positive control of aircraft. Flight in PCA is normally conducted under instrument flight rules. PCA is designated throughout most of the conterminous United States and its vertical extent is from 18,000 feet MSL to and including flight level 600. In Alaska PCA does not include the airspace less than 1,500 feet above the surface of the earth nor the airspace over the Alaska Peninsula west of longitude 160° W. Rules for operating in PCA are found in FARs 91.97 and 91.24.

8. transition area -- Airspace extending upward from 700 feet 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 1,200 feet or more above the surface of the earth when designated in conjunction with airway route structures or segments. Unless otherwise limited, transition areas terminate at the base of the overlying controlled airspace.

controlled airspace (ICAO)

Airspace of defined dimensions within which air traffic control service is provided to controlled flights.

1. Control Area (ICAO) --- A controlled airspace extending upward from a specified limit above the earth.

2. Control Zone (ICAO) -- A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

3. Terminal Control Area (ICAO) -- A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodromes.

controlled area

An area which requires control of access, occupancy and working conditions for radiation protection purposes.

controlled departure time/CDT

(1) A departure time, usually including a ground delay, assigned to an aircraft as part of an arrival flow program. CDTs are computed for individual aircraft and are used as a means to spread demand for a particular NAS resource over a longer time period in order to alleviate a condition where demand is predicted to be significantly in excess of capacity. (2) A method of arriving at a destination at a specified time by changing direction and/or speed of an aircraft.

1. controlled departure time (CDT) programs -- These programs are the flow control process whereby aircraft are held on the ground at the departure airport when delays are projected to occur in either the en route system or the terminal of intended landing. The purpose of these programs is to reduce congestion in the air traffic system or to limit the duration of airborne holding in the arrival center or terminal area. A CDT is a specified departure slot shown on the flight plan as an expected departure clearance time (EDCT)

controlled security mode

The mode of operation which provides a type of multi-level security in which a more limited amount of trust is placed in the hardware/software base of the system, with resultant restrictions on the classification levels and clearance levels that may be supported.

controlled sharing

The condition which exists when access control is applied to all users and components of a resource-sharing AIS system.

Controlled Visual Flight Rules/CVFR

VFR operation in which a pilot has filed a flight plan or flight intent requesting ATC separation service and is receiving such service. See Terminal Radar Service Area.

Controlled Visual Rules/CVR

Visual flights in which avoidance of collision with all other aircraft is assured by the ATC system. To enable the ATC system to carry this out, CVR flight is restricted to Positive Control Airspace.

controller

See Air Traffic Control Specialist.

controlling obstruction

The highest obstruction relative to a prescribed plan within a specific area.

convection

(1) In general, mass motion within a fluid resulting in transport and mixing of the properties of that fluid. (2) In meteorology, atmospheric motions that are predominantly vertical, resulting in vertical transport and mixing of atmospheric properties; distinguished from advection.

convective cloud

See cumuliform.

convective condensation level/CCL

The lowest level at which condensation will occur as a result of convection due to surface heating. When condensation occurs at this level, the layer between the surface and the CCL will be thoroughly mixed, the temperature lapse rate will be dry adiabatic, and the mixing ratio will be constant.

convective instability

The state of an unsaturated layer of air whose lapse rates of temperature and moisture are such that when lifted

adiabatically until the layer becomes saturated, convection is spontaneous.

Convective SIGMET/WST/Convective Significant Meteorological Information

A weather advisory concerning convective weather significant to the safety of all aircraft. Convective SIGMET's are issued for tornadoes, lines of thunderstorms, embedded thunderstorms of any intensity level, areas of thunderstorms greater than or equal to VIP level 4 with an areal coverage of 4/10 (40%) or more, and hail 3/4 inch or greater. See SIGMET, CWA, and AIRMET. (Refer to AIM)

convergence

THe condition that exists when the distribution of winds within a given area is such that there is a net horizontal inflow of air into the area. In convergence at lower levels, the removal of the resulting excess is accomplished by an upward movement of air; consequently, areas of low level convergent winds are regions favorable to the occurrence of clouds and precipitation. Compare with divergence.

conversion

The process of transporting a computer system from one environment to a different environment while maintaining the functional requirements of the original system. This activity involves the translating of data, files or programs into formats or representations compatible with a new software or hardware system. From the user's viewpoint, the system of programs performs the same function in the old and new environments. Conversion may be accomplished using a number of techniques including, recording, reprogramming and redesign.

converted data

Alphanumeric data (generally flight movement data) converted by the computer program for insertion into numeric and logical tables (files).

1. converted fix -- A fix developed by the program from the filed route. Any flight plan fix located within the control area and inbound/outbound fixes converted for insertion into numeric and logical tables (files).

2. converted route -- Numeric and logic data created by the computer program from input filed route data to define the route of flight.

3. converted route data -- Alphanumeric route data converted and expanded into numeric and logic files by the computer program to define the route of flight.

4. converted segment -- Two Converted Fixes and the line between them.

Cooperative Independent Surveillance/CIS

A system which derives aircraft position directly from an exchange with a cooperative aircraft unit, without position data from the navigation system. The position is computed by the ground based system and may be transmitted back to the aircraft.

coordinate(s)

The intersection of lines of reference, usually expressed in degrees/minutes/ seconds of latitude and longitude, used to determine position or location.

1. coordinates, display -- Coordinates covering a particular plan view display's geographical area.

2. coordinates, system -- Coordinates covering a position within the geographical area of a facility.

3. coordinates, X, Y -- Geometric notations used to define the position of a point.

coordinate conversion

The first step in the processing of radar data. It is the conversion of radar data coordinates from radar site polar coordinates to system XY coordinates. The system XY cartesian axis is located at the lower left hand corner of the plane that is tangent to the earth's surface at the origin of the stereographic axis. The positive Y axis has the direction of true north at the point of tangency. The coordinate conversion of radar data results in an approximation to the stereographic projection of this data onto the tangent plane.

coordination fix

Used as a common reference point for coordination between facilities. A fix is used for the purpose of handoff, transfer control of an aircraft, or coordinate flight progress. For terminal facilities, it may also serve as a clearance for arriving aircraft. See inbound fix, outbound fix, handoff fix.

copy card

A tabulating card with a frame of unexposed and unprocessed microfilm mounted in or above a rectangular hole for subsequent exposure and development while still mounted in the card.

core/core memory

See storage, magnetic core.

coriolis error

See celestial observation errors.

coriolis force

An apparent force due to the rotation of the earth which causes a moving body to be deflected to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.

corona

A prismatically colored circle or arcs of a circle with the sun or moon at its center. THe coloration is from blue inside to red outside (opposite that of a halo). It varies in size (much smaller) as opposed to the fixed diameter of a halo. Characteristic of clouds composed of water droplets, it is valuable in differentiating between middle and cirriform clouds.

corner effect

The rounding off of the attenuation versus frequency characteristic of a filter at the extremes (or corners) of the passband.

corposant

See St. Elmo's Fire.

correction

An error has been made in the transmission and the correct version follows.

corrective advisory

A TCAS resolution advisory that instructs the pilot to deviate from a current vertical rate, e.g., DON'T CLIMB when the aircraft is climbing.

corrective maintenance

All unscheduled inspection, testing or repair activities performed on equipment, following its failure, for the purpose of restoring that equipment to satisfactory operating condition.

1. corrective maintenance action -- Action required to repair a single failure; comprised of all those individual maintenance tasks involved in the maintenance procedure, e.g., fault localization, isolation, repair, checkout, etc.

2. corrective/preventive maintenance data -- Maintenance log information consisting of any maintenance actions performed, corrective or preventive. This would include such things as failure reports and transient problems encountered, results of investigations and testing, equipment adjustments, etc.

correlated radar data

Primary or beacon radar data within the small search area or the large search area of the track with which it has been identified. In any one cycle for a given track, correlated radar data (if more than one datum qualifies) will be of the same datum-track priority and it will be the highest datum-track priority data received in that cycle. See correlation.

correlation

The relative association of two sets of data; e.g., positional agreement between radar data and the computer predicted track position. It is the process whereby primary/beacon radar data are uniquely identified with a given track. The process is used by the automatic tracking process for position or velocity smoothing or extrapolating of the track position. See priority, standard correlation.

correlation area

The airspace over a specified geographical area in which NORAD, PACAF or PIAD Region Operations Control Centers have the responsibility for air defense.

correlation fix

A fix used for flight plan correlation.

correlation line

A reference line established by NORAD, PACAF, or PIAD Region Commander, from which penetration or time-over for a flight is computed for the purposes of flight plan correlation.

correlation preference value

A numerical value is assigned to each track datum pair based on radar datum class and track class relationships. This value is used in the correlation process to obtain the best track/datum pairing. See priority.

cost-risk analysis

An analysis of the cost of potential risk of loss of compromise of data in an ADP system without data protection versus the cost of providing data protection.

count-down

The rate of beacon interrogations compared with that of parent radar pulses; this term is also used to compare the number of replies transmitted by a transponder with the total number of interrogation pulses received.

coupled approach

An instrument approach performed by the aircraft autopilot which is receiving position information and/or steering commands from on-board navigation equipment. In general, coupled non-precision approaches must be discontinued and flown manually at altitudes lower than 50 feet below the minimum descent altitude, and coupled precision approaches must be flown manually below 50 feet AGL. Coupled and autoland approaches are flown in VFR and IFR. It is common for air carriers to require their crews to fly coupled approaches and autoland approaches (if certified) when the weather conditions are less than approximately 4000 RVR. See autoland approach

course

(1) The intended direction of flight in the horizontal plane measured in degrees from north. (2) The direction of the intended path of an aircraft over the earth; or the direction of a line on a chart representing the intended aircraft path expressed as the angle measured from a

specific reference datum clockwise from 0° thru 360° to the line. (3) The ILS localizer signal pattern usually specified as the front course or the back course. (4) The intended track along a straight, curved, or segmented MLS path. See bearing, radial, Instrument Landing System, Microwave Landing System.

1. course setting error/CSE -- The difference between the desired course setting and the course which is actually set.

2. great circle course -- The route between two points on the earth's surface measured along the shorter segment of the circumference of the great circle between the two points. A great circle course establishes the shortest distance over the surface of the earth between any two terrestrial points.

2. grid course -- The horizontal angle measured clockwise from grid north to the course line. The course of an aircraft measured with reference to the north direction of a polar grid.

3. magnetic course - A predetermined desired magnetic track angle measured clockwise in radial arc degrees from magnetic north. The magnetic course, once determined and set, does not vary as a function of magnetic variation or aircraft direction.

4. station course -- A predetermined desired course direction to be followed (measured in degrees from station north).

5. true course/TC -- A predetermined true track angle measured clockwise, in degrees, from true north to the line representing the intended path of the aircraft.

course line

(1) A line of position which is parallel or approximately parallel to the track of the aircraft. (2) A line of position used to check aircraft position relative to intended course.

coverage

The volume of airspace in which a specific service is provided.

crab

A correction of aircraft heading into the wind to make good a given track; correction for wind drift.

crash

The uncontrolled contact of an aircraft with a fixed object (i.e., ground, man-made objects, etc.).

crash locator beacon

An electronic device attached to the aircraft structure as far aft as practicable in the fuselage, or in the tail surface, in such a manner that damage to the beacon will be minimized in the event of crash impact. It may be automatically ejectable or be permanently mounted. If it is automatically ejectable it will also have provision for manual removal and operation. The beacon operates from its own power source on 121.5 MHz and/or 243 MHz, preferably on both emergency frequencies, transmitting a distinctive downward swept audio tone for homing purposes, and is designed to function without human action after an accident.

crashworthiness

The ability of an aircraft to maintain a protective shell around the occupant(s) in conjunction with the ability to minimize injuries during the crash.

crewmember

A person assigned to perform duty in an aircraft during flight time.

critical

Functions or services that, if lost, would prevent the safe separation and/or control over aircraft.

1. critical altitude -- The maximum altitude at which, in standard atmosphere, it is possible to maintain, at a specified rotational speed, a specific [power or a specified manifold pressure. Unless otherwise stated, the critical altitude is the maximum altitude at which it is possible to maintain, at the maximum continuous rotational; speed, one of the following: (1) The maximum continuous power, in the case of engines for which this power rating is the same at sea level and at a rated altitude. (2) The maximum continuous rated manifold pressure, in the case of engines, the maximum

continuous power of which is governed by a constant manifold pressure.

2. critical engine -- The engine which, upon failure, would most adversely affect the performance or handling qualities of an aircraft.

criticality

A measure of the severity of a failure in relation to required performance, hazards to material or personnel, and maintenance cost.

1. criticality code -- A code which identifies whether test equipment, used at an Airway Facility is critical or non-critical, as used to measure and evaluate key performance parameters designated in applicable maintenance technical handbooks for system certification.

cross control

A compandor circuit arrangement in which input signals to the compressor also control the operation of the expander at the same end of the circuit.

cross (fix) at (altitude)

Used by ATC when a specified altitude restriction at a specified fix is required

cross (fix) at or above (altitude)

Used by ATC when an altitude restriction at a specified fix is required. It does not prohibit the aircraft from crossing the fix at a higher altitude than specified; however, the higher altitude may not be one that will violate a succeeding altitude restriction or altitude assignment. See altitude assignment, altitude restriction. (Refer to AIM)

cross (fix) at or below (altitude)

Used by ATC when a maximum crossing altitude at a specific fix is required. It does not prohibit the aircraft from crossing the fix at a lower altitude; however, it must be at or above the minimum IFR altitude, SEE minimum IFR altitude, altitude restriction. (Refer to FAR Part 91)

cross modulation

A type of inter-modulation of the carrier of the desired signal by an undesired signal wave.

crosstalk

An unwanted transfer of energy from one communications channel to another channel.

1. crosstalk far-end -- Crosstalk that travels along the disturbed circuit in the direction in which the signals travel in the circuit. To determine the far-end crosstalk between two pairs, 1 and 2, signals are transmitted on pair 2 at station A, and the crosstalk level is measured on pair 2 at station B.

2. crosstalk index -- A statistically derived number that is used to relate crosstalk coupling in dBx to the grade of performance (with respect to crosstalk) to be expected from a circuit. The index depends upon the number of disturbing circuits; the activity on these circuits; and the distributing of talker volumes, loses, room noise and the listener's acuity.

3. crosstalk runaround -- Crosstalk resulting from the coupling of the high level end of one repeater to the low level end of another repeater. Often a third repeater or line is the means of coupling; therefore, runaround crosstalk may be a form of interaction crosstalk.

4. crosstalk suppression filter -- A filter, inserted in a line, that is designed to reduce crosstalk.

cross track velocity

Velocity of an aircraft normal to the intended flight path.

crossbar system

An automatic switching arrangement used extensively in telephone toll switching to permit x, y access and connection of any number of circuits on either a single-circuit or party-line basis.

crosslink traffic advisory

Information concerning current relative vertical (and horizontal, if available) position sent by own aircraft to a TCAS I equipped aircraft.

1. crosslink alert -- Information contained in a short special surveillance message sent to a Mode S, non-TCAS equipped aircraft, that TCAS has generated a resolution advisory against that aircraft.

crosstell

A track under control of one facility, i.e., ARTS III NAS, in transfer to, although not yet accepted by, another adjacent facility and data concerning the track is being sent across to the receiving facility. See type E crosstell.

crosswind

(1) When used concerning the traffic pattern, the word means "crosswind leg." See traffic pattern. (2) When used concerning wind conditions, the word means a wind not parallel to the runway or the path of an aircraft. See crosswind component.

1. crosswind component -- The wind component measured in knots at 90° to the longitudinal axis of the runway.

cruise

Used in an ATC clearance to authorize a pilot to conduct flight at any altitude from the minimum IFR altitude up to and including the altitude specified in the clearance. THe pilot may level off at any intermediate altitude within this block of airspace. Climb/descent within the block is to be made at the discretion of the pilot. However, once the pilot starts descent and verbally reports leaving an altitude in the block, he may not return to that altitude without additional ATC clearance. Further, it is approval for the pilot to proceed to and make an approach at the destination airport and can be used in conjunction with:

1. An airport clearance limit at locations with a standard/special instrument approach procedure. The FAR's require that if an instrument letdown to an airport is necessary, the pilot shall make the letdown in accordance with a standard/special instrument approach procedure for that airport, or

2. An airport clearance limit at locations that are within/below/outside controlled airspace and without a standard/special instrument approach procedure. Such a clearance is not authorization for the pilot to descend under IFR conditions below the applicable minimum IFR altitude nor does it imply that ATC is exercising control over aircraft in uncontrolled airspace;

however, it provides a means foe the aircraft to proceed to destination airport, descend, and land in accordance with applicable FAR's governing VFR flight operations. Also, this provides search and rescue protection until such time as the IFR flight plan is closed. See Instrument Approach Procedure.

cruise control

The operation of an aircraft to obtain the maximum efficiency on a particular mission (most miles per amount of fuel).

cruising altitude

(1) A level determined by vertical measurement from mean sea level. (2) An altitude or flight level maintained during en route level flight. This is a constant altitude and should not be confused with a cruise clearance. See altitude.

1. cruising level (ICAO) -- A level maintained during a significant portion of a flight.

cryptology

Meaning enigmatic language, it is a field that encompasses both the operations (cryptanalysis) and the science (cryptography) of encoding.

1. cryptanalysis -- The steps and operations performed in converting encrypted messages into plain text without initial knowledge of the key employed in the encryption algorithm.

2. cryptographic system -- The documents, devices, equipment and associated techniques that are used as a unit to provide a single means of encryption (enciphering or encoding).

3. cryptography -- The art or science which treats the principles, means and methods for rendering plain text unintelligible and for converting encrypted messages into intelligible form.

4. crypto-operation -- A deliberate or accidental process or act that results in a change in the integrity of the original data.

cumulative elapsed time/CET

The time estimated to be taken by an aircraft in traveling to a fix from some preceding fix (reference fix).

cumuliform

A term descriptive of all convective clouds exhibiting vertical development in contrast to the horizontally extended stratiform types.

cumulonimbus

A cumuliform cloud type; it is heavy and dense, with considerable vertical extent in the form of massive towers. This form frequently exhibits tops in the shape of an anvil or massive plume. Under the base of cumulonimbus, which often are very dark, there frequently exist virga, precipitation, and low ragged clouds (scud), either merged with it or standing separately. This cloud type is frequently accompanied by lighting, thunder, and sometimes hail; occasionally producing a tornado or a waterspout. The ultimate manifestation of the growth of a cumulus cloud, occasionally extends well into the stratosphere.

cumulonimbus mamma

A cumulonimbus cloud having hanging protuberances, like pouches, festoons, or udders, on the under side of the cloud; usually indicative of severe turbulence.

cumulus

A cloud in the form of individual detached domes or towers which are usually dense and well defined. These clouds develop vertically in the form of rising mounds, the bulging upper part of which often resembles a cauliflower. The sunlit parts of these clouds are mostly brilliant white; their bases are relatively dark and nearly horizontal.

cumulus fractus

See fractus.

currency

The prescribed minimum time requirements necessary to work an ATC position of operation, independently, under general supervision.

current route segment

(a) Based on flight plan position: That route segment which precedes the "flight plan next fix". (b) Based on track position: That route segment which precedes the "track next fix" (only meaningful for matched tracks).

current sectorization

The arrangement of control sectors and their assigned FPA(s) resulting from the sector plan in effect plus modification via CS messages.

1. current sectorization plan -- The image of one of the adapted plans which the program is currently using for data routing, etc. It is this image which is modified by a manually entered re-sectorization message. See sectorization plan.

cursor

A character, usually an underline or block, used to indicate a position on a video display or computer terminal.

custodial area

An organizational subdivision of a region/center in which property is physically located and/or by which a property record is maintained.

1. custodial property record -- A record which includes all in-use personal property, capitalized or selectively managed and controlled for a custodial area.

custodian

An individual who has possession of or is otherwise charged with the responsibility for safeguarding or accounting for classified information.

customer provided equipment/CPE

Devices and apparatus and their associated wiring that are owned by a customer and are interconnected with telephone company equipment or lines for the telecommunications service desired.

cutmark

A sensing mark that permits automatic cutting of microfiche from a roll of 105 mm film.

cutover

See in service transition.

CWP weather products

Includes alphanumeric, graphic weather products and portrayals.

cycle/cycle time

(1) The time in which all unconditional programs will have operated at least once. (2) In TTY usage, the elapsed time for a full APULS polling sequence of a multi-station TTY circuit. In computer usage, the time in which all unconditional programs will have operated at least once.

cyclogenesis

Any development or strengthening of cyclonic circulation in the atmosphere.

cyclone

(1) An area of low atmospheric pressure which has a closed circulation that is cyclonic, i. e., as viewed from above, the circulation is counter clockwise in he Northern Hemisphere, clockwise in the Southern Hemisphere, undefined at the Equator. Because cyclonic circulation and relatively low atmospheric pressure usually co-exist, in common practice the term cyclone and low are used interchangeably. Also, because cyclones often are accompanied by inclement (sometimes destructive) weather, they are frequently referred to simply as storms. (2) Frequently misused to denote a tornado. (3) In the Indian Ocean, a tropical cyclone of hurricane or typhoon force.

D-line

An adapted line segment that causes a program search for an applicable PDR when intersected by a direct route segment for a departing flight.

D-sounding

The difference between pressure altitude and true altitude as determined at a given time in flight (true altitude minus pressure altitude).

D-type conditioning

A performance characteristic that controls the signal to C-notched noise ratio and inter-modulation distortion. D-type conditioning may be combined with C-type conditioning.

D-value

Departure of true altitude from pressure altitude; obtained by algebraically subtracting true altitude from pressure altitude (thus it may be plus or minus). On a constant pressure chart, the difference between actual height and standard atmospheric height of a constant pressure surface.

daily

A scheduling term, meaning every calendar day. When used in a maintenance schedule, daily is intended to mean every calendar day for those locations staffed seven days a week. At other locations, daily is intended to mean every calendar day resident staffing is on duty, the schedule may be reduced to a minimum of three times a week, with not more than three days between successive repetitions, in the event of any emergency, and at non-resident or one-man locations.

damping

(1) A progressive reduction of motion of a moving part. (2) Electrically, the progressive reduction of amplitude of wave motion.

dashpot

A device used to cause damping or deceleration in a mechanism. Usually an air or oil filled cylinder with a piston having metered holes.

Data

(1) Information. (2) A general term used to denote elements of information which can be processed or produced by a computer. Data types include:

1. air traffic data -- The messages exchanged between air traffic controllers and pilots, and the data provided by/to the NAS sub-systems for the control of air traffic, but not including weather and flight plan data.

2. diagnostic and maintenance data -- Information which includes the results of diagnostic and other maintenance tests.

2. flight planning data -- The information exchanged between pilots, NAS specialists, and NAS sub-systems in the preparation and utilization of aircraft departure and arrival schedules and routes.

3. navigation and landing data -- The signals provided to aircraft avionics and pilots to enable navigation in terminal and en route areas, and assist pilots in landing procedures at airports.

4. surveillance data -- Data obtained from search radar and beacon interrogator systems indicating the position and velocity of aircraft.

5. traffic management data -- The messages exchanged between specialists and pilots, and the data provided by/to NAS sub-systems for the management of aircraft flow.

6. weather data -- The messages exchanged between NAS sub-systems, specialists, and users for the collection, distribution, and analysis of current meteorological conditions; and the preparation and distribution of meteorological forecasts to NAS users.

7. maintenance and operations support data -- The messages exchanged between the NAS sub-systems and the remote maintenance monitoring system for the monitoring and control of those sub-systems, and the information obtained for NAS specialists in management of maintenance resources.

data-addressable device

Any physical device in a computer system uniquely addressed by control data within the message sent by an I/O instruction.

data base

That portion of a data-processing system that consists of the permanent or semi-permanent data that is necessary to carry out the functions of the system. The data base is a logically organized collection of information where a multiple relationship exists among records and which is used in one or more related applications. Data that represent well-known physical or mathematical constants or that merely control the proper sequencing of the data processing, are also considered part of the data base. The data base is often sub-divided into two parts: static and dynamic. System parameters that are subject to only occasional manual changes (for example, geographic data, aircraft characteristics, etc.) are usually considered the static part of the data base, particularly if they are expressed in tabular form such that these data can be changed within broad limits without upsetting the proper operation of the system. Data that regularly change during operation of the system (such as radar data, controller requests, aircraft position) are considered to be the dynamic part of the data base. A data base may sometimes be referred to as a file.

1. data base management system -- A generalized software package which handles the creation and maintenance of a data base.

data block

The symbology displayed adjacent to a tracked aircraft target on a PVD, containing aircraft position symbols, leader, velocity vector and the alphanumeric data associated with the aircraft, e.g., aircraft identification, assigned altitude, Mode C altitude, computer number, BEACON code, attention bars, and special condition indicators. See leader.

1. data block, full -- The symbology displayed adjacent to a tracked aircraft target on a PVD, containing (subject to field filtering) aircraft position symbol, leader, velocity vector and the alphanumeric data associated with the aircraft.

2. data block, limited -- A seven character block of data displayed on the R-Controller's PVD. To display uncorrelated emergency, radio failure beacon data

blocks, beacon code readout data blocks, or Mode C intruder data.

data conditioning

The addition of equipment to or selection of communication facilities to provide the performance characteristics required for certain types of data transmission.

data-dependent protection

The state that exists when computerized data is the same as that in the source documents and has not been exposed to accidental or malicious alteration or destruction.

data entry controls

Devices located at the Radar Controllers console which are used to enter data into the CCC. The devices include: alphanumeric keyboard, track ball, quick action keys, and category function controls.

data element

A basic unit of identifiable and definable information. A data element occupies the space provided by fields in a record or blocks on a form. It has an identifying name and value or values for expressing a specific fact. For example, a data element named "color of eyes" could have recorded values of "blue (a name)," "BL (an abbreviation)" or "06 (a code)." Similarly, a data element named "age of employee" could have a recorded value of "28(a numeric value)."

data link

(1) Any communication channel or circuit used to transmit data from a sensor to a computer, a readout device, or a storage device. (2) Electronic equipment for automatic transmission of information in digital form.

1. data link message -- There are two types of data link messages, air traffic control (ATC) and flight service (non-ATC) messages. An ATC data link message consists of information used to communicate between ATC and the pilot. Service data link message would include weather information, NOTAMs, and miscellaneous information. If ATC or service is not specified on the diagram, then the message could be one or both.

2. data link transmission -- The transmission of data link messages from the transmitter of a Mode S sensor or

transponder over a radio frequency (RF) link which uses air (free space) as the communications medium.

3. data link weather graphics products -- Weather data, to be supplied to pilots via Mode S data link upon request, that is transmitted in a graphical form (e.g., contours of turbulence based on weather radar data, synoptic maps including isobars, et al.)

data processing

The operation of digital or analog computers.

1. data processing activity/DPA -- A single computer which maybe composed of multiple pieces of equipment, e.g., printer, disk drive, tape drive, CPU, control unit, etc., or it could be a stand alone microcomputer.

2. data processing installation/DPI -- One or more DPA computers located in an office, division or a facility.

data reduction program

A computer program designed to reduce master operational recording tape data for analysis and evaluation.

data security

The protection of data from accidental or malicious modification, destruction or disclosure.

1. data protection engineering -- The methodology and tools used for designing and implementing data protection mechanisms.

data service(s) organization

An organizational element which is responsible for the design, development and/or maintenance of automated data systems. This is a relative term under which the scope and level of service may vary depending on a particular automated data system.

data system

A system that is designed to provide the manager of an organization/activity with the information he/she needs to keep informed of the current status of that organization/activity, to understand the implications and to make and implement appropriate planning and operating decisions. The system gathers and summarizes program, operational and aviation universe data for operational

support, analysis, management decision and control. The system includes a specific set of data, procedures, services and reports.

1. local (data) system(s) -- A management system used only for internal management by a single office, service, region or center; or a system used by a single region for operational purposes provided that the data source and dissemination is confined to the geographical jurisdiction of that region.

2. national (data) system(s) -- A system where data within the system is used in more than one office, service, region, and/or center or in more than one program. A system may also be considered national in scope if output from the system is disseminated nationally to a segment of the aviation public or other government elements or if input to the system comes from more than one office, service, region or center; national headquarters of non-governmental organizations, government agencies or segments of the public beyond the geographical boundaries of the region.

3. time sharing system -- (1) A form of automated data service in which multiple users have access to a remotely located computer through on-site terminals. (2) A synonym for contractual data services.

Data Systems Coordinator/DSC

A Data Systems Specialist/DSS designated by the Data Systems Officer to represent the AT watch supervisor in matters concerning automation.

data transfer channel

1. data transfer channel, low speed -- A channel capable of modulation rates up to and including 300 bits per second.

2. data transfer channel, medium speed -- A channel capable of modulation rates below 3000 but above 300 bits per second.

3. data transfer channel, high speed -- A channel capable of modulation rates above 3000 bits per second.

date-time group

Six digits representing the day of the month, the hour and the minute from the twenty-four hour clock, in that order (e.g., "142215"). Date-time groups have no time zone

designator and always represent Greenwich Mean Time (GMT). Some formats contain an 8 digit date-time group. The first two digits represent the day of the month, the second two digits represent the month of the year, the last 4 digits represent the hour and minutes GMT (e.g., "08091710").

datum

Reference to a direction, level or position from which angles, heights, depths, speeds or distances are convertionally measured.

day

The 24 hour period during which the earth completes one rotation on its axis.

1. civil day -- The interval of time between two successive lower transits of a meridian by the mean (or civil) sun.

2. sidereal day -- The interval of time between two successive upper transits of a meridian by the first point of Aries (23 hours 56 minutes).

3. solar day -- The interval of time between two successive lower transits of a meridian by the true (apparent) sun.

dBm 0

The test tone 1000 Hz power level at the 0TLP.

1. dBmC 0 -- The test tone 1000 Hz power level measured at the 0TLP using a "C'' message weighting network.

2. dBrnC 0 -- The noise power measured at the 0TLP with a "C'' message weighting network referenced to the reference noise power level of 10^{-9} watts at 1000 Hz.

dead reckoning/DR

(1) A method of determining the position of an aircraft on the basis of indicated airspeed, compass heading, and the best possible estimate of wind velocity. Dead reckoning is a last resort when all other navigation methods fail. (2) Position fixing based on estination of the distance traveled and the course followed from a known point.

1. dead reckoning position -- The position of an aircraft determined for a given time by the application of direction and speed only.

lead-time

The time remaining in the pulse repetition frequency of a radar when no video returns are being received.

debug

The process of identifying, locating, isolating and correcting/removing any errors, faults or malfunctions from computer equipment or mistakes from a program or routine.

Decca navigation

A form of hyperbolic navigation in which the master station normally operates with two slave stations. This system is characterized by the use of continuous-wave signals. See Loran.

decelerate

(1) To reduce the speed of an object. (2) Negative acceleration.

decimal, binary coded

Describing a decimal notation in which the individual decimal digits are represented by a pattern of ones and zeros; e.g., in the 8-4-2-1 code decimal notation, the number twelve is represented as 0001 0010 for 1 and 2, respectively; whereas, in pure or straight binary notation, it is represented as 1100.

decipher

To convert, by use of the appropriate key, enciphered text into its equivalent plain text.

decision height/DH

The height, specified in MSL, above the highest runway elevation in the touchdown zone at which a missed approach shall be initiated if the required visual reference has not been established. This term is used only in procedures where an electronic glide slope provides the reference for descent, as in ILS or PAR. The minimum altitude to which a pilot following an ILS Instrument Approach Procedure may descend before making a decision to land or execute a missed approach procedure. See category, landing.

1. decision altitude/height (ICAO) -- A specified altitude or height (A/H) in the precision approach at which a missed approach must be initiated if the required visual reference to continue the approach has not been established. Decision altitude (DA) is referenced to mean sea level (MSL) and decision height (DH) is referenced to the threshold elevation. The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.

declare

To state with emphasis that a situation exists, as in declaring the existence of an emergency event.

declassification

The determination that classified information no longer requires, in the interest of national security, any degree of protection against unauthorized disclosure, together with a removal or cancellation of the classification designation.

1. declassification event -- An event that eliminates the need for continued classification of information.

declination/dec

The angular distance to a body on the celestial sphere measured north to south through 90° from the celestial equator along the hour circle of the body (comparable to latitude).

decoder

A device or sub-system in the ground equipment that transforms the beacon or transponder reply code information into a form suitable for display or for further processing or action. Also used to denote the portion of the airborne transponder that interprets the interrogation code or mode received and instructs the transponder coder as to the type of reply to be sent.

de-correlated return

A return which is correlated in one scan or one operation of MRDP and then, subsequently, superseded by a lower correlation preference value/CPV return or an equal CPV return closer to the predicted track position within the

same scan or operation of MRDP (Multiple Radar Data Processing).

decrypt

To convert, as in converting from encrypted text to plain text.

deepening

A decrease in the central pressure of a pressure system; usually applied to a low rather than to a high, although technically, it is acceptable in either sense.

default

A standard value or condition under which a computer operates, unless specific instructions to do otherwise are given.

1. defaulted priorities -- The sequence of data selection priorities programmed into an automated system.

defense area

Airspace of the United States other than airspace designated as an ADIZ within which the ready control of aircraft is required in the interest of national security during an Air Defense Emergency or Defense Emergency.

defense emergency

A condition declared by the Commander of a U. S. unified or specified command (other than CINCNORAD), or by higher authority, confirming an overt attack of any type upon the United States or a major attack on U. S. forces overseas or an allied forces in any theater of operation.

Defense Visual Flight Rules/DVFR

Rules applicable to flights within an ADIZ conducted under the visual flight rules in FAR Part 91. See Air Defense Identification Zone. (Refer to FAR, Part 99)

defensive combat maneuvers/DCM

One or a combination of basic flight maneuvers calculated to provide a defensive position of advantage over another aircraft which has an offensive intent.

defruit

Technique utilized to suppress non-synchronous beacon replies.

degauss

(1) To apply a variable, alternating current (AC) field for the purpose of demagnetizing magnetic recording media, usually tapes. The process involves increasing the AC field gradually from zero to some maximum value and back to zero, which leaves a very low residue of magnetic induction on the media.

degradation

A gradual deterioration in performance as a function of time.

delay

1. filed en route delay -- Any of the following pre-planned delays at points/areas along the route of flight which require special flight plan filing and handling techniques.

1. terminal area delay - A delay within a terminal area for touch-and-go, low approach, or other terminal area activity.

2. special use airspace delay - A delay within a Military Operating Area, Restricted Area, Warning Area, or ATC Assigned Airspace.

4. aerial refuelling delay - A delay within an Aerial Refuelling Track or Anchor.

delay area

A route segment of specified circular dimensions within which a flight will operate for a pre-determined interval of time.

delay distortion

Between two frequencies, the difference in arrival time between signals at the two frequencies. It is the direct result of a non-linear phase-shift characteristic in the transmission medium. See envelope delay.

delay fix

Any fix to which delay data is suffixed in Field 10 of the flight plan message. See field.

delay indefinite (reason if known) expect further clearance (time)

Used by ATC to inform a pilot when an accurate estimate of the delay time and the reason for the delay cannot immediately be determined; e.g., a disabled aircraft on the runway, terminal or center area saturation, weather below landing minimums, etc. See expect further clearance.

delay forecast

The forecast of expected departure delays at a particular airport or flight delays along a specific route.

delay time/DT

(1) The amount of time that the arrival must lose to cross the meter fix at the assigned meter fix time. This is the difference between ACLT and VTA. (2) The component of downtime during which no maintenance is being accomplished on an item because of technician alert and response time, supply delay, or administrative reasons.

delete

To erase or cancel information or a previous action, as in deleting the highlighting of an item on a display, or completely deleting a full data block.

demarcation

A boundary used to describe a terminal strip at which connections are made between the serving company's circuits and those of the customer.

1. demarcation strip -- The terminal block where (commercial) common carrier lines terminate and user wiring begins. It is an imaginary line separating telephone company maintenance jurisdiction and user jurisdiction.

demodulation

The process whereby a wave resulting from modulation is so operated upon that a wave is obtained having substantially the characteristics of the original modulating wave.

density

(1) The ratio of the mass of any substance to the volume it occupies (weight per unit volume). (2) The ratio of any quantity to the volume or area it occupies, i.e., population per unit area, power density, etc. (3) The number of bits per inch/bpi which can be stored on a medium, e.g., tape or disk.

density altitude

See altitude.

deny

To refuse a request.

departure center

The ARTCC having jurisdiction for the airspace that generates a flight to the delay airport.

departure control

(1) A function of an approach control facility providing air traffic control service for departing IFR and, under certain conditions, VFR aircraft. (2) ATC operational position which is responsible for the control of departing aircraft from shortly after takeoff until their handoff to the en route system. See approach control. (Refer to AIM)

departure list

A controller-located list of departing aircraft presented on the plan view display in tabular form.

departure message

A message stating the time a specific aircraft departed an airport.

departure time

The time an aircraft becomes airborne.

depression

In meteorology, an area of low pressure; a low or trough. This is usually applied to a certain stage in the development of a tropical cyclone, to migratory lows and troughs, and to upper level lows and troughs that are only weakly developed.

derating

The intentional reduction of stress/strength ratio in the application of an item, usually for the purpose of reducing the occurrence of stress related failures.

derivative classification

A determination that information is in substance the same as information that is currently classified, and a designation of the level of classification.

descent speed adjustments

Speed deceleration calculations made to determine an accurate VTA. These calculations start at the transition point and use arrival speed segments to the vertex.

desensitization

Temporary reduction of transponder sensitivity after receipt of a signal. Used to reduce echo (multi-path) effects.

design review

Meetings held during the design process to critically examine the product design, configuration, design documentation, test program, planning and test data.

1. critical design review/CDR -- A formal review of all accomplishments during detailed design. This may entail review of pre-released detailed design documentation; e.g., drawings and specifications, analytical and experimental verification data, long lead item procurement list, bid package plan, site and environmental impacts, final test and evaluation plan, configuration and change control procedures.

2. preliminary design review/PDR -- A formal review to determine compatibility of the selected design approach with the performance and functional requirements, to formalize the Allocation Baseline and to obtain approval for commencement to the detailed design phase.

detect

To discern (visual or auditorial) a fact or item, usually from a display, such as an alarm indicator or the actions of an aircraft or noting the occurrence of events or situations such as pilot problems or equipment failure.

detent

A device, usually spring loaded, such as an arm or pin or roller, used to hold a mechanism in place after it has been positioned.

determine

To process information mentally in order to reach a decision about a situation, state of affairs, or timing of an action.

deviation(s)

(1) The vectorial separation between a predicted track position and a primary/beacon radar datum. (2) A departure from a current clearance, such as an off course maneuver to avoid weather or turbulence. (3) Where specifically authorized in the FAR's and requested by the pilot, an ATC authorization to deviate from certain regulations. (Refer to AIM) (4) Compass error caused by the magnetism within an aircraft; the angle measured from magnetic north eastward or westward to the direction of the earth's lines of magnetic force as deflected by the aircraft's magnetism.

1. deviation/dev correction -- The correction applied to a compass reading to correct for deviation error. The numerical equivalent of deviation with the algebraic sign added to magnetic heading to obtain compass heading.

device

An apparatus constructed or intended for a special purpose.

1. input device -- The mechanical unit designed to bring data to be processed into a computer; e.g., a card reader, a tape reader, or a keyboard.

2. output device -- The part of a machine which translates the electrical impulses representing data processed by the machine into permanent results such as printed forms, punched cards, and magnetic writing on tape.

3. device code -- The bit code for a specific input or output device. When decoded by external decoders, it generates a single device select pulse.

dew

Water condensed onto grass and other objects near the ground, the temperature of which have fallen below the

initial dew point temperature of the surface air, but is still above freezing. Compare with frost.

dew point/dew point temperature

The temperature to which a sample of air must be cooled, while the mixing ratio and barometric pressure remain constant, in order to attain saturation with respect to water.

diagnostic program

See routine, diagnostic.

1. diagnostic computer program -- Those programs which provide a means to test, analyze and verify hardware performance.

dial signaling

Denotes a type of signaling in which pulse trains are transmitted to a receiving terminal to operate automatic line selection equipment. The sequence of the dial pulses is determined by an operator, but their duration is predetermined by equipment adjustments.

dialing

The process of addressing by either stored address push button, key-sending, or rotary dialing.

differential

Pertaining to, or involving, a difference. A differential current device depends upon the difference in two current values to determine its action.

digital

Pertaining to the utilization of discrete integral numbers in a given base to represent all the quantities that occur in a problem or a calculation. It is possible to express in digital form all information stored, transferred, or processed by a dual state condition; e.g., on-off, open-closed, and true-false.

digital altimeter setting

Digitally encoded pressure sensitive flight instrument setting. The altimeter setting indicates the atmospheric pressure at a specific location relative to mean sea level that is used to adjust the altimeter.

Digital Data Communication System/DACOM

The term applicable to the solid state, medium speed digital data communication system for NAS. It is an all-inclusive term encompassing the transmission terminal equipment for installation at remote radar facilities and at ARTCCs. The equipment, when used in conjunction with voice bandwidth communication channels, will provide for transmissions of digital information from common processor equipment located at radar sites to the FAA ARTCCs and Air Defense Centers or between ARTCCs.

digitize

To convert an analog measurement of a physical variable into a numerical value, thereby expressing the quantity in digital form.

1. digitized beacon -- Beacon data in a specific code format containing information such as target position, identification (beacon code), altitude and indication whether or not it is a reinforced beacon. If it is Mode S information, it would also contain a track report number.

2. digitized search radar -- Search radar that has been digitized into a specific code format containing position and possibly signal strength information.

3. digitized weather radar data -- Weather radar data in specific code format showing the intensity, position and possibly the types of precipitation.

4. digitized primary reports -- Encoded search radar target reports.

5. digitized winds -- Encoded wind speed and direction.

digitizer

A device which converts an analog measurement into digital form. Synonymous with (quantizer).

dip

To briefly lower and then raise.

1. celestial dip -- The angle of depression of the visible sea horizon due to the elevation of the eye of the observer above the level of the sea.

2. magnetic dip -- The vertical displacement of the compass needle from the horizon caused by the earth's magnetic field.

dip switch

A type of switch with two parallel rows of leads that provide connections from the circuits inside the switch to printed circuit boards or cards.

direct

(1) Straight line flight between two navigational aids, fixes, points, or any combination thereof. When used by pilots in describing off-airway routes, points defining direct route segments become compulsory reporting points unless the aircraft is under radar contact. (2) To cause a flight data display to appear at another workstation.

direct access

(1) A method of transmitting a series of digits by depressing a single button. (2) Refers to the use of Direct Access Keys to initiate and answer telephone calls at controller positions in an ARTCC. They are provided to reduce or eliminate the amount of dialing required to reach selected positions in an ARTCC. See quick access.

Direct Access Radar Channel/DARC

A backup digital radar processing system in the ARTCCs. This computer displays digitized radar and alphanumeric data blocks during periods when the primary radar display processing system is unavailable.

Direct Altitude and Identity Readout/DAIR

The DAIR System is a modification to the AN/TPX-42 Interrogator System. The Navy has two adaptations of the DAIR System -- Carrier Air Traffic Control Direct Altitude and Identification Readout System for Aircraft Carriers and Radar Air Traffic Control Facility Direct Altitude and Identity Readout System for land-based terminal operations. The DAIR detects, tracks, and predicts secondary radar aircraft targets. Targets are displayed by means of computer-generated symbols and alphanumeric characters depicting flight identification, altitude, ground speed, and flight plan data. The DAIR System is capable of interfacing with ARTCC's.

direct course error/DICE

The difference between a flight's scheduled arrival time at a selected reference point along its assigned flight path in the Metroplex arrival sequence pattern and its arrival time at that point if it were to turn immediately onto a direct course to that point.

direct segment

See route segment.

directional filter

A filter that separates bands of frequencies that are traveling in opposite directions on a transmission system. THe directional filters (directional separation filters) may be conventional low-pass, high-pass or band-pass filters used for this particular application.

Direction Finder/DF/UDF/VDF/UVDF

A radio receiver equipped with a directional sensing antenna used to take bearings on a radio transmitter. Specialized radio direction finders are used in aircraft as air navigation aids. Others are ground-based, primarily to obtain a "fix" on a pilot requesting orientation assistance or to locate downed aircraft. A location "fix" is established by the intersection of two or more bearing lines plotted on a navigational chart using either two separately located Direction Finders to obtain a fix on an aircraft or by a pilot plotting the bearing indications of his DF on two separately located ground-based transmitters, both of which can be identified on a chart. UDF's receive signals in the ultra high frequency radio broadcast band; VDF's in the very high frequency band; and UVDF's in both bands. ATC provides DF service at specified air traffic control towers and flight service stations.

1. DF approach procedure -- Used under emergency conditions where another instrument approach procedure cannot be executed. DF guidance for an instrument approach is given by ATC facilities with DF capability. (Refer to AIM)

2. DF fix -- The geographical location of an aircraft obtained by one or more direction finders.

3. DF guidance/DF steer -- Headings provided to aircraft by facilities equipped with direction finding equipment. THese headings, if followed, will lead the aircraft to a predetermined point such as the DF

station or an airport. DF guidance is given to aircraft in distress or to other aircraft which request the service. Practice DF guidance is provided when workload permits. (Refer to AIM)

4. direction finder service -- There are three types of direction finder service: Doppler (DOPDF) VHF/DF, and UHF/DF.

directives (Traffic Management)

An order to change the general or specific flow of traffic in specific airspaces in accordance with a previously negotiated strategy to enhance a change to that traffic flow.

disc pack

A storage device consisting of a stack of rotating magnetic discs which are used to store and recover digital data. The disc pack is used on a disc drive.

disclosure

The divulging of information by any means of communication of record contained in a system of records to any person or to an agency other than the individual to whom the information pertains. This includes the transfer of a record or the granting of access to a record.

disconnect code

(1) Dialing two digit code to disconnect two telephone circuits at the end of a conversation. (2) A functional character transmitted on teletypewriter system for disconnecting at the end of a message.

discontinuity

A zone with comparatively rapid transition of one or more meteorological elements.

Discrete Address Beacon System/DABS

A radar system which has two modes of interrogation: Spatial; where either a Mode A or C reply is requested of all aircraft in that part of the airspace, and Discrete address; where a particular aircraft (identified by a spatial interrogation) is requested to reply with altitude or other information.

1. discrete code/discrete beacon code -- As used in the Air Traffic Control Radar Beacon System/ATCRBS, any one of 4096 selectable Mode 3/A aircraft transponder codes except those ending in zero ; e.g., discrete codes: 0010, 1201, 2317, 7777; non-discrete codes 0100, 1200, 7700. Non-discrete codes are normally reserved for radar facilities that are not equipped with discrete decoding capability and for other purposes such as emergencies. There are 4032 unique codes. See non-discrete code, radar. (Refer to AIM)

2. discrete beacon code allocation -- A computer program function which automatically assigns a unique discrete beacon code to a particular flight.

3. discrete correlation -- The process whereby a discrete beacon radar datum is uniquely identified (correlated) with a track having that discrete code assigned.

discrete frequency

A separate radio frequency for use in direct pilot-controller communications in air traffic control which reduces frequency congestion by controlling the number of aircraft operating on a particular frequency at one time. Discrete frequencies are normally designated for each control sector in en route/terminal ATC facilities. See control sector.

discrimination ratio/DR

The ratio of upper test MTBF to lower test MTBF.

disk

A thin, flat, circular object made of any material.

1. disk, magnetic -- A storage device on which information is recorded on the magnetizable surface of a rotating disk. A magnetic disk storage system is an array of such devices, with associated reading and writing heads which are mounted on movable arms.

2. disk storage -- See storage, disk.

displaced threshold

A runway threshold that is located at a point on the runway other than the designated beginning of the runway. See threshold. (Refer to AIM)

isplay

A presentation of information such as a projection on a screen, generation on a cathode ray tube or a printout.

1. display control(s) -- Interactive input which controls display parameters such as brightness, contrast, focus, etc., used by an operator, such as a controller or flight service specialist.

2. display management -- To inhibit/select data for display.

Display Channel/DC

A general term for the display system, either the CDC or the DCC, which is the interface between the Radar Controller and the CCC.

1. Display Channel Complex/DCC -- The DCC is the Display Channel (DC) based upon the IBM 9020E computer.

disposal

To discard, throw away, or otherwise complete or terminate the useful life of an item, whether such action is intentional or accidental. Therefore, disposal includes spills, leaks and other uncontrolled discharges of fuels, oils, chemicals, etc., as well as actions related to containing, transporting, destroying, degrading, decontaminating or confining such materials.

1. disposal authority -- Authorization for the destruction or other disposition of records either immediately or after a lapse of a given time period.

2. disposal schedule -- A disposal schedule describes a group of records with reference to the nature and duration of their administrative, fiscal, legal and historical value, and establishes a retention period after which the records will be destroyed.

dissipation

The difference between the electrical input and output powers of an electronic device, manifested as heat.

1. dissipation density -- Dissipation per unit volume of equipment or per unit heat transfer area.

distance information

Information that lets a pilot know how far, horizontally, he/she is from a NAVAID or the end of a runway.

Distance Measuring Equipment/DME

Equipment (airborne and ground) used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigational aid. See TACAN, VORTAC, Microwave Landing System.

1. DME/N -- Distance measuring equipment where the "N" stands for narrow spectrum characteristics, primarily serving operational needs of en route or traffic management advisory (TMA) navigation.

2. DME/P -- The distance measuring element of the MLS, where the "P" stands for precise distance measurement. The spectrum characteristics are those of the DME/N.

   a. Final Approach/FA mode -- The condition of DME/P operation which supports flight operations in the final approach and runway regions.

   b. initial approach/IA mode -- The condition of DME/P operation which supports those flight operations outside the final approach region and which is inter-operable with DME/N.

3. DME/P Accuracy standard 1 -- When considering the DME/P accuracy requirement, the operations that can be performed in the service volume of the final approach mode tend to fall into one of two groups. This had led to two accuracy standards being defined for the final approach mode. Accuracy standard 1 is the least demanding and is designed to cater for most conventional takeoff and landing (CTOL) operations.

4. DME/P Accuracy standard 2 -- When considering the DME/P accuracy requirement, the operations that can be performed in the service volume of the final approach mode tend to fall into one of two groups. This has led to two accuracy standards being defined for the final approach mode. Accuracy standard 2 gives improved accuracy that may be necessary for vertical takeoff and landing (VTOL) and short takeoff and landing (STOL).

5. DME arc -- A course, indicated as a constant DME distance, around a navigation facility which provides distance information.

6. DME distance -- The line of sight distance (slant range) from the source of the DME signal to the receiving antenna.

7. DME fix -- A geographical position determined by reference to a NAVAID which provides distance and azimuth information and defined by a specified distance in nautical miles and a radial in degrees magnetic from that aid.

8. DME interrogation -- A signal transmitted by on-board avionics which is received by DME ground equipment and retransmitted at a different frequency back to the avionics.

9. DME response -- The retransmitted signal going from the DME ground equipment back to the on board avionics.

10. DME-separation -- Spacing of aircraft in terms of distance determined by reference to distance measuring equipment.

Distant Early Warning Identification Zone/DEWIZ

An identification zone of defined dimensions extending upwards from the surface, in the Dew Line in Canada, and around the entire coastal area of Alaska.

distortion

(1) A change or alteration of normal shape. (2) Electrically, a change produced, usually unintentionally, in a waveform. For example, the effect on a teletypewriter signal caused by distributed inductance, capacitance, and resistance in a line; unbalanced voltages; ground potentials; improper relay bias and adjustment; and other causes.

1. distortion transmission impairment/D.T.I. -- The reduction of effective transmission by distortion measured in dB.

distress

A condition of being threatened by serious and/or imminent danger, and of requiring immediate assistance.

distributed ATC management

System concept based on having some separation and/or traffic management functions controlled by airborne pilots and some controlled by a ground agency.

distribution

A measure of closeness of the grouping of other primary/beacon radar data around the "best fit" return within the large search area.

distributor

A device used to transmit electrical pulses in a definite order to the signal line.

disturbance

In meteorology, applied rather loosely: (1) any low pressure or cyclone, but usually one that is relatively small in size. (2) An area where weather, wind, pressure, etc., show signs of cyclonic development. (3) Any deviation in flow or pressure that is associated with a disturbed state of the weather, i. e., cloudiness and precipitation. (4) Any individual circulatory system within the primary circulation of the atmosphere.

diurnal

Daily, especially pertaining to a cycle completed within a 24 hour period, and which recurs every 24 hours.

dive

A steep descent with or without power at an airspeed greater than that which is used in normal level flight.

divergence

The condition that exists when the distribution of winds within a given area is such that there is a net horizontal flow of air outward from the region. In divergence at lower levels, the remaining deficit is compensated for by subsidence of air from aloft; consequently the air is heated and the relative humidity lowered making divergence a warming and drying process. Low level divergent regions are areas unfavorable to the occurrence of clouds and precipitation. The opposite of convergence.

diverse route

One of two or more communications circuits that must be furnished over different or geographically varied routes to reduce the impact of outages.

iverse vector

An instruction issued by a radar controller to fly a specific course which is not a part of a pre-determined radar pattern. Also referred to as "radar vector".

1. diverse vector area/DVA -- (1) In a radar environment, that area in which a prescribed departure route is not required as the only suitable route to avoid obstacles. (2) The area in which random radar vectors below the MVA/MIA, established in accordance with the TERPS criteria for diverse departures obstacle and terrain avoidance, may be issued to departing aircraft.

diversity

With respect to a transponder, a method of selecting the reply transmission path based on the relative amplitude of the received interrogation signals from two or more channels with independent antennas.

document

Any recorded information regardless of its physical form or characteristics, including, without limitation, written or printed matter, telegraphic messages, data processing cards and tapes, maps, charts, paintings, drawings, engravings, sketches, working notes and papers, reproductions of such things by any means or process and sound, voice, magnetic or electronic recordings in any form.

1. document control station -- An office or activity which controls classified documents. Normally a document control station distributes these documents to sub-accounts within the office for operational purposes and for storage.

DOD FLIP

Department of Defense Flight Information Publications used for flight planning, en route, and terminal operations. FLIP is produced by the Defense Mapping Agency for world-wide use. United States Government Flight Information Publications (en route charts and instrument approach procedure charts) are incorporated in DOD FLIP for use in the National Airspace System.

dog leg

A route containing a major alteration of course (as opposed to a straight line course).

doldrums

The equatorial belt of calm or light and variable winds between the two tradewind belts. Compare intertropical convergence zone.

dormant flight plan

Flights of which the system has knowledge, but which are residing in bulk storage and not available for immediate program operation.

dose

The amount of radiation delivered to a specific area or volume or to the whole body.

1. dose rate -- Radiation dose delivered per unit of time.

double-walled tank

A container with two complete shells which provides both primary and secondary containment. The outer shell must provide structural support and must be constructed primarily of non-earthen materials including, but not limited to steel a Fiberglass Reinforced Plastic/FRP.

down draft

A relatively small scale downward current of air; often observed on the lee side of large objects restricting the smooth flow of the air or in precipitation areas in or near cumuliform clouds.

down link

A signal propagated from a transponder, i.e., an aircraft-to-ground data link.

downtime

The period of time during which an item is not in a condition to perform its intended function.

downwash

The downward thrust imparted on the air to provide lift for an airplane.

downwind leg

See traffic pattern.

downgrade

A determination that classified information requires, in the interests of national security, a lower degree of protection against unauthorized disclosure than currently provided, together with a changing of the classification designation to reflect the lower degree of protection.

drag

A force opposing the motion of an airplane through the air.

1. drag chute -- A parachute device installed on certain aircraft which is deployed on landing roll to assist in deceleration of the aircraft.

draglink

A specific lever used in the perforator and re-perforator. It has a fixed pivot point at one end; the other end is used to limit the travel of a toggle link to one plane of movement.

drawings

The blueprints, schematics or other detailed representations associated with construction and installation of a facility, excluding those representations contained in a manufacturer's instruction books.

drift

The rate of lateral displacement of the aircraft by wind, generally expressed in degrees.

1. drift angle/DA -- The angle between true heading and track (or true course), expressed as degrees right or left according to the way the aircraft has drifted.

2. drift correction/dc -- Correction for drift, expressed in degrees (plus or minus), and applied to true course to obtain true heading.

3. double drift/DD -- A method of determining the wind by observing drift on an initial true heading and two other true headings which are flown in a specific pattern. Also called multiple drift.

4. driftmeter -- An instrument used for measuring drift.

drifting snow

A type of hydrometeor composed of snow particles picked up from the surface, but carried to a height of less than six feet.

drizzle

A form of precipitation. Very small water drops that appear to float with the air currents while falling in an irregular path (unlike rain, which falls in a comparatively straight path, and unlike fog droplets which remain suspended in the air).

drop

(1) A station which is neither a circuit terminal nor an extension station. If there are two or more stations on a premise, which is not a circuit terminal, one of these is the drop and main station and the others are extension stations. (2) Any TTY device on a TTY loop.

1. drop channel -- With respect to communications, a type of operation where one or more channels of a multi-channel system are terminated (dropped) at some point intermediate between the end terminals of the system.

2. drop repeater -- A communications device which ius provided with the necessary equipment for local termination (dropping) of one or more channels.

dropout(s)

Large reductions in channel gain. They are characterized by the length of time channel gain goes below some threshold and remains below the threshold, the number of occurrences in a fixed period of time, and their time variability.

dropsonde

A radiosonde dropped by parachute from an aircraft to obtain soundings (measurements) of the atmosphere below.

drum

A metal cylinder, such as the one around which a wire rope is wound. Another application is in clutches when the shoes contact the inside walls of a cylinder.

1. magnetic drum -- A cylinder having a surface coating of magnetic material, which stores binary information by the orientation of magnetic dipoles near or on its

surface. Since the drum is rotated at a uniform rate, the information stored is periodically available as a given portion as the surface moves past one or more flux detecting devices (called ''heads'') located near the surface of the drum.

dry adiabatic lapse rate

The rate of decrease of temperature with height when unsaturated air is lifted adiabatically (due to expansion as it is lifted to lower pressure). See adiabatic process.

dry bulb

A name given to an ordinary thermometer used to determine temperature of the air; also used as a contraction for dry bulb temperature. Compare wet bulb.

1. dry bulb temperature -- The temperature of the air.

dump

To transfer all or part of the contents of one section of a computer memory into another section or type of storage.

dunnage

Boards, blocks or metal bracing used to support supplies, to protect them from damage or for convenience in handling.

duplex

Pertaining to a twin, a pair or a two-in-one situation; e.g., a channel providing simultaneous transmission in both directions or a second set of equipment to be used in event of the failure of the primary or either devices.

1. duplex operation -- The operation of associated transmitting and receiving apparatus at one location in conjunction with associated transmitting and receiving equipment at another location, in which the processes of transmission and reception are simultaneous. When used on a carrier circuit, duplex operation requires a frequency band for each direction of transmission.

dust

A type of lithometeor composed of small earthen particles suspended in the atmosphere.

dust devil

A small, vigorous whirlwind, usually of short duration, rendered visible by dust, sand, and debris picked up from the ground.

dust storm/duster/black blizzard

An unusual, frequently severe weather condition characterized by strong winds and dust filled air over an extensive area.

dynamic

Subject to change. Data is considered to be dynamic when it can be changed during system operation.

1. dynamic range -- The ratio between the overload level and the minimum triggering level in a transponder.

2. dynamic simulation/DYSIM -- A simulation of air traffic using live or recorded data used for training air traffic controllers.

east terminal

Conventions have been established in order to minimize interference between operating companies. For this reason, the "east" terminal of a carrier system must be so arranged that the frequency allocation of the out-going and in-coming channels correspond to the established pattern. It is important that such conventions be respected so as to guard against possible future conflict. Geographically, an "east" terminal is usually located at the east or north end of a circuit.

eavesdropping

The unauthorized interception of information-bearing emanations through the use of methods other than wiretapping.

EBCDIC

See code(s).

eccentric

A device which has its center of movement located away from its physical center.

1. eccentric stud/screw -- A machine screw or bolt having a smooth surface between the head and the threads. The threaded portion has its center offset from the center line of the smooth portion. Frequently used to adjust the position of a member, having a slot into which the eccentric stud is inserted, by rotating the stud as needed.

echo

(1) In radar, the energy reflected or scattered by a target. (2) Signal reflected from a distant termination because of impedance mismatch at the termination. (3) The radar scope presentation of the return from a target.

ecliptic

The great circle on the celestial sphere along which the apparent sun, by reason of the earth's annual revolution, appears to move. The plane of the ecliptic is tilted to the plane of the equator at an angle of 233° 27'.

eddy

A local irregularity of wind in a larger scale wind flow. Small scale eddies produce turbulent conditions.

effective air path/EAP

A straight line on a navigation chart connecting two air positions, commonly used between the air position of two pressure soundings to determine effective true airspeed between two soundings.

1. effective air distance/EAD -- The distance measured along the effective air path.

2. effective true airspeed/ETAS -- The effective air distance divided by the elapsed time between two pressure soundings.

egress point

The geographical point at which an airborne refueling track terminates.

EIA RS-232

An Electronic Industries Association/EIA specification concerning the voltage interface requirements between data handling terminal equipment and data communication channel equipment. The standard defines a means of exchanging control signals and serial binary data signals between terminal and communications equipment. Letter suffixes indicate the latest edition.

eight hour(s)

A scheduling term, meaning three times each calendar day, once each shift or watch, and at approximately eight hour intervals.

eight level (code)

(1) A code used for data transmission having seven intelligence bits, one parity bit, one start bit and two stop bits. The ASCII (or USASCII) is an example of this code. (2) Any teletypewriter code which utilizes eight impulses for describing a character.

electromagnetic emanations

Signals transmitted as radiation through the air and through conductors.

1. electromagnetic spectrum -- A graphical representation of radiant energy in an orderly arrangement according to its wave length or frequency.

electronic counter measures/ECM

Electronic radiation or chaff dispensing activities with the object of impairing the use of electronic devices, equipment, systems or with the intent to mislead (electronic deception) the user in the interpretation or use of information by his/her electronic system.

1. electronic counter counter measures/ECCM -- Actions taken to insure effective use of the electro-magnetic spectrum despite the employment of ECM. Includes the use of ECCM receivers/videos such as DICKE-FIX, DICKE-FIX, Cascade Log, Log FTC, etc., which may effectively reduce the radar degradation induced by certain types of ECM.

element

(1) One of the constituent parts of anything. An element, in fact, may be a part, a sub-assembly, an assembly, a unit, a set, etc. (2) A part of a National Airspace System sub-system; examples are the compute element and storage element in the CCC. (3) A term used for equipment in a computer system, for example, a computer element, a storage element, an input/output element, etc.

elevated pole

That celestial pole which is the same side of the equinoctial as the position of the observer.

elevation information

(1) Information which lets a pilot know his/her vertical position relative to a glidepath to a particular runway. (2) Vertical position relative to mean sea level.

emanations

See compromising emanations, electromagnetic emanations.

1. emanation security -- The protection that results from all measures designed to deny unauthorized persons information of value that might be derived from intercept and analysis of compromising emanations.

emergency

A distress or an urgency condition.

emergency assistance

Assistance a controller or flight service specialist may give to a pilot in an emergency situation.

1. emergency aircraft bearing -- The direction to an aircraft, as indicated by its radio transmitter signal, from a specific Direction Finder/DF receiver.

2. emergency assistance transmission -- The transmission of emergency assistance over an RF link that uses air (free space) as the communications medium.

emergency modification

A temporary modification installed to maintain continuity of air navigation, air traffic control, communications or support service during unusual or emergency conditions.

Emergency Operations Facility/EOF

A secondary location intended to supplant the ARTCC during emergency or disaster situations during which the primary facility would not be available. During situations such as riots, picketing, floods, or any other situation precluding operations from the ARTCC, central flow control functions would be performed at the EOF.

emergency information

Information transferred during an emergency that may not normally be transferred during routine operations.

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. The device aids in locating aircraft by radiating a downward sweep audio tone, 2-4 times per second. It is designed to function without human action after an accident. (Refer to FAR, Part 91, AIM)

emergency mode

The emergency mode of operation is defined when a sub-system provides the essential functions required by that sub-system (e.g., surveillance, automatic tracking, and local flight data update). The emergency mode is intended primarily to

provide continuity to essential services during transition between operating modes.

emergency safe altitude

See minimum safe altitude.

emergency situation simulation request

A request made by a specialist from central flow for simulation processing to be performed using parameters that set up specific simulated emergencies. See Central Flow processing parameters.

1. emergency situation simulation result -- The results of a central flow emergency situation simulation.

emulate

To equal or approach equality. For example, a 1410 emulator will give essentially exactly equivalent results to the 1410 computer.

en route

One of three phases of flight services (terminal, en route, oceanic). En route service is provided outside of terminal airspace and is exclusive of oceanic control.

1. en route air traffic control service -- Air traffic control service provided aircraft on an IFR flight plan, generally be centers, when these aircraft are operating between departure and destination terminal areas.

2. en route decent -- Descent from the en route cruising altitude which takes place along the route of the flight.

3. en route flight advisory service/flight watch -- A service specifically designed to provide, upon pilot request, timely weather information pertinent to his type of flight, and altitude. The FSS's providing this service are listed in the Airport/Facility Directory. (Refer to AIM)

En Route Automated Radar Tracking System/EARTS

An automated radar and radar beacon tracking system. Its functional capabilities and design are essentially the same as the terminal ARTS IIIA system except for the EARTS capability of employing both short-range (ASR) and long-

range (ARSR) radars, use of full digital radar displays, and fail-safe design. See Automated Radar Terminal Systems/ARTS.

En Route Minimum Safe Altitude Warning/EMSAW

A function of the NAS Stage A en route computer that aids the controller by alerting him when a tracked aircraft is below or predicted by the computer to go below a predetermined minimum IFR altitude (MIA).

encipher

To convert plain text into unintelligible form by means of a cipher system.

encode

To convert plain text into unintelligible form by means of a code system.

encrypt

To convert plain text into unintelligible form by means of a cryptographic system.

1. encryption -- A set of mathematically expressed rules for rendering information unintelligible by effecting a series of transformations through the use of variable elements controlled by the application of a key to the normal representation of the information. Synonymous with privacy transformation.

2. end-to-end encryption -- Encryption of information at the origin within a communications network and postponing decryption to the final destination point.

end distortion

An abnormal type of distortion that either adds to or subtracts from the trailing edge of the numbered marking pulses.

end exercise point/EEP

The point at which an aircraft is no longer classified as faker. Ground target, bomb release line, or final neutralization in the strike route portion of the mission, as appropriate.

end item

Descriptive designation for a deliverable item of hardware software or system documentation at the level of assembly that requires management control and accountability, and which is included in approved baseline.

End-of-Message code/EOM

A TTY code which informs the receiving station that the message is finished or has been received in its entirety. The code turns off equipment at the receiving station, isolating it from the line until it is properly selected again.

1. end-of-line code -- This TTY code terminates intervening lines of a multi-line message.

energy audit

A determination of the energy consumption characteristics of an existing building, including the size, type, rate of energy consumption and major energy using system(s) of that building, and the climate characterizing the region where the building is located.

enter

To insert data or text into a computer system.

1. enter key -- A key located on a keypack or keyboard used to enter messages into the computer.

entered message

Messages input by an operator into a piece of equipment.

entrapment

The deliberate planting of apparent flaws in a system for the purpose of detecting attempted penetrations or confusing an intruder about which flaws to exploit.

entry

See between-the-lines entry, piggy back entry.

entry, keyboard

(1) An element of information manually inserted usually via a set of switches or marked punch levers, called keys, into an automatic data processing system; (2) a medium as above

for achieving access to or entrance into an automatic data processing system.

entry point

A point which denotes the beginning of a Low Altitude Route.

envelope delay

The derivative of the phase shift characteristics with respect to frequency. It is measured by transmitting a narrow-band signal at the frequencies of interest and using the same reference at the receiver.

1. envelope delay distortion -- The maximum difference, in microseconds, of the envelope delay characteristic between any two specified frequencies. (True delay distortion, as determined from the phase characteristic, is often confused with envelope delay distortion, as determined from the envelope delay characteristic.

environment

The aggregate of all the external conditions and influences affecting the life and development of a product.

Environmental Assessment/EA

A concise public document for which a Federal agency is responsible, which serves to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. The purpose of the assessment is to delineate the environmental impacts and alternatives of a proposed action.

1. Environmental Impact Statement/EIS Final Environmental Impact Statement -- A document which reflects a final evaluation of the environmental impact of a proposed action.

2. Draft Environmental Impact Statement/DEIS -- A document which reflects an initial evaluation of the environmental impact of a proposed action. The agency makes its own evaluation and assumes responsibility for the DEIS. This document is distributed to appropriate governmental agencies for comment and is made available to the public.

3. Findings Of No Significant Impact/FONSI -- A document which briefly presents the reasons why an action, not

otherwise excluded, will not have a significant effect on the human environment and for which an EIS therefore will not be prepared.

envelope delay

The derivative of the phase-shift characteristic with respect to frequency. It is measured by transmitting a narrow-band signal at the frequencies of interest and using the same reference at the receiver.

1. envelope delay distortion -- The maximum difference, in microseconds, of the envelope delay characteristics between any two specified frequencies. True delay distortion, as determined from the phase characteristics, is often confused with envelope delay distortion, as determined from the envelope delay characteristic. It is not directly related to delay distortion.

epoch year variation

The magnetic variation at a location, determined from an authoritative epoch year description of the earth's magnetic field. The earth's magnetic field is generally redefined and charted every five years.

equal altitude

See circle(s).

equalization

A process by means of which attenuation is rendered essentially constant over a band of frequencies, even though the circuits or transmission medium has losses that vary with frequency. Equalization is usually accomplished by LCR networks that introduce attenuation inversely proportional to the attenuation characteristics of the equipment or circuit.

1. equalizer -- (1) An electrical network in which attenuation (or gain) varies with frequency and is used to provide equalization. (2) A device used to obtain equalization.

2. equalizing pulses -- Electronic pulses at twice the line frequency occurring just before and after the vertical synchronizing pulse in a standard television signal.

equation of time

The amount of time by which the mean sun leads or lags behind the true sun at any instant. The difference between mean and apparent times expressed in units of solar time with the algebraic sign, so that when added to the mean time it gives apparent time.

equator

The great circle on the earth's surface equidistant from the poles. Latitude is measured north and south from the equator.

equinoctial

See celestial equator.

equinox

(1) Either of two points on the celestial sphere where the ecliptic intersects the celestial equator. (2) Either of two times during the year when the sun crosses the celestial equator and when the length of day and night are approximately equal.

1. autumnal equinox -- The point on the equinoctial when the sun, moving along the ecliptic, passes from north to south declination. This usually occurs on September 21 of each year.

2. vernal equinox -- The point on the equinoctial where the sun, moving along the ecliptic, passes from south to north declination. This usually occurs on March 21 of each year.

equipment

One or more units and necessary assemblies, sub-assemblies and parts connected or associated together and including all necessary interconnecting cabling, hydraulic lines, accessories, etc., to perform an operational function e.g., radio receiving set, missile, radar set. Equipment is not normally a replaceable item.

1. peripheral equipment -- The auxiliary machines which may be placed under the control of the central computer. Examples of this are card readers, card punches, magnetic tape feeds and high speed printers. Peripheral equipment may be used on-line or off-line depending upon computer design, job requirements and economics.

equipment alarm

Alarm(s) generated by a remote monitoring sub-system or other maintenance processor when certain equipment operating parameters fall outside pre-specified ranges.

equipment component

An equipment unit subassembly, designed to provide an essential function in a unit, consisting of modules, parts and associated hardware, including the chassis.

equipment room

The space provided a common carrier (leased communications) for the installation of distribution frames and other items of auxiliary apparatus.

equipment status

Current values of equipment parameters being monitored by a remote monitoring sub-system or other processor. The parameters to be monitored will depend on the specific equipment. Some examples of parameters to be monitored include: alternate current, battery current, course frequency, AC voltage, RF sensitivity, audio output level, RF power, percent memo usage, throughput, temperature, etc.

1. status request -- Requests made by a processor or an operator for equipment status.

equipment test configuration data

Information showing the specific equipment configuration for any given test.

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.

erase

As concerns a computer, to replace all the binary digits in a storage device by binary zeros.

error

An error may be defined as any character entry or the receipt of any character other than the character that should have been entered from the input message, or any machine function mistakenly initiated by the operator.

1. error environment -- All data pertinent to the identification and isolation of a fault producing hardware error.

2. error rate -- A measure of quality of circuit or equipment; the number of erroneous bits or characters in a sample, frequently taken

essential

Functions or services that, if lost, would reduce the capability of the NAS to exercise safe separation.and control over aircraft.

established airways/routes

Preplanned and/or published airways or routes not requiring "on-the-spot" computation by the controller to determine airspace to be protected. These include:

1. designated airway -- published in the FAR's, plus any locally chartered turning-radius airspace.'

2. designated route -- published in the FAR's and its locally charted, associated, protected airspace, plus any turning-radius airspace.

3. direct route -- locally charted by a facility for sector use but not disseminated in the FAR's, and its associated, protected airspace plus any turning-radius airspace.

established altitude

A Mode C altitude determined by the program to be a reported level flight altitude.

established code

A single code representing data used for smoothing a particular track for a predetermined number of consecutive scans.

stablishment personnel

Those individuals who have responsibility for the engineering, construction, installation and major modification of facilities/equipment.

estimated ceiling

A ceiling classification applied when the ceiling height has been estimated by the observer or has been determined by some other method; but, because of the specified limits of time, distance, or precipitation conditions, a more descriptive classification cannot be applied.

estimated departure clearance time/EDCT

A ground delay assigned to an aircraft arriving at an airport during an arrival flow program. EDCTs are assigned to aircraft which have not been given control departure times (CDTs) and are an average of the delays assigned through the CDTs. The runway release time assigned by the CFCF, ARTCC, or terminal facility is shown as an EDCT on the flight progress strip; i.e., EDCT 1815.

estimated elapsed time (ICAO)

The estimated time required to proceed from one significant point to another. See total elapsed time.

estimated off-block time (ICAO)

The estimated time at which the aircraft will commence movement associated with departure.

estimated time of arrival/ETA

The time the flight is estimated to arrive at the gate (scheduled operators) or the actual runway on times for non-scheduled operators.

estimated time en route/ETE

The estimated flying time from departure point to destination (lift-off to touchdown).

European Central Altitude Reservation Facility/EUCARF

A USAF facility established for the purpose of processing altitude reservations within their area of responsibility.

evaluate

To examine and judge the merits of an action or alternative.

evaluation

A test or practical demonstration of knowledge, skill and/or ability.

1. benchmark evaluation -- A mandatory ATC performance evaluation conducted at 40%, 70% and 100% of allotted training time.

2. periodic evaluation -- An optional ATC performance evaluation conducted in addition to the benchmark evaluation.

3. certification evaluation -- An ATC performance evaluation required for position certification.

evaporation

See change of state.

event cycle

A series of sequential steps taken to complete a program, administrative or financial function. The process is used to initiate and perform related activities, create the necessary documentation, and gather and report related.

examiner

An employee designated, in writing, to monitor and conduct examinations.

exception(s)

Conditions which fail to meet FAA standards of acceptability and are not waived by an approved NAS Configuration Control Decision/CCD.

1. major exception -- A condition which adversely affects the facility operation or performance and must be corrected before facility commissioning.

2. minor exception -- A condition which does not meet the major exception criteria but still fails to meet FAA standards of acceptability. Minor exceptions are corrected, when possible, with available material and manpower before a JAI is completed.

xchange

(1) To replace, transfer or modify personnel responsibilities/designate a controller to a position. (2) A unit of a common carrier (leased communications) for the administration of service in a specified geographic area.

execute

(1) To perform a command or run a program on a computer.
(2) To discharge or enact.

1. **execute missed approach** -- Instructions issued to a pilot making an instrument approach which means continue inbound to the missed approach point and execute the missed approach procedure as described on the Instrument Approach Procedure Chart or as previously assigned by ATC. The pilot may climb immediately to the altitude specified in the missed approach procedure upon making a missed approach. No turns should be initiated prior to reaching the missed approach point. When conducting an ASR or PAR approach, execute the assigned missed approach procedure immediately upon receiving instructions to "execute missed approach." (Refer to AIM)

xecution times

The total amount of time that a sub-program spends in performing its intended function. It includes the time spent performing operational programs plus the time spent performing monitor service calls. It does not include the times a sub-program spends being suspended, in idle, or waiting to be dispatched by a computer.

executive control

A program written to regulate the various programs within a system.

executive state

One of two generally possible states in which an AIS system may operate, and in which only certain privileged instructions may be executed; such privileged instructions may not be executed when the system is operating in the user state. Synonymous with supervisory state.

exercise flush

The phraseology used for testing flush operations.

exercise route

The route of flight to be flown by strike force aircraft from departure to point of recovery.

existing safeguards

The internal control measures or procedures which are currently in place to prevent or a least minimize waste, loss, unauthorized use or misappropriation.

exit fix

The last fix of a standard instrument departure (SID) or coded route; also the fix from which a transition is made from a SID or coded route to the transition fix.

exit point

A point which denotes the end of a Low Altitude Route.

expanded quota flow/EQF

A traffic management program administered by CFCF Wherein aircraft are held on the ground at the departure airport when delays are projected to occur either in the en route system or at the airport of intended landing. When EQF is activated, delays are assigned through FA and/or CT processing (see definitions below) and appear as an EDCT on the controller's flight progress strip.

expander

A part of a compandor; it is used at the receiving end of a circuit to return the compressed signal to its original form. It attenuates weak signals and amplifies strong signals.

expansion clutch

A clutch that operates on the principal of spreading clutch shoes apart or outward to engage with the inside surface of a drum. The shoes are attached to a sleeve, while the drum is attached to a shaft which is rotating. Clutch engagement causes the sleeve to turn.

expansion memory

Random Access Memory/RAM installed in a computer which is in addition to the base memory.

Expect (altitude) at (time or fix)

Used under certain conditions to provide a pilot with an altitude to be used in the event of two-way communications failure. It also provides altitude information to assist the pilot in planning. (Refer to AIM)

expected approach clearance time/EAC

The time at which it is expected that an arriving aircraft will be cleared to begin approach for a landing.

expected departure clearance time/EDCT

The runway release time assigned to an aircraft in a controlled departure time program and shown on the flight progress strip as an EDCT.

expect further clearance (time)/EFC

The time at which it is expected that additional clearance will be issued to an aircraft.

expect further clearance via (airways, routes or fixes)

Used to inform a pilot of the routing he can expect if any part of the route beyond a short range clearance limit differs from that filed.

expedite

Used by ATC when prompt compliance is required to avoid the development of an imminent situation.

explore

To investigate systematically, perhaps by a variety of actions, such as when determining whether other controllers are receiving an aircraft transmissions.

extended over-water operation(s)

(1) With respect to aircraft , an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline. (2) With respect to helicopters, an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline and more than 50 nautical miles from an offshore helicopter structure.

extension service

Communication services obtained from an FAA circuit by a non-FAA user.

extension station

A communication service station in addition to the main station on the same exchange.

external airport

An airport outside the adapted airspace of a center.

external fix

A fix on an adapted route but which is not found in fix adaptation.

external load

A load that is carried, or extends, outside of the aircraft fuselage.

1. external load attaching means -- The structural components used to attach an external load to an aircraft, including external load containers, the backup structure at the attachment points, and any quick release devices used to jettison the external load.

external security audit

A security audit conducted by an organization independent of the one being audited.

external storage

Computer storage away from the computer itself but in a form usable in the computer; such as magnetic tapes, magnetic wire, punched cards, etc.

extrapolated flight plan

See flight plan extrapolation and flight plan position.

extratropical low/extratropical cyclone/extratropical storm

Any cyclone that is not a tropical cyclone, usually referring to the migratory frontal cyclones of middle and high latitudes.

Eye

The roughly circular area of calm or relatively light winds and comparatively fair weather at the center of a well developed tropical cyclone. A wall cloud marks the outer boundary of the eye.

F-time

An estimated time over a coordination fix, for a proposed departure flight plan, which is transmitted as a result of a planned shutdown action. A flight plan received with an F-Time retains the F-Time until the F designation is explicitly changed.

FAA approved equivalent

A method for identifying, calculating, measuring, developing or preparing part or all of a noise exposure map where that method differs from the methods, specifications or criteria required by FAR Part 150.

facility

(1) Generally, any installation of equipment designed to aid in the navigation, communication or control of air traffic. The term denotes the total electronic equipment, power generation or distribution systems and any structure used to house, support and/or protect these equipment and systems. A facility may include a number of systems, subsystems or equipment, e.g., a long range radar facility, or it may consist of only a single system, subsystem or equipment, such as an isolated Radar Microwave Link Repeater/RMRL facility. (2) Any building, installation, structure, equipment, aircraft, vehicle and/or property owned, leased, operated, or maintained to support the National Airspace System. (3) A single, physical location where business is conducted or where services or operations are performed. A number of distinctly separate functions and activities may be performed at or within a single, physical location.

1. facility general reference data record -- A form which is part of the FRDF and is used to document general facility commissioning, location and other data not recorded elsewhere in the FRDF.

2. facility master file/FMF -- The automated record or listing of facilities which are commissioned, partially commissioned, temporarily shutdown, under test or in a standby status.

3. facility reference data file/FRDF -- The reference data necessary to supply initial facility commissioning, subsequent periodic and corrective maintenance activities, technical inspections, engineering analysis, management evaluations and evaluations following aircraft accidents. A separate FRDF is

established for each facility that must be covered by a facility maintenance log.

facility identification

The identifier (usually three letters) of a navigation or landing facility.

1. facility identification broadcast -- An audio frequency Morse code and possibly voice transmission of a navigation facility identification code.

facility/service operational time

The time from facility/service restoration until the time the facility/service is released by appropriate Air Traffic/AT personnel or until the next unscheduled interruption occurs.

facility/service available but not in use

The period of time from when the facility/service is operationally available until it is accepted for operational use, i.e., AT decides not to use the facility/service due to existing conditions.

facility/service deteriorated but useable and not released by Air Traffic/AT

The time when a facility/service has deteriorated to below standards until that time when the appropriate AT personnel release the facility/service for maintenance. Certification may or may not have been partially or fully removed. Such incidents are normally reported as unscheduled interruptions at the time AT releases the facility/service for maintenance.

Fahrenheit temperature scale/F

A temperature scale with 32 degrees as the boiling point of pure ice and 212 degrees as the boiling point of pure water at standard sea level atmospheric pressure (29.92 inches or 1013.2 millibars).

fail-operational

A terms which indicates that no single failure (component or part) removes the operating capability of a system.

fail-safe

(1) The system functional capability which provides for uninterrupted operation following component failures with remaining capacity sufficient to continue performance of all required tasks without derogation. (2) The automatic termination and protection of programs or other processing operations when a hardware or software failure is detected in a computer system. (3) A procedure whereby redundant elements of each type of equipment is installed at a facility to allow uninterrupted service whenever a single element fails.

1. fail safe operation -- A type of control that prevents improper operation of the controlled function during circuit failure.

fail-soft

(1) The concept of providing a limited system functional capability following a system failure after the minimum fail-safe condition. System capability in which operations continue, but with some degradation in capacity, when a failure has occurred. (2) The selective termination of affected non-essential processing when a hardware or software failure is detected in a computer system.

failure

(1) The cessation of the ability of a system or any of its elements to perform a specified function or functions. (2) Any hardware malfunction which causes a non-transient error.

1. catastrophic failure -- Failure that is both sudden and complete.

2. dependent failure -- Failure which is caused by the failure of an associated item(s).

3. independent failures -- Failure which occurs without being related to the failure of associated items; not dependent.

4. random failure -- Any failure whose cause and/or mechanism make its time of occurrence unpredictable, but which is predictable only in a probablistic or statistical sense.

failure access

An unauthorized and usually inadvertent access to data resulting from a hardware or software failure in a computer system.

failure analysis

The logical, systematic examination of an item or its diagram(s) to identify and analyze the probability, causes and consequences of potential and real fixtures.

failure control

The methodology used to detect and provide fail-safe or fail-soft recovery from hardware and software failures in a computer system.

failure mechanism

(1) A basic physical process of change which is responsible for the observed failure mode. (2) The process of degradation or the chain of events which result in a particular failure mode.

failure mode

A particular way in which failure occurs, independent of the reason for failure; the condition or state which is the end result of a particular failure mode.

1. failure mode effects and criticality analysis/FMECA -- Analyzing each item in the design in relation to modes of failure, probability of occurrence, and the effects of the failures on the operation of the equipment or system as a whole.

failure rate

The number of failures of an item per unit measure of life (cycles, time, etc.). It represents a constant hazard rate during the useful life period.

faker

A strike force aircraft simulating a hostile aircraft during an air defense exercise while in the strike route portion of the mission, i.e., IP/HHCL to ground target BRL/EEP.

1. faker monitor -- Military personnel responsible for monitoring the progress and providing safety to faker aircraft in accordance with safe intercept criteria,

beginning at the IP/HHCL and terminating at the BRL/EEP or at the point of final neutralization.

Fall wind

A cold wind blowing downslope. Fall wind differs from foehn in that the air is initially cold enough to remain relatively cold despite compressional heating during descent.

false advisory

An advisory caused by a false track or TCAS malfunction.

false track

A track created by erroneous surveillance data.

fan markers

These are two types of marker beacons: FM and LFM fan markers are keyed to indicate on which radio range course they are located.

fast file

A system whereby a pilot files a flight plan via telephone that is tape recorded and then transcribed for transmission to the appropriate air traffic facility. Locations having a fast file capability are contained in the Airport/Facilities Directory. (Refer to AIM)

fast time operation

Processing data as fast as the computer program is able to accept the inputs and make outputs without regard to the passage of real time.

fault

(1) Synonym for loophole. See failure. (2) A condition under which a malfunction occurs causing an interruption of the processor. This malfunction may have been caused by a physical breakdown or the attempted execution of an illegal function code.

1. fault detection time -- The time between the occurrence of a fault and the point at which it is recognized that the system or equipment does not respond to operational demand during the mission sequence.

2. fault localization -- A man/machine task to determine which particular major unit of equipment is a fault, by making use of malfunction symptoms, test equipment, and features built into the equipment.

fault tree analysis

A method for relating a process of system failure to equipment, component or materials failure modes using fault trees. A fault tree is a model that graphically and logically represents the various combinations of possible events, fault and normal, occurring in a process or system that leads to the top event. Process or normal elements may include hardware, software, human and environmental factors.

feathered propeller

A propeller whose blades have been rotated so that the leading and trailing edges are nearly parallel with the aircraft flight path to stop or minimize drag and engine rotation. Normally used to indicate shutdown of a reciprocating or turboprop engine due to malfunction.

Federal Airways

There are two categories of federal airways: High altitude and low altitude. Each Federal Airway is based on route segments that extends from one navigational aid or intersection to another navigational aid (or through several navigational aids or intersections) specified for that airway. Federal Airways normally include the primary airspace within parallel boundary lines 4 NM each side of a centerline, and a secondary area of 2 NM either side of the primary area. Each airway segment has a changeover point approximately half way between the two navigational aids which is normally less than 51 miles from either of the navigational aids defining that segment. Normally, the low altitude airways are designated from 1,200 feet above ground level up to 17,999 feet. The high altitude or jet airways are designated at or above 18,000 feet.

Federal building

Any building, structure or facility which is constructed, renovated, leased or purchased in whole or in part for use by the United States.

Federal Telecommunications System/FTS

A leased communications service for exclusive use by the U.S. Government.

feeder fix

The fix depicted on Instrument Approach Procedure Charts which establishes the starting point of the feeder route.

feeder route

A route depicted on instrument approach procedure charts to designate routes for aircraft to proceed from the en route structure to the initial approach fix (IAF). See Instrument Approach Procedure.

ferry flight

A flight for the purpose of: returning an aircraft to base, delivering an aircraft from one location to another, or moving an aircraft to and from a maintenance base. Ferry flights, under certain conditions, may be conducted under terms of a special flight permit.

fetch protection

A system-provided restriction to prevent a program from accessing data in another user's segment of storage.

field

(1) An airport or military airfield along with any adjoining structures. (2) With respect to a video display, one of the two (or more) equal parts into which a frame is divided in interlaced scanning. (3) With respect to communications, the sub-divided portion of the message format which contains the various types of information composed within the message. (4) A group of bits in a message treated as a single unit of information. (5) Areas within a data block or input message where the different data is contained. See fixed field, variable length field.

1. field abbreviation -- The abbreviation of the field name for flight plan message fields, 02 through 11. 02-AID, 03-TYP, 04-BCN, 05-SPD, 06-FIX, 07-TIM, 08-ALT, 09-RAL, 10-RTE, 11-RMK.

2. field reference -- A general term used whenever the field number and field abbreviation are both applicable.

field-elevation

The MSL altitude of the highest point of land on an airport.

1. field elevation pressure -- The existing atmospheric pressure in inches of mercury at the elevation of the field. Also known as station pressure.

figure shift

A control character in the baudot code after which characters are interpreted as belonging to the groupings containing numeric, punctuation and special symbols (upper case). A function performed by a teletypewriter, when initiated by the figures shift character (4), which causes the machine to shift from lower case (letters) to upper case (numbers, symbols, etc.).

file

(1) An organized collection of data stored in a form suitable for ready reference. (2) A logical grouping of records.

1. file protection -- The aggregate of all processes and procedures established in an AIS and designed to inhibit unauthorized access, contamination or elimination of a file.

filed

Normally used in conjunction with flight plans, meaning a flight plan has been submitted to ATC.

1. filed flight plan -- A set of characters stored as a result of initial input of an FP or SP message, in the form as received by this computer and modified as necessary by: one or more accepted Amendment (AM messages), program-inserted transitions to types 2 and 4 coded routes, SIDs and STARs or program-inserted incomplete route data. Characters entered and recognized as device control, correction, or deletion characters are not included in the filed flight route.

2. filed route -- Alphanumeric route data filed in a flight plan. The filed route contains fixes, airways, and pre-filed route identifiers.

3. filed segment -- Two fixes, filed or implied, and the route between them.

filling

An increase in the central pressure of a pressure system; opposite of deepening. It is more commonly applied to a low rather than a high.

film(s)

1. Any sheet or strip of transparent plastic coated with a light-sensitive emulsion. 2. All efforts relating to the production of motion pictures, including scripts, photography, props, etc., whether for broadcasting purposes or other types of public presentation.

filter

An impedance network with elements arranged to allow passage of certain frequencies while preventing passage of other frequencies.

final

Commonly used to mean that an aircraft is on the final approach course or is aligned with a landing area. (See final approach course, final approach-IFR, traffic pattern, segments of an instrument approach pattern)

final approach

1. final approach course -- A straight line extension of a localizer. a final approach radial/bearing, or a runway centerline, all without regard to distance.

2. final approach fix/FAF -- A geographic location from or over which final approach (IFR) to an airport is executed.

3. final approach - IFR -- The flight path of an aircraft which is inbound to the airport on an approved final instrument approach course, beginning at the point of interception of that course and extending to the airport or the point where circling for landing or missed approach is executed.

4. final approach - VFR -- A flight path of a landing aircraft in the direction of landing along the extended runway centerline from the base leg to the runway.

5. final approach point/FAP -- The point, applicable only to a non-precision approach with no depicted FAF (such as an on-airport VOR), where the aircraft is established inbound on the final approach course from the procedure turn and where the final approach descent may be commenced. The FAP serves as the FAF and identifies the beginning of the final approach segment. (See segments of an Instrument Approach Procedure)

final controller

That controller providing final landing approach guidance.

fireproof

(1) With respect to materials and parts used to confine fire in a designated fire zone, means the capability to withstand at least as well as steel in dimensions appropriate for the purpose for which they are used, the heat produced when there is a severe fire of extended duration in that zone. (2) With respect to other materials and parts, means the capacity to withstand the heat associated with fire at least as well as steel in dimensions appropriate for the purpose for which they are used.

fire resistant

(1) With respect to sheet or structural members, means the capacity to withstand the heat associated with fire at least as well as aluminum alloy in dimensions appropriate for the purpose for which they are used. (2) With respect to fluid-carrying lines, fluid system parts, wiring, air ducts, fittings and powerplant controls, means the capacity to perform the intended function under the heat and other conditions likely to occur when there is a fire at the place concerned.

firmware

(1) A program permanently fixed onto a memory chip (ROM), i.e., software in a hardware support. (2) A set of machine instructions which control the sequences and operation of the controller portion of a processor. The instruction code is written into nondestructive read only memory.

first gust

The leading edge of a spreading downdraft, plow wind, from an approaching thunderstorm.

first order message

An initial transmitted flight plan message for a given flight. See second order message.

1. first order transmission -- The initiate transfer/TI message is considered a first order message when the content of the TI message represents the initial transfer of data on this flight.

first-line technical supervisor

An employee whose primary responsibility includes the technical supervision of journeymen technicians/mechanics, or who is a first source of technical assistance to which journeymen may turn; i.e. the technician in charge of a unit or Sector Field Office.

five-level (code)

A code used for data transmission having five intelligence bits, one start bit and one stop bit. The latter is normally 1.42 times the length of the other bits to allow for differences in machine timing. The baudot is an example of this code.

fix

(1) 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. (2) A geographical point expressed in latitude and longitude (which are converted to system coordinates). The fix is stored and uniquely identified in adaptation. A fix is both an aid for navigation and a reference point for control purposes. (3) The geographical position of an aircraft for a specified time, established by reference to navigational aids or celestial plot.

1. fish point/gateway fix -- An oceanic reporting point used to transition from or to the North Atlantic Organized Track System and the North Pacific Composite Route System.

2. fix name -- A 2-5 alphanumeric identification of a geographical point.

fix maneuver type

The type of maneuver, based on a flight's activity, that is assigned by the program to each converted fix in a flight plan. The following list shows fix maneuver type in decreasing order of priority. The highest applicable priority is assigned to each converted fix.

1. arrival -- The last converted fix is identified as an arrival fix if it is the last fix in the flight plan or route stage.

2. departure -- The first converted fix is identified as a departure fix if it is the first fix in the flight plan or route stage.

3. delay -- Any delay area fix group.

4. terminal -- Any Terminal area fix group.

5. en route -- Any other fix group.

6. hold -- See holding fix.

fix loading threshold

A predetermined saturation rate of aircraft passing a particular fix.

fix posting area/FPA

A volume of air space, bounded by a series of connected line segments with altitudes, which is assigned to a sector or approach control facility. The FPA is the basic unit of air space within the ARC System.

fix time determination/FTD

The establishment and maintenance of stored fix times for each converted fix in each flight plan in the system. This process uses speed and times filed or updated in the flight plan, geographical route and adaptation data, and stored wind data.

fixed field

An exact, non-variable number of characters or symbols necessary to form a specific data group. See field.

fixed point arithmetic

A type of computation in which fixed-point numbers are used; fixed point numbers as used in the CCC are signed integers or addresses in binary format with fixed binary point. (Contrasted with floating point arithmetic.)

fixed-wing special IFR operations

Aircraft operating in accordance with a waiver and a Letter Of Agreement within control zones specified in FAR 93.113 by IFR qualified pilots in IFR equipped aircraft and by pilots of agricultural and industrial aircraft.

flag/flag alarm

(1) A warning device incorporated in certain airborne navigation and flight instruments indicating that:

instruments are inoperative or otherwise not operating satisfactorily, or signal strength or quality of the received signal falls below acceptable values. (2) A circuit (flip-flop) that provides a signal that indicates that an input/output device is ready to receive or transmit data from or to a computer.

flame resistant

Not susceptible to combustion to the point of propagating a flame, beyond safe limits, after the ignition source is removed.

flameout

Unintended loss of combustion in turbine engines resulting in the loss of engine power.

flammable

With respect to a fluid or gas, means susceptible to igniting readily or to exploding.

flanking effect

The effect on filter characteristics of connecting additional filters in parallel.

flap extension speed

The highest speed permissible with wing flaps in a prescribed extended position.

flash resistant

Not susceptible to burning violently when ignited.

flashing

A visual signal interrupted 60 times a minute with a 50/50 on-off ratio.

FLAT

See tracking status.

flaw

Synonym for loophole. See pseudo-flaw.

leet Area Control and Surveillance Facility/FACSFAC

A U.S. Navy fixed ground facility which manages offshore and inland operating areas including warning areas, restricted areas and other assigned airspace.

flicker

In a video display, a fluttering sensation which results from the periodic fluctuation of light.

flider

A digital electronic device which provides for message composition, display, error correction, and automatic entry of assembled data into a central processing system. Automatically enforces character acceptability and format restriction; automatically inserts coding and parity checks.

flight

A generic term which describes one or more aircraft whose intended flight characteristics is specified in a single flight plan. See also paired flight and unpaired flight.

flight check

A call-sign prefix used by the FAA aircraft engaged in flight inspection/certification of navigational aids and flight procedures. The word "recorded" may be added as a suffix; e.g., "Flight Check 320 recorded" to indicate that an automated flight inspection is in progress in terminal areas. (See flight inspection/flight check)

flight crewmember

A pilot, flight engineer or navigator assigned to duty in an aircraft during flight time.

flight data

Flight plans, flight plan amendments and flight progress reports (including arrivals and departures where appropriate).

1. flight data/revised flight data (update) -- All data applicable to a flight including but not limited to: flight plan, flight amendments, reported altitude, track position and velocity, and time estimates.

2. flight data transmission -- The transmission of flight data over an RF link that uses air (free space) as a communications medium.

Flight Data Entry and Printout/FDEP

Equipment for a remote location which contains, as a minimum, a Digital Communications Control Unit (DCCU). an alphanumeric keyboard and a flight strip printer. Its interface with the Central Computer Complex is via FDEP adapters located in the PAM.

flight follow

To provide advice and information to assist pilots in the conduct of a flight not otherwise controlled, including the tracking of that flight on a situation display.

Flight following/FF

A test technique used in System Shakedown, in which the test system maintains all flight data on actual IFR air traffic in parallel with the ARTCC that has responsibility for separation of aircraft (see Radar Flight Following).

flight identification

A general term used to identify a flight plan (i.e., any legal format for Field 02). Examples: Aircraft Identification; Aircraft Identification plus departure point; Aircraft Identification, departure point and Computer Identification; Terminal Computer Identification.

flight information

See flight data.

flight information region/FIR

An airspace of defined dimensions within which Flight Information Service and Alerting Service are provided.

1. flight information service - A service provided for the purpose of giving advise and information useful for the safe and efficient conduct of flights.

2. alerting service - A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid and to assist such organizations as required.

flight inspection/flight check

In-flight investigation and certification of certain operational performance characteristics of electronic and visual navigation facilities by an authorized inspector in conformance with the U. S. Standard Flight Inspection Manual.

1. Flight Inspection Field Office/FIFO and Flight Inspection Group/FIG -- These organizations conduct in-flight inspections and evaluations of all navigation and landing aids, certify, rectify or deny either limited or total use of such facilities for air navigation or landing purposes; make site surveys and determine the safety and practicability of associated flight procedures.

flight level/FL

A level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet. For example, FL 250 represents a barometric altimeter indication of 25,000 feet.

1. flight level (ICAO) -- A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hPa (1013.2 mb), and is separated from other such surfaces by specific pressure intervals.

Note 1. A pressure type altimeter calibrated in accordance with the standard atmosphere: when set to a QFH altimeter setting, will indicate altitude; when set to a QFE altimeter setting, will indicate height above the QFE reference datum; and when set to a pressure of 1013.2 hPa (1013.2 mb), may be used to indicate flight levels.

Note 2. The terms height and altitude, used in Note 1 above, indicate altimetric rather than geometric heights and altitudes.

flight line

A term used to describe the precise movement of a civil photogrammetric aircraft along a predetermined course(s) at a predetermined altitude during the actual photographic run.

flight management system

An aircraft on-board computerized management system which integrates vertical and lateral flight path control.

flight match status

An internal program status whose setting (matched or unmatched) is based on the perpendicular distance from the track position to the route segment.

flight movement data

Designates a class of input messages consisting of flight plans, flight plan modifications, progress reports, and pre-filed routes.

flight path

A line, course, or track along which an aircraft is flying or is intended to be flown. (See track, course)

1. flight path angle -- The angle which an aircraft makes, through the air, relative to the (local) horizon. It is negative when the aircraft is descending and positive when the aircraft is climbing.

flight plan

(1) The combination of an altitude profile with a horizontal track. (2) Specified information relating to an intended flight of an aircraft which is furnished to the appropriate airspace management agency (filed either verbally or in writing with an air traffic control facility, military base operations, or FSS). It is stored in the computer. See also paired flight plan and unpaired flight plan.

1. flight plan times -- Times to which no speed adjustments have been made.

2. flight plan activity status -- The status that is assigned by the program to a flight plan. Possible status are listed below:

   a. active -- All flights for which an actual departure time has been entered whether the flight originates inside or outside the control area.

   b. amendment -- Amendments include changes to route, assigned altitude, call, sign, etc.

   c. display -- An alphanumeric plan position display based on the flight plan position and velocity.

d. dormant -- Flights of which the system has knowledge, but which are residing in bulk storage and not available for immediate program operation.

e. extrapolation -- A computer logical process which uses stored fix time and geographical data to determine where on its route a flight would be if it navigated perfectly according to its flight plan.

f. inactive departure -- Flight plans for which the first converted fix is within the control area and for which either no time or an inactive time group has been included.

g. inactive en route -- Flights for which the first converted fix is outside the control and for which only an inactive time group over the coordination fix is available.

h. modification -- A change to flight plan storage of a more permanent nature than an update of time or a reported altitude. Modifications include changes to route, assigned altitude, call sign, etc. See update.

i. next fix -- The first fix of the flight plan route whose computed time of arrival exceeds the present time. (This term has meaning only for active flight plans.)

j. position -- The present position of a flight, as computed by the flight plan extrapolation process.

k. present position -- The fix with a CTA closest to clock time or the fix at which the aircraft is holding or delaying.

l. previous fix -- That fix in the converted route of flight for which the stored fix time is equal to or less than present time.

m. velocity -- The speed and heading of a flight relative to the ground according to its flight plan and stored wind data. Ground velocity over a route segment is obtained from the times stored for the fixes at each end of the segment and the location of the fixes.

flight plan aided tracking

The computer use of flight plan and flight progress data to assist the tracking of aircraft.

flight plan position

A computer generated position based on the filed flight plan.

flight recorder

A general term applied to any instrument or device that records information about the performance of an aircraft in flight or about conditions encountered in flight. Flight recorders may make records of airspeed, outside air temperature, vertical acceleration, engine RPM, manifold pressure, and other pertinent variables for a given flight.

1. flight recorder (ICAO) -- Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation.

Flight Service Station/FSS

Air traffic facilities which provide pilot briefing, en route communications and VFR search and rescue services, assist lost aircraft and aircraft in emergency situations, relay ATC clearances, originate Notices to Airmen, broadcast aviation weather and NAS information, receive and process IFR flight plans and monitor radio air navigation facilities (NAVAIDs). In addition, at selected locations, FSSs provide en route flight advisory service (Flight Watch), take weather observations, issue airport advisories, and advise Customs and Immigration of transborder flights.

Flight Standards District Office/FSDO

These organizations have the combined functions of an Air Carrier District Office and a General Aviation District Office.

flight strip

A printed record of specific flight data relating to aircraft position and a time at specific fixes along its route. See field.

flight technical error

The accuracy with which the pilot controls the aircraft as measured by the indicated aircraft position with respect to

the indicated command or desired position. It does not include procedural blunders.

flight test

A flight for the purpose of: investigating the operation/flight characteristics of an aircraft or aircraft component; or evaluating an applicant for a pilot certificate or rating.

flight time

The time from the moment the aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing. Also know as block-to-block time.

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.

flight watch

A shortened term for use in air-ground contacts to identify the flight service station providing En Route Flight Advisory Service; e.g., "Oakland Flight Watch." (See En Route Flight Advisory Service)

floating point arithmetic

A type of computation in which floating-point numbers are used; floating-point numbers are used in the CCC consisting of two portions: the fraction (a number expressed in hexadecimal (base 16) digits) and the characteristic (a power of 16, which is to be multiplied by the fraction).

floppy disk

A plastic disk, coated with magnetic material and enclosed in a plastic jacket, used to store applications programs and data and to transport information from one computer to another. Floppy disks come in a variety of sizes and capacities.

flow-chart

A graphic representation of the major steps of work in process. The illustrative symbols may represent documents, machines, or actions taken during the process. The area of

concentration is on where, or who does what; rather than how it is to be done.

flow control/FC

Adjustment of traffic flow into and out of specified control areas (ARTCC's, airports, and/or between both). See Central Flow Control Facility, local control.

1. flow advisories and directives -- Advisories and directives concerning the traffic flow at a specified facility.

2. flow planning and control data -- Measured or predicted quantities of traffic times, locations of saturations, and other traffic flow data which will be used by the ATCCC and the traffic management processor in algorithms that determine projected delays, strategies, solutions to delays and specific clearances to be issued.

flow control display interval/FCDI

A dynamically adjustable parameter number or minutes prior to flight plan calculated time of arrival at the airport, when the flight will become eligible for metering calculations and display.

flow line

A streamline.

flow time update interval/FTUI

A parameter time in tenths of minutes. When position data from the radar tracker sub-system indicates that a time difference, for any metered aircraft, exceeds this parameter (+ or -), the metering entry for the aircraft will be updated accordingly. Time updates are applied until the aircraft's metering entry is frozen (see FCLT and MLDI) at which time further updates are suspended. Updates are for metering purposes only and do not affect the flight data processing time (FDP) data base.

flush

A term used to launch military aircraft in a minimum time for survival.

flutter

The effect of a variation in the transmission characteristic of a telephone circuit caused by the action of superposed dc telegraph currents on magnetic materials associated with the circuit.

fluttering

A visual signal interrupted 60 times a minute with a 95/5 on-off ratio.

fly heading (degrees)

Informs the pilot of the heading he should fly. The pilot may have to turn to, or continue on, a specific compass direction in order to comply with the instructions. The pilot is expected to turn in the shorter direction to the heading unless otherwise instructed by ATC.

focal point fix/FPF

The fix-name fix adapted to a specific fix posting area. An FPF has a special meaning for direct route processing.

foehn

A warm, dry downslope wind; the warmness and dryness being due to adiabatic compression upon descent. It is characteristic of mountain regions. See adiabatic process, Chinook, Santa Ana.

fog

A hydrometeor consisting of numerous minute water droplets and based at the surface. The droplets are small enough to be suspended in the earth's atmosphere indefinitely. (Unlike drizzle, it does not fall to the surface; differs from cloud only in that a cloud is not based at the surface; distinguished from haze by its wetness and gray color).

"For Official Use Only"/FOUO information

Non-classified official information of a sensitive, proprietary or personally private nature which must be protected against unauthorized public release.

force/quick look

To compel or produce a result on a display, as in forcing a full data block that would not otherwise be presented.

forced defect

The practice of inducing electrical and mechanical stresses in order to determine the maximum capability of a device so that conservative usage in subsequent applications will thereby increase its life through the derating determined by these tests.

forced display

Information automatically projected by a computer on a display, on the basis of programmed priorities.

foreign air carrier

Any person other than a citizen of the United States, who undertakes directly, by lease or other arrangement, to engage in air transportation.

foreign air commerce

The carriage by aircraft of persons or property for compensation or hire, or the carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in the United States and any place outside thereof; whether such commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

foreign air transportation

The carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft, in commerce between a place in the United States and any place outside of the United States, whether that commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

foreign exchange/FX service

Service permitting connections in a telephone exchange area that is foreign to the exchange area in which the customer is located.

foreign government information

(1) Information provided to the United States by a foreign government or international organization of governments in the expectation, express or implied, that the information is to be kept in confidence. (2) Information produced by the United States pursuant to a written joint arrangement with a foreign government or international organization of

governments requiring that either the information or the arrangement, or both, be kept in confidence. Such a written joint arrangement may be evidenced by an exchange of letters, a memorandum of understanding or other written record.

foreign national

Any person not a citizen of, not a national of, nor an immigrant alien to, the United States.

foreign representative

A citizen or national of, or an immigrant alien to the United States who is acting as a representative, official or employee of a foreign government, firm, corporation or person.

format

(1) The predetermined arrangement of characters, symbols and data groups (fields) necessary to formulate a message; also an arrangement of information on a form or in storage. (2) A dimensioned layout containing requirements for size, placement and orientation of text and graphics. (3) The process of preparing and organizing the surface of a disk to accept programs and data.

format generator set

A Model 28 ASR set modified to include format generator and parity check features for use with automated ATC system. Used to compose and/or transmit either fixed or flexible format messages. Provides a format generator, parity check character generator and message counter, in addition to normal message composition functions. Equipped with two independent tape readers: a pivoted tape reader for on-line transmission and a hard gate reader for off-line tape preparation.

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. 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.

1. standard formation -- A formation in which a proximity of no more than one mile laterally or longitudinally and within 100 feet vertically from the flight leader is maintained by each wingman.

2. non-standard formation -- Formations operating under any of the following conditions. (1) When the flight leader has requested and ATC has approved other than standard formation dimensions. (2) When operating within an authorized Altitude Reservation (ALTRV) or under the provisions of a Letter of Agreement. (3) When the operations are conducted in airspace specifically designated for a special activity. Non-standard formations include:

   a. individual flight plan formations -- Aircraft operating by prior arrangement with the FAA on the same route as a single aircraft with regard to altitude, navigation and position reporting, longitudinally contained within one minute's flying time.

   b. cell formation -- Two or more aircraft operating on the same route, longitudinally contained within one minute's flying time, laterally contained within the route width to be protected and utilizing normally 3,000 consecutive feet of altitude.

   c. stream formation -- Two or more aircraft or cells of aircraft operating on the same route with more than one minute but not more than fifteen minutes longitudinal spacing between aircraft (or cells), laterally contained within the route width to be protected and utilizing normally 3,000 consecutive feet of altitude.

formerly restricted data

Information removed from the restricted data category upon a joint determination by the Department of Energy and the Department of Defense that such information relates primarily to the military utilization of atomic weapons and that such information can be adequately safeguarded as classified defense information.

formulary

A technique for permitting the decision to grant or deny access dynamically at the time access is required, rather than at the time of creation of the access list.

ormulate

To mentally devise or prepare the content of a message according to a specific formula, standard, or procedure, such as an advisory or clearance.

fortuitous

Happening by chance, accidental, not planned.

1. fortuitous distortion -- A random and intermittent form of teletypewriter distortion which results in the impulses being either shortened or lengthened. It is an intermittent distortion caused by lightning, battery fluctuations, hits on the line, power induction, etc.

forward

To send information verbally or by machine action to another person.

four wire circuit

A communications circuit having two pairs of wires, so arranged that communications currents are transmitted in one direction on one path and in the other direction on the other path. Capable of handling information in two directions, one pair of wires is assigned the east-west route; the other pair is assigned the west-east route. No hybrids are required for interfacing separate transmitters and receivers at each terminal (four wire line to four wire equipment). A four wire circuit may use four wires or may consist of other methods of multiplexing, such as frequency division or time division.

1. four wire terminating set -- A hybrid arrangement by which four wire circuits are terminated on a two wire basis for interconnection with two wire circuits.

fox message

Standard message used for testing teletypewriter circuits and machines because it includes all the alphanumerics on a teletypewriter as well as most function characters. It is: "The Quick Brown Fox Jumped Over a Lazy Dog's Back 1234567890 Sending" (sending station's identification is inserted in the three blank spaces).

fractus

Clouds in the form of irregular shreds, appearing as if torn. Applying only to stratus and cumulus, they have a

clearly ragged appearance, i.e., cumulus fractus and stratus fractus.

frame

(1) The total area allocated for film exposure, whether or not this area is filled by the recorded image. (2) In a video display, the scanning of the picture area once. In the line-interlaced scanning pattern of two to one, a frame consists of two fields.

framing

The process of selecting the bit groupings representing one or more characters from a continuous stream of bits.

1. framing bits -- The start and stop elements of a signaling code consisting of one character. These non-information carrying bits are used for the separation of characters in a bit stream.

frequency

A simplex channel of air/ground communications utilizing the same frequency for transmission and reception.

1. frequency fogging -- The interchanging of the frequency allocations of carrier channels to prevent singing, to reduce crosstalk, and to correct for line slope. It is accomplished by having the modulators in a repeater translate a low frequency group to a high frequency group, and vice versa. Because of this frequency inversion process, a channel will appear in the low group for one repeater section and will then be translated to the high group for the next section. This results in nearly constant attenuation with frequency over two successive repeater sections, and eliminates the need for large slope equalization and adjustment. Also, singing and crosstalk are minimized because the high level output of a repeater is at a different frequency than the low level input to other repeaters.

frequency division multiplex

A system of transmission in which characters or bits belonging to separate messages modulate a series of separate carriers transmitted simultaneously on a single circuit.

frequency shift keying/FSK

Two possible states (1 and 0) are transmitted as two separate frequencies.

freeze/frozen

Terms used in referring to arrivals which have been assigned ACLT's and to the lists in which they are displayed.

1. freeze calculated landing time/FCLT -- A dynamic parameter number of minutes prior to the meter fix calculated time of arrival for each aircraft, When the TCLT is frozen and becomes an ACLT; i.e., the VTA is updated and consequently the TCLT modified as appropriate until FCLT minutes prior to meter fix calculated time of arrival at which time updating is suspended and an ACLT and a frozen meter fix crossing time (MFT) are assigned.

2. freeze speed parameter/FSPD -- A speed adapted for each aircraft to determine fast and slow aircraft. Fast aircraft freeze on parameter FCLT and slow aircraft freeze on parameter MLDI.

freezing

See change of state.

freezing level

A level in the atmosphere at which the temperature is 0°C (32°F).

friction

The resistance or opposition offered to one body moving relative to another with which it is in contact.

1. friction clutch -- A clutch which depends upon the friction between two or more disks to deliver motion from one component to another. Pressure is applied to one set of the disk so that they engage with the other set; one set being driven and the other being attached to the unit to be driven.

front

A surface, interface, or transition zone of discontinuity between two adjacent air masses of different densities. More simply, the boundary between two different air masses.

1. frontal zone -- A front or zone with a marked increase of density gradient; used to denote that fronts are not truly a "surface" of discontinuity but rather a "zone" of rapid transition of meteorological elements.

frontogenesis

The initial formation of a front or frontal zone.

frontolysis

The dissipation of a front.

frost/hoarfrost

Ice crystal deposits formed by sublimation when temperature and dew point are below freezing.

fruit

Non-synchronously-received beacon replies initiated by interrogations of other radar beacon interrogators.

FSS

See Flight Service Station.

Fuel advisory departure/FAD

Procedures to minimize engine running time for aircraft destined for an airport experiencing prolonged arrival delays.

fuel dumping

Airborne release of usable fuel. This does not include the dropping of fuel tanks. See jettisoning of external stores.

fuel siphoning/fuel venting

Unintentional release of fuel caused by overflow, puncture, loose cap, etc.

fulcrum

The support or point of support on which a lever moves.

full data block

See data block.

full duplex

A telegraph or signaling circuit, on which information can be transmitted in two directions at the same time, with each direction independent of the other. See service, full duplex.

full service mode

The full service mode of operation is defined when a subsystem performs all designated functions within the required response times.

fully perforated tape

Perforated paper tape in which the perforations are complete. That is, the punch makes a complete hole in the tape (as opposed to chadless tape).

function

The mechanical operations performed within the typing unit which result in non-printing operations such as: line feed, carriage return, letters-figure shift, signal bell, etc.

functional computer programs

Operational computer programs for the IBM 9020E Display Channel Complex/DCC and Raytheon Display Channel/CDC.

functional package

A coordinated subset of National Airspace System equipments, computer program functions, and operating procedures, which together constitute a complete air traffic control system. The final functional package will be the complete set of all features and functions.

functions (category)

Specific radar controlled input actions within a category.

funnel cloud

A tornado cloud or vortex cloud extending downward from the parent cloud but not reaching the ground.

further information requested

A printed output message generated by the computer requesting from the operator additional information concerning the last typewriter/ teletypewriter input because

the input message contained; an unacceptable format, an unreasonable adaptation value or an illogical input.

future flight plan schedules

See flight plan.

gain

The ratio of output to input in an electronic circuit.

1. gain hits -- Sudden uncontrolled changes in gain (or loss) of a channel. Gain hits usually last longer than impulse noise spikes. They can be characterized by the distribution of hit magnitudes in dB, duration of hits, number of occurrences in a fixed period of time, and their time variability.

gain time control/GTC

A ground receiver circuit that provides gain reduction as a function of time.

gamma radiation

Short wavelength electromagnetic radiation of high energy originating in atomic nuclei.

gap

A hole, opening, or space, such as the distance between two objects or surfaces.

garbage

Unpredictable numerical results, usually resulting either from machine switch-on, machine malfunction or machine misuse.

garble

(1) A distorted or interrupted transmitted code sequence, which results in an unreadable copy of the transmission. (2) Superposition of a set of code pulses on either another set of code pulses or on noise, so that it cannot be deciphered. See synchronous garble.

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 15 minutes. The sequence for departure will be maintained in accordance with initial call-up unless modified by flow control restrictions. Pilots should monitor the ground control/clearance delivery frequency for engine start-up advisories or new proposed start time if the delay changes. (See flow control)

gauge (gage)

(1) A standard used for a scale of measurement. (2) The tool so used.

geometric distortion

In a video display, any aberration which causes the reproduced picture to be geometrically dissimilar to the perspective plane projection of the original scene.

general aviation/GA

All civil aviation activity except that of air carriers certificated in accordance with FAR Part 121, 123, 127, and 135. The type of aircraft used in general aviation activities cover a wide spectrum from corporate multi-engine jet aircraft piloted by professional crews to amateur-built single engine piston aerobiotic aircraft, balloons and dirigibles.

1. general aviation (ICAO) -- All civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire.

2. business transportation -- Any use of an aircraft not for compensation or hire by an individual for the transportation required by a business in which he is engaged.

3. executive transportation -- Any use of an aircraft by a corporation, company or other organization for the purpose of transporting its employees and/or property not for compensation or hire, and employing professional pilots for the operation of the aircraft.

4. personal/pleasure flying -- Any use of an aircraft for personal purposes not associated with a business or profession, and not for hire. This includes maintenance of pilot proficiency.

5. registered active general aviation aircraft -- A civil aircraft registered with the FAA that has been flown one or more hours during the previous calendar year. Excluded are aircraft owned and operated in regularly scheduled, non-scheduled, or charter service by commercial air carriers or aircraft in excess of 12,500 pounds maximum gross takeoff weight, and owned and operated by a commercial operator certificated by the FAA to engage in intrastate common carriage.

General Aviation District Office/GADO

These offices conduct those air safety programs relating to certification, inspection, and surveillance of general aviation operators, agencies, and related airmen; aircraft airworthiness (civil aircraft except those used by scheduled and supplemental air carriers and commercial operators, weighing in excess of 12,500 lbs.); air taxi operators, aerial applicators and rotorcraft external load operators; and maintain surveillance of and conduct inspections of general aviation flight operations and maintenance to assure compliance with safety requirements.

general control environment

Various environmental factors (such as management's attitude toward internal control, competence and integrity off personnel, delegation and communication of authority and responsibility, ADP considerations and others) that can influence the effectiveness of internal controls over program and administrative functions.

geocentric coordinates

A coordinate system which defines the position of a point with respect to the center of the earth.

geodesic line

A line of shortest distance between two points on any mathematically defined surface.

geodetic coordinates

The quantities of latitude, longitude and height, which define the position of a point with respect to a geodetic datum.

geodetic datum

The numerical or geometrical quantity or set of such quantities (mathematical model) which serves as a reference for computing other quantities in a specific geographic region such as a latitude and longitude of a point.

geographic data

In the radar system it is the reception of radio pulses from fixed objects; for example, bridges, mountains, buildings, etc. In the display sub-system, it is locations on a display surface which indicates a fixed object, or objects, that may affect air traffic control operations.

1. geographic map data -- In the NAS display system, it is static data (line and symbol) which indicates the location of airports, NAVAIDs, obstructions, airways (victor and jet), boundaries (center and sector), runway extensions, radar sites, etc. See additional airways, abbreviated airways.

geographical sector/GSEC

An indivisible unit of airspace, low or high altitude (or both), which is defined on the ground and which is assigned to some work sector in every sectorization plan.

GEOREF

An international code reference system for reporting geographical position (similar to rectangular coordinates).

geostrophic wind

The mathematically calculated wind which theoretically blows parallel to the contour lines, in which only pressure gradient force and Coriolis force are considered.

ghost

A position that is manned during simulation System Shakedown tests, whose purpose is to simulate a sector, ARTCC, terminal, or other facility that interfaces with the sectors under test. Data is not usually taken on ghost activities because the purpose of the Ghosts is only to improve the realism of the simulation in the test sectors, and the internal operations of Ghost sectors and facilities are not usually realistic. That is, Ghosts look realistic to the test sectors, but do not look realistic to themselves or to each other.

glare condition

A state created by a telephone trunk being seized simultaneously by both ends.

glaze

A coating of ice, generally clear and smooth, formed by the freezing of supercooled water on a surface. See clear icing.

lider

A heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its lifting surfaces and whose free flight does not depend principally on an engine.

glidepath

A descent profile determined for vertical guidance during a final approach.

glideslope

Operates in the 329 to 335 MHz band. It generates a path at an angle of about 3° above the horizon by the crossover of two lobes which, like the localizer signals, are modulated at 90 or 150 Hz. The lobes are formed by an antenna array stacked on a vertical pole. Lobe patterns are the result of ground reflections that provide a virtual image of the antennas. The pole is usually located about 400 feet from the runway center and 1000 feet inside the runway threshold. See ILS. The Glide Slope provides vertical guidance for aircraft during approach and landing. The glide slope consists of the following: electronic components emitting signals which provide vertical guidance reference to airborne instruments during instrument approaches such as ILS; or visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing.

glideslope/glidepath intercept altitude

The minimum altitude to intercept the glideslope/path on a precision approach. The intersection of the published intercept altitude with the glideslope/path, designated on Government charts by the lightning bolt symbol, is the precision FAF; however, when ATC directs a lower altitude, the resultant lower intercept position is then the FAF. (See Final Approach Fix, segments of an Instrument Approach Procedure)

Global Positioning System/GPS

1. GPS coordination data -- Data transmitted from the GPS master control station to the GPS monitor to support the monitoring function. This data will include the intended GPS navigation messages for comparison with the monitored navigation signal.

2. GPS master control station -- The ground based DOD monitor and control network of GPS.

go ahead

Proceed with your message. Not to be used for any other purpose.

go around

Instructions for a pilot to abandon his approach to landing. Additional instructions may follow. Unless otherwise advised by ATC, a VFR aircraft or an aircraft conducting visual approach should overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg. A pilot on an IFR flight plan making an instrument approach should execute the published missed approach procedure or proceed as instructed by ATC; e.g., "Go around" (additional instructions if required). (See low approach, missed approach)

grade of service

The performance of the interconnection network(s) with respect to user requests for through-connection during peak-busy hour traffic load versus the through connections which are not successfully completed within the permissible through connection delay time(s).

gradient

(1) A slope expressed in feet per mile, or as a ratio of the horizontal to the vertical distance. For example, 40:1 means 40 feet horizontally to 1 foot vertically. (2) In meteorology, a horizontal decrease in value per unit distance of a parameter in the direction of maximum decrease; most commonly used with pressure, temperature, and moisture.

gradient wind

Generally accepted as the actual wind above the friction level, influenced by Coriolis force, pressure gradient, and centrifugal force.

graphic weather data display

The display of weather products such as weather maps containing pressure centers (highs and lows), weather fronts, areas of precipitation, pressure isobars, temperatures, wind speed and direction, areas of IFR and marginal VFR, etc.

graticule

A system of vertical and horizontal lines that is used to divide a drawing, picture, chart, etc., into smaller sections. On a map the graticule consists of the latitude and longitude lines.

great circle

The line of intersection formed on the surface of a sphere by a plane that passes through the surface and center of a sphere. The shortest distance between two points on the surface of a sphere is along the great circle joining the two points.

Greenwich Meridian

The prime meridian which passes through Greenwich, England, and from which longitude is measured east or west.

grid navigation

A method of navigation using a grid overlay for direction determination.

grivation/griv

The angle between grid north and magnetic north at any point.

gross square feet

The sum of all heated or cooled floor area enclosed in a building, calculated from the outside dimensions, or from the centerline of common walls.

ground clutter

A pattern produced on the radar scope by ground returns which may degrade other radar returns in the affected area. The effect of ground clutter is minimized by the use of Moving Target Indicator/MTI circuits in the radar equipment resulting in a radar presentation which displays only targets which are in motion. (See clutter)

ground collision avoidance/GCA

Provision for both strategic conflict avoidance and tactical collision avoidance from central ground jurisdictions by command control to aircraft.

ground check

An evaluation at ground level of the radiated signal associated with a system, subsystem or equipment conducted by Airway Facilities maintenance personnel.

ground clutter

Pertaining to radar, a cluster of echoes, generally at short range, reflected from ground targets.

ground control assistance

A computer program concept which will generate an optimum path between an aircraft's position and its destination on the surface of a major airport.

ground controlled approach/GCA

An approach for landing which is largely directed by a ground controller.

ground delay

The amount of delay encountered prior to departure, usually associated with EDCT. Shown as a "G" in the remarks section of flight plan; i.e., G020.

ground derived

Information generated on the ground about an airborne aircraft. See air derived.

ground fog

In the United States, a fog that conceals less than 0.6 of the sky and is not contiguous with the base of clouds.

ground plot

A graphic representation of track and ground speed.

ground point of intercept/GPI

A point on the runway centerline at which it is assumed that a straight line extension of the glide slope intercepts the runway surface.

ground range

The horizontal distance from the subpoint of the aircraft to an object on the ground.

ground return

The reflection from the terrain as displayed on a CRT.

ground rules

Standards, conventions or practices which are recognized.

ground search radar returns

RF pulses that return to the ground search radar after being reflected off metal surfaces of aircraft and other objects on the airport surface.

ground speed/GS

The actual speed of an aircraft relative to the surface of the earth, measured in nautical miles per hour (knots).

ground target

Destruct objective of a faker aircraft.

ground visibility

Prevailing horizontal visibility near the earth's surface as reported by the National Weather Service or an accredited observer.

ground water

The water beneath the surface of the ground, consisting largely of surface water that has seeped down, and subsurface water which will flow into wells or springs.

ground wave

A radio wave that is propagated over the surface of the earth and tends to parallel the earth's surface.

group

One or more printed characters preceded and followed by a space character.

guidance information

Navigation information displayed to a pilot showing the aircraft's position relative to a specific course, such as a final approach.

gust

A sudden brief increase in wind; according to U. S. weather observing practice, gusts are reported when the variation in wind speed between peaks and lulls is at least 10 knots.

gyrodyne

A rotorcraft whose rotors are normally engine-driven for takeoff, hovering and landing, and for forward flight through part of its speed range, and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

gyroplane

A rotorcraft whose rotors are not engine-driven except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving; and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

nail

A form of precipitation composed of balls or irregular lumps of ice, always produced by convective clouds which are nearly always cumulonimbus.

half-duplex

Transmission in one direction at a time over a single channel. Thus, in a half duplex telegraph system, information can be transmitted in only one direction at a time. See service, half-duplex.

halo

A prismatically colored, or whitish circle, or arcs of a circle, with the sun or moon at its center. THe coloration, if not white, is from red inside to blue outside (opposite that of a corona). It is fixed in size with an angular diameter of 22° (common) or 46° (rare), and is characteristic of clouds composed of ice crystals. It is valuable in differentiating between cirriform and forms of lower clouds.

handoff

That action whereby identification of, radio communications with and, unless otherwise specified, control responsibility for an aircraft is transferred from one controller to another without interruption of radar surveillance.

1. handoff fix -- A predetermined geographical location over which an aircraft will transit from one facilities' area to another and for which a time estimate is transferred. (It is also the last fix for which the transmitting facility prepares a fix posting for use within its facility.)

2. handoff point/HOP -- The point with which an aircraft's position is correlated when transferring target identity during a radar handoff. When using non-radar procedures, the HOP is the point where control responsibility is transferred unless otherwise specified.

handshaking procedure(s)

A dialogue between a user and a computer, a computer and another computer, a program and another program, for the purpose of identifying a user and authenticating his/her identity, through a sequence of questions and answers based on information either previously stored in the computer or

supplied to the computer by the initiator of dialogue. Synonymous with password dialogue.

hard copy

Printed outputs, as opposed to displays and magnetic tape outputs.

hard disk

A carefully machined and polished non-magnetic metal platter, coated with magnetic material, used for storage of programs and data. Hard disks may be permanently mounted inside a disk drive or may come in removable cartridges.

hardware

The physical equipment or devices used to perform simple or complex computer functions. This includes the mechanical, magnetic, electrical and electronic devices from which a computer is constructed (equipment). This term must be qualified by using an appropriately restrictive modifier to convey a specific identification or meaning.

1. hardware error -- Any error which has been caused by hardware malfunction.

2. hardware security -- Computer equipment features or devices used in an AIS system to preclude unauthorized access to data or system resources.

have numbers

Used by pilots to inform ATC that they have received runway, wind, and altimeter information only.

Hawaii Air Defense Sector/HADS

A geographical subdivision of the Pacific Islands Air Defense Region/PIADR.

hazard rate

The instantaneous failure rate at any point in time during the life cycle phases.

hazardous materials incident

An incident which occurs during the transportation, loading, unloading or temporary storage of a hazardous material in which: a person is killed; a person received injuries requiring hospitalization; estimated carrier or other

property damage, or both exceeds 50 thousand dollars; fire, breakage, spillage or suspected contamination occurs involving the shipment of radioactive materials; a situation exists of such a nature that, in the judgement of the carrier, that a continuing danger to life exists at the scene of the incident.

hazardous near miss

An occasion wherein two aircraft in flight approach within 100 feet or less with each other.

hazardous weather

Weather conditions which have the potential to significantly increase the likelihood of aviation accidents. Hazardous weather conditions include moderate to severe icing moderate to severe turbulence, moderate to severe precipitation, wind shear, thunderstorms, sustained high winds near the surface or widespread areas of low visibility.

1. hazardous in-flight weather advisory service/HIWAS -- A program for broadcasting hazardous weather information (AWW's, SIGMET's, Convective SIGMET's, CWA's, AIRMET's, and Urgent PIREP's) on a continuous basis over selected VOR's. (Refer to AIM)

haze

A type of lithometeor composed of fine dust or salt particles dispersed through a portion of the atmosphere. The particles are so small they cannot be felt or individually seen with the naked eye (as compared with the larger particles of dust), but diminish the visibility. Haze is distinguished from fog by its bluish or yellowish tinge.

header

The initial characters of a message designating addressee, routing, time of origination, etc. In the CDC Display System, it is the first word in a display message.

heading

(1) Information placed at the top of a document or file which identifies its contents. Also referred to as header or title. (2) The angular direction of the longitudinal axis of an aircraft measured clockwise from a reference point.

1. compass heading/CH -- The reading taken directly from the compass.

2. grid heading/GH -- The heading of an aircraft with reference to grid north.

3. magnetic heading/MH -- The direction toward which the longitudinal axis of the aircraft points as measured clockwise in degrees from magnetic north.

4. true heading/TH -- The direction toward which the longitudinal axis of the aircraft points as measured clockwise in degrees from true north.

heading jitter

The magnitude of change in successive heading changes based on scan-to-scan deviations of a single radar.

heat of compression error

The error caused by the increase in the indication of the free air temperature gage, due to air compression and friction on the case around the sensitive element.

height above airport/HAA

Indicates the height of the MDA above the published airport elevation in the touchdown zone. This is published in conjunction with straight-in minimums.

height above landing/HAL

The height above a designated helicopter landing area used for helicopter instrument approach procedures.

height above touchdown/HAT

Indicates the height of the DH or MDA above the highest elevation in the touchdown zone. This is published in conjunction with straight-in minimums. See category landing.

helical

(1) Spiraled; being similar to the threads of a bolt. (2) The path travelled by a point on a rotating object which is moving in a direction which is at right angle to the plane of rotation.

1. helical gear -- (1) A gear having helical teeth. (2) A gear having teeth cut at an angle other than 90°, to the plane of rotation.

helicopter

A rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors.

helipad

A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

heliport

An area of land, water, or structure used or intended to be used for the landing and takeoff of helicopters and includes its buildings and facilities, if any.

Hertz/Hz

The standard radio equivalent of frequency in cycles per second of an electromagnetic wave. Kilohertz (kHz) is a frequency of one thousand cycles per second. Megahertz (MHz) is a frequency of one million cycles per second.

hi-BRITE display

A plan view type electronic display of sufficient brightness for presenting radar and/or other data in a control tower cab during daylight conditions.

high

An area of high barometric pressure, with its attendant system of winds; an anticyclone. Also known as a high pressure system.

high altitude operations

Operations conducted at or above FL-180 (FL 240 in Alaska).

high frequency/HF

The frequency band between 3 and 30 MHz.

1. high frequency communications/HF communications -- High radio frequencies (HF) between 3 and 30 MHz used for

air-to-ground voice communication in overseas operations.

high pass filter

A filter designed to pass all frequencies above a certain cutoff point, and attenuate all frequencies below that point.

high seas

That area of the international waters commencing 3 nautical miles from the edge of the land mass.

high speed data transfer channel

See data transfer channel, high speed.

high speed taxiway/exit/turnoff

A long radius taxiway designed and provided with lighting or marking to define the path of aircraft, travelling at high speed (up to 60 knots), from the runway center to a point on the center of the taxiway. Also referred to as long radius exit or turn-off taxiway. The high speed taxiway is designed to expedite aircraft turning off the runway after landing, thus reducing runway occupancy time.

highlight

To provide prominence to an item on a display.

hit

A momentary disturbance on a circuit. In data communication, a hit duration of less than a bit length may garble one or more characters, particularly in an asynchronous mechanical selector system.

1. hit on the line -- A momentary open circuit on a teletypewriter loop.

2. hit measurement -- Examination of a received holding tone for abrupt changes in its level of phase for an extended period. The holding tone may remain at its new level or phase or return to its original value. The dropout level is determined at the start of the measurement and remains fixed over the measurement interval.

hold

The capability of suspending a call in progress while placing or answering another call.

hold for release

Used by ATC to delay an aircraft for traffic management reasons; i.e., weather, traffic volume, etc. Hold for release instructions (including departure delay information) are used to inform a pilot or a controller (either directly or through an authorized relay) that a departure clearance is not valid until a release time or additional instructions have been received.

hold list

A controller located list of holding aircraft presented on a plan view display in tabular form.

holding

A predetermined maneuver which keeps an aircraft within a specified airspace while awaiting further clearance.

holding fix

A fix designated as a result of a hold action having been entered for the fix. A specified fix used as a reference point in establishing and maintaining the position of an aircraft while holding.

1. holding point (ICAO) -- A specified location, identified by visual or other means, in the vicinity of which the position of an aircraft in flight is maintained in accordance with air traffic control clearances.

home

A term which refers to the upper left corner of a video display, specifically to the first character position.

homing

Flight towards a NAVAID, without correcting for wind, by adjusting the aircraft heading to maintain a relative bearing of zero degrees. See bearing.

1. homing (ICAO) -- The procedure of using the direction-finding equipment of one radio station with the emission of another radio station, where at least one

of the stations is mobile, and whereby the mobile station proceeds continuously towards the other station.

horizon

The apparent intersection of the earth and the sky as seen by an observer.

1. bubble horizon -- An artificial horizon parallel to the celestial horizon, established by means of a bubble level.

2. celestial horizon -- The great circle on the celestial sphere formed by the intersection of a plane passing through the center of the earth which is parallel to the plane tangent to the earth at the observers position.

3. visible horizon -- The circle around the observer where earth and sky appear to meet. Also called natural horizon or sea horizon.

horizontal positioning

The process by which the type box in a teletype is moved horizontally.

host center

(1) The ARTCC facility that is responsible for arrival operations into a specific terminal. (2) A center having one or more ARTS facilities directly interfaced with the center by physical data lines.

hot line

A dedicated line from selected positions in one ARTCC to selected positions in another ARTCC. The line,is terminated in loud speakers, to be used for immediate access for radar handoffs.

hot spot

A part or other area or region that is abnormally or unacceptably hot. The temperature depends on the item and the application.

hour angle

1. Greenwich hour angle/GHA -- The angular distance measured from the upper branch of the Greenwich

meridian westward through 360° to the upper branch of the hour circle passing through a point.

2. local hour angle/LHA -- The angular distance measured from the upper branch of the observers meridian westward through 360° to the upper branch of the hour circle passing through a body.

3. sidereal hour angle/SHA -- The angular distance measured from the upper branch of the hour circle of the first point of Aries westward through 360° to the upper branch of the hour circle passing through a body.

hour circle

See circle.

hover check

Used to describe when a helicopter/VTOL aircraft requires a stabilized hover to conduct a performance/power check prior to hover taxi, air taxi, or takeoff. Altitude of the hover will vary based on the purpose of the check.

hover taxi

Used to describe 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 feet AGL to reduce ground effect turbulence or provide clearance for cargo sling-loads. See air taxi, hover check (Refer to AIM)

How do you hear me?

A question relating to the quality of the transmission or to determine how well the transmission is being received.

humidity

A measurement of the amount of water vapor in the air relative to the total possible amount the air could hold at a particular temperature. This measurement is a percentage, with 100 percent equal to the saturation level at the current temperature.

1. mixing ratio -- The ratio by weight of the amount of water vapor in a volume of air to the amount of dry air; usually expressed as grams per kilogram (g/kg).

2. relative humidity -- The ratio of the existing amount of water vapor in the air at a given temperature to the maximum amount that could exist at that temperature; usually expressed in percent.

3. specific humidity -- The ratio by weight of water vapor in a sample of air to the combined weight of water vapor and dry air. Compare mixing ratio.

hurricane

A tropical cyclone in the Western Hemisphere with winds in excess of 65 knots or 120 km/h.

hybrid

A bridge-type circuit or connecting device that combines the functions of providing impedance matching between certain circuits and isolation between other circuits. A hybrid is often used to connect a four wire line to a two wire line so that both directions of transmission on the four wire line are isolated from each other, but are connected to the two wire line.

hydrometeor

A general term for particles of liquid water or ice such as rain, fog, frost, etc., formed by modification of water vapor in the atmosphere. The term also applies to water or ice particles lifted from the earth by the wind such as sea spray or blowing snow.

hydrometer

An instrument used for measuring the water vapor content of the air.

1. hydrograph -- The record produced by a continuous recording hygrometer.

say again

The message will be repeated.

ice crystals

A type of precipitation composed of unbranched crystals in the form of needles, columns, or plates; usually having a very slight downward motion. They may fall from a cloudless sky.

ice fog

A type of fog composed of minute suspended particles of ice. This occurs at very low temperatures, and it may cause halo phenomena.

ice needles

A form of ice crystals.

ice pellets

Small, transparent or translucent, round or irregularly shaped pellets of ice. THey may be hard grains that rebound on striking a hard surface, or pellets of snow encased in ice.

icing

In general, any deposit of ice forming on an object. See clear icing, rime icing, glaze.

ident

A request for a pilot to active the aircraft transponder identification feature. This will help the controller to confirm an aircraft identity or identify an aircraft. (Refer to AIM)

1. "IDENT" feature -- The special feature in ATCRBS equipment and the "I/P" feature in certain SIF equipment used to distinguish one displayed select code from other codes.

identification

The process that enables, generally by the use of unique machine-readable names, recognition of users or resources as identical to those previously described to an AIS system.

independent cooperative surveillance (secondary surveillance)

Surveillance information obtained independent of on-board navigational data but involving the retransmission of the surveillance signal by the use of a "cocperative" aircraft transponder or other device. Selected data for the aircraft, such as its identification or other device. Selected data for the aircraft, such as its identification and altitude, may be included in the transponder "reply" signal.

idle line

(1) A data transmission circuit that is in a steady-state marking condition. (2) A closed loop or circuit having normal continuous current flow for a period greater than the time required to transmit a complete character, this time being 100 milliseconds when operating at 100 words per minute.

idle thrust

The jet thrust obtained with the engine power control lever set at the stop for the least thrust position at which it can be placed.

if feasible, reduce speed to (speed)

(See speed adjustments)

if no transmission received for (time)

Used by ATC in radar approaches to prefix procedures which should be followed by the pilot in event of lost communications. See lost communications.

IFR

See instrument flight rules.

1. IFR aircraft/IFR flight -- An aircraft conducting flight in accordance with instrument flight rules.

2. IFR conditions -- Weather conditions below the minimum for flight under visual flight rules. See Instrument Meteorological Conditions.

3. IFR departure procedure -- See IFR takeoff minimums and departure procedures. (Refer to AIM)

4. IFR military training routes/IR -- Routes used by the Department of Defense and associated Reserve and Air

Guard units for the purpose of conducting low-altitude navigation and tactical training in both IFR and VFR weather conditions below 10,000 feet MSL at airspeeds in excess of 250 knots IAS.

5. IFR over-the-top -- The operation of an aircraft over-the-top of instrument meteorological conditions on an IFR flight plan when cleared by air traffic control to maintain "VFR conditions" or VFR conditions on-top."

6. IFR takeoff minimums and departure procedures -- FAR, Part 91, prescribes standard takeoff rules for certain civil users. At some airports, obstructions or other factors require the establishment of non-standard takeoff minimums, departure procedures, or both to assist pilots in avoiding obstacles during the climb to the minimun en route altitude. Those airports are listed in NOS/DOD Instrument Approach Charts (IAP's) under a section entitled "IFR Takeoff Minimums and Departure Procedures." The NOS/DOD IAP chart legend illustrates the symbol used to alert the pilot to non-standard takeoff minimums and departure procedures. When departing IFR from such airports or from any airports where there are no departure procedures, SID's, or ATC facilities available, pilots should advise ATC of any departure limitations. Controllers may query a pilot to determine acceptable departure directions, turns, or headings after takeoff. Pilots should be familiar with the departure procedures and must assure that their aircraft can meet or exceed any specified climb gradients.

immediately

Used by ATC when such action compliance is required to avoid an imminent situation.

immigrant alien

Any person who has been lawfully admitted into the United States under an immigration visa for permanent residence.

impedance matching

A method of minimizing the adverse effects of junctions between dissimilar transmission lines or connections between equipment with different impedances. To eliminate reflections from an impedance mismatch between elements A and B, the input impedance of B must equal the output impedance of A. Too obtain maximum power transfer from A to B, B's impedance must be the conjugate of A. This means that if A is inductive, B must be equally capacitive, or

vice versa. Various methods are used to make the impedance of dissimilar elements appear equal (a transformer for example), and the process is known as impedance matching.

impersonation

An attempt to gain access to a system by posing as an authorized user. Synonymous with masquerading, mimicking.

implied fix

An intersection that is not specifically filed in a flight plan, but is implied by a junction of two adapted routes.

improved side lobe suppression/ISLS

A radar system that eliminates the effects of undesired reflection over the whole beam.

impulse noise

Large peaks or impulses in the total noise wavefront. Impulse noise is measured with an instrument which counts impulses greater than a selected threshold value.

1. impulse noise level -- The threshold (expressed in dBrnC) at which the median count from a number of observations (each having the same specified time interval) is equal to a specific number. The median number is currently one per minute.

inactive flight plan

See flight plan activity status.

inactive sector

(1) A WSEC whose mating GSEC is now paired with some other active WSEC. (2) A sector to which no fix posting areas are currently assigned. See sector.

in-band signaling

The transmission of signaling tones at some frequency or frequencies within the channel normally used for voice transmission.

inbound fix

The last posted fix traversed by an aircraft before crossing the control area boundary to enter the control area.

1. inbound coordination fix -- The coordination fix received on an inter-facility flight plan message. For an approach control, the inbound coordination fix may be the inbound approach control boundary intercept point.

inbound list

A controller located list of inbound aircraft presented on a plan view display in tabular form.

incident

(1) A single occurrence relating to an interruption. (2) An occurrence involving the operation of one or more aircraft in which a hazard or a potential hazard to safety is involved but which is not classified as an accident due to degree of injury and/or extent of damage.

incinerator

An engineering device which uses controlled flame combustion to thermally degrade fuels, oils and other chemicals. Examples of such devices are rotary kilns, liquid injection incinerators, cement kilns and high temperature boilers.

incomplete parameter checking

A system fault which exist when all parameters have not been fully checked for correctness and consistency by the operating system, thus making the system vulnerable to penetration.

increase speed to (speed)

(See speed adjustment)

indefinite ceiling

A ceiling classification denoting vertical visibility into a surface based obscuration.

indent

A depression, dent or low area on a body.

index error

See celestial observation error.

inertia

The opposition offered by a body to a change in its state of motion.

indicated airspeed/IAS

The speed of an aircraft as shown on its pitot static airspeed indicator, calibrated to reflect standard atmosphere adiabatic compressible flow at sea level, uncorrected for airspeed system errors.

indirect access

Refers to the use of a Dialing Pad in order to access another position in an ARTCC. The capability of calling a party by dialing a multi-digit telephone number.

individual

A citizen of the United States or an alien lawfully admitted for permanent residence. A proprietorship or any collection of individuals; e.g., corporations, partnerships, etc., are not considered individuals.

infant mortality

The initial period during which the population of an item exhibits a high but rapidly decreasing failure rate.

in-flight weather briefing

A weather briefing that could be a continuous broadcast of a recorded route-specific weather message, or pertinent route of flight weather information transmitted from a NAS facility, flight service specialist, or, possibly, a controller to an airborne user.

1. in-flight weather briefing broadcast -- A continuous broadcast of an in-flight weather briefing using RF signals transmitted through the air (free space).

2. in-flight weather briefing transmission -- The transmission of an in-flight weather briefing over an RF link that uses air (free space) as the communications medium.

3. in-flight weather message -- Computer-generated message containing pertinent weather information for pilots flying a specific route.

sformation

Knowledge that can be communicated by any means.

1. information bits -- The signal elements of a character carrying the intelligence, as contrasted with framing bits used as start-stop elements.

information request/INREQ

(1) A request for specific information by a pilot, controller, or flight service specialist. (2) A request for information concerning an overdue VFR aircraft.

1. information request transmission -- THe transmission of an information request over an RF link that uses air (free space) as the communications medium.

information security

The result of any system of administrative policies and procedures for identifying, controlling and protecting from unauthorized disclosure, information the protection of which is authorized by executive order or statute.

inherent

Achievable under ideal conditions, generally derived by analysis, and potentially present in the design.

1. inherent distortion -- The distortion of the display of a received radar signal caused by the design characteristics of a particular radar set.

inhibit

(1) To prevent the occurrence of a machine action, as in inhibiting an alert function. (2) A controller action to suppress the presentation of certain information.

1. inhibit transmission -- To block transmission of information to a specific facility or FDEP position in a manner that provides notification to affected sectors/ facilities.

initial approach

1. initial approach altitude -- The altitude (or altitudes,) prescribed for the initial approach segment of an instrument approach.

2. initial approach fix/IAF -- The fixes depicted on instrument approach procedure charts that identify the beginning of the initial approach segment(s). See fix, segments of an instrument approach procedure.

3. initial approach segment -- The segment (of a standard instrument approach procedure) between the initial approach fix and the intermediate fix or the point where the aircraft is established on the intermediate course of final approach course.

initial operating capability/IOC

That point during system installation when the hardware and software has been successfully merged to meet the total system requirements. IOC includes the installation and testing of systems to insure that they meet defined requirements. The IOC is considered a partial JAI where the maintenance responsibility is accepted but a period of time is set aside for verification of operational procedures, along with training, familiarization, etc.

initial point

A preselected geographical position which is used as a reference for the beginning of a run on a target.

1. initial point/H-hour control line/IP/HHCL -- That point at which the faker route portion of an exercise begins.

initial tolerance/limit

The maximum deviation from the standard value of a parameter, or the range, that was acceptable or permissible at the time of initial installation, tuneup, or construction; that will be allowable after any modification or modernization; and that is desirable after any readjustment following an out-of-tolerance/limit condition.

initiation

The process by which a controller or a computer associates speed and heading with radar data to form a track.

1. initiate -- To begin an action involving the concurrence of another controller/specialist, as in initiating a handoff.

inland SAR region

The area in which the USAF, through the Aerospace Rescue and Recovery Service (ARRS), exercises the SAR coordination

function. It includes all of the inland area within the conterminous U.S., except the waters under jurisdiction of the U.S. Coast Guard for SAR purposes. The ARRS has divided the Inland Region into three sub-regions and a rescue coordination center in each sub-region executes coordination responsibilities.

inner fix/IF

The first turning point along the flight path being flown by a specific arrival occurring after the firm runway schedule time for that flight has been established.

inner marker/IM/inner marker beacon

A marker beacon used with an ILS (CAT II) precision approach located between the middle marker and the 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 is at the designated decision height (DH), normally 100 feet above the touchdown zone elevation, on the ILS CAT II approach. It also marks progress during a CAT III approach. See Instrument Landing System. (Refer to AIM)

input

(1) Information or data transferred or to be transferred from an external storage medium into the internal storage of the computer. (2) Describing the routines which direct input as defined in (1) or the devices from which such information is available to the computer.
(3) The device or collective set of devices necessary for input as defined in (1).

input-output/I/O

A general term for the equipment used to communicate with a computer and the data involved in the communication.

1. I/O channel -- A CCC selector multiplex channel which presents the CCC's I/O interface to the external world.

2. I/O error -- Any hardware, program, or input data condition which prevents normal I/O processing by the program. See transient I/O error.

3. I/O path -- That chain of hardware which links CCC core storage with a physical device. It includes a channel and one or more control units. See control unit and physical device.

4. input/output typewriter -- A device used to enter information or to receive information as the result of computer processing.

input/output control element off-loading

General dispatching of the processor.

insertion loss

The added loss introduced when a device or line section is interposed between two elements of a circuit. The qualification of "insertion" is used because the new circuit element may not match the impedance of the former circuit elements. Consequently, the apparent loss added to the circuit may not be the same as the loss of the new element when measured alone. If the device or line section, when inserted, causes mismatched circuits to become matched, an insertion gain may result.

insolation

Incoming solar radiation falling upon the earth and its atmosphere.

instability

A general term used to indicate various states of the atmosphere in which spontaneous convection will occur when prescribed criteria are met; indicative of turbulence. See absolute instability, conditionally unstable air, convective instability.

instrument

A device using an internal mechanism to show visually or aurally the attitude, altitude or operation of an aircraft or aircraft part. It includes electronic devices for automatically controlling an aircraft in flight.

integrated circuit/IC

A single piece of silicon or other semiconductor material which contains all the components of an electronic circuit. The term IC is also used to refer to the package that contains the integrated circuit. See chip.

integrity

See data integrity, system integrity.

nteractive computing

Use of a computer such that the user is in control and may enter data or make other demands on the system which responds by the immediate processing of user request and returning appropriate replies to these requests.

intercept

(1) The encounter with or tracking of an airborne object, normally as a result of a flight path pre-planned to effect such encounter in the shortest practicable time. (2) With respect to celestial navigation, the difference in minutes of arc between an observed altitude of a celestial body and its computed altitude for the same time. This difference is measured as a distance in nautical miles from the plotting position along the azimuth of the body to determine the point through which to plot the line of position.

interceptor

An airplane engaged for the sole purpose of performing an intercept.

1. interceptor training flight -- The flight of one or more aircraft for the development and maintenance of proficiency for both air and ground components related to the intercept mission.

interchange channel/IXC

That portion of a private telephone line which connects central offices.

interdiction

The act of impeding or denying the use of system resources to a user.

interface

(1) The connection of one electronic device to another, such as the connection of a peripheral device to a computer. It applies to both the physical connector and the electronic signals at the connector. (2) A point of connection between networks or systems and privately owned terminal equipment. It represents a user, telephone company demarcation point.

interfacility flow control network

This system provides a two way communications link between the CFCC, CFCF and the TMU's. In addition, the processing

system interfaces with the ARINC and AFTN/NADIN circuits for flight plan updates from airlines and flight service stations.

interlaced scanning

In a video display, a scanning process in which successively scanned lines are spaced an integral number of line widths, and in which the adjacent lines are scanned during successive cycles of the field frequency.

inter-modulation (non-linear) distortion

The generation of signal components that are not present in the input signal. The principal cause is non-linear electronic circuits such as amplifiers, modulators and demodulators. The effect is a distorted output with low amplitude signals whose frequencies are multiples of the input signal harmonics. With multiple frequency inputs the non-linear distortion shows up as harmonics of individual inputs plus the sum and difference products of the inputs and their harmonics (intermodulation products). This type of distortion is evaluated by measuring a number of second and third order modulation products which result from the non-linearity's acting on a multiple-tone transmitted signal.

internal security audit

A security audit conducted by personnel responsible to the management of the organization being audited.

international date line

The anti-meridian of Greenwich, modified to avoid island groups and land masses; in crossing this Greenwich anti-meridian there is a change of local date.

inter-state

Within the 48 contiguous states, Alaska, Hawaii and the District of Columbia.

1. inter-state air commerce -- The carriage by aircraft of persons or property for compensation or hire, or carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in any State of the United States, or District of Columbia; or between places in the same State of the United States through the airspace over any place outside thereof; or between places in the same

territory or possession of the United States, or District of Columbia.

2. inter-state air transportation -- The carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft, in commerce: between a place in a State or District of Columbia and another place in another State or the District of Columbia; between places in the same State through the airspace of any place outside that State or between places in the same possession of the United States; whether that commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

intertropical convergence zone

The boundary zone between the trade wind system of the Northern and Southern Hemisphere. It is characterized in maritime climates by showery precipitation with cumulonimbus clouds sometimes extending to great heights.

intra-state air transportation

The carriage of persons or property as a common carrier for compensation or hire, by turbojet-powered aircraft capable of carrying thirty or more persons, wholly within the same State of the United States.

instruction

A machine word or a set of characters in machine language directing the computer to take a certain action.

1. instruction-addressable device -- Any physical device uniquely addressed by an I/O instruction operant.

instrument approach procedure/IAP/instrument approach

A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority. See segments of an instrument approach procedure. (Refer to FAR Part 91, AIM) U.S. civil standard instrument approach procedures are approved by the FAA as prescribed under FAR, Part 97 and are available for public use. U.S. military standard instrument approach procedures are approved and published by the Department of Defense. Special instrument approach procedures are approved by the FAA for individual

operators but are not published in FAR, Part 97 for public use.

1. instrument approach procedure (ICAO) -- A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en route obstacle clearance criteria apply.

instrument approach procedure, segments of

An instrument approach procedure may have as many as four separate segments depending on how the approach procedure is structured.

1. initial approach -- The segment between the initial approach fix and the intermediate fix or point where the aircraft is established on the intermediate course or final approach course.

2. intermediate approach -- The segment between the intermediate fix or point and the final approach fix.

3. final approach -- The segment between the final approach fix or point and the runway, airport, or missed approach point.

4. missed approach -- The segment between the missed approach point or the point of arrival at decision height and the missed approach fix at the prescribed altitude.

inversion

An increase in temperature with height (a reversal of the normal decrease with height in the troposphere). It may also be applied to other meteorological properties.

iso echo

In radar circuitry, a circuit that reverses signal strength above a specified intensity level, thus causing a void on the scope in the most intense portion of an echo, when maximum intensity is greater than the specified level.

isobar

A line of equal or constant barometric pressure.

isogonic line/isogonal

A line drawn on a chart joining points of equal magnetic variation.

isogriv

A line drawn on a chart joining points of equal grivation.

isoheight

On a weather chart, a line of equal height. Same as contour.

isoline

A line of equal value of a variable quantity, i. e., an isoline of temperature is an isotherm. See isobar, isotach.

isoshear

A line of equal wind shear.

isotach

A line drawn on a chart joining points of equal wind speed.

isotherm

A line drawn on a chart joining points of equal temperature.

isothermal

Of equal or constant temperature, with respect to either space or time; more commonly temperature with height. A zero lapse rate.

instrument flight

Flight in which the attitude, altitude and course of the aircraft is at all time maintained by the pilot's reference to cockpit instruments.

instrument flight rules/IFR

Flight in which the ATC system assures collision avoidance between aircraft operating in accordance with IFR and CVR in Positive Controlled Airspace. When operating outside Positive Control Airspace, pilot responsibility with respect to collision avoidance differs according to flight weather conditions.

1. IFR aircraft -- An aircraft conducting flight in accordance with Instrument Flight Rules.

2. IFR conditions -- Weather conditions below the minimum for flight under Visual Flight Rules.

3. IFR departure flight plans/arrival flights -- IFR flight plans for aircraft arriving and departing from an airport under the jurisdiction of a particular tower or approach and departure control sector.

4. instrument flight rules (ICAO) -- A set of rules governing the conduct of flight under instrument meteorological conditions.

instrument landing system/ILS

A runway approach system for unfavorable weather conditions consisting of equipment both on the aircraft and on the ground. There are three, basic systems on the ground: The localizer, which broadcasts a 100 MHz signal that locates the far end of the runway; the glide slope, which broadcasts a 150 MHz signal from sides of the approach end of the runway and defines the limits within which the aircraft must be for proper approach; and the extended center marker beacon which broadcasts at 75 MHz from several antennas defining the center of the extended runway.

1. ILS Categories:

   a. Category I -- An ILS approach procedure which provides for approach to a height above touchdown of not less than 200 feet and with runway visual range of not less than 1,800 feet.

   b. Category II -- An ILS approach procedure which provides for approach to a height above touchdown of not less than 100 feet and with runway visual range of not less than 1,200 feet.

   c. Category III. -- (1) 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. (2) 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. (3) IIIC -- An ILS approach procedure which provides for approach without a decision height minimum and without runway visual range minimum.

2. ILS gate -- The closest point to the runway that an aircraft can intercept the ILS and still make a safe approach. Based on the aircraft type, the gate can be four to eight miles from touchdown. The larger and faster the aircraft, the longer the gate is from the touchdown. When speed classes are mixed on the same runway, then several gates on the same ILS are beneficial.

instrument meteorological conditions/IMC

Meteorological conditions expressed in terms of visibility, distance form cloud, and ceiling less than the minima specified for visual meteorological conditions. (See visual flight rules)

instrument runway

A runway equipped with electronic and visual navigation aids for which a precision or non-precision approach procedure having straight-in landing minimums has been approved.

1. instrument runway (ICAO) -- One of the following types of runways intended for the operation of aircraft using instrument approach procedures:

2. non-precision approach runway -- An instrument runway served by visual aids and a non-visual aid providing at least directional guidance adequate for a straight-in approach.

3. precision approach runway, Category I -- An instrument runway served by ILS and visual aids intended for operations down to 60 m (200 feet) decision height and down to an RVR of the order of 800 m.

4. precision approach runway, Category II -- An instrument runway served by ILS and visual aids intended for operations down to 30 m (100 feet) decision height and down to an RVR of the order of 400 m.

5. precision approach runway, Category III -- An instrument runway served by ILS to and along the surface of the runway and: intended for operations down to an RVR of the order of 200 m (no decision height being applicable) using visual aids during the final phase of landing; intended for operations down to an RVR of the order of 50 m (no decision height being applicable) using visual aids for taxiing; or intended for operations without reliance on visual reference for landing or taxiing.

insurance stock

Items of material essential for continued service of a facility, or for human safety, for which procurement delays are intolerable.

integrity

The state existing when data agrees with the source from which it is derived; and when it has not been either accidentally or maliciously altered, disclosed or destroyed.

intensive student jet training area/ISJTA

Airspace which contains the intensive training activities of military student jet pilots and in which restrictions are imposed on IFR flight.

inter-active processing

The processing environment characterized by task initiation via commands issued on a terminal. It is possible on some systems for the user to interact with the initiated task, modifying it or its behavior as the user deems necessary. Some systems allow the user to initiate tasks that perform transactions on a data base, the set of allowable transactions being fixed and small. Interactive processing is typified by a high degree of communications between the initiated task and the user.

inter-changeability

The ability to interchange, without restriction, similar equipment or portions thereof in manufacture, maintenance or operation.

intercom

Intercommunication between controllers within an ARTCC.

inter-exchange channel

A communications channel between common carrier exchanges. Measured by airline mileage.

interface

(1) The common boundary of two bodies or spaces. The functional inter-system relationships which influence system accomplishments. (2) A communication link between two or more system components (i.e., configuration establishes a CCC interface). An on-line device is considered interfaced

unless it is No-Op'ed or inhibited. Interface is also used in referring to the communication link between the computer program and the user.

1. message size -- The average duration of a voice message in call seconds, or the average size of a data message measured in bits or bytes (except for the case of maintenance and operations messages, the size of data messages includes information content only, ISO layer 7, and excludes communication protocols, headers, addresses, etc.).

2. external interfaces -- Interfaces between the NAS and systems and sub-systems outside the NAS.

3. internal interfaces -- Interfaces between systems and sub-systems within the NAS. These interfaces can be categorized as either inter sub-system or intra sub-system.

4. inter sub-system internal interfaces -- Interfaces between sub-systems both located within the NAS.

5. intra sub-system internal interfaces -- Interfaces between end items of a single sub-system located within the NAS.

6. functional interface -- Interfaces which interact across non -material boundaries and are described in terms of information transfer characteristics described in the International Standards Organization/Open System Interconnect (ISO-OSI). seven layer model, as discussed in ISO 7498.

7. message rate -- (1) The probable worst case number of messages per unit time to reach the interface between two sub-systems. (Applies to air traffic messages, flight planning messages, navigation-landing messages, traffic management messages, and weather messages.) (2) The maximum number of messages per unit time (not exceeded more than 0.1% of the time) to reach the interface between two sub-systems. (Applies to communication messages). (3) The average number of messages per unit time to reach the interface between two sub-systems. (Applies to maintenance and operations messages).

8. physical interface -- Interfaces associated with material contact. Physical interfaces are described in terms of mechanical, electrical/ electronic, environmental and envelope characteristics.

9. man-machine interface -- Interfaces that encompass man-man/man-machine interaction involved in the command, control, operation, and maintenance of sub-systems or end items.

10. operational interface -- Type of interface which interacts across a system boundary, and defines the information and services exchanged. Operational interfaces are specified as part of the Operational Requirements and in the development of Operations Concept.

inter-facility

Between adjacent facilities; for example, between ARTCC and ARTCC, between ARTCC and TRACON, etc. Contrasted with intra-facility.

interim altitude

An altitude clearance which is a temporary altitude assignment prior to the issuance a final altitude clearance, it is primarily intended to stop an aircraft's climb or descent in traffic. It is used to specify to the computer so that an invalid conflict alert will be precluded.

interlace

To transmit different interrogation modes on successive sweeps. See sweep.

interleave

(1) Transponder reply trains that overlap in time in such a way that no pulse from either train occurs at a possible pulse position in the other train. (2) In CCC sub-system, it is the same as time-shared. In the radar sub-system, beacon interrogations are generated in a predefined sequence of two or three modes. For example; 32C32C. . .

intermediate approach segment

(See segments of an Instrument Approach Procedure)

intermediate fix

See inner fix.

Intermittent Positive Control/IPC

A data acquisition system that can reliably and accurately provide the ATC center with identity, position and altitude

information on all aircraft within designated portions of the airspace. The ATC computer, through a data link, can automatically advise aircraft of threats due to other aircraft, weather, airspace boundaries and surface obstacles. The computer can also generate commands for appropriate evasive maneuvers. The system works on both controlled and uncontrolled aircraft.

internal control

The specific steps (such as procedures, policies and methods) which management implements to provide reasonable assurance that: obligations and costs are in compliance with applicable laws; funds, property and other assets are safeguarded against waste, loss, unauthorized use or misappropriation; and revenues and expenditures are properly recorded and accounted for to permit the preparation of reliable reports and to maintain accountability over the assets.

1. internal control documentation -- Various types of documentation used to describe internal control methods and measures, to communicate responsibility and authority and to serve as a reference for persons reviewing internal controls and their functioning. Examples are written policies, organization charts, procedures, manuals, memoranda, flow charts, decision tables, completed questionnaires, software, etc.

2. internal control review -- A detailed examination of a system of internal control to determine whether adequate control measures exist and are implemented to prevent or detect the occurrence of potential risks in a cost effective manner.

3. internal control system -- The sum of the organization's methods and procedures used to achieve the objectives of internal control. An internal control system is not a separate system within an organization, but rather an integral part of the management processes used by an organization to carry out its programs and activities.

4. internal control techniques -- Processes and documents being used to efficiently and effectively accomplish an internal control objective.

International Aeronautical Telecommunications Switching Center/IATSC

A teletypewriter switching center that connects with the international circuits.

international airport

Relating to international flight, it means: (1) An airport of entry which has been designated by the Secretary of Treasury or Commissioner of Customs as an international airport for customs service. (2) A landing rights airport at which specific permission to land must be obtained from customs authorities in advance of contemplated use. (3) Airports designated under the Convention on International Civil Aviation as an airport for use by international commercial air transport and/or international general aviation. (Refer to Airport/Facility Directory and IFIM)

1. international airport (ICAO) -- Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration,public health, animal and plant quarantine and similar procedures are carried out.

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.

International Field Office/IFO

An FAA Office which has air carrier and general aviation responsibilities overseas.

International Flight Information Manual/IFIM

A publication designed primarily as a pilot's pre-flight planning guide for flights into foreign airspace and for flights returning to the U.S. from foreign locations.

International Flight Service Station/IFSS

A central operations facility in the flight advisory system, manned and equipped to control aeronautical point-to-point telecommunications and air/ground telecommunications with pilots operating over international territory or waters providing flight plan following, weather information, search and rescue action, and other flight assistance operations.

internal fix

A fix contained in fix adaptation.

inter-phone

Communications between controllers within an ARTCC and stations remote from the ARTCC.

interrogation

Transmission of a signal intended to trigger a transponder. Also called challenge and challenging system.

1. interrogator -- The ground-based surveillance radar beacon transmitter-receiver which scans in synchronism with a primary radar, transmitting discrete radio signals which repetitiously request all transponders, on the mode being used, to reply. The replies received are mixed with the primary returns and displayed on the same plan position indicator. Also applied to the airborne element of the TACAN/DME system.

interruption

A break in continuity, the loss or unavailability of a facility/service, regardless of duration.

1. interrupt -- A manually or automatically generated request, detected by the computer, which breaks into the normal operation of a data processing system and causes the system to perform a task which it is not currently executing.

intersecting runways

Two or more runways which cross or meet within their lengths. See intersection.

intersection

(1) A point defined by any combination of courses, radials, or bearings of two or more navigational aids. (2) Used to describe the point where two runways, a runway and a taxiway, or two taxiways cross or meet.

1. intersection clearance coordination -- The coordination of an ATC clearance between two or more sectors.

2. intersection departure/intersection takeoff -- A takeoff or proposed takeoff on a runway from an intersection.

intra-facility

Within a single facility; for example, between two sectors within the same ARTCC, etc. Contrasted with inter-facility.

intruder

(1) An aircraft which poses a collision threat to another aircraft by flying in airspace where it should not have entered or where it has not been cleared. (2) An altitude reporting aircraft that is being considered as a potential threat and that is being processed by TCAS threat detection logic.

ion

An atomic particle, atom or chemical radical bearing an electrical charge, either negative or positive.

1. ionizing radiation -- Electromagnetic radiation (gamma rays or x-rays) or particulate radiation (alpha particles, beta particles, neutrons, etc.) capable of producing ions, directly or indirectly, in its passage through matter.

IR

Ground equipment that transmits the interrogation pulses and receives the corresponding reply pulses from airborne transponders.

isolation

The containment of users and resources in an AIS system in such a way that users and processes are separate from one another as well as from the protection control of the operating system.

1. isolation level -- The functional level to which a failure can be isolated using accessory test equipment at designated test points.

issue

To distribute or communicate information. Typically involving a pilot or an aircraft, as in issuing clearances or advisories.

amming

Electronic or mechanical interference which may disrupt the display of aircraft on radar or the transmission/reception of radio communications/navigation.

jet advisory service

The service provided certain civil aircraft while operating within radar and non-radar jet advisory areas. Within radar jet advisory areas, civil aircraft receiving this service are provided radar flight following, radar traffic information, and vectors around observed traffic. In non-radar jet advisory areas, civil aircraft receiving this service are afforded standard IFR separation from all other aircraft known to ATC to be operating within these areas.

Jet Altitude/JALT

An altitude dividing the low altitude, vector airway, route structure from the high altitude, jet airway, route structure.

jet blast

Jet engine exhaust (thrust stream turbulence). (See wake turbulence)

jet routes

A high altitude route system, at the above 18,000 feet MSL, predicated on a network of designated high altitude VHF/UHF facilities.

jet stream

(1) A quasi horizontal stream of winds, 50 knots or more concentrated within a narrow band embedded in the westerlies in the high troposphere. (2) A migrating stream of high-speed winds present at high altitudes.

jettisoning of external stores

Airborne release of external stores; e.g., tip-tanks, ordnance. See fuel dumping. (Refer to FAR Part 91)

job

A task or group of tasks to be performed by a computer. A job is the smallest accounting unit on most computers, e.g., computer resources are normally charges against one account number per job.

joint acceptance inspection/JAI

An activity to gain consensus of all involved groups that projects for facility establishment, improvement or relocation are completed in accordance with national criteria.

1. joint acceptance board -- A board which consists of representatives of the office resporsible for project implementation, Airway Facilities sector,, Air Traffic and others, as appropriate, which has been convened to formally inspect a project.

2. joint acceptance inspection report -- A document used to document all findings of a joint acceptance board.

joint use

An installed, facility, system, subsystem or equipment which provides services to both the FAA and other agencies or military services. The facility, system, subsystem or equipment may be owned by either the FAA or the sharing organization. The term is used primarily in connection with radars.

1. joint use equipment -- Equipment or a facility providing information to both the FAA and military users.

2. joint use sites -- Long Range radar sites that input to both NAS ATC and the USAF Defense Systems.

3. joint use restricted area -- A restricted area within which IFR and/or VFR flight operations may be authorized by the controlling agency (a FAA facility) when not in use by the using agency.

JOVIAL

An acronym for "Jules Own Version of an International Algorithm Language''. The primary computer language for the NAS En Route Stage A System.

junction

A point where a direct route, airway, or coded route intercepts another direct route, airway, or coded route.

unction filter

A combination of a high-pass and low-pass filter, which is used to separate frequency bands for transmission over separate paths. For example, junction filters are used to separate voice and carrier frequencies at the junction between open wire and cable so that the carrier frequencies and voice frequencies can be sent over non-loaded and voice frequency loaded cable pairs respectively.

katabatic wind

Any wind blowing downslope. See fall wind, foehn.

Kelvin temperature scale/K

A temperature scale with zero degrees equal to the temperature at which all molecular motion ceases, i. e., absolute zero (0°K= -273°C). The Kelvin degree is identical to the Celsius degree; hence at standard sea level pressure, the melting point is 273°K and the boiling point 373°K.

key

(1) One element of a multiple element entry device. See keyboard. (2) In cryptography, a sentence of symbols that controls the operations of encryption and decryption.

1. key click -- An audible signal produced by a computer or other device when a key is pressed.

2. key generation -- With respect to cryptography, the origination of a key or of a set of distinctive keys.

key inspection element

A selected non-equipment oriented parameter, which is a critical indicator of whether or not a support function is being accomplished adequately and proper maintenance is being performed. A key inspection element is the counterpart of a key performance parameter in such areas as roads, grounds, etc.

key performance parameter

A selected parameter of the system, subsystem or equipment, which is a critical indicator of whether or not it is performing its intended function.

keyboard

An assembly having the appearance of a typewriter's front section, that is the keys are often arranged like those on a typewriter or calculator. The keys are used to enter information or commands into a computer, or to directly control a teleprinter system, input device, or to control a perforating mechanism. See computer entry device.

1. keyboard control -- The system of cams, links and other mechanisms used to control or direct the output of a keyboard.

eyboard send-receive set/KSR

A combination teletypewriter transmitter and receiver with transmission capability from keyboard only. As applied to a teletypewriter, the printing unit prepares hard copy and the keyboard unit transmits manually-entered information. THere is no paper tape capability. THe KSR operates in either half duplex or full duplex configuration on a circuit.

1. keyboard send-receive typing reperforator set/KTR -- Electro-mechanical apparatus that provides terminal facilities for exchanging messages over telegraph, telephone or radio circuits. An operator sends messages by typing on a keyboard which translates the data to serial teletypewriter code. The originating KTR set records the transmission on paper tape in the form of code hole perforations and printed characters. Distant stations record the transmission on page-width copy paper and/or paper tape. These sets operate at speeds up to 100 wpm.

keypack

See alpha-numeric keypack, keyboard.

keyword

Synonym for password.

kilo

A prefix meaning 1000, when used with decimal expressions such as kilometer, or 1,024 (2^{10}) when used with binary expressions.

1. kilobit -- A unit of measure for computer memory which equals 1,024 bits.

2. kilobyte -- A unit of measure for computer memory which equals 1,024 bytes.

kite

A framework, covered with paper, cloth, metal or other material, intended to be flown at the end of a rope or cable, and having as its only support the force of the wind moving past its surfaces.

klixon

A thermal sensitive device, the element of which is convex in shape, used to open a circuit in the event of overload.

It is normally used for motor protection and is reset manually.

knots/k

A unit of speed equal to one nautical mile per hour.

known traffic

With respect to ATC clearances, means aircraft whose altitude, position, and intentions are known to ATC.

knurl

A matching process which produces a rough surface or an object making it easier to grasp with the fingers.

and

Landing areas, building areas, runway clear zones, transitional surfaces, clearways, approach zones and areas required for off site construction, entrance roads, drainage, protection of approaches, installation of air navigation facilities, noise compatibility or other airport purposes.

1. land use controls -- Measures, established by State or local government(s), which are designed to carry out land use planning. The controls include, among other measures: zoning, subdivision regulations, planned acquisition including lease-back, easements, covenants or conditions in deeds or leases, building codes, issuance of building permits and capital improvement programs such as sewer, water, utilities or other service facilities.

land breeze

A coastal breeze blowing from land to sea, caused by temperature difference when the sea surface is warmer than the adjacent land. Therefore, it usually blows at night and alternates with a sea breeze, which blows in the opposite direction by day.

andfall

(1) The first point of land over which an aircraft crosses when flying from seaward. (2) As used in celestial navigation, the procedures in which an aircraft is flown along a celestial line of position which passes through the destination.

landing area

Any locality either on land or water, including airports and intermediate landing fields, which is used, or intended to be used, for the landing and takeoff of aircraft, whether or not facilities are provided for the shelter, servicing, or repair of aircraft, or for receiving or discharging passengers or cargo.

1. landing area (ICAO) -- That part of a movement area intended for the landing or takeoff of aircraft.

landing

1. landing categories -- See category, landing.

2. landing direction indicator -- A device which visually indicates the direction in which landings and takeoffs should be made. See tetrahedron. (Refer to AIM)

3. landing roll -- The distance from the point of touchdown to the point where the aircraft can be brought to a stop or exit the runway.

4. landing sequence -- The order in which aircraft are positioned for landing. See approach sequence.

5. landing threshold -- The beginning of that portion of a runway usable for landing.

landing gear

1. landing gear extended speed -- The maximum speed at which an aircraft can be safely flown with the landing gear extended.

2. landing gear operating speed -- The maximum speed at which the landing gear can be safely extended or retracted.

Landing minimums/IFR, landing minimums

The minimum visibility prescribed for landing a civil aircraft while using an instrument approach procedure. The minimum applies 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 -- A statement of MDA and visibility, or DH and visibility, required for a straight-in landing on a specified runway, or

2. circling minimums -- A statement of 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. See straight-in landing, circle-to-land maneuver, Decision Height, Minimum Descent Altitude, visibility, Instrument Approach Procedure. (Refer to FAR Part 91)

anguage

A system for representing and communicating information or data between people, between people and machines or between machines. Such a system consists of a defined set of characters and rules for combining them into larger units, such as words or expressions, and rules for word arrangement or usage to achieve specific meaning.

lapse rate

The rate of decrease of an atmospheric variable with height; commonly refers to a decrease of temperature with height.

large aircraft

An aircraft of more than 12,500 pounds maximum certificated takeoff weight.

large scale ECM mission

An ECM mission performed by seven or more aircraft working as a unit.

large search area/LSA

A specified region used in the correlation process which encompasses the Small Search Area and is centered about the predicted track position.

last assigned altitude

The last altitude/flight level assigned by ATC and acknowledged by the pilot. See maintain. (Refer to FAR Part 91)

latch

A lever, or bar with a notch or slot, or a hook used to engage some part to prevent motion.

latent heat

The amount of heat absorbed (converted to kinetic energy) during the process of change of liquid water to water vapor, ice to water vapor, or ice to liquid water; or the amount released during the reverse processes.

1. latent heat of condensation -- Heat released during the change of water vapor to water.

2. latent heat of fusion -- Heat released during the change of water to ice or the amount absorbed in the change of ice to water.

3. latent heat of sublimation -- Heat released during the change of water vapor to ice or the amount absorbed in the change of ice to water vapor.

4. latent heat of vaporization -- Heat absorbed in the change of water to water vapor; the negative of latent heat of condensation.

lateral axis

An imaginary line running through the center of gravity of an aircraft, parallel to the straight line through both wing tips.

lateral separation

The lateral spacing of aircraft at the same altitude by requiring operation on different routes or in different geographical locations. See separation.

latitude/lat

Angular distance measured north or south of the equator along a meridian, 0° through 90°.

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 layer or that the clouds or obscuring phenomena composing them are of the same type.

leader

A straight line connecting the track symbol and the alphanumeric data. See data block.

leading zeros

Zeros placed ahead of positive integers for parity. In the number 0200 the zero preceding the 2 is a leading zero.

eak/leaking

Any instance in which an article, container or equipment has any fuel, oil or other chemical residue on any portion of its external surface.

lee wave/mountain wave/standing wave

Any stationary wave disturbance caused by a barrier in a fluid flow. In the atmosphere when sufficient moisture is present, this wave will be evidenced by lenticular clouds to the lee of mountain barriers.

legal recording

A set of data used as the legal record of the operational environment.

lenticular cloud/lenticularis

A species of cloud whose elements have the form of more or less isolated, generally smooth lenses or almonds. These clouds appear most often in formations of orographic origin, the result of lee waves, in which case they remain nearly stationary with respect to the terrain (standing cloud), but they also occur in regions without marked orography.

etters category

That part of the typebox containing pallets bearing the letters. This term also applies to the posting of the printer components to print in the "letter case."

letters shift

A function performed by a teletypewriter, when initiated by the letters shift character, which causes the machine to shift from upper case (figures, symbols) to lower case (letters). Also, used as part of certain control codes.

level of free convection/LFC

The level at which a parcel of air lifted dry adiabatically until saturated and moist adiabatically thereafter would become warmer than its surroundings in a conditionally unstable atmosphere. See conditional instability and adiabatic process.

lever

An arm, rod, or bar which is pivoted about some point called the fulcrum and which is used to transfer motion from one component to another.

life, useful

The total operating time in which an item remains operationally effective and economically useful before wear-out.

life cycle cost

(1) The total cost of acquisition, operation, maintenance and support of an system throughout it's useful life. (2) The total cost of owning, operating and maintaining a building over its useful life, including energy costs. In the case of a leased building costs are calculated over the effective remaining term of the lease.

lifting condensation level/LCL

The level at which a parcel of unsaturated air lifted dry adiabatically would become saturated. Compare level of free convection and convective condensation level.

Light Emitting Diode/LED

An electronic device which glows when an electric current flows through it.

light gun

A hand held directional light signaling device which emits a brilliant narrow beam of white, green or red light as selected by the tower controller. The color and type of light transmitted can be used to approve or disapprove anticipated pilot actions where radio communication is not available. The light gun is used for controlling traffic operating in the vicinity of the airport and on the airport movement area. (Refer to AIM)

light pen

A photoelectric device for entering displayed positional data in the computer.

lighted airport

An airport where runway and obstruction lighting is available. See airport lighting. (Refer to AIM)

lighter-than-air aircraft

An aircraft that can rise and remain suspended by using contained gas weighing less than the air that is displaced by the gas.

lightning

Generally, any and all forms of visible electrical discharge produced by a thunderstorm.

limit(s)

How much a parameter is permitted to vary before a circuit is considered to be out of tolerance.

limited program tape

A loop of punched paper type which is inserted in the tape reader portion of a digital data transmission device which automatically controls the tape punch for entry of certain machine function codes on a product tape but requires the manual entry of selected data in the required format.

line

(1) Either a two-wire or four-wire circuit between a sending station and a receiving station, which can have one (1) or both equipment terminations dedicated or switch connected. Sometimes referred to as a signal line or telephone line. (2) The metallic circuit between the sending station and the receiving station, used to carry the current for operation of a printer.

1. line circuit -- The circuitry required to terminate, convert and provide transmission, supervisory and control signals at the position side of the inter-connection networks and position and/or equipment end instruments. This circuitry can be divided between actual network terminations and position equipment terminations. This includes all circuitry that interfaces the position with the interconnection networks and the common control.

line current -- The direct current in a metallic loop at a given time, measured in milliamperes.

ncy

line relay -- A sensitive polar relay connected in ies with the line. Its contacts control the ation of a teleprinter selector manager.

nt -- Two nodes and the straight line
them. Segments of A-lines, D-lines, R-
S-lines can be defined by modes and/or fixes
traight lines connecting them.

aring

directional relationship between two moving

ts into which a circuit is generally split. When
service tests the drop side, the service is
trouble toward the customer's equipment or the
in the central office in which he/she is working.
ng the line side, the telephone service is
to a distant office.

on performed by a teletypewriter, when initiated by
feed character, which causes the machine to advance
er feed roller to the next line (1/6"). Also used in
control codes.

ine feed clutch -- One of six, steel shoe, internal
xpansion clutches mounted on the main shaft of a
rinter and used to initiate the action required for
he line feed function.

ine feed function -- The mechanical operation of the
printer which produces a line feed.

er

ilter associated with a transmission line. In some
lications, line filter may imply a filter used to
parate the speech frequencies from the carrier
equencies; in other applications, it may imply directional
eparation.

requency

In a video display, the number of times per second that a
fixed vertical line in the picture is crossed in one
direction by the scanning spot. Scanning during vertical
intervals is counted.

1. number of scanning lines -- The ratio of line freque
to frame frequency.

ine group

The frequency spectrum occupied by a group of carrier channels applied to a transmission facility.

line monitor relay group

Those relays which operate to control the send and receive functions in a teletype system.

line of position/LOP

A line containing all possible geographic positions of an observer at a given instant of time.

line shunt relay

A relay which when unopened places a shunt (short circuit) across the signal line. During normal printer operation, this relay is operated and the shunt is removed from the line.

1. line filter bypass -- A network designed to maintain phantom group balance when one side of the group is equipped with a carrier system. Since it must balance the phantom group for only voice frequencies, its configuration is usually quite simple compared with the filter that it balances.

link

A connecting bar or rod, with movable pivots at each end, used to transfer motion.

link encryption

(1) The application of on-line crypto-operations to a link with a communications system so that all information passing over the link is encrypted in its entirety. (2) End-to-end encryption within each link of a communications network.

linkage

(1) A series or system of links: a series of connecting members for transfer of motion. (2) The purposeful combination of data or information from one information system with that from another system in the hope of deriving additional information; in particular, the combination of computer files from two or more sources.

liquid

Any substance in a liquid form, including, but not limited to oil, petroleum and chemicals.

1. oil or petroleum liquid/product -- Oil or petroleum of any kind in liquid form including, but not limited to, waste oils and distillation products such as fuel oil, kerosene, naphtha, gasoline and benzene.

Liquid Cristal Display/LCD

A video display device consisting of a liquid crystal material sealed between two glass plates. The crystals allow light to pass through them in response to electrical charges.

list(s)

Aircraft data presented in tabular form on a plan view display.

Lithometeor

ıded in the
ı sand.

load

into a computer

Fast Path

ıstructions
may be used to

may not allow

load f

to use Cancel Button

l weight of the
d in terms of any
ctia forces, or

lobe

6:30 am

of a cam which has

Local

See Novel in other room.

C for the
LATA encompasses

designated exchanges which are grouped to serve common social, economic and other purposes.

local area network/LAN

A communications network composed of a series of stations connected by a transmission medium with a high data transmission rate covering a geographical area less than 10 miles.

local changes

A unique change to one facility which does not conflict with or alter national operations or procedures.

local channel

The connection between the common carrier (leased communications) test room, where the inter-exchange line is terminated, and the service outlet, such as an ARTCC or ATCT.

local control

This is the control process which is responsible for the control of the runway surfaces. It takes control of arrival aircraft about three to five miles from touchdown, clears them to land, and issues takeoff clearances to departures. See flow control.

local device

A device within an ARTCC having input/output capabilities to or from the CCC. Example: I/O typewriter, computer entry device (CED), and computer readout device (CRD).

local exchange company/LEC

The local telephone company.

local loop

(1) A signal line, with its own power source, used for test or transmission within a small area, such as within a building. Sometimes referred to as a dummy line. (2) That portion of a telephone circuit which connects the customer's equipment to equipment at a central office.

1. local operation -- The operation of equipment on a local loop.

local traffic

Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the airport. See traffic pattern.

localizer

Operates in the 108-112 MHz band and provides the signal used to line up aircraft with the centerline of the runway. The path is formed by equi-signal crossover of two lobes, one modulated at 90 Hz and the other at 150 Hz. These lobes are formed by an array of antennas located just beyond the stop end of the runway. See ILS system.

1. localizer course (ILS) (ICAO) -- The locus of points, in any given horizontal plane, at which the DDM (difference in depth of modulation) is zero.

2. localizer usable distance -- The maximum distance from the localizer transmitter at a specified altitude, as verified by flight inspection, at which reliable course information is continuously received. (Refer to AIM)

Localizer type Directional Aid/LDA

A NAVAID used for non-precision instrument approaches with utility and accuracy comparable to a localizer but which is not a part of an complete ILS and is not aligned with the runway. (Refer to AIM)

location

(1) A general term used to refer to a facility (input/output source) external to a center. (2) A named place where communication service is furnished or desired.

1. location indicator (ICAO) -- A four-letter code group assigned to the location of an aeronautical fixed facility.

locator beacon, personnel

A portable, lightweight beacon, manually operated, which is 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 and/or 243 MHz, 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.

lock

A device used to retain or hold a lever or other device in a fixed position until released by an unlocking unit. Similar to latch.

lock and key protection system

A computer protection system that involves matching a key or password with a specified access requirement.

log

A written record of computed or observed flight data; generally applied to the written navigational record of a flight.

logic priority

That logic inherent in the CCC design which defines data transfer priorities between external devices and the CCC I/O system.

logical completeness measure

A means for accessing the effectiveness and degree to which a set of security and access control mechanisms meet the requirements of a set of security specifications.

logical device

The symbolic name used by the program to refer to a functionally significant data source or data destination.

logical information

Alphabetic or numeric character codes (called alphanumeric data) and fixed-length logical data upon which operations such as comparison, translation, bit testing, and bit setting are performed.

logistic support

Support given the NAS operational requirements through acquisition, storage, distribution and inventory control of instruments, supplies, spare parts, tools and working equipment.

loop

(1) A short transmission line which connects a telephone subscriber to the switchboard. (2) A closed path in which a signal may circulate. This path may be within a piece of equipment, such as a repeater or carrier terminal, or may be a complete carrier circuit.

1. loop options -- The different dc circuit arrangements that can be made between a carrier telegraph terminal and a teleprinter.

long

When the net loss of a telephone circuit is more than the limits allowed.

longitude/long

The angular distance east or west of the Greenwich meridian, measured in the plane of the equator or of a parallel from 0° to 180°.

longitudinal axis

An imaginary line running fore and aft through the center of gravity of an aircraft, parallel to the axis of the propeller or thrust line.

longitudinal deviation

The number of miles by which a track position currently leads or lags its associated flight plan position.

longitudinal redundancy character

A lengthwise parity bit of a TTY message.

longitudinal separation

The longitudinal spacing of aircraft at the same altitude by a minimum distance expressed in units of time or miles. See separation. (Refer to AIM)

long-range flight plans

Flight plans for flights which have a proposed departure time that is at least several hours later than the time at which the flight plan is filed.

oop

A closed TTY circuit with two or more TTY devices connected in series. Transmission is limited to one terminal at a time. See automatic program unit, area B and drop.

1. loop resistance -- The dc resistance of a cable pair from a central office to a local customer.

loopback

An arrangement used to connect the receive side of a circuit to the transmit side, thus forming a loop that enables a distant point to check circuit continuity. Generally, telephone company loopback devices used on air-to-ground circuits are activated by application of 2400 Hz at the proper transmission level.

loophole

An error of omission or oversight in software or hardware which permits circumventing the access control process. Synonymous with fault, flaw.

LORAN/Long Range Navigation

A hyperbolic radio-navigation system that uses ground waves at low frequencies to obtain an operating range of approximately 1,000 miles independent of line-of-sight. It uses a pulse techniques to avoid sky wave contamination. The Loran-C system currently consists of 16 chains operating throughout the world, comprising a total of 51 transmitting stations. The difference in time of receipt of radio pulses from one such pair of stations is measured and the resultant time difference locates the aircraft on a hyperbolic line. When this is crossed with a second hyperbolic line from another pair of stations, a fix is obtained. Loran operation is primarily along coastal areas, with approximately two-thirds of the continental United States and Alaska currently within the Loran-C coverage area. Letter designations such as A, C, and D denote different broadcast operating frequencies. LORAN A operates in the 1750 - 1950 kHz frequency band. LORAN C and D operate in the 100-110 kHz frequency band. See Decca navigation.

1. near band interference -- Interference whose carrier frequency lies in the frequency band 70-88 kHz, 112-130 kHz.

2. near-synchronous interference -- Near band interference whose carrier frequency/f_c satisfies the relationship:

magnitude [$f_c - N/(2GRI)$] is less than 0.006 Hz where N is an integer.

lost communications/two-way radio communications failure

Loss of the ability to communicate by radio. Aircraft are sometimes referred to as NORDO (No Radio). Standard pilot procedures are specified in FAR Part 91. Radar controllers issue procedures for pilots to follow in the event of lost communications during a radar approach when weather reports indicate that an aircraft will likely encounter IFR weather conditions during the approach. (Refer to FAR Part 91, AIM)

low

An area of low barometric pressure, with its attendant system of winds. Also called a barometric depression or cyclone.

low altitude air to air training/LOWAT

Maneuvers performed on MTR's that are not "classical intercepts." LOWAT allows for observation and analysis of an aerial attack, initiation of the appropriate defense response and continuation of the primary mission with minimal interruption.

low altitude airway structure/federal airways

The network of airways serving aircraft operations up to but not including 18,000 MSL. See airway. (Refer to AIM)

low altitude alert, check you altitude immediately

See safety alert.

Low Altitude Alert System/LAAS

An automated function of the TPX-42 that alerts the controller when a Mode C transponder-equipped aircraft on an IFR flight plan is below a predetermined minimum safe altitude. If requested by the pilot, LAAS monitoring is also available to VFR Mode C transponder-equipped aircraft.

low altitude operation

Operations conducted below FL 180 (FL 240 in Alaska).

low approach

An approach over an airport or runway following an instrument approach or VFR approach including the go-around

maneuver where the pilot intentionally does not make contact with the runway. (Refer to AIM)

low frequency/LF

The frequency band between 30 and 300 kHz. (Refer to AIM)

low-pass filter

A filter that passes all frequencies below a certain designated cutoff point, and attenuates all frequencies above that point.

low speed data transfer channel

See data transfer channel, low

lower sideband

The lower of two frequencies or two groups of frequencies produced by a modulation process.

rubber line

A reference mark representing the longitudinal axis of an aircraft.

Lug

(1) An ear-like projection by which an object is held, supported, or contacted by some other object. (2) A formed piece of metal used to connect wires to terminals.

mach number

(1) The ratio of the velocity of a body to that of sound in the medium in which the body is moving. (2) The ratio of true airspeed to the local speed of sound; e.g., MACH .82, MACH 1.6. See airspeed.

machine language

A programming language which uses only numbers. Programmers use it to work directly with the CPU.

magnetic bearing

The direction of another aircraft from own aircraft measured in degrees clockwise (as viewed from above) from magnetic north.

magnetic

Relating to the earth's magnetic poles.

1. magnetic direction -- A direction measured clockwise from the magnetic meridian.

2. magnetic radial (from VOR or VOR/DME station) -- A radial from a VOR or VOR/DME station designated in degrees from either assigned magnetic variation or station north. Station north differs from true north by "station declination" which is chosen to approximately align station north with magnetic north. (Current practice is to change station declination when differences between it and the local magnetic variation differs by two degrees.)

magnetic (H) field

One of two mutually supporting vectors of an electromagnetic wave the intensity of which is expressed in amperes per meter (A/m). A magnetic field exists in a region if magnetic objects in the region experience a force.

magnetic variation

The local difference between magnetic north and true north, as determined from an epoch year description of the earth's magnetic field.

main memory

See storage, main.

main rotor

The rotor that supplies the principal lift to a rotorcraft.

main (or standby) units

Those units which are operationally critical, and in order to achieve a high degree of reliability are redundantly integrated into the system.

mainshaft

The shaft which is coupled to a motor and from which the mechanical power is distributed.

maintain

(1) Concerning altitude/flight level, the term means to remain at the altitude/flight level specified. The phrase "climb and" or "descend and" normally precedes "maintain" and the altitude assignment; e.g., "descend and maintain 5,000." (2) Concerning other ATC instructions, the term is used in its literal sense; e.g., maintain VFR. (3) Control, responsibility and accountability for a system of records.

maintainability

(1) A measure of the ease and rapidity with which a system or equipment can be restored to operational status following a failure, expressed as the probability that an item will be retained in or restored to a specific condition within a given period of time when the maintenance is performed in accordance with prescribed procedures and resources. See availability.

1. maintainability engineering -- The engineering discipline which formulates an acceptable combination of design features, repair policies and maintenance resources, to achieve a specified level of maintainability, as an operational requirement, at optimum life cycle costs.

maintenance

(1) All actions necessary for retaining an item in a specified condition before failure or breakdown (preventive maintenance) or the process of restoring an item to return it to a workable condition (corrective maintenance). (2) Any specified sequence of steps prescribed to accomplish a maintenance activity. (3) Any service activity such as

repairing, monitoring, testing, troubleshooting or modifying any module in the system. Maintenance may be broken down into the following categories:

1. off-line -- Maintenance performed on modules in the test or inactive state. This is the more common form of maintenance.

2. on-line -- Maintenance performed on active modules. Examples include status and performance monitoring and dynamic fault detection.

On-Line and Off-Line maintenance may be further categorized as:

3. scheduled -- Maintenance activity that is carried out at a planned time, whether or not the exact nature of the maintenance to be undertaken was known ahead of time. Scheduled maintenance includes:

   a. preventive -- Maintenance that is planned, periodic marginal and functional testing of modules. Marginal components and system misalignment will be located here.

   b. routine -- Maintenance is the regular servicing of failed assemblies at the test bench or repetitive minor servicing or components or assemblies at the operation site.

   c. corrective (for known failures) -- Maintenance is servicing of failed modules at a later time that is more convenient, as when there will be a higher maintenance capability or when there will be a lower air traffic demand.

4. unscheduled -- Maintenance activity that was unplanned and must be carried out immediately following a failure detected by on-line maintenance and is such that it cannot be rescheduled.

maintenance capabilities

The facilities, tools, test equipment, drawings, technical publications, trained maintenance personnel, engineering support and spare parts required to restore a system to serviceable condition.

maintenance concept

A description of the planned general scheme for maintenance and support of an item in the operational environment. The

maintenance concept provides the practical basis for design, layout, and packaging of the system and its test equipment and establishes the scope of maintenance responsibility for each level (echelon) of maintenance and the personnel resources (maintenance manning and skill levels) required to maintain the system.

maintenance management data

Any maintenance related information, analyses, or reports developed and provided by the RMMS from such sources as past equipment status and alarm records, corrective and preventive maintenance records, spare parts records, etc.

1. maintenance control command -- commands that perform control, diagnostic and adjustment functions.

2. maintenance data in -- Equipment status requests, certification parameter data requests, maintenance control commands and maintenance management data.

3. maintenance data out -- Equipment status and alarms, certification parameter data, maintenance control response, maintenance management data request and corrective/preventive maintenance data.

Maintenance Monitor Console/MMC

The keyboard/crt located at the SMMCV for use by the systems engineer. Additional MMC's are provided for use by appropriate ARTCC technicians; e.g., communications technicians for the RCAG.

maintenance personnel

Individuals who are responsible for corrective and periodic maintenance activities at a facility. These activities include adjustment, calibration, troubleshooting, inspection, overhaul, etc., of equipment.

Maintenance Processor Subsystem/MPS

The central processor located at an ARTCC, used to connect the entire RMMS together, analyze system parameters and maintain a data base.

maintenance task

Actions required to preclude the occurrence of a malfunction or restore equipment to a satisfactory operating condition.

major airway

An airway having higher posting priority than a minor airway when intercepted within a FPA during direct route conversion.

major alteration

An alteration 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 qualities affecting airworthiness; or that is not done according to accepted practices or cannot be done by elementary operations.

major repair

A repair: that, if improperly done, might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics or other qualities affecting airworthiness; or that is not done according to accepted practices or cannot be done by elementary operations.

make short approach

Used by ATC to inform a pilot to alter his traffic pattern so as to make a short final approach. See traffic pattern.

mammato cumulus

Obsolete. See cumulonimbus mamma.

mandatory altitude

An altitude depicted on an instrument Approach Procedure Chart requiring the aircraft to maintain altitude at the depicted value.

maneuver anticipation

A means, achieved either by equipment mechanization or procedurally, by which path changes are initiated in aircraft navigation.

maneuver area

A designated area within an MTR where aircraft may deviate from the route centerline and perform various maneuvers to deliver personnel, equipment or weapons. Delivery may be simulated or actual.

anifold pressure

Absolute pressure as measured at the appropriate point in the induction system and usually expressed in inches of mercury.

managed airspace

That part of the airspace which is designated and affected by unique procedural and or equipage requirements.

manned facility

A facility which is normally occupied by specialists, technicians or other FAA personnel for the conduct or support of NAS operations.

manual input

Manual input by an operator. This could consist of key strokes on a keyboard or key pad, track ball movements, etc.

manual mode

Flight data processing is accomplished within the use of the NAS computer.

map symbol(s)

Figures and designs used to represent topographical, cultural, and aeronautical features on a map or chart.

mapping

The blanking out of unwanted radar returns such as clutter. Aircraft targets, when they are displayed, may appear at a reduced intensity in this area.

mare's tail

See cirrus.

maritime polar air/mP

See polar air.

maritime SAR region

The area in which the U. S. Coast Guard exercises the SAR coordinating function. It includes the territories and

possessions of the U. S. (except the Canal Zone and the inland region of Alaska) and areas of the high seas designated in the National SAR Plan. The USCG has divided the Maritime Region into sub-regions and a rescue coordination center in each sub-region exercises coordination responsibilities.

maritime tropical air/mT

See tropical air.

mark

(1) An impulse which, in a neutral circuit, causes the loop to be closed; or in a polar circuit, causes the loop current to flow in a direction opposite to that for a space impulse. (2) A descriptive name, instructions, cautions, or other information applied to fuel, oil or other chemical items or objects which are subject to regulation.

1. mark-hold -- The normal no-traffic line condition whereby a steady mark is transmitted.

2. mark-to-space transition -- The transition, or switching, from a marking impulse to a spacing impulse.

3. mark pulse -- A binary coded pulse obtained by causing the presence of a current in the signal line for a prescribed period of time.

Mark X SIF

The military version of the ATCRBS. See bracket decoding.

marker beacon(s)

(1) A radio transmitter(s) established at range stations, along airways and at intermediate points between range stations to assist pilots and observers in fixing position. (2) A portion of an ILS system which includes two or three marker beacons operating at 75 MHz from a vertical fan-shaped lobe that is perpendicular to the direction of flight. In a two-beacon system, one marker is located about 5 miles from the runway threshold and the second marker is located at the decision point where the glide path is 200 feet above the ground. In a three beacon system, the third marker is located at the runway threshold. See Instrument Landing System.

1. fan type marker -- A 75 megacycle radio transmitter usually installed at strategic points along a radio range across the on course signal. The signal is

produced in a space shaped like a thick fan immediately above the transmitter. THe signal may be received visually or aurally, depending on the receiver.

2. M type marker -- A low powered, non-directional radio station which transmits a characteristic signal once every few seconds. The range of the receiver is approximately 10 miles.

3. Z type marker -- A special 75 megacycle radio which transmits a signal within the cone of silence to enable the pilot to identify his position over the range station. THe signal may be picked up visually or aurally depending on the receiver used.

marker beacon transmissions

The transmission of marker beacon signals through the air (free space).

marking

The physical act of indicating on material the assigned classification, changes in classification and any special limitations on the dissemination of the information.

marking bias

The tendency of mechanical and/or electrical equipment to produce results that favor marking pulses at the expense of the spacing pulse.

1. marking bias distortion -- Bias distortion which lengthens the marking impulse by advancing the space-to-mark transition.

2. marking end distortion -- End distortion which lengthens the marking impulse by delaying the mark-to-space transition.

marking condition

An idle condition of the teletypewriter loop or circuit in which a steady state marking signal prevents the teletypewriter equipment from running open during periods of no traffic.

marking contacts

Those relay contacts which are closed when marking current is causing relay operation.

marking current

That magnitude and polarity of current in the line when the receiving mechanism is in the operated condition.

MARY tape

A baudot code tape punched to repeat the characters "MARY space 4679" for test purposes.

masquerading

Synonym for impersonation.

master station

The primary or control transmitter station, the signal of which triggers the transmitter of one or more other stations. Also a transmitter station, the signals of which are used by other stations as a basis for synchronizing transmissions.

matched track

A track whose present position and heading has been associated with the proper route leg of its paired flight plan, also a track that is paired to its proper flight plan route segment.

matching

A computer logical process which determines if a track is in correspondence with its paired flight plan's route. If correspondence is established, the matching process computes which flight plan route segment the track is currently traversing and designates that fix in the flight plan toward which the track is next proceeding as the track next fix.

material

Any product or substance on, or in which, information is embodied.

material weakness

A situation in which the designed procedures, or the degree of operational compliance with them, does not meet the objectives of internal control.

matrix

(1) An array of quantities in a prescribed form; in mathematics, usually capable of being subject to a mathematical operation by means of an operator or another matrix according to prescribed rules. (2) An array of coupled circuit elements; e.g., diodes, wires, magnetic cores, and relays, which are capable of performing a specific function; such as, the conversion from one numerical system to another. The elements are usually arranged in rows and columns. Thus, a matrix is a particular type of encoder or decoder.

Maximum Authorized Altitude/MAA

The highest altitude on a Federal Airway, jet route, or other direct route for which a MEA is designated in FAR Part 95 at which adequate reception of navigation aid signals is assured.

maximum wind axis

On a constant pressure chart, a line denoting the axis of maximum wind speed at that constant pressure surface.

may

"May" means an action is permitted. For example: at navigational aid facilities, certain maintenance activities may be performed without recourse to flight inspection.

mayday

The international radiotelephony distress signal. When repeated three times, it indicates imminent and grave danger and that immediate assistance is requested. See pan-pan. (Refer to AIM)

MDF

The location where all internal equipment interfacing with leased or Government owned facilities terminates. The demarcation point is the equipment side of the MDF. At the RCAG, this demarcation point will be mounted outside the building.

mean bench repair time

The average time required to diagnose a fault, isolate and replace the faulty component and perform those tests necessary to verify the replacement unit is operating in accordance with applicable technical orders.

mean down time/MDT

(1) The average time a piece of equipment is down during a maintenance action and during which the system is not in a condition to perform its intended function. (2) The operational down time which is the mean of the times required to restore an equipment to an operational state after a failure and is equal to the Total Outage Time/Number of Outages. See mean time to repair, availability.

mean sea level

(1) The average height of the surface of the sea for all stages of tide; used as reference for elevations throughout the U. S. (2) The average level of the sea, used to compute barometric pressure.

mean sun

An imaginary sun traveling around the equinoctial at the average annual rate of the true sun.

mean time between failure/MTBF

(1) For a particular interval, the total functioning life of a population of an item divided by the total number of failures within the population during the measurement involved. (2) The reciprocal of the mean unit failure rate of an element. See availability.

mean time to repair/MTTR

(1) The mean time required to complete a maintenance action, i.e., total active maintenance downtime (fault isolation, fault correction,, calibration and check out) divided by the total number of maintenance actions, over a given period of time, excluding those time elements which are related to preparation and delay, administrative and supply delay, downtime. (2) The inherent down time which is equal to the Total Unscheduled Outage Time/Number of Unscheduled Outages. See mean down time, availability.

mean time to restore/MTR

(1) That time associated with re-initiation of a system's functional capabilities. For non-redundant systems, this time is usually equivalent to MTTR. In the case of stand-by redundant systems, or systems where a different hardware type can provide back-up service, system restoration time is equal to the time required to switch operation to the back-up unit. It is computed by dividing the total system outage

time by the number of system outages, over a given period of time. See availability.

mean up time/MUT

The mean of the times between failures. See availability.

measured ceiling

A ceiling classification applied when the ceiling value has been determined by instruments or the known height of unobscured portions of objects, other than natural landmarks.

medical certificate

Acceptable evidence of physical fitness on a form prescribed by the Administrator.

medium speed data transfer channel

See data transfer channel, medium speed.

mega

A prefix meaning one million (10^6) when used with decimal numbers or 1,048,576 (2^{20}) when used with binary expressions.

1. megabyte -- A unit of measurement for computer memory which equals 1,048,576 bytes.

melting

See change of state.

memory

Integrated circuits in a computer which are used to store data and programs.

1. memory/storage -- The units that store information and from which information can be extracted at a later time.

memory bounds

The limits in the range of storage addresses for a protected region in memory.

1. memory bounds checking -- Synonym for bounds checking.

mercurial barometer

A barometer in which pressure is determined by balancing air pressure against the weight of a column of mercury in an evacuated glass tube.

meridional part

A unit of measurement equal to one minute of longitude at the equator.

mesocyclone

A vertical column of cyclonically rotating air, typically 2 to 15 km in diameter, within a severe thunderstorm.

message

(1) An arbitrary amount of information whose beginning and end are defined or implied. (2) Operator-typed information recorded on teletypewriter paper and/or tape. A single message is all information contained in any one format and transferred as a unit.

1. message size -- The average duration of a voice message in call seconds, or the average size of a data message measured in bits or bytes (except for the case of maintenance and operations messages, the size of data messages includes information content only, ISO layer 7, and excludes communication protocols, headers, addresses, etc.).

meteorological data

Refers to changes in alphanumeric information such as surface observations, winds and temperatures aloft, altimeter settings etc., entered into the ACCC by controllers and forwarded to the CWP as amendments.

Meteorological Impact Statement/MIS

An unscheduled planning forecast describing conditions expected to begin within 4 to 12 hours which may impact the flow of air traffic in a specific center's (ARTCC) area.

meteorological visibility

In U. S. observing practice, a main category of visibility which includes the subcategories of prevailing visibility and runway visibility. Meteorological visibility is a measure of horizontal visibility near the earth's surface,

based on sighting of objects in the daytime or unfocused lights of moderate intensity at night. Compare slant visibility, runway visual range, vertical visibility. See surface visibility, tower visibility, and sector visibility.

meteorology

The science of the atmosphere.

meter fix time/MFT or slot time

A calculated time to depart the meter fix in order to cross the vertex at the ACLT. This time reflects descent speed adjustment and any applicable time that must be absorbed prior to crossing the meter fix.

meter list display interval/MLDI

A dynamic parameter which controls the number of minutes prior to the flight plan calculated time of arrival at the meter fix, for each aircraft, at which time the TCLT is frozen and becomes an ACLT; i.e., the VTA is updated and consequently the TCLT modified as appropriate until frozen at which time updating is suspended and an ACLT is assigned. When frozen, the flight entry is inserted into the arrival sector's meter list for display on the sector PVD. MLDI is used if filed true airspeed is less than or equal to freeze speed parameters (FSPD).

metering

A method of time-regulating arrival traffic flow into a terminal area so as not to exceed a predetermined terminal acceptance rate.

1. metering airports -- Airports adapted for metering and for which optimum flight paths are defined. A maximum of 15 airports may be adapted.

2. metering data -- Data used in support of, or generated by, metering processing. Metering processing is the combination of procedures used by operational control personnel in order to reduce congestion and provide fuel conservation strategies for flight within the ACF airspace.

3. metering and sequencing -- Control of an aircraft in a manner that provides a stream of properly spaced aircraft arriving at a fix or airport at a rate which can be accepted by adjacent ATC facilities or airports.

metering fix

A fix along an established route from over which aircraft will be metered prior to entering terminal airspace. Normally, this fix should be established at a distance from the airport which will facilitate a profile descent 10,000 feet above airport elevation (AAE) or above.

metering position(s)

Adapted PVD's and associated "D" positions eligible for display of a metering position list. A maximum of four PVD's may be adapted.

1. metering position list -- An ordered list of data on arrivals for a selected metering airport displayed on a metering position PVD.

metroplex

An area encompassing 4 to 6 high density airports.

microbarograph

An aneroid barograph designed to record atmospheric pressure changes of very small magnitudes.

microburst

A down draft induced, diverging, horizontal flow near the surface, whose initial dimension is less than 4 km, and whose differential velocity is greater than 10 m/s.

microfiche

A sheet of film containing multiple micro-images in a grid pattern and a heading or title which can be read without magnification.

microfilm

(1) A fine grain, high resolution film containing an image or images greatly reduced in size from the original. (2) The recording of micro-images on film.

microform

A generic term for all types and formats of microfilm which cannot be read without special viewing devices.

micro-graphics

The science, art, technology of document and information miniaturization and associated microform systems.

1. micrographic system(s) -- A configuration of equipment and procedures that utilize microforms for the production, reproduction, viewing or retrieval of required documentation.

micro-images

A unit of information, such as a page of text or drawing, too small to be read without magnification.

microprocessor

An integrated circuit package which contains the control and processing portion of a computer.

Microwave Landing System/MLS

A precision instrument approach/landing system operating in the microwave spectrum which provides lateral and vertical guidance to aircraft having compatible avionics equipment. An MLS normally consists of an azimuth station, elevation station and precision distance measuring equipment

1. MLS categories:

   a. Category I -- an approach procedure which provides for a height above touchdown not less than 200 feet and a runway visual range of not less than 1,800 feet.

   b. Category II -- Undefined until data gathering/analysis is completed.

   c. Category III -- Undefined until data gathering/analysis is completed.

2. control motion noise/CMN -- That portion of the guidance signal error which causes control surface, wheel and column motion and could affect aircraft attitude angle during coupled flight, but does not cause aircraft displacement from the desired course and/or glide path.

3. MLS approach reference datum -- A point on the minimum glide path at a specified height above the threshold.

4. MLS auxiliary data -- This data transmitted at the same frequency as, and time division multiplexed with, MLS azimuth, back azimuth, and elevation signals. This data will include: facility identification; azimuth threshold distance; coverage and offset; equipment performance levels; beam widths; DME/P distance, offset, and channel; and elevation height, offset, and distance to threshold. This data will eventually include weather and runway condition information.

5. MLS datum point -- The point on the runway center line closest to the phase center of the approach elevation antenna.

6. path following error/PFE -- That portion of the guidance signal error which could cause aircraft displacement from the desired course and/or glide path.

7. path following noise/PFN -- That portion of the guidance signal error which could cause aircraft displacement from the mean course line of mean glide path as appropriate.

microwave radiation

Electromagnetic radiation ranging in frequency from 300 MHz to 300 GHz with corresponding wavelengths ranging from 1.0 meter to 0.1 centimeter.

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. See marker beacon, instrument landing system. (Refer to AIM)

mil

An angular measurement now accepted as 1/6400th of a circle, or 3.375 minutes of angle. Originally, it was the angle that would subtend an arc of one yard at a distance of 1000 yards.

military authority assumes responsibility for separation of aircraft/MARSA

A condition whereby the military services involved assume responsibility for separation between participating military

aircraft in the ATC system. It is used only for required IFR operations which are specified in letters of agreement or other appropriate FAA or military documents.

military B

Low-speed (100 wpm) multi-point teletypewriter circuits which connect ARTCC with selected military Base Operations Offices (BASOPS) located within the area of each ARTCC. See service B.

military operations area/MOA

See special use airspace.

military radar unit/MRU

Any fixed or mobile ground based radar unit under the operational jurisdiction of the military services, excluding commissioned ATC facilities. Military radar units do not provide ATC service.

military training routes/MTR

To maintain proficiency, the military services must train in a wide range of airborne tactics. One phase of this training involves low level combat tactics. The required maneuvers and high speeds are such that they may occasionally make the see-and-avoid aspect of VFR flight more difficult without increased vigilance in areas containing such operations. Generally, MTRs are established below 10,000 feet MSL for operations at speeds in excess of 250 knots. However, route segments may be defined at higher altitudes for purposes of route continuity. For example, route segments may be defined for descent, climbout, and mountainous terrain. There are IFR and VFR routes.

1. IFR military training routes/IR -- Operations on these routes are conducted in accordance with IFRs regardless of weather conditions.

2. VFR military training routes/VR -- Operations on these routes are conducted in accordance with VFRs.

millibar/mb

An internationally used unit of pressure equal to 1,000 dynes per square centimeter. It is convenient for reporting atmospheric pressure.

mimicking

Synonym for impersonation.

minimal flight path

A path which affords the shortest possible time en route, obtained by using maximum assistance from the wind.

minimum crossing altitude/MCA

The lowest altitude at certain radio fixes at which an aircraft must cross when proceeding in the direction of a higher minimum en route IFR altitude.

minimum descent altitude/MDA

Means the lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circling to land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided.

minimum en route IFR altitude/MEA

The altitude in effect between radio fixes which assures acceptable navigational signal coverage and meets obstruction clearance requirements between those fixes.

minimum fuel

Indicates that an aircraft's fuel supply has reached a state where, upon reaching the destination, it can accept little or no delay. This is not an emergency situation but merely indicates an emergency situation is possible should any undue delay occur. (Refer to AIM)

minimum holding altitude/MHA

The lowest altitude prescribed for a holding pattern which assures navigational signal coverage, communications, and meets obstruction clearance requirements.

minimum IFR altitudes/MIA

Minimum altitudes for IFR operations as prescribed in FAR Part 91. These altitudes are published on aeronautical charts and prescribed in FAR Part 95 for airways and routes, and in FAR Part 97 for standard instrument approach procedures. If no applicable minimum altitude is prescribed in FAR Parts 95 or 97, the following minimum IFR altitude applies: in designated mountainous areas, 2,000 feet above

the highest obstacle within a horizontal distance of 5 statute miles from the course to be flown; or other than mountainous areas, 1,000 feet above the highest obstacle within a horizontal distance of 5 statute miles from the course to be flown; or as otherwise authorized by the Administrator or assigned by ATC. See minimum en route IFR altitude, minimum obstruction clearance altitude, minimum crossing altitude, minimum safe altitude, minimum vectoring altitude. (Refer to FAR Part 91)

minimum obstruction clearance altitude/MOCA

The specified altitude in effect between radio fixes on VOR airways, off-airway routes, or route segments which meets obstruction clearance requirements for the entire route segment and which assures acceptable navigational signal coverage only with 22 miles of a VOR.

minimum reception altitude/MRA

The lowest altitude required to receive adequate signals to determine specific VOR/VORTAC/TACAN fixes.

minimum safe altitude/MSA

(1) The minimum altitude specified in FAR Part 91 for various aircraft operations. (2) Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance for emergency use within a specified distance from the navigation facility upon which a procedure is predicated. These altitudes will be identified as minimum sector altitudes or emergency safe altitudes and are established as follows:

1. minimum sector altitudes/MSA -- Altitudes depicted on approach charts which provide at least 1,000 feet of obstacle clearance within a 25-mile radius of the navigation facility upon which the procedure is predicated. Sectors depicted on approach charts must be at least 90° in scope. These altitudes are for emergency use only and do not necessarily assure acceptable navigational signal coverage.

2. minimum sector altitude/MSA (ICAO) -- The lowest altitude which may be used under emergency conditions which will provide a minimum clearance of 300 m (1,000 feet) above all obstacles located in an area contained within a sector of a circle of 46 km (25 NM) radius centered on a radio aid to navigation.

3. emergency safe altitudes/ESA -- Altitudes depicted on approach charts which provide at least 1,000 feet of

obstacle clearance in non-mountainous areas and 2,000 feet of obstacle clearance in designated mountainous areas within a 100-mile radius of the navigation facility upon which the procedure is predicated and normally used only in military procedures. These altitudes are identified on published procedures as "Emergency Safe Altitudes."

minimum safe altitude warning/MSAW

A function of the ARTS III computer that aids the controller by alerting him when a tracked Mode C- equipped aircraft is below or is predicted by the computer to go below a predetermined minimum safe altitude. (Refer to AIM)

minimum vectoring altitude/MVA

The lowest altitude, expressed in feet above mean sea level, that aircraft will be vectored by a radar controller. This altitude assures communications, radar coverage, and meets obstruction clearance criteria.

minimums/minima

Weather condition requirements established for a particular operation or type of operation; e.g., IFR takeoff or landing, alternate airport for IFR flight plans, VFR flight, etc. See landing minimums, IFR takeoff minimums, VFR conditions, IFR conditions. (Refer to FAR Part 91, AIM)

minor airway

An airway having a lower posting priority than a major airway.

minor alteration

An alteration, to an aircraft, which is other than a major alteration.

minor repair

A repair, to an aircraft, which is other than a major repair.

missed approach

A runway approach that must be aborted as a result of problems such as insufficient aircraft spacing, excessive cross-track on approach velocity, or insufficient forward visibility.

missed approach point/MAP

A point prescribed in each instrument approach procedure at which a missed approach procedure shall be executed if the required visual reference does not exist. See missed approach, segments of an instrument approach procedure.

missed approach procedure (ICAO)

The procedure to be followed if the approach cannot be continued.

missile attack warning

The phraseology used for actual flush operations.

mist

A popular expression for drizzle or heavy fog.

mixed airspace

Airspace containing aircraft flying under either VFR or IFR. See controlled air space.

mode

The number or letter assigned to a specific pulse spacing of radio signals transmitted or received by ground interrogator or airborne transponder components of the ATCRBS.

1. mode C -- (1) A beacon radar transponder which automatically reports altitude when interrogated by a ground station. (2) Altitude reporting arrangement for secondary radar. The transponder mode used to derive altitude information.

   a. interrogation -- Civil transponder interrogation asking for aircraft altitude.

   b. intruder -- An aircraft which has entered a sector's airspace and is not being tracked by this sector and is transmitting Mode C altitude data which indicates the A/C is within the sector's selected altitude limits.

2. mode 2 -- A military only system.

3. mode 3/A -- (1) Transponder response for identification and tracking. (2) A beacon radar transponder which autonatically reports identification

when interrogated by a ground station. (64 and 4096 codes.)

4. mode 3/C -- (1) Transponder response for automatic pressure altitude transmission. (2) A beacon radar transponder which automatically reports altitude and identification when interrogated by a ground station.

5. mode 4 -- A special military beacon mode.

mode/SSR mode (ICAO)

The letter or number assigned to a specific pulse spacing of the interrogation signals transmitted by an interrogator. There are 4 modes, A, B, C and D corresponding to four different interrogation pulse spacings.

mode request indicator

An internal program indicator whose setting at a given time may be Flat, Flat Coast, Flat Turn, Free, or Free Coast. See tracking.

model

To construct, or fashion, in imitation of the actual (i.e., a system model). An analytic model tends to be a set of formulae that achieve the end results; i.e., a set of calculations. A simulation model tends to construct an imitation on a more geometric sense letting the pieces come together or interact where they will.

1. empirical -- Based on past experience and an intuitive knowledge of some of the major cause and effect relationships, the limits or trends of the variables can be estimated.

2. deterministic -- Given the cause and effect or systems relationships, and assuming no uncertainty, a set of equations can be written which describes the system operation. The results are limits, since uncertainty has been ruled out.

3. probabilistic -- Forms the richest set of systems models. These may range from deterministic models with random inputs to models in which the system relations themselves are considered in statistical terms.

modem

(1) A device which converts digital signals from a computer to signals that are compatible with telephone lines or other

communications facilities. (2) A contraction of modulator and demodulator used to designate units or equipment panels. As an example, the modulator modem for a digital data transfer channel is located at the transmitting end of the channel. The demodulator modem is located at the receiving end.

modification

An alteration to a ground facility, system, subsystem or equipment, such that its electrical, mechanical or physical characteristics, arrangement, configuration or use has been altered. Such changes must result in: changes to record documents and/or changes in existing standards and tolerances/limits or the need for establishing new standards and tolerances/limits.

1. functional modification -- A change to currently authorized standards or tolerances/limits which requires the establishment of new standards or tolerances/limits, or results in a significant change to the end product or use. Examples are modifications which change: a radiated signal; the control or monitoring functions between a facility and a control point; the time delay required for the operation of potential relays on engine generators; or the support capability or structural integrity of a structure or building.

2. non-functional modification -- Changes to currently authorized standards or tolerances/limits which does not require the establishment of new standards or tolerances/limits, and does not result in a significant change to the end product or use. Examples are modifications which change: the waveforms or voltages within a piece of equipment; the signal level on a control line; the type of door hinges on an engine generator control panel;or the shape of a cable support bracket on a structure.

3. test modification -- An experimental modification installed in the most limited scale practical (e.g., normally on a single piece of equipment; a single channel; a single site; a single chain of sites, as in an RML system; etc.) for the development and/or evaluation of a proposed modification.

4. emergency modification -- A temporary modification installed to maintain continuity of air traffic control (e.g., in the event normal reports cannot be effected immediately because approved materials are not available). Emergency modifications shall not derogate

operational or maintenance capabilities to a point where temporary usability of the facility, system or equipment is unacceptable (e.g., beyond the limits of certifiability).

5. training modification -- A temporary modification installed to facilitate the use of a system or equipment for training purposes. Such modifications are readily removable in the event the system or equipment is placed into use in an operational environment.

module

(1) A part of a National Airspace System sub-system element. A module or unit is a "black box" which exists spatially and functionally distinct from other "black boxes" in the sub-system element. A module usually has its own power supplies and represents the level at which on-line redundancy is usually provided. Examples are the Data Filter Group Modules within the Data Filter Group Element and the Data Receiver Group Modules within the Radar Element. (2) A uniquely identified element of a computer program which performs a specific function or set of related functions. (3) A segment of a course (training) that may be taken independently of other parts of that course.

modularity

The structural or functional partitioning of systems with a view towards operational independence of the resulting modules.

modulation rate

The signaling speed of a data stream measured in bauds. It is the number of changes in line conditions per second. The reciprocal of the binary digit of smallest duration is the baud rate.

module state

See state.

module status

See status.

modulo

Separated into segments. In arithmetic it is a method of counting with an upper limit. When the limit is reached,

counting begins again. For example, the sequence in counting Modulo 3 is 0, 1, 2, 0, 1, 2, 0, . . . Modulo is often abbreviated to MOD.

moist adiabatic lapse rate

See saturated adiabatic lapse rate.

moisture

An all inclusive term denoting water in any or all of its three states.

monitor

(1) To check periodically, keep track off, or scrutinize the status of an item of equipment, such as in monitoring the status of a questionable NAVAID. (2) A device designed to detect when designated parameters have deviated beyond prescribed tolerance/limit, and then to activate an alarm to this effect and/or alter the operation. (3) A control program in a computer's ROM. (4) A peripheral device used to display information, such as a CRT.

monitoring

(1) The flight following of aircraft, whose primary navigation is being performed by the pilot, to note deviations from it's authorized flight path, airway or route. (2) See automated security monitoring, threat monitoring.

monochrome display

A single color video display, usually black and white, black and green or black and amber.

monopulse

A radar system using a receiving antenna having two or more partially overlapping lobes in the radiation pattern. Sum and difference channels in the receiver compare the amplitudes or phases of the received signal.

monsoon

A wind that in summer blows from sea to a continental interior, bringing copious rain, and in winter blows from the interior to the sea, resulting in sustained dry weather.

monthly

A scheduling term, meaning once calendar month, and at approximately thirty-day intervals (25 to 35 days).

mosaic

A device used in television camera tubes for electrical storage of the optical image to be televised.

1. mosaicking -- The process of selective rejection of redundant radar returns from radar sites with overlapping coverage to avoid double display of a single target on a single display surface.

most probable position/MPP

The computed position of an aircraft determined by comparing a DR position and an LOP or a fix of doubtful accuracy determined for the same time, in which relative weights are given to the estimated probable error of each.

mountain wave

A standing wave or lee wave to the lee of a mountain peak.

movement area

The runways, taxiways, and other areas of an airport which are utilized for taxiing, take-off, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports/heliports with a tower, specific approval for entry onto the movement area must be obtained from ATC.

moving reservation

ALTRV's which encompass en route activities and advance coincident with the mission progress.

moving target indicator/MTI

An electronic device which will permit radar scope presentation only from targets which are in motion. A partial remedy for ground clutter.

1. coherent signal, MTI -- A signal which is proportional in amplitude to the phase difference between a radar return and a reference signal.

MULTICOM

A mobile service not open to public correspondence used to provide communications essential to conduct the activities being performed by or directed from private aircraft (FAR 87.277).

multi-path

The propagation phenomenon that results in signals reaching the receiving antenna by two or more paths, generally with a time or phase difference between the two. The electromagnetic energy arrival at a receiver is normally the result of reflections from either the ground or from other external reflectors such as another aircraft, a structure or buildings.

multiple access right terminal

A terminal that may be used by more than one class of users; for example, users with different access right to data.

multiple sampling

Sampling inspection in which, after each sample is inspected, the decision is made to accept, reject or take another sample; but in which there is a prescribed maximum number of samples, after which decision to accept or reject must be reached.

note: Multiple sampling as defined here sometimes has been called "sequential sapling" or "truncated sequential sampling."

multiplex/multiplexing

A process by which different items of information can be transmitted simultaneously in the same direction on a single circuit.

1. frequency division, multiplex/FDM -- A method of multiplexing in which the total frequency spectrum available is divided into channels, each of which occupies a particular frequency range all of the time.

2. time division, multiplex/TDM -- A method of multiplexing in which the total frequency spectrum available is used by each channel, but only for part of the time.

multiplexor channel

A low speed data communication path, contained in the CCC's I/O control element, which is used for the attachment of I/O devices such as printers, consoles, and keyboards.

multiple junction

More than one junction of an airway or coded route with another airway or coded route. (Example: Route A intercepts or coincides with Route B at more than one point.)

multiplying

Providing more than (1) connection at a common point.

multi-processing

In computer terminology, a technique for handling numerous routines or programs simultaneously by overlapping or interleaving their execution. See parallel processing.

multi-programming

In computer terminology, a technique for handling numerous routines or programs simultaneously by overlapping or interleaving their execution.

municipal solid waste

Garbage, refuse, sludge, wastes and other discarded materials resulting from residential and non-residential operations and activities, such as household activities, office operations and commercial housekeeping wastes.

mutual interference

Any undesired reception of transmitted energy among elements of a group of cooperative stations. It occurs when groups of stations in close proximity use common or adjoining frequency bands in a system that has no specific provisions for multiplexing.

mutually suspicious

Pertaining to the state that exists between interactive processes (subsystems or programs) each of which contains sensitive data and is assumed to be designed so as to extract data from the other and to protect bits own data.

nadir

The point on the celestial sphere directly beneath the observers position.

nak attack

A penetration technique which capitalizes on a potential weakness in an operating system that does not handle asynchronous interrupts properly and, thus, leaves the system in an unprotected state during such interrupts.

narrowband

The use of a small frequency spectrum for the band-pass of electronic communication equipment; usually in the kilo hertz range. (as opposed to broadband)

NAS change proposal/NCP

A proposal for a change to a baseline or a configuration management item or a request for authorization of a specific site operation which is in variance with certain national criteria.

1. local NCP -- A request for authorization for a local modification or variance from national criteria.

2. national NCP -- A proposal which, if approved, results in the issuance of a CCD for system-wide modification and/or a handbook change.

3. test NCP -- A request for authorization of non-standard configuration procedures or for variance from criteria in order to conduct a test.

NAS configuration control decision/CCD

A record of decision on a local, national or test NCP. If a change is approved, a CCD directs the action required to implement the change.

national (of the United States)

A citizen of the United States, or a person who, although not a citizen, holds permanent allegiance to the United States.

National Airspace System/NAS

The system of air navigation and air traffic control encompassing communication facilities, air navigation

facilities, airways, controlled airspace, special use airspace, and flight procedures authorized by Federal Aviation Regulations (FAR) for domestic and international aviation.

1. NAS documentation -- Any documents describing systems, sub- systems, procedures, etc., associated with NAS. This would include interface control documents, equipment specifications, functional specifications, requirement specifications, NAS change proposals/NCP, configuration control documents/CCD, etc.

2. NAS Stage A en route system -- An automated system of en route ATC providing alphanumeric information on en route radar displays. The Stage A will serve as the basis for the evolutionary growth of future automated system (Stage B & C). Additional systems to be incorporated include flow control, conflict detection, electronic tabular displays, etc.

3. NAS terminal system -- See ARTS.

4. NAS terminal area -- The geographic region whose boundaries are defined by latitude, longitude, and altitude parameters within which all controlled aircraft are under the jurisdiction of the ARTS III System.

national beacon code allocation plan airspace/NBCAP airspace

Airspace over United States territory located within the North American continent between Canada and Mexico, including adjacent territorial waters outward to about boundaries of oceanic control areas (CTA)/Flight Information Regions (FIR). See flight information region.

National Communications Center/NATCOM

A unique facility in Kansas City, Missouri, that provides communication switching services to the National Weather Service (NWS), the FAA, U.S. military, commercial and private flight organizations under the auspices of the FAA and the DOD. Data handled by NATCOM's five computer systems includes weather data, flight plans, and Notices to Airmen (NOTAMs) on both national and international networks.

national criteria

Standards which are intended to apply throughout the FAA. These standards are contained in documents issued by or under authority of a headquarters office or service.

National Field Support Group/NFSG

The group consisting of organizations located at the FAA Technical Center and the FAA Aeronautical Center with responsibility for providing technical assistance concerning field systems and equipment problems. These organizations are the national automation engineering field support sector and the national airway engineering field support sector.

National Flight Data Center/NFDC

A facility established by FAA to operate a central aeronautical information service for the collection, validation, and dissemination of aeronautical data in support of the activities of government, industry, and the aviation community.

National Flight Data Digest/NFDD

Daily (except weekends and holidays) publication of flight information appropriate to aeronautical charts, aeronautical publications, Notices to Airmen or other media serving the purpose of providing operational flight data essential to safe and efficient aircraft operations.

national flight service data base

The national flight service data base consists of weather data such as AWP-generated special aviation graphic products, hourly and special surface weather observations, PIREPs, CWP/CWSU alphanumeric products, and NWS products. The national flight service data base also contains aeronautical information such as NOTAMs, traffic flow data (traffic management summaries), preferred route information, and information concerning military operations/special-use airspace.

national search and rescue plan

An inter-agency agreement whose purpose is to provide effective utilization of all available facilities in all types of search and rescue missions.

national security

The national defense and foreign relations of the United States.

nautical mile/NM

A unit of distance used in navigation, 6080 feet; the mean length of one minute of longitude on the equator; approximately 1 minute of latitude; 1.15 statute miles.

nautical twilight

See twilight.

navigable airspace

Airspace at and above the minimum flight altitudes prescribed in the FARs including airspace needed for safe takeoff and landing.

navigation

(1) The service which enables a properly equipped platform to calculate its position through the interpretation of signals received from or exchanged with a source(s) external to the platform. (2) The calculation and display of airplane present position, velocity vector and related data, i.e., track angle, ground speed, drift angle, etc.

1. full service navigation -- That service required within a given airspace, without prior arrangement, to continuously satisfy the most stringent accuracy requirements of any properly equipped user in the specified airspace.

2. limited service navigation -- That service which provides continuous navigation at an accuracy less than full service; or provides intermittent navigation at the same accuracy as full service navigation.

3. navigation guidance -- With respect to RNAV systems, the calculation of steering commands to maintain the desired track from the present aircraft position.

Navigation Aid(s)/NAVAID(s)

Any means of obtaining a fix or LOP as an aid to dead reckoning or position determination.

1. celestial -- The determination of position by reference to celestial bodies.

2. map/chart -- The determination of position by identification of land marks with their representation on a map or chart.

3. pressure differential -- The determination of the average drift, or the crosswind component of the wind effect on an aircraft for a given period of time using values of the pressure sounding.

4. radar -- The determination of position by obtaining information from a radar indicator. The radar includes airborne radar, Air Traffic Control Radar Beacon System, Surveillance Radar, Airport Surveillance Radar and Precision Approach Radar.

5. radio -- The determination of position by the use of radio facilities. There are several categories of air navigation radio aids: low/medium frequency radio range, non-directional radio beacon, VHF Omnidirectional Range, Tactical Air Navigation, and VHF Omnidirectional Range/Tactical Air Navigation/Distance Measuring Equipment. There are three classes of NAVAIDs: T (Terminal), L (Low Altitude) and H (High Altitude). Other types of navigation aids include marker beacons (FM, LFM, Station Location or Z-Markers and ILS marker beacons). Within the Instrument Landing System category there are: localizers, glide path transmitters, marker beacons, and compass locator transmitters. NAVAIDs also include voice, VHF/UHF directional finders.

near-midair collision/NMAC

An incident associated with the operation of an aircraft in which a possibility of collision occurs as the result of a proximity of less than 500 feet to another aircraft, or a report is received from a pilot or a flight crew member stating that a collision hazard existed between two or more aircraft. See hazardous near miss.

near miss

See hazardous near miss.

need-to-know

A term given to the requirement that knowledge or possession of classified information shall be provided only to persons whose official duties or contractual obligations require such access. Responsibility for determining the "need-to-know" of a prospective recipient rests upon the individual who has possession, knowledge or control of the information. A prospective recipient may not make the determination. He/she may only justify this access.

negative

"No," or "permission not granted," or "that is not correct."

negative advisory

One of the following TCAS resolution advisories: DON'T CLIMB, DON'T DESCENT. A negative advisory can be either preventive or corrective.

negative contact

Used by pilots to inform ATC that: (1) Previously issued traffic is not in sight. It might be followed by the pilot's request for the controller to provide assistance in avoiding the traffic, (2) They were unable to contact ATC on a particular frequency.

negative vorticity

See vorticity.

negotiate

To discuss in order to come to a mutually acceptable agreement, as when negotiating with a pilot the technique to be used to accomplish a flight delay.

net loss

The transmission loss at 1000 Hz in dB between two locations. The greater the number, the poorer the circuit. It is sometimes referred to as the specified equivalent or the card loss.

network balancing

Generally, the use of an impedance matching device associated with a hybrid coil of a terminating set (telephone). The device balances the derived two wire circuit (line) for maximum return loss. Networks are of two broad types; precision and compromise. A network of this type may be referred to as a balancing net, precision net, compromise net or net.

network channel terminal equipment/NCTE

The equipment located at the end user's premises on the local exchange company/LEC side of the network interface/NI. It provides certain functions that are inherent in the provision and maintenance of specific network channel

services in order to meet network service requirements at the NI.

1. network interface/NI -- The point of demarcation on the end user's premises at which the LEC's responsibility for the provision of its tariffed network channel services end.

neutral circuit

A teletypewriter operation that uses current or no-current conditions to transmit information. In the circuit, current flows in only one direction. The circuit is closed during the marking condition and open during the spacing condition. Contrast with polar circuit.

neutron

An electrically neutral particle of approximately unit mass, present in all atomic nuclei, except those of ordinary hydrogen.

NEXRAD

1. NEXRAD product -- The weather radar products produced by NEXRAD. The basic products produced are: (1) reflectivity maps which provide echo-intensity data displayed as an image, (2) velocity maps which provide the mean radial velocity data displayed as an image, and (3) spectrum width maps which provide the mean radial velocity spectrum width data displayed as an image.

next fix

See flight plan next fix, track next fix.

1. next posted fix -- The first posted fix on the flight plan route whose computer time of arrival (CTA) exceeds present time. This term has meaning only for active flight plans.

nicad battery

A nickel-cadmium battery used for backup power in the CCC.

night

The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time.

night (ICAO)

The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise as may be specified by the appropriate authority.

note -- Civil twilight ends in the evening when the center of the sun's disk is 6° below the horizon and begins in the morning when the center of the sun's disk is 6° below the horizon.

nimbostratus

A principal cloud type, gray colored, often dark, the appearance of which is rendered diffuse by more or less continuously falling rain or snow, which in most cases reaches the ground. It is thick enough throughout to blot out the sun.

no gyro approach/vector

A radar approach/vector provided in case of a malfunctioning gyro-compass or directional gyro. Instead of providing the pilot with headings to be flown, the controller observes the radar track and issues control instructions "turn right/left" or "stop turn" as appropriate. (Refer to AIM)

no-op

To discontinue communications with a device with no notification of unsuccessful transmission.

noctilucent clouds

Clouds of unknown composition which occur at great heights, probably around 75 to 90 kilometers. THey resemble thin cirrus, but usually with a bluish or silverish color, although sometimes orange to red, standing out against a dark night sky. They are rarely observed.

node

The end point of an adapted straight line segment defined by latitude/longitude.

noise

(1) The unwanted result of thermal processes in amplifiers, active switches, etc. (2) The combined effect of radio

frequency interference, crosstalk and other interfering processes.

1. noise, impulse (digital data communications) -- A shift in binary digits in data communications systems. It occurs from many causes, and is statistically non-predictable, and therefore very difficult to combat.

2. noise, thermal -- Random electrical fluctuations generated in the radar receiver.

noise attenuation of buildings

The modification of structures to enhance their properties and characteristics to reduce exterior and interior noise through absorption, transmission loss and reflection of sound energy.

Noise Exposure Forecast/NEF

A weighing system for measuring noise levels in the vicinity of airports.

noise figure

The amount of electronic noise introduced by a piece of equipment over the basic thermal noise that is present. It represents the relationship of the signal-to-noise ratio at the input of a device to the signal-to-noise ratio at its output.

noise filter

A combination of electrical components that inhibits extraneous signals from passing through or into an electronic circuit.

noise level

The strength of extraneous audible sound in a given location, or the strength of these signals in an electronic circuit. It is usually measured in dB.

noise level reduction/NLR

A measurement of the effectiveness of structural shielding materials to reduce the amount of acoustical energy. For a given structure, NLR may vary with the source of frequency content.

noise sensitive area

Locations where aircraft noise may interfere with existing or planned use of the land. Whether noise interferes with a particular use depends upon the level of noise exposure and the types of activities which are involved. Residential neighborhoods, educational, health and religious structures and sites, outdoor recreational, cultural and historic sites may be noise sensitive areas. Whether noise interferes with a particular use depends upon the level of noise exposure received and the type of activities involved. A site which is unacceptable for outside use may be acceptable for use inside a structure, if adequate noise attenuation features are built into that structure.

noise, white (digital data communications)

White noise occurs in a statistical random sequence with fairly well defined properties and may be compensated for by thorough proper receiver design.

noise weighting

The proper interfering effect when noise currents are converted to sound. The weighting networks integrate the noise power over the voice frequency range by giving each small band of frequencies a weighting proportional to its contribution to the total interfering effect. Several types of weighting networks are built into noise measuring sets.

non-approach control tower

Authorizes aircraft to land or takeoff at the airport controlled by the tower or to transit the airport traffic area. The primary function of a non-approach control tower is the sequencing of aircraft in the traffic pattern and on the landing area. Non-approach control towers also separate aircraft operating under instrument flight rules clearances from approach controls and centers. They provide ground control services to aircraft, vehicles, personnel, and equipment on the airport movement area.

non-composite separation

Separation in accordance with minima other than the composite separation minimum specified for the area concerned.

non-compulsory radio fix

A geographical position determined from radio NAVAIDs that occurs at a Non-Compulsory Reporting Point.

non-compulsory reporting points

Reporting points that are optional to the pilot. These points are given on aeronautical charts and in non-compulsory radio fixes.

non-control information

Any information transferred from a controller or flight service specialist to a pilot (or from a pilot to a controller/flight service specialist) which is not directly related to air traffic control.

non-daily

A reporting interval which occurs on other than a daily basis.

Non-Directional Beacon, low/medium frequency (homing beacons)/NDB

The low or medium frequency non-directional radio beacon, or homing facility, was one of the earliest electronic navigation aids adopted by the FAA for radio navigation. Homing beacons are installed at various locations to provide either navigation fixes or homing points. When a radio beacon is used in conjunction with the Instrument Landing System markers, it is called a Compass Locator. The typical low or medium frequency radio beacon transmits non-directional signals whereby the pilot of an aircraft properly equipped can determine his bearing and "home" on the station. These facilities normally operate in the frequency band of 190 to 535 kHz and transmit a continuous carrier with either 400 or 1020 Hz modulation. All radio beacons except the compass locators transmit a continuous three-letter identification in code except during voice transmissions. Voice transmissions are made on radio beacons unless the letter "W" (without voice) is included in the class designator (HW). There are four types of non-directional homing facilities in use:

1. HH facilities -- Facilities which have a power output of 2,000 or more watts and a reception range of 75 nautical miles. This type of facility is generally used with over-water routes.

2. H facilities -- Facilities which have a power output of 50 to 1999 watts and a reception range of 50 nautical miles.

3. MH facilities -- Facilities which have a power output of less than 50 watts and a reception range of 25 nautical miles.

4. IIS compass locator facilities -- Facilities which have a power output of less than 25 watts and a reception range of 15 nautical miles. They are designated as LOM (Outer Marker) and LMM (Middle Marker), appropriate to the outer and middle beacon sites where they are located.

non-discrete code

A radar beacon Mode 3/A assigned to more than one aircraft within a specific geographical area. Currently, a four octal digit code in which the last two digits are zeros. See discrete code.

non-ionizing radiation

The less energetic forms of electromagnetic radiation, such as near ultraviolet, visible light, infrared, microwave, radio and electrical power.

non-linear distortion

The generation of signal components from the transmitted signal that add to the transmitted signal usually in an undesired manner.

non-maskable interrupt/NMI

An interrupt to a computer program which the CPU cannot ignore or disable.

non-occupational exposure

Exposure to a hazard which occurs outside a controlled area or to a visitor to a controlled area.

non-oceanic FPA

A FPA not adapted as oceanic, within which straight-line computations is performed.

non-precision approach procedure

Means a standard instrument approach procedure in which no electronic glide slope is provided and does not imply an unacceptable quality of course guidance. See precision approach procedure.

non-print function

An teletype operation which does not result in a printed character, such as: figures-letters shift, etc. See function.

non-radar

Precedes other terms and generally means without the use of radar, such as:

1. non-radar approach -- Used to describe instrument approaches for which course guidance on final approach is not provided by ground based precision or surveillance radar. Radar vectors to the final approach course may or may not be provided by ATC. Examples of non-radar approaches are VOR, NDB, TACAN, and ILS/MLS approaches. See final approach-IFR, final approach course, radar approach, Instrument Approach Procedure.

2. Non-radar Approach Control -- An ATC facility providing approach control service without the use of radar. See approach control, approach control service.

3. non-radar arrival -- An aircraft arriving at an airport without radar service or at an airport served by a radar facility and radar contact has not been established or has been terminated due to a lack of radar service to the airport. See radar arrival, radar service.

4. non-radar route -- A flight path or route over which the pilot is performing his own navigation. The pilot may be receiving radar separation, radar monitoring, or other ATC services while on a non-radar route. See radar route.

5. non-radar separation -- The spacing of aircraft in accordance with established minima without the use of radar; e.g., vertical, lateral, or longitudinal separation. See radar separation.

non-radar separation (ICAO)

The separation used when aircraft position information is derived from services other than radar.

non-real-time programs

Programs that operate on static data where the time of operation is not dependent on the time when the data was gathered.

non-record material

Records having no administrative, fiscal, legal or other historical value. These include but are not limited to, stocks of publications, library material, duplicate papers of record material such as day files, reading files, etc., and papers of a transitory value such as drafts, worksheets, informational notes and route slips.

non-reinforced beacon return

A beacon message without search radar reinforcement whose correlation criteria requires that the search and beacon target reports fall within the same 1/4 mile range cell and overlap in azimuth such that the leading edge threshold is achieved for either target prior to detection of trailing edge of the other target.

non-renewable energy source

Resources such as fuel oil, gasoline, natural gas, liquified petroleum gas, coal, and purchased steam or electricity generated from such resources.

non-retriable I/O error

An error is declared non-retriable when an I/O operation cannot be initiated or completed with a given device via a specific path after "N Times Retry". See unsuccessful I/O operation, retry.

non-standard spare parts

Replaceable parts (often called parts peculiar) that are unique in characteristic or function to the degree that they are not readily obtainable from sources other than the prime contractor.

non-synchronous garble

Transponder responses inadvertently picked up by a given interrogator different from the one triggering the response. The result is that the ground station picks up a signal that is not synchronous with the interrogation signal, also called total fruit.