



# Appendix A

## Glossary

## APPENDIX A – GLOSSARY

**ADVISORY CIRCULAR (AC)** - Federal Aviation Administration Advisory Circular. This is a FAA document, which provides guidance on aviation issues.

**AIRCRAFT APPROACH CATEGORY** - An aircraft approach category is a FAA grouping of aircraft based on approach speed. The aircraft approach categories are:

- (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.

**AIR NAVIGATION AID FACILITY (NAVAID)** - Any facility used or available for use as an aid to air navigation, including landing areas; lights; any apparatus or equipment for disseminating weather information, for signaling, for radio direction-finding, or for radio or other electronic communication; and any other structure or mechanism having a similar purpose for guiding or controlling flight in the air or during the landing or takeoff of aircraft.

**AIRPLANE DESIGN GROUP (PHYSICAL CHARACTERISTICS)** - The FAA airplane Design Group subdivides airplanes by wingspan. The airplane Design Groups are:

- (1) Group I: Wingspan up to but not including 49 feet (15 m);
- (2) Group II: Wingspan 49 feet (15 m) up to but not including 79 feet (24 m);
- (3) Group III: Wingspan 79 feet (24 m) up to but not including 118 feet (36 m);
- (4) Group IV: Wingspan 118 feet (36 m) up to but not including 171 feet (52 m);
- (5) Group V: Wingspan 171 feet (52 m) up to but not including 197 feet (60 m)
- (6) Group VI: Wingspan 197 feet (60 m) up to but not including 262 feet (80 m).

**AIRPORT HAZARD** - An airport hazard is any structure or natural object located on or in the vicinity of a public airport, or any use of land near such airport, that obstructs the airspace

required for the flight of aircraft in landing or taking off at the airport or is otherwise hazardous to aircraft landing, taking off, or taxiing at the airport.

**AIRPORT IMPROVEMENT PROGRAM (AIP)** – FAA program that is the primary source of funding for airport projects as grants. This funding is provided at specific levels, with the funding priority based on the airport's Capital Improvement Program (CIP)

**AIRPORT TRAFFIC CONTROL TOWER (ATCT)** - A facility providing airport traffic control service to an airport and its associated airspace area.

**APPROACH LIGHT SYSTEM (ALS)** - An airport lighting system designed to assist pilots in finding the runway during instrument approaches for landing. The lights extend from the runway end outwards along the extended centerline for a certain distance, depending on the type of runway.

**ATC - 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 enroute air traffic control services. ATC is provided by the Federal Aviation Administration, a branch of the federal government under the Department of Transportation.

**APPROACH END OF RUNWAY** - The approach end of runway is the near end of the runway as viewed from the cockpit of a landing airplane.

**APPROACH SURFACE** - An imaginary surface extending out from the end of the Primary Surface at a slope and width defined in FAR Part 77, above which the airspace must be free of obstacles as aircraft approach or depart the runway.

**BASED AIRCRAFT** - An aircraft permanently stationed at an airport by agreement between the airport owner (management or FBO) and the aircraft owner.

**CAPITAL IMPROVEMENT PROGRAM (CIP) –** The Capital Improvement Program provides a schedule of development for the proposed projects identified in an Airport Master Plan.

**CATEGORY I, II, AND III LANDINGS -**

- Category I: 200 foot ceiling and 2400 foot RVR;
- Category II: 100 foot ceiling and 1200 foot RVR;
- Category IIIA: zero ceiling and 700 foot RVR;
- Category IIIB: zero ceiling and 150 foot RVR;
- Category IIIC: zero ceiling and zero RVR.

To make landing under these conditions, aircraft must be equipped with special avionics, pilot must be qualified to land under specified conditions for that category, and aircraft must have proper ground equipment for conditions.

**CEILING -** The height above the earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken" "overcast", or "obscured" and not classified as "thin" or "partial". The ceiling is reported in feet above the surface in a given location.

**CLEAR ZONE -** Defined by FAR Part 77 as an area off each runway end to be void of trees and other obstacles. The FAA has replaced this area with the Runway Protection Zone (RPZ).

**CLEARWAY -** A clearway is an area beyond the stop end of runway, not less than 500 feet (150 m) wide, centered on the extended centerline of the runway, and controlled by the airport authorities. -The clearway is expressed in terms of a geometric plane extending from the end of the runway, with an upward slope not exceeding 1.25 percent, above which no object nor terrain may protrude. Threshold lights, however, may protrude above the clearway plane if their height above the end of the runway is 26 inches (66 cm) or less and if they are located to each side of the runway. A clearway increases the allowable operating takeoff weights of turbine-powered airplanes. For most airplanes, the maximum usable length of the clearway is less than 1,000 feet (300 m).

**DECISION HEIGHT (DH) -** The height 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.

**DECLARED DISTANCE -** Declared distances are the runway distances that limit turbine-powered airplane operations and thus the airport operational capacity. The distances are the accelerated stop -distance available (ASDA), the Landing Distance Available (LDA), the Takeoff Distance Available (TODA), and the Takeoff Run Available (TORA).

(1) ASDA is equal to TORA plus the length of the stopway (SWY), if provided.

(2) LDA is equal to the length of runway available and suitable for the landing ground run of airplanes.

(3) TODA is equal to TORA plus the length of the clearway (CWY) if provided.

(4) TORA is equal to the length of runway available and suitable for the takeoff ground run of airplanes.

**DESIGN AIRCRAFT -** The Design Aircraft is an aircraft whose dimensions and/or other requirements make it the most demanding aircraft for an airport's facilities (i.e. runways and taxiways). The Design Aircraft is used as the basis for airport planning and design; because if the airport's facilities are designed to accommodate the Design Aircraft, they can accommodate less demanding aircraft as well. An aircraft can be utilized as the Design Aircraft for an airport if it will (has) conduct (ed) 500 or more annual operations (250 landings) at that airport.

**DISPLACED THRESHOLD -** A displaced threshold is a threshold located at a point on the runway other than at the runway end. Except for the approach standards defined in FAR Part 77, approach surfaces are associated with the threshold location.

**DISTANCE MEASURING EQUIPMENT (DME) -** Equipment (airborne and ground) used to measure, in nautical miles, the distance of an aircraft from a NAVAID.

**DME FIX -** A geographical position determined by reference to a NAVAID, which provides distance and azimuth information. The DME fix is defined by a specified distance in nautical miles and a radial in degrees magnetic from that aid.

**FEDERAL AVIATION REGULATION (FAR)** - Regulations developed by the FAA in order to maintain safety, define standards, and institute uniform practices throughout the industry.

**FINAL APPROACH FIX (FAF)** - The fix from or over which final approach (IFR) to an airport is executed.

**FINAL APPROACH** - A flight path of a landing aircraft in the direction of landing along the extended runway centerline from the base leg to the runway. For instrument approaches, the final approach begins at the final approach fix (FAF).

**FIX** - A geographical position determined by visual reference to the surface by reference to one or more radio NAVAIDs, by celestial plotting, or by another navigational device.

**FIXED BASE OPERATION OR FIXED BASE OPERATOR (FBO)** - A sales and/or service facility located at an airport, or the person who operates such a facility.

**GENERAL AVIATION (GA)** - All civil aircraft and aviation activity except that of the certified air carriers and military operations. GA includes corporate flying and private flying (recreation or personal).

**GLIDESLOPE** - Vertical guidance provided by a ground based radio transmitter to an aircraft landing by use of an Instrument Landing System. This guidance informs the pilot if the aircraft is either too high or too low as it flies its approach to the runway for landing.

**GLOBAL POSITIONING SYSTEM (GPS)** - GPS is a navigational system based on the use of multiple satellites strategically placed in the earth's orbit. GPS is used by aircraft equipped with the proper GPS receiving equipment for enroute navigation, as well as instrument approaches to airports for landing. GPS allows aircraft to fly more freely and set waypoints (destinations) without the need or reliance on ground based radio navigation facilities such as VORs.

**HAZARD TO AIR NAVIGATION** - Any object which has a substantial adverse effect upon the safe and efficient use of navigable air-space by aircraft or on the operation of air navigation facilities is a hazard to air navigation. The FAA

will conduct an aeronautical study of any object to determine whether or not the object is a hazard to air navigation. As part of the airport layout plan approval process, the FAA conducts aeronautical studies of all obstructions to air navigation identified on the Airport Layout Plan. Hazards or potential hazards to air navigation are eliminated by either altering the existing or proposed object or adjusting the aviation operation to accommodate the object, in that order of priority.

**HEIGHT ABOVE AIRPORT (HAA)** - Indicates the height of the MDA above the published airport elevation. This is published in conjunction with circling minimums.

**HOLDING** - A predetermined maneuver which keeps an aircraft within a specified airspace while awaiting further clearance.

**HOLDING FIX** - A specified geographical point or NAVAID used as a reference point in establishing and maintaining the position of an aircraft while holding.

**IFR CONDITIONS** - Weather conditions below the minimum prescribed for flight under VFR.

**INITIAL APPROACH** - 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 segment of the final approach course.

**INITIAL APPROACH ALTITUDE** - The altitude prescribed for the initial approach segment of an instrument approach.

**INSTRUMENT FLIGHT RULES (IFR)** - Aircraft operation rules as pre-scribed by Federal Aviation Regulations for flying by instruments.

**INSTRUMENT LANDING SYSTEM (ILS)** - A system of electronic devices whereby the pilot guides his aircraft to a runway solely by reference to instruments in the cockpit. In some instances the signals received from the ground can be fed into the automatic pilot for automatically controlled approaches. The ILS consists of a Localizer, Glideslope and Marker Beacons (and Approach Light System).

**ITINERANT OPERATIONS** - All aircraft

operations other than local operations.

**LOCAL OPERATION** - Operations performed by an aircraft that:

- (a) operates within the local traffic pattern or within sight of the airport;
- (b) are known to be departing for or arriving from an Airport within a 20 mile radius of the Airport in question;
- (c) execute practice maneuvers such as touch and goes or simulated instrument approaches at the airport.

The majority of local operations are conducted by based aircraft.

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

**LOCALIZER** - A ground based radio transmitter which provides pilots with course guidance as they approach a runway for landing utilizing a Instrument Landing System. The course guidance is known as “azimuth”.

**MEDIUM INTENSITY APPROACH LIGHT SYSTEM (MALS)** - An airport approach light system of medium intensity.

**MARKER BEACON** - An instrument, which provides aural and/or visual identification of a specific position along a Instrument Landing System approach to a runway.

**MEDIUM INTENSITY RUNWAY LIGHTS (MIRL)** - An airport runway lighting system of medium intensity.

**MOVEMENT AREA** - The runways, taxiways, and other areas of an airport which are used for taxiing, takeoff, and landing of aircraft, excluding loading ramps and parking areas.

**NAUTICAL MILE (NM)** - The unit measure of distance in both nautical and aeronautical context. A nautical mile equals 1.15 statute miles (6,080 feet). The measure of speed in regards to nautical miles is known as KNOTS (nautical miles per hour).

**NON DIRECTIONAL BEACON (NDB)** - A radio beacon transmitting non directional signals whereby an aircraft equipped with

direction finding equipment can determine headings to or from the radio beacon and “home” in on a track to or from it.

**NATIONAL AIRSPACE SYSTEM (NAS)** - The common system of air navigation and air traffic control encompassing communications facilities, air navigation facilities, airways, controlled airspace special use airspace, and flight procedures authorized by FAR's for domestic and international aviation.

**NON-PRECISION APPROACH** - A standard instrument approach procedure in which no electronic glide slope is provided. A localizer, NDB, or VOR is often used.

**NON PRECISION INSTRUMENT RUNWAY** - A non precision instrument runway is one with an instrument approach procedure utilizing air navigation facilities, with only horizontal guidance, or area-type navigation equipment for which a straight in non precision instrument approach procedure has been approved or planned, and no precision approach facility of procedure is planned or indicated on an FAA or DOD approved Airport Layout Plan, or on other FAA or DOD planning documents.

**NOTICE TO AIRMEN (NOTAM)**- A notice identified either as a NOTAM or an Airmen Advisory 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 essential to personnel concerned with flight operations.

(1) NOTAM : A Notice to Airmen in message form requiring expeditious and wide dissemination by telecommunications means.

(2) AIRMEN ADVISORY : A Notice to Airmen normally only given local dissemination, during pre-flight or in-flight briefing, or otherwise during contact with pilots.

**OBSTACLE FREE ZONE (OFZ)** - An OFZ is an area:

(1) Comprised of the runway OFZ, the approach OFZ, and the inner-transitional surface OFZ.

(A) Runway OFZ: The runway OFZ is the volume of space above a surface longitudinally

centered on the runway. The elevation of any point on the surface is the same as the elevation of the nearest point on the runway centerline. The runway OFZ extends 200 feet (60 m) beyond each end of the runway and its width is:

1) 120 feet (36 m) for visual runways serving or expected to serve only small airplanes with approach speeds less than 50 knots.

2) 250 feet (75 m) for non precision instrument and visual runways serving or expected to serve small airplanes with approach speeds of 50 knots or more and no large airplanes.

3) 300 feet (90 m) for precision instrument runways serving or expected to serve only small airplanes.

4) 180 feet (54 m), plus the wingspan of the most demanding airplane, plus 20 feet (6 m) per 1,000 feet (300 m) or airport elevation; or, 400 feet (120 m), whichever is greater, for runways serving or expected to serve large airplanes.

(B) Approach OFZ: The approach OFZ is the volume of space above a surface which has the same width as the runway OFZ and rises at a slope of 50 (horizontal) to 1 (vertical) away from the runway into the approach area. It begins 200 feet (60 m) from the runway threshold at the same elevation as the runway threshold and it extends 200 feet (60 m) beyond the last light unit in the approach lighting system. The approach OFZ applies only to runways with an approach lighting system.

(C) Inner-Transitional Surface OFZ: The inner-transitional surface OFZ is the volume or space above the surfaces which slope 3 (horizontal) to 1 (vertical) laterally from the edges of the runway.

1) OFZ and approach OFZ end at the height of 150 feet (45 m) above the established airport elevation. The inner-transitional surface OFZ applies only to precision instrument runways.

2) Free of all fixed objects. FAA approved frangible equipment, which provides an essential aviation service may be located in the OFZ, provided the amount of penetration is kept to a practical minimum.

3) Clear of vehicles as well as parked, holding,

or taxiing aircraft in the proximity of an airplane conducting an approach, missed approach, landing, takeoff or departure.

**OBSTRUCTION TO AIR NAVIGATION** - An existing object, including a mobile object, is, and a future object would be, an obstruction to air navigation if it is of a greater height than any of the heights or surfaces defined in FAR PART 77.23.

**OPERATION** - Generally thought of as either a take-off or a landing of an aircraft. FAA ATCT operations include all radio contacts with an aircraft, regardless of whether or not they are taking off or landing. Operations used for planning purposes include only takeoffs, landings and touch and goes.

**PRECISION APPROACH PATH INDICATOR (PAPI)** - An airport approach light aid to pilots. See GVGI.

**PRECISION INSTRUMENT RUNWAY** - A precision instrument runway is one with an instrument approach procedure utilizing an Instrument Landing System (ILS), microwave landing system (MLS), or precision approach radar (PAR). A planned precision instrument runway is one for which a precision approach system or procedure is indicated on an FAA or DOD approved airport layout plan, or on other FAA or DOD planning documents.

**PRIMARY SURFACE** - An imaginary horizontal surface extending out an equal distance on each side of the runway centerline a width as defined in FAR Part 77.

**R/W** - Runway.

**RUNWAY ALIGNMENT INDICATOR LIGHTS (RAIL)** - (usually part of a MALS system).

**RADAR (RADIO DETECTION AND RANGING)** - A device which, by measuring the time interval between transmission and reception of radio pulses, provides information on range, azimuth and/or elevation of objects in the path of the transmitted pulses.

**RADAR SERVICE** - A term which encompasses aircraft separation, navigation guidance, and/or flight track monitoring services based on the use of radar which can be provided by a controller to

a pilot of a radar-identified aircraft.

**RADAR SURVEILLANCE** - The radar observation of a given geographic area for the purpose of performing some radar function.

**RADIAL** - A magnetic bearing extending from a VOR, a VORTAC, or a TACAN navigational facility.

**RUNWAY END IDENTIFIER LIGHTS (REIL)** - Flashing strobe lights (usually white) which indicate the end of a runway. They are located at each end of the runway.

**RELIEVER AIRPORT** - An airport designated as having the primary function of relieving congestion at a commercial airport and providing more general aviation access to the overall community. Reliever Airports are allowed to receive AIP (federal) funds for improvement.

**RUNWAY** - A runway is a defined rectangular area on an airport prepared for the landing or takeoff of airplanes.

**RUNWAY PROTECTION ZONE (RPZ)** - A trapezoidal area centered about the extended runway centerline beginning 200 feet beyond the end of the area usable for takeoff or landing. The dimensions are a function of the approach visibility minimum and the type of aircraft. Refer to AC 150/5300-13 for specific dimensions and land use guidelines.

**RUNWAY SAFETY AREA** - A runway safety area is a rectangular area, centered on the runway centerline, which includes the runway (and stopway, if present) and the runway shoulders. The portion abutting the edge of the runway shoulders, runway ends, and stopways is cleared, drained, graded and usually turfed. Under normal conditions, the runway safety area is capable of supporting snow removal, firefighting, and rescue equipment and accommodating the occasional passage of aircraft without causing major damage to the aircraft.

**RUNWAY VISUAL RANGE (RVR)** - An instrumentally derived value, based on standard calibrations, that represents the horizontal distance a pilot will see down the runway from the approach end.

**SAFETY AREA** - An actual graded area

surrounding the runway that can be safely negotiated in case of an emergency by an aircraft that will be using that runway.

**SEPARATION** - Spacing of aircraft to achieve their safe and orderly movement in flight and while landing and taking off.

**SEPARATION MINIMA** - The minimum longitudinal, lateral, or vertical distances by which aircraft are spaced through the application of air traffic control procedures.

**SMALL AIRCRAFT** - A small aircraft is an aircraft of 12,500 pounds (5,700 kg) or less maximum certificated takeoff weight.

**STATUTE MILE** - A regular "highway" mile measuring 5,280 feet.

**STOP END OF RUNWAY** - The stop end of runway is the far runway end as viewed from the cockpit of a landing airplane.

**STOPWAY** - A stopway is an area beyond the stop end of the takeoff runway which is no less wide than the runway and is centered on the extended centerline of the runway. It is able to support an airplane during an aborted takeoff without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating the airplane during an aborted takeoff.

**STRAIGHT-IN APPROACH** - Entry into the traffic pattern by interception of the extended runway centerline (final approach) without executing any other portion of the traffic pattern.

**T/W** - Taxiway.

**TAXI** - To operate an airplane under its own power on the ground, except the movement incident to actual takeoff and landing.

**TAXILANE** - A taxilane is the portion of the aircraft parking area used for access between taxiways, aircraft parking positions, hangars, storage facilities, etc. A taxilane is outside the movement area, and is normally not controlled by the Air Traffic Control Tower.

**TAXIWAY** - A taxiway is a defined path, from one part of an airport to another, selected or prepared for the taxiing of aircraft.

**TAXIWAY SAFETY AREA** - A taxiway safety area is an area centered on the taxiway centerline, which includes the taxiway and taxiway shoulders. The portion abutting the edge of the taxiway shoulders is cleared, drained, graded, and usually turfed.

Under normal conditions, the taxiway safety area is capable of supporting snow removal, fire fighting, and rescue equipment and accommodating the occasional passage of aircraft without causing major damage to the aircraft.

**THRESHOLD** - The threshold is the beginning of that portion of the runway available and suitable for the landing of airplanes.

**THRESHOLD CROSSING HEIGHT (TCH)** - The height of the straight line extension of the visual or electronic glide slope above the runway threshold.

**TOUCH AND GO** - A training operation in which a landing approach is made, the aircraft touches-down on the runway, but does not fully reduce speed to turn off the runway. Instead, after the landing, full engine power is applied while still rolling and a takeoff is made, thereby practicing both maneuvers as part of one motion. It counts as two separate aircraft operations.

**TRACK** - The flight path of an aircraft over the surface of the earth.

**TRAFFIC PATTERN** - The traffic flow that is prescribed for aircraft landing at or taking off from an airport. The usual traffic pattern consists of five segments, or "legs". These components are the upwind leg, crosswind leg, downwind leg, base leg, and the final approach. Traffic patterns are followed by aircraft in order to exit the airport area after takeoff in an orderly fashion, and to enter an Airport area and ultimately land, also in an orderly fashion.

**TRANSITION ZONE** - An imaginary surface extending upward at a 7 -to 1 slope (i.e. up one foot for every seven feet moved horizon-tally) from the Primary Surface and Approach Surface defined in Federal Aviation Regulations (FAR) Part 77.

**TURBINE** - A mechanical device or engine that spins in reaction to fluid flow through or over it. This device is used in turbofan, turbojet, and turboprop-powered aircraft.

**TURBOFAN** - A turbojet engine whose thrust has been increased by the addition of a low-pressure compressor fan.

**TURBOJET** - An engine that derives power from a fanned wheel spinning in reaction to burning gases escaping from a combustion chamber. The turbine in turn drives a compressor and other accessories.

**TURBOPROP** - A turbine engine in which the rotating turbine turns a propeller.

**UTILITY AIRPORT** - A utility airport is an airport designed, constructed, and maintained to serve airplanes in Aircraft Approach Category A and B. For discussion on airport type, see paragraph 5.

**VFR CONDITIONS** - Basic weather conditions prescribed for flight under Visual Flight Rules; usually implies a ceiling of at least 1000 feet and a forward visibility of three miles or more.

**VERY HIGH FREQUENCY OMNI DIRECTIONAL RANGE (VOR)** - A ground radio station that provides a pilot of a properly equipped aircraft with his radial location in reference to that station. A VORTAC is an electronic air navigation facility combining a VOR and a TACAN.

**VISIBILITY, PREVAILING** - The horizontal distance at which targets of known distance are visible over at least half of the horizon. It is normally determined by an observer on or close to the ground viewing buildings or other similar objects during the day and ordinary city lights at night.

**VISUAL APPROACH SLOPE INDICATOR (VASI)** - The VASI is a device used by pilots to determine their position in regard to the recommended approach path for a particular airport. See also GVGI.

**VISUAL FLIGHT RULES (VFR)** - "See and be seen" flight rules. Each pilot is responsible for the safe spacing and proper operation of his aircraft. Under VFR, a pilot is not required to file a flight plan or be in constant radar and

communication contact with air traffic control. Visual flight rules are determined by weather and require a ceiling of at least 1,000 feet and visibility of at least 3 miles.

**VFR TRAFFIC** - Aircraft traffic operated solely in accordance with Visual Flight Rules.

**VISUAL APPROACH** - A VFR approach granted to an IFR flight by air traffic control under special circumstances. Visual approaches are normally conducted by aircraft operating under visual flight rules.

**VISUAL RUNWAY** - A visual runway is a runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA or Department of Defense (DOD) approved layout plan, or, on other FAA or DOD planning documents.

**VORTAC** - A combination of the civil VOR/DME and the military TACAN which can provide both distance and direction of an aircraft from the station.

**WAKE TURBULENCE** - The air turbulence caused by a moving aircraft, originating at the tips of the wings. The turbulence is caused by vortices generated by an aircraft's wingtips as it travels through the air. This turbulence is greatest when the aircraft is taking off and landing.

**WIND COVERAGE** - Wind coverage is the percent of time for which aeronautical operations are considered safe due to acceptable crosswind components.