

# LAKE HAVASU CITY

## *Municipal Airport*

### AIRPORT MASTER PLAN



## APPENDIX A

## GLOSSARY OF TERMS



# Glossary of Terms

## A

**ABOVE GROUND LEVEL:** The elevation of a point or surface above the ground.

**ACCELERATE-STOP DISTANCE AVAILABLE (ASDA):** See declared distances.

**ADVISORY CIRCULAR:** External publications issued by the FAA consisting of nonregulatory material providing for the recommendations relative to a policy, guidance and information relative to a specific aviation subject.

**AIR CARRIER:** An operator which: (1) performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week, and places between which such flights are performed; or (2) transports mail by air pursuant to a current contract with the U.S. Postal Service. Certified in accordance with Federal Aviation Regulation (FAR) Parts 121 and 127.

**AIRCRAFT:** A transportation vehicle that is used or intended for use for flight.

**AIRCRAFT APPROACH CATEGORY:** A grouping of aircraft based on 1.3 times the stall speed in their landing configuration at their maximum certificated landing weight. The categories are as follows:

- Category A: Speed less than 91 knots.
- Category B: Speed 91 knots or more, but less than 121 knots.
- Category C: Speed 121 knots or more, but less than 141 knots.
- Category D: Speed 141 knots or more, but less than 166 knots.
- Category E: Speed greater than 166 knots.

**AIRCRAFT OPERATION:** The landing, takeoff, or touch-and-go procedure by an aircraft on a runway at an airport.

**AIRCRAFT OPERATIONS AREA (AOA):** A restricted and secure area on the airport property designed to protect all aspects related to aircraft operations.

**AIRCRAFT OWNERS AND PILOTS ASSOCIATION:** A private organization serving the interests and needs of general aviation pilots and aircraft owners.

**AIRCRAFT RESCUE AND FIRE FIGHTING:** A facility located at an airport that provides emergency vehicles, extinguishing agents, and personnel responsible for minimizing the impacts of an aircraft accident or incident.

**AIRFIELD:** The portion of an airport which contains the facilities necessary for the operation of aircraft.

**AIRLINE HUB:** An airport at which an airline concentrates a significant portion of its activity and which often has a significant amount of connecting traffic.

**AIRPLANE DESIGN GROUP (ADG):** A grouping of aircraft based upon wingspan. The groups are as follows:

- Group I: Up to but not including 49 feet.
- Group II: 49 feet up to but not including 79 feet.
- Group III: 79 feet up to but not including 118 feet.
- Group IV: 118 feet up to but not including 171 feet.
- Group V: 171 feet up to but not including 214 feet.
- Group VI: 214 feet or greater.

**AIRPORT AUTHORITY:** A quasi-governmental public organization responsible for setting the policies governing the management and operation of an airport or system of airports under its jurisdiction.

**AIRPORT BEACON:** A navigational aid located at an airport which displays a rotating light beam to identify whether an airport is lighted.

**AIRPORT CAPITAL IMPROVEMENT PLAN:** The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

**AIRPORT ELEVATION:** The highest point on the runway system at an airport expressed in feet above mean sea level (MSL).

**AIRPORT IMPROVEMENT PROGRAM:** A program authorized by the Airport and Airway Improvement Act of 1982 that provides funding for airport planning and development.

**AIRPORT LAYOUT DRAWING (ALD):** The drawing of the airport showing the layout of existing and proposed airport facilities.

**AIRPORT LAYOUT PLAN (ALP):** A scaled drawing of the existing and planned land and facilities necessary for the operation and development of the airport.

**AIRPORT LAYOUT PLAN DRAWING SET:** A set of technical drawings depicting the current and future airport conditions. The individual sheets comprising the set can vary with the complexities of the airport, but the FAA-required drawings include the Airport Layout Plan (sometimes referred to as the Airport Layout Drawing (ALD)), the Airport Airspace Drawing, and the Inner Portion of the Approach Surface Drawing, On-Airport Land Use Drawing, and Property Map.

**AIRPORT MASTER PLAN:** The planner's concept of the long-term development of an airport.

**AIRPORT MOVEMENT AREA SAFETY SYSTEM:** A system that provides automated alerts and warnings of potential runway incursions or other hazardous aircraft movement events.

**AIRPORT OBSTRUCTION CHART:** A scaled drawing depicting the Federal Aviation Regulation (FAR) Part 77 surfaces, a representation of objects that penetrate these surfaces, runway, taxiway, and ramp areas, navigational aids, buildings, roads and other detail in the vicinity of an airport.

**AIRPORT REFERENCE CODE (ARC):** A coding system used to relate airport design criteria to the operational (Aircraft Approach Category) to the physical characteristics (Airplane Design Group) of the airplanes intended to operate at the airport.

**AIRPORT REFERENCE POINT (ARP):** The latitude and longitude of the approximate center of the airport.

**AIRPORT SPONSOR:** The entity that is legally responsible for the management and operation of an airport, including the fulfillment of the requirements of laws and regulations related thereto.

**AIRPORT SURFACE DETECTION EQUIPMENT:** A radar system that provides air traffic controllers with a visual representation of the movement of aircraft and other vehicles on the ground on the airfield at an airport.

**AIRPORT SURVEILLANCE RADAR:** The primary radar located at an airport or in an air traffic control terminal area that receives a signal at an antenna and transmits the signal to air traffic control display equipment defining the location of aircraft in the air. The signal provides only the azimuth and range of aircraft from the location of the antenna.

**AIRPORT TRAFFIC CONTROL TOWER (ATCT):** A central operations facility in the terminal air traffic control system, consisting of a tower, including an associated instrument flight rule (IFR) room if radar equipped, using air/ground communications and/or radar, visual signaling and other devices to provide safe and expeditious movement of terminal air traffic.

**AIR ROUTE TRAFFIC CONTROL CENTER:** A facility which provides en route air traffic control service to aircraft operating on an IFR flight plan within controlled airspace over a large, multi-state region.

**AIRSIDE:** The portion of an airport that contains the facilities necessary for the operation of aircraft.

**AIRSPACE:** The volume of space above the surface of the ground that is provided for the operation of aircraft.

**AIR TAXI:** An air carrier certificated in accordance with FAR Part 121 and FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally operates small aircraft "for hire" for specific trips.

**AIR TRAFFIC CONTROL:** A service operated by an appropriate organization for the purpose of providing for the safe, orderly, and expeditious flow of air traffic.

**AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC):** A facility established to provide air traffic control service to aircraft operating on an IFR flight plan within controlled airspace and principally during the en route phase of flight.

**AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER:** A facility operated by the FAA which is responsible for the central flow control, the central altitude reservation system, the airport reservation position system, and the air traffic service contingency command for the air traffic control system.



**AIR TRAFFIC HUB:** A categorization of commercial service airports or group of commercial service airports in a metropolitan or urban area based upon the proportion of annual national enplanements existing at the airport or airports. The categories are large hub, medium hub, small hub, or non-hub. It forms the basis for the apportionment of entitlement funds.

**AIR TRANSPORT ASSOCIATION OF AMERICA:** An organization consisting of the principal U.S. airlines that represents the interests of the airline industry on major aviation issues before federal, state, and local government bodies. It promotes air transportation safety by coordinating industry and governmental safety programs and it serves as a focal point for industry efforts to standardize practices and enhance the efficiency of the air transportation system.

**ALERT AREA:** See special-use airspace.

**ALTITUDE:** The vertical distance measured in feet above mean sea level.

**ANNUAL INSTRUMENT APPROACH (AIA):** An approach to an airport with the intent to land by an aircraft in accordance with an IFR flight plan when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude.

**APPROACH LIGHTING SYSTEM (ALS):** An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams by which the pilot aligns the aircraft with the extended centerline of the runway on his final approach and landing.

**APPROACH MINIMUMS:** The altitude below which an aircraft may not descend while on an IFR approach unless the pilot has the runway in sight.

**APPROACH SURFACE:** An imaginary obstruction limiting surface defined in FAR Part 77 which is longitudinally centered on an extended runway centerline and extends outward and upward from the primary surface at each end of a runway at a designated slope and distance based upon the type of available or planned approach by aircraft to a runway.

**APRON:** A specified portion of the airfield used for passenger, cargo or freight loading and unloading, aircraft parking, and the refueling, maintenance and servicing of aircraft.

**AREA NAVIGATION:** The air navigation procedure that provides the capability to establish and maintain a flight path on an arbitrary course that remains within the coverage area of navigational sources being used.

**AUTOMATED TERMINAL INFORMATION SERVICE (ATIS):** The continuous broadcast of recorded non-control information at towered airports. Information typically includes wind speed, direction, and runway in use.

**AUTOMATED SURFACE OBSERVATION SYSTEM (ASOS):** A reporting system that provides frequent airport ground surface weather observation data through digitized voice broadcasts and printed reports.

**AUTOMATIC WEATHER OBSERVATION STATION (AWOS):** Equipment used to automatically record weather conditions (i.e. cloud height, visibility, wind speed and direction, temperature, dew point, etc.)

**AUTOMATIC DIRECTION FINDER (ADF):** An aircraft radio navigation system which senses and indicates the direction to a non-directional radio beacon (NDB) ground transmitter.

**AVIGATION EASEMENT:** A contractual right or a property interest in land over which a right of unobstructed flight in the airspace is established.

**AZIMUTH:** Horizontal direction expressed as the angular distance between true north and the direction of a fixed point (as the observer's heading).

## B

**BASE LEG:** A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline. See "traffic pattern."

**BASED AIRCRAFT:** The general aviation aircraft that use a specific airport as a home base.

**BEARING:** The horizontal direction to or from any point, usually measured clockwise from true north or magnetic north.

**BLAST FENCE:** A barrier used to divert or dissipate jet blast or propeller wash.

**BLAST PAD:** A prepared surface adjacent to the end of a runway for the purpose of eliminating the erosion of the ground surface by the wind forces produced by airplanes at the initiation of takeoff operations.

**BUILDING RESTRICTION LINE (BRL):** A line which identifies suitable building area locations on the airport.

## C

**CAPITAL IMPROVEMENT PLAN:** The planning program used by the Federal Aviation Administration to identify, prioritize, and distribute Airport Improvement Program funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

**CARGO SERVICE AIRPORT:** An airport served by aircraft providing air transportation of property only, including mail, with an annual aggregate landed weight of at least 100,000,000 pounds.

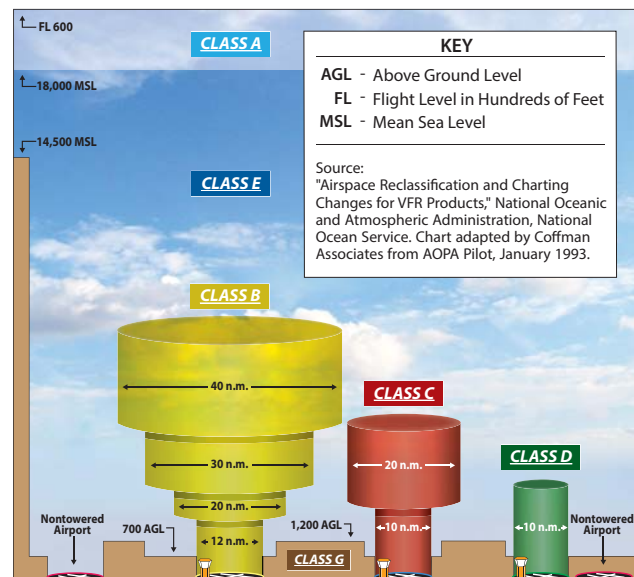
**CATEGORY I:** An Instrument Landing System (ILS) that provides acceptable guidance information to an aircraft from the coverage limits of the ILS to the point at which the localizer course line intersects the glide path at a decision height of 200 feet above the horizontal plane containing the runway threshold.

**CATEGORY II:** An ILS that provides acceptable guidance information to an aircraft from the coverage limits of the ILS to the point at which the localizer course line intersects the glide path at a decision height of 100 feet above the horizontal plane containing the runway threshold.

**CATEGORY III:** An ILS that provides acceptable guidance information to a pilot from the coverage limits of the ILS with no decision height specified above the horizontal plane containing the runway threshold.

**CEILING:** The height above the ground surface to the location of the lowest layer of clouds which is reported as either broken or overcast.

**CIRCLING APPROACH:** A maneuver initiated by the pilot to align the aircraft with the runway for landing when flying a predetermined circling instrument approach under IFR.



**CLASS A AIRSPACE:** See Controlled Airspace.

**CLASS B AIRSPACE:** See Controlled Airspace.

**CLASS C AIRSPACE:** See Controlled Airspace.

**CLASS D AIRSPACE:** See Controlled Airspace.

**CLASS E AIRSPACE:** See Controlled Airspace.

**CLASS G AIRSPACE:** See Controlled Airspace.

**CLEAR ZONE:** See Runway Protection Zone.

**COMMERCIAL SERVICE AIRPORT:** A public airport providing scheduled passenger service that enplanes at least 2,500 annual passengers.

**COMMON TRAFFIC ADVISORY FREQUENCY:** A radio frequency identified in the appropriate aeronautical chart which is designated for the purpose of transmitting airport advisory information and procedures while operating to or from an uncontrolled airport.

**COMPASS LOCATOR (LOM):** A low power, low/medium frequency radio-beacon installed in conjunction with the instrument landing system at one or two of the marker sites.

**CONICAL SURFACE:** An imaginary obstruction-limiting surface defined in FAR Part 77 that extends

from the edge of the horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

**CONTROLLED AIRPORT:** An airport that has an operating airport traffic control tower.

**CONTROLLED AIRSPACE:** Airspace of defined dimensions within which air traffic control services are provided to instrument flight rules (IFR) and visual flight rules (VFR) flights in accordance with the airspace classification. Controlled airspace in the United States is designated as follows:

- **CLASS A:** Generally, the airspace from 18,000 feet mean sea level (MSL) up to but not including flight level FL600. All persons must operate their aircraft under IFR.
- **CLASS B:**  
Generally, the airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports. The configuration of Class B airspace is unique to each airport, but typically consists of two or more layers of air space and is designed to contain all published instrument approach procedures to the airport. An air traffic control clearance is required for all aircraft to operate in the area.
- **CLASS C:** Generally, the airspace from the surface to 4,000 feet above the airport elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach control and are served by a qualifying number of IFR operations or passenger enplanements. Although individually tailored for each airport, Class C airspace typically consists of a surface area with a five nautical mile (nm) radius and an outer area with a 10 nautical mile radius that extends from 1,200 feet to 4,000 feet above the airport elevation. Two-way radio communication is required for all aircraft.
- **CLASS D:** Generally, that airspace from the surface to 2,500 feet above the air port elevation (charted as MSL) surrounding those airports that have an operational control tower. Class D airspace is individually tailored and configured to encompass published instrument approach procedure. Unless otherwise authorized, all persons must establish two-way radio communication.

- **CLASS E:** Generally, controlled airspace that is not classified as Class A, B, C, or D. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Class E airspace encompasses all Victor Airways. Only aircraft following instrument flight rules are required to establish two-way radio communication with air traffic control.

- **CLASS G:** Generally, that airspace not classified as Class A, B, C, D, or E. Class G airspace is uncontrolled for all aircraft. Class G airspace extends from the surface to the overlying Class E airspace.

**CONTROLLED FIRING AREA:** See special-use airspace.

**CROSSWIND:** A wind that is not parallel to a runway centerline or to the intended flight path of an aircraft.

**CROSSWIND COMPONENT:** The component of wind that is at a right angle to the runway centerline or the intended flight path of an aircraft.

**CROSSWIND LEG:** A flight path at right angles to the landing runway off its upwind end. See "traffic pattern."

**D**

**DECIBEL:** A unit of noise representing a level relative to a reference of a sound pressure 20 micro newtons per square meter.

**DECISION HEIGHT/DECISION ALTITUDE:** The height above the end of the runway surface at which a decision must be made by a pilot during the ILS or Precision Approach Radar approach to either continue the approach or to execute a missed approach.

**DECLARED DISTANCES:** The distances declared available for the airplane's takeoff runway, takeoff distance, accelerate-stop distance, and landing distance requirements. The distances are:

- **TAKEOFF RUNWAY AVAILABLE (TORA):** The runway length declared available and suitable for the ground run of an airplane taking off.

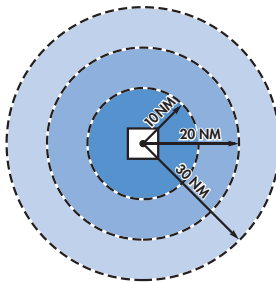
- **TAKEOFF DISTANCE AVAILABLE (TODA):** The TORA plus the length of any remaining runway and/or clear way beyond the far end of the TORA.
- **ACCELERATE-STOP DISTANCE AVAILABLE (ASDA):** The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff.
- **LANDING DISTANCE AVAILABLE (LDA):** The runway length declared available and suitable for landing.

**DEPARTMENT OF TRANSPORTATION:** The cabinet level federal government organization consisting of modal operating agencies, such as the Federal Aviation Administration, which was established to promote the coordination of federal transportation programs and to act as a focal point for research and development efforts in transportation.

**DISCRETIONARY FUNDS:** Federal grant funds that may be appropriated to an airport based upon designation by the Secretary of Transportation or Congress to meet a specified national priority such as enhancing capacity, safety, and security, or mitigating noise.

**DISPLACED THRESHOLD:** A threshold that is located at a point on the runway other than the designated beginning of the 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.



**DNL:** The 24-hour average sound level, in A-weighted decibels, obtained after the addition of ten decibels to sound levels for the periods between 10 p.m. and 7 a.m. as averaged over a span of one year. It is the FAA standard metric for determining the cumulative exposure of individuals to noise.

**DOWNWIND LEG:** A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg. Also see “traffic pattern.”

**E**

**EASEMENT:** The legal right of one party to use a portion of the total rights in real estate owned by another party. This may include the right of passage over, on, or below the property; certain air rights above the property, including view rights; and the rights to any specified form of development or activity, as well as any other legal rights in the property that may be specified in the easement document.

**ELEVATION:** The vertical distance measured in feet above mean sea level.

**ENPLANED PASSENGERS:** The total number of revenue passengers boarding aircraft, including originating, stop-over, and transfer passengers, in scheduled and nonscheduled services.

**ENPLANEMENT:** The boarding of a passenger, cargo, freight, or mail on an aircraft at an airport.

**ENTITLEMENT:** Federal funds for which a commercial service airport may be eligible based upon its annual passenger enplanements.

**ENVIRONMENTAL ASSESSMENT (EA):** An environmental analysis performed pursuant to the National Environmental Policy Act to determine whether an action would significantly affect the environment and thus require a more detailed environmental impact statement.

**ENVIRONMENTAL AUDIT:** An assessment of the current status of a party’s compliance with applicable environmental requirements of a party’s environmental compliance policies, practices, and controls.

**ENVIRONMENTAL IMPACT STATEMENT (EIS):** A document required of federal agencies by the National Environmental Policy Act for major projects are legislative proposals affecting the environment. It is a tool for decision-making describing the positive and negative effects of a proposed action and citing alternative actions.

**ESSENTIAL AIR SERVICE:** A federal program which guarantees air carrier service to selected small cities by providing subsidies as needed to prevent these cities from such service.



**F**

**FEDERAL AVIATION REGULATIONS:** The general and permanent rules established by the executive departments and agencies of the Federal Government for aviation, which are published in the Federal Register. These are the aviation subset of the Code of Federal Regulations.

**FEDERAL INSPECTION SERVICES:** The provision of customs and immigration services including passport inspection, inspection of baggage, the collection of duties on certain imported items, and the inspections for agricultural products, illegal drugs, or other restricted items.

**FINAL APPROACH:** A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. See “traffic pattern.”

**FINAL APPROACH AND TAKEOFF AREA (FATO).** A defined area over which the final phase of the helicopter approach to a hover, or a landing is completed and from which the takeoff is initiated.

**FINAL APPROACH FIX:** The designated point at which the final approach segment for an aircraft landing on a runway begins for a non-precision approach.

**FINDING OF NO SIGNIFICANT IMPACT (FONSI):** A public document prepared by a Federal agency that presents the rationale why a proposed action will not have a significant effect on the environment and for which an environmental impact statement will not be prepared.

**FIXED BASE OPERATOR (FBO):** A provider of services to users of an airport. Such services include, but are not limited to, hangaring, fueling, flight training, repair, and maintenance.

**FLIGHT LEVEL:** A measure of altitude used by aircraft flying above 18,000 feet. Flight levels are indicated by three digits representing the pressure altitude in hundreds of feet. An airplane flying at flight level 360 is flying at a pressure altitude of 36,000 feet. This is expressed as FL 360.

**FLIGHT SERVICE STATION:** An operations facility in the national flight advisory system which utilizes data interchange facilities for the collection and dissemination of Notices to Airmen, weather, and administrative data and which provides pre-flight

and in-flight advisory services to pilots through air and ground based communication facilities.

**FRANGIBLE NAVAID:** A navigational aid which retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.

**G**

**GENERAL AVIATION:** That portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of convenience and necessity, and large aircraft commercial operators.

**GENERAL AVIATION AIRPORT:** An airport that provides air service to only general aviation.

**GLIDESLOPE (GS):** Provides vertical guidance for aircraft during approach and landing. The glideslope consists of the following:

1. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or
2. Visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing.

**GLOBAL POSITIONING SYSTEM (GPS):** A system of 48 satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.

**GROUND ACCESS:** The transportation system on and around the airport that provides access to and from the airport by ground transportation vehicles for passengers, employees, cargo, freight, and airport services.

**H**

**HELIPAD:** A designated area for the takeoff, landing, and parking of helicopters.

**HIGH INTENSITY RUNWAY LIGHTS:** The highest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.



**HIGH-SPEED EXIT TAXIWAY:** A long radius taxiway designed to expedite aircraft turning off the runway after landing (at speeds to 60 knots), thus reducing runway occupancy time.

**HORIZONTAL SURFACE:** An imaginary obstruction-limiting surface defined in FAR Part 77 that is specified as a portion of a horizontal plane surrounding a runway located 150 feet above the established airport elevation. The specific horizontal dimensions of this surface are a function of the types of approaches existing or planned for the runway.

**I**

**INITIAL APPROACH FIX:** The designated point at which the initial approach segment begins for an instrument approach to a runway.

**INSTRUMENT APPROACH PROCEDURE:** 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.

**INSTRUMENT FLIGHT RULES (IFR):** Procedures for the conduct of flight in weather conditions below Visual Flight Rules weather minimums. The term IFR is often also used to define weather conditions and the type of flight plan under which an aircraft is operating.

**INSTRUMENT LANDING SYSTEM (ILS):** A precision instrument approach system which normally consists of the following electronic components and visual aids:

1. Localizer.
2. Glide Slope.
3. Outer Marker.
4. Middle Marker.
5. Approach Lights.

**INSTRUMENT METEOROLOGICAL CONDITIONS:** Meteorological conditions expressed in terms of specific visibility and ceiling conditions that are less than the minimums specified for visual meteorological conditions.

**ITINERANT OPERATIONS:** Operations by aircraft that are not based at a specified airport.

**K**

**KNOTS:** A unit of speed length used in navigation that is equivalent to the number of nautical miles traveled in one hour.

**L**

**LANDSIDE:** The portion of an airport that provides the facilities necessary for the processing of passengers, cargo, freight, and ground transportation vehicles.

**LANDING DISTANCE AVAILABLE (LDA):** See declared distances.

**LARGE AIRPLANE:** An airplane that has a maximum certified takeoff weight in excess of 12,500 pounds.

**LOCAL AREA AUGMENTATION SYSTEM:** A differential GPS system that provides localized measurement correction signals to the basic GPS signals to improve navigational accuracy integrity, continuity, and availability.

**LOCAL OPERATIONS:** Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.

**LOCAL TRAFFIC:** Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from the local practice areas, or aircraft executing practice instrument approach procedures. Typically, this includes touch and-go training operations.

**LOCALIZER:** The component of an ILS which provides course guidance to the runway.

**LOCALIZER TYPE DIRECTIONAL AID (LDA):** A facility of comparable utility and accuracy to a localizer, but is not part of a complete ILS and is not aligned with the runway.

**LONG RANGE NAVIGATION SYSTEM (LORAN):** Long range navigation is an electronic navigational aid which determines aircraft position and speed by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. Loran is used for en route navigation.

**LOW INTENSITY RUNWAY LIGHTS:** The lowest classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

**M**

**MEDIUM INTENSITY RUNWAY LIGHTS:** The middle classification in terms of intensity or brightness for lights designated for use in delineating the sides of a runway.

**MICROWAVE LANDING SYSTEM (MLS):** An instrument approach and landing system that provides precision guidance in azimuth, elevation, and distance measurement.

**MILITARY OPERATIONS:** Aircraft operations that are performed in military aircraft.

**MILITARY OPERATIONS AREA (MOA):** See special-use airspace

**MILITARY TRAINING ROUTE:** An air route depicted on aeronautical charts for the conduct of military flight training at speeds above 250 knots.

**MISSED APPROACH COURSE (MAC):** The flight route to be followed if, after an instrument approach, a landing is not affected, and occurring normally:

1. When the aircraft has descended to the decision height and has not established visual contact; or
2. When directed by air traffic control to pull up or to go around again.

**MOVEMENT AREA:** The runways, taxiways, and other areas of an airport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports with a tower, air traffic control clearance is required for entry onto the movement area.

**N**

**NATIONAL AIRSPACE SYSTEM:** The network of air traffic control facilities, air traffic control areas, and navigational facilities through the U.S.

**NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS:** The national airport system plan developed by the Secretary of Transportation on a biannual basis for the development of public use airports to meet national air transportation needs.

**NATIONAL TRANSPORTATION SAFETY BOARD:** A federal government organization established to investigate and determine the probable cause of transportation accidents, to recommend equipment and procedures to enhance transportation safety, and to review on appeal the suspension or revocation of any certificates or licenses issued by the Secretary of Transportation.

**NAUTICAL MILE:** A unit of length used in navigation which is equivalent to the distance spanned by one minute of arc in latitude, that is, 1,852 meters or 6,076 feet. It is equivalent to approximately 1.15 statute mile.

**NAVAID:** A term used to describe any electrical or visual air navigational aids, lights, signs, and associated supporting equipment (i.e. PAPI, VASI, ILS, etc.)

**NAVIGATIONAL AID:** A facility used as, available for use as, or designed for use as an aid to air navigation.

**NOISE CONTOUR:** A continuous line on a map of the airport vicinity connecting all points of the same noise exposure level.

**NON-DIRECTIONAL BEACON (NDB):** A beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his or her bearing to and from the radio beacon and home on, or track to, the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

**NON-PRECISION APPROACH PROCEDURE:** A standard instrument approach procedure in which no electronic glide slope is provided, such as VOR, TACAN, NDB, or LOC.

**NOTICE TO AIRMEN:** A notice containing information concerning the establishment, condition, or change in any component of or hazard in the National Airspace System, the timely knowledge of which is considered essential to personnel concerned with flight operations.

O

**OBJECT FREE AREA (OFA):** An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

**OBSTACLE FREE ZONE (OFZ):** The airspace below 150 feet above the established airport elevation and along the runway and extended runway centerline that is required to be kept clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance for aircraft landing or taking off from the runway, and for missed approaches.

**ONE-ENGINE INOPERABLE SURFACE:** A surface emanating from the runway end at a slope ratio of 62.5:1. Air carrier airports are required to maintain a technical drawing of this surface depicting any object penetrations by January 1, 2010.

**OPERATION:** The take-off, landing, or touch-and-go procedure by an aircraft on a runway at an airport.

**OUTER MARKER (OM):** An ILS navigation facility in the terminal area navigation system located four to seven miles from the runway edge on the extended centerline, indicating to the pilot that he/she is passing over the facility and can begin final approach.

P

**PILOT CONTROLLED LIGHTING:** Runway lighting systems at an airport that are controlled by activating the microphone of a pilot on a specified radio frequency.

**PRECISION APPROACH:** A standard instrument approach procedure which provides runway alignment and glide slope (descent) information. It is categorized as follows:

- **CATEGORY I (CAT I):** A precision approach which provides for approaches with a decision height of not less than 200 feet and visibility not less than 1/2 mile or Runway Visual Range (RVR) 2400 (RVR 1800) with operative touchdown zone and runway centerline lights.

- **CATEGORY II (CAT II):** A precision approach which provides for approaches with a decision height of not less than 100 feet and visibility not less than 1200 feet RVR.

- **CATEGORY III (CAT III):** A precision approach which provides for approaches with minima less than Category II.

**PRECISION APPROACH PATH INDICATOR (PAPI):** A lighting system providing visual approach slope guidance to aircraft during a landing approach. It is similar to a VASI but provides a sharper transition between the colored indicator lights.

**PRECISION APPROACH RADAR:** A radar facility in the terminal air traffic control system used to detect and display with a high degree of accuracy the direction, range, and elevation of an aircraft on the final approach to a runway.

**PRECISION OBJECT FREE AREA (POFA):** An area centered on the extended runway centerline, beginning at the runway threshold and extending behind the runway threshold that is 200 feet long by 800 feet wide. The POFA is a clearing standard which requires the POFA to be kept clear of above ground objects protruding above the runway safety area edge elevation (except for frangible NAVAIDs). The POFA applies to all new authorized instrument approach procedures with less than 3/4 mile visibility.

**PRIMARY AIRPORT:** A commercial service airport that enplanes at least 10,000 annual passengers.

**PRIMARY SURFACE:** An imaginary obstruction limiting surface defined in FAR Part 77 that is specified as a rectangular surface longitudinally centered about a runway. The specific dimensions of this surface are a function of the types of approaches existing or planned for the runway.

**PROHIBITED AREA:** See special-use airspace.

**PVC:** Poor visibility and ceiling. Used in determining Annual Service Volume. PVC conditions exist when the cloud ceiling is less than 500 feet and visibility is less than one mile.

**R**

**RADIAL:** A navigational signal generated by a Very High Frequency Omni-directional Range or VORTAC station that is measured as an azimuth from the station.

**REGRESSION ANALYSIS:** A statistical technique that seeks to identify and quantify the relationships between factors associated with a forecast.

**REMOTE COMMUNICATIONS OUTLET (RCO):** An unstaffed transmitter receiver/facility remotely controlled by air traffic personnel. RCOs serve flight service stations (FSSs). RCOs were established to provide ground-to-ground communications between air traffic control specialists and pilots at satellite airports for delivering en route clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/landing times.

**REMOTE TRANSMITTER/RECEIVER (RTR):** See remote communications outlet. RTRs serve ARTCCs.

**RELIEVER AIRPORT:** An airport to serve general aviation aircraft which might otherwise use a congested air-carrier served airport.

**RESTRICTED AREA:** See special-use airspace.

**RNAV:** Area navigation - airborne equipment which permits flights over determined tracks within prescribed accuracy tolerances without the need to overfly ground-based navigation facilities. Used en route and for approaches to an airport.

**RUNWAY:** A defined rectangular area on an airport prepared for aircraft landing and takeoff. Runways are normally numbered in relation to their magnetic direction, rounded off to the nearest 10 degrees. For example, a runway with a magnetic heading of 180 would be designated Runway 18. The runway heading on the opposite end of the runway is 180 degrees from that runway end. For example, the opposite runway heading for Runway 18 would be Runway 36 (magnetic heading of 360). Aircraft can takeoff or land from either end of a runway, depending upon wind direction.

**RUNWAY ALIGNMENT INDICATOR LIGHT:** A series of high intensity sequentially flashing lights installed

on the extended centerline of the runway usually in conjunction with an approach lighting system.

**RUNWAY DESIGN CODE:** A code signifying the design standards to which the runway is to be built.

**RUNWAY END IDENTIFICATION LIGHTING (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.

**RUNWAY GRADIENT:** The average slope, measured in percent, between the two ends of a runway.

**RUNWAY PROTECTION ZONE (RPZ):** An area off the runway end to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape. Its dimensions are determined by the aircraft approach speed and runway approach type and minima.

**RUNWAY REFERENCE CODE:** A code signifying the current operational capabilities of a runway and associated taxiway.

**RUNWAY SAFETY AREA (RSA):** A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

**RUNWAY VISIBILITY ZONE (RVZ):** An area on the airport to be kept clear of permanent objects so that there is an unobstructed line of sight from any point five feet above the runway centerline to any point five feet above an intersecting runway centerline.

**RUNWAY VISUAL RANGE (RVR):** An instrumentally derived value, in feet, representing the horizontal distance a pilot can see down the runway from the runway end.

**S**

**SCOPE:** The document that identifies and defines the tasks, emphasis, and level of effort associated with a project or study.

**SEGMENTED CIRCLE:** A system of visual indicators designed to provide traffic pattern information at airports without operating control towers.



**SHOULDER:** An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement; enhanced drainage; and blast protection. The shoulder does not necessarily need to be paved.

**SLANT-RANGE DISTANCE:** The straight line distance between an aircraft and a point on the ground.

**SMALL AIRCRAFT:** An aircraft that has a maximum certified takeoff weight of up to 12,500 pounds.

**SPECIAL-USE AIRSPACE:** Airspace of defined dimensions identified by a surface area wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Special-use airspace classifications include:

- **ALERT AREA:** Airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft.
- **CONTROLLED FIRING AREA:** Airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons or property on the ground.
- **MILITARY OPERATIONS AREA (MOA):** Designated airspace with defined vertical and lateral dimensions established outside Class A airspace to separate/segregate certain military activities from instrument flight rule (IFR) traffic and to identify for visual flight rule (VFR) traffic where these activities are conducted.
- **PROHIBITED AREA:** Designated airspace within which the flight of aircraft is prohibited.
- **RESTRICTED AREA:** Airspace designated under Federal Aviation Regulation (FAR) 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use. When not in use by the using agency, IFR/VFR operations can be authorized by the controlling air traffic control facility.
- **WARNING AREA:** Airspace which may contain hazards to nonparticipating aircraft.

**STANDARD INSTRUMENT DEPARTURE (SID):** A preplanned coded air traffic control IFR departure routing, preprinted for pilot use in graphic and textual form only.

**STANDARD INSTRUMENT DEPARTURE PROCEDURES:** A published standard flight procedure to be utilized following takeoff to provide a transition between the airport and the terminal area or en route airspace.

**STANDARD TERMINAL ARRIVAL ROUTE (STAR):** A preplanned coded air traffic control IFR arrival routing, preprinted for pilot use in graphic and textual or textual form only.

**STOP-AND-GO:** A procedure wherein an aircraft will land, make a complete stop on the runway, and then commence a takeoff from that point. A stop-and-go is recorded as two operations: one operation for the landing and one operation for the takeoff.

**STOPWAY:** An area beyond the end of a takeoff runway that is designed to support an aircraft during an aborted takeoff without causing structural damage to the aircraft. It is not to be used for takeoff, landing, or taxiing by aircraft.

**STRAIGHT-IN LANDING/APPROACH:** A landing made on a runway aligned within 30 degrees of the final approach course following completion of an instrument approach.

**T**.....

**TACTICAL AIR NAVIGATION (TACAN):** An ultrahigh frequency electronic air navigation system which provides suitably-equipped aircraft a continuous indication of bearing and distance to the TACAN station.

**TAKEOFF RUNWAY AVAILABLE (TORA):**  
See declared distances.

**TAKEOFF DISTANCE AVAILABLE (TODA):**  
See declared distances.

**TAXILANE:** The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

**TAXIWAY:** A defined path established for the taxiing of aircraft from one part of an airport to another.

**TAXIWAY DESIGN GROUP:** A classification of airplanes based on outer to outer Main Gear Width (MGW) and Cockpit to Main Gear (CMG) distance.

**TAXIWAY SAFETY AREA (TSA):** A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

**TERMINAL INSTRUMENT PROCEDURES:** Published flight procedures for conducting instrument approaches to runways under instrument meteorological conditions.

**TERMINAL RADAR APPROACH CONTROL:** An element of the air traffic control system responsible for monitoring the en-route and terminal segment of air traffic in the airspace surrounding airports with moderate to high levels of air traffic.

**TETRAHEDRON:** A device used as a landing direction indicator. The small end of the tetrahedron points in the direction of landing.

**THRESHOLD:** The beginning of that portion of the runway available for landing. In some instances the landing threshold may be displaced.

**TOUCH-AND-GO:** An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A touch-and go is recorded as two operations: one operation for the landing and one operation for the takeoff.

**TOUCHDOWN:** The point at which a landing aircraft makes contact with the runway surface.

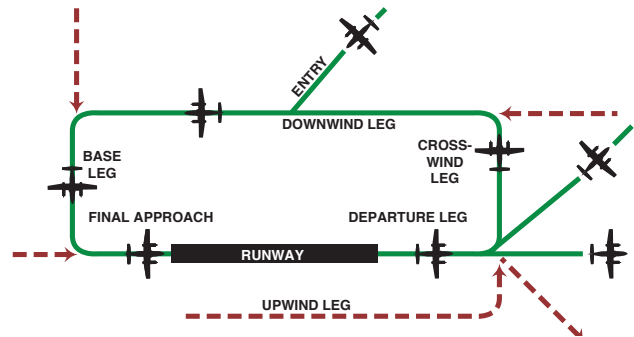
**TOUCHDOWN AND LIFT-OFF AREA (TLOF):** A load bearing, generally paved area, normally centered in the FATO, on which the helicopter lands or takes off.

**TOUCHDOWN ZONE (TDZ):** The first 3,000 feet of the runway beginning at the threshold.

**TOUCHDOWN ZONE ELEVATION (TDZE):** The highest elevation in the touchdown zone.

**TOUCHDOWN ZONE (TDZ) 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.

**TRAFFIC PATTERN:** The traffic flow that is prescribed for aircraft landing at or taking off from an airport. The components of a typical traffic pattern are the upwind leg, crosswind leg, downwind leg, base leg, and final approach.



## U

**UNCONTROLLED AIRPORT:** An airport without an air traffic control tower at which the control of Visual Flight Rules traffic is not exercised.

**UNCONTROLLED AIRSPACE:** Airspace within which aircraft are not subject to air traffic control.

**UNIVERSAL COMMUNICATION (UNICOM):** A nongovernment communication facility which may provide airport information at certain airports. Locations and frequencies of UNICOM's are shown on aeronautical charts and publications.

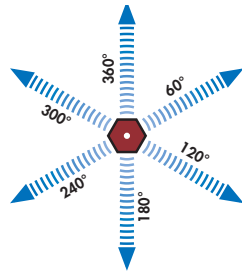
**UPWIND LEG:** A flight path parallel to the landing runway in the direction of landing. See "traffic pattern."

## V

**VECTOR:** A heading issued to an aircraft to provide navigational guidance by radar.

**VERY HIGH FREQUENCY/ OMNIDIRECTIONAL RANGE (VOR):** A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the national airspace system. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature.

**VERY HIGH FREQUENCY OMNI-DIRECTIONAL RANGE/TACTICAL AIR NAVIGATION (VORTAC):** A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance-measuring equipment (DME) at one site.



**VICTOR AIRWAY:** A control area or portion thereof established in the form of a corridor, the centerline of which is defined by radio navigational aids.

**VISUAL APPROACH:** An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of an air traffic control facility and having an air traffic control authorization, may proceed to the airport of destination in VFR conditions.

**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 VASI's which provide two visual guide paths to the same runway.

**VISUAL FLIGHT RULES (VFR):** Rules that govern the procedures for conducting flight under visual conditions. The term VFR is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan.

**VISUAL METEOROLOGICAL CONDITIONS:** Meteorological conditions expressed in terms of specific visibility and ceiling conditions which are equal to or greater than the threshold values for instrument meteorological conditions.

**VOR:** See "Very High Frequency Omnidirectional Range Station."

**VORTAC:** See "Very High Frequency Omnidirectional Range Station/Tactical Air Navigation."

**W**

**WARNING AREA:** See special-use airspace.

**WIDE AREA AUGMENTATION SYSTEM:** An enhancement of the Global Positioning System that includes integrity broadcasts, differential corrections, and additional ranging signals for the purpose of providing the accuracy, integrity, availability, and continuity required to support all phases of flight.

## Abbreviations

**AC:** advisory circular

**ADF:** automatic direction finder

**ADG:** airplane design group

**AFSS:** automated flight service station

**AGL:** above ground level

**AIA:** annual instrument approach

**AIP:** Airport Improvement Program

**AIR-21:** Wendell H. Ford Aviation Investment and Reform Act for the 21st Century

**ALS:** approach lighting system

**ALSF-1:** standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT I configuration)

**ALSF-2:** standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT II configuration)

**AOA:** Aircraft Operation Area

**APV:** instrument approach procedure with vertical guidance

**ARC:** airport reference code

<b>ARFF:</b> aircraft rescue and fire fighting	<b>ILS:</b> instrument landing system
<b>ARP:</b> airport reference point	<b>IM:</b> inner marker
<b>ARTCC:</b> air route traffic control center	<b>LDA:</b> localizer type directional aid
<b>ASDA:</b> accelerate-stop distance available	<b>LDA:</b> landing distance available
<b>ASR:</b> airport surveillance radar	<b>LIRL:</b> low intensity runway edge lighting
<b>ASOS:</b> automated surface observation station	<b>LMM:</b> compass locator at middle marker
<b>ATCT:</b> airport traffic control tower	<b>LOM:</b> compass locator at outer marker
<b>ATIS:</b> automated terminal information service	<b>LORAN:</b> long range navigation
<b>AVGAS:</b> aviation gasoline - typically 100 low lead (100LL)	<b>MALS:</b> medium intensity approach lighting system with indicator lights
<b>AWOS:</b> automatic weather observation station	<b>MIRL:</b> medium intensity runway edge lighting
<b>BRL:</b> building restriction line	<b>MITL:</b> medium intensity taxiway edge lighting
<b>CFR:</b> Code of Federal Regulation	<b>MLS:</b> microwave landing system
<b>CIP:</b> capital improvement program	<b>MM:</b> middle marker
<b>DME:</b> distance measuring equipment	<b>MOA:</b> military operations area
<b>DNL:</b> day-night noise level	<b>MSL:</b> mean sea level
<b>DWL:</b> runway weight bearing capacity of aircraft with dual-wheel type landing gear	<b>NAVAID:</b> navigational aid
<b>DTWL:</b> runway weight bearing capacity of aircraft with dual-tandem type landing gear	<b>NDB:</b> nondirectional radio beacon
<b>FAA:</b> Federal Aviation Administration	<b>NM:</b> nautical mile (6,076.1 feet)
<b>FAR:</b> Federal Aviation Regulation	<b>NPES:</b> National Pollutant Discharge Elimination System
<b>FBO:</b> fixed base operator	<b>NPIAS:</b> National Plan of Integrated Airport Systems
<b>FY:</b> fiscal year	<b>NPRM:</b> notice of proposed rule making
<b>GPS:</b> global positioning system	<b>ODALS:</b> omnidirectional approach lighting system
<b>GS:</b> glide slope	<b>OFA:</b> object free area
<b>HIRL:</b> high intensity runway edge lighting	<b>OFZ:</b> obstacle free zone
<b>IFR:</b> instrument flight rules (FAR Part 91)	<b>OM:</b> outer marker



<b>PAC:</b> planning advisory committee	<b>SID:</b> standard instrument departure
<b>PAPI:</b> precision approach path indicator	<b>SM:</b> statute mile (5,280 feet)
<b>PFC:</b> porous friction course	<b>SRE:</b> snow removal equipment
<b>PFC:</b> passenger facility charge	<b>SSALF:</b> simplified short approach lighting system with runway alignment indicator lights
<b>PCL:</b> pilot-controlled lighting	<b>STAR:</b> standard terminal arrival route
<b>PIW:</b> public information workshop	<b>SWL:</b> runway weight bearing capacity for aircraft with single-wheel tandem type landing gear
<b>PLASI:</b> pulsating visual approach slope indicator	<b>TACAN:</b> tactical air navigational aid
<b>POFA:</b> precision object free area	<b>TAF:</b> Federal Aviation Administration (FAA) Terminal Area Forecast
<b>PVASI:</b> pulsating/steady visual approach slope indicator	<b>TDG:</b> Taxiway Design Group
<b>PVC:</b> poor visibility and ceiling	<b>TLOF:</b> Touchdown and lift-off
<b>RCO:</b> remote communications outlet	<b>TDZ:</b> touchdown zone
<b>RRC:</b> Runway Reference Code	<b>TDZE:</b> touchdown zone elevation
<b>RDC:</b> Runway Design Code	<b>TODA:</b> takeoff distance available
<b>REIL:</b> runway end identification lighting	<b>TORA:</b> takeoff runway available
<b>RNAV:</b> area navigation	<b>TRACON:</b> terminal radar approach control
<b>RPZ:</b> runway protection zone	<b>VASI:</b> visual approach slope indicator
<b>RSA:</b> runway safety area	<b>VFR:</b> visual flight rules (FAR Part 91)
<b>RTR:</b> remote transmitter/receiver	<b>VHF:</b> very high frequency
<b>RVR:</b> runway visibility range	<b>VOR:</b> very high frequency omni-directional range
<b>RVZ:</b> runway visibility zone	<b>VORTAC:</b> VOR and TACAN collocated
<b>SALS:</b> short approach lighting system	
<b>SASP:</b> state aviation system plan	
<b>SEL:</b> sound exposure level	