

Glossary of Terms
 Aviation and Aircraft Noise Terms

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Air Carrier - A commercial airline with published schedules operating at least five round trips per week.

Air Route Traffic Control Center (ARTCC) - A facility providing air traffic control to aircraft on an IFR flight plan within controlled airspace and principally during the enroute phase of flight.

Air Taxi - An aircraft certificated for commercial service available for hire on demand.

Air Traffic Control (ATC) - The control of aircraft traffic, in the vicinity of airports from control towers, and in the airways between airports from control centers.

Air Traffic Control Tower (ATCT) - A central operations tower in the terminal air traffic control system with an associated Instrument Flight Rule room if radar equipped, using air/ground communications and/or radar, visual signaling and other devices to provide safe, expeditious movement of air traffic.

Aircraft Fleet Mix - Describes the types of aircraft using the airport. The data is important as some types of aircraft are noisier or quieter than others.

Airport Layout Plan (ALP) - The official, FAA approved map of an airport's facilities.

Altitude MSL - Aircraft altitude measured in feet above mean sea level.

Ambient Noise Level - The existing background noise level characteristic of an environment.

Approach Lights - High intensity lights located along the approach path at the end of an instrument runway. Approach lights aid the pilot in the transition from instrument flight conditions to visual conditions at the end of an instrument approach.

Approach Lighting System (ALS) - Radiating light beams guiding pilots to the extended centerline of the runway on final approach and landing.

Arrival - The act of landing at an airport.

Arrival Procedure - A series of directions from air traffic control, using fixes and procedures, to guide an aircraft from the enroute environment to an airport for landing.

Arrival Stream - A flow of aircraft following similar arrival procedures.

Auxiliary Power Unit (APU) - A self-contained generator in an aircraft producing power for ground operation and for starting the engines.

Average Daily Operations - The average number of aircraft takeoffs or aircraft landings in a day.

Avionics - Airborne navigation, communications, and data display equipment required for operation under specific air traffic control procedures.

Backblast - Low frequency noise and high velocity air generated by jet engines on takeoff.

Base Leg - Is a flight path at right angles to the landing runway. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline.

Center - See Air Route Traffic Control Center (ATCC).

Commuter Airline - Operator of small aircraft (maximum size of 30 seats) performing scheduled service between two or more points.

Day/Night Noise Level (DNL) - The daily average noise metric in which noise occurring between 10 p.m. and 7 a.m. is penalized by 10 db. DNL is often expressed as annual average noise levels.

Day/Night Usage - The percentage of operations during the day versus night is important as night time operations are penalized to account for the increased sensitivity of nearby residents to aircraft noise during these hours.

Decibel (dB) - In sound, decibels measure a scale from the threshold of human hearing, 0 dB upward towards the threshold of pain, about 120-140 dB. Because decibels are such a small measure, they are computed logarithmically and cannot be added arithmetically. An increase of ten dB is perceived by human ears as a doubling of noise.

dBA - A-weighted decibels adjust sound pressure towards the frequency range of human hearing.

dBC - C-weighted decibels adjust sound pressure towards the low frequency end of the spectrum. Although less consistent with human hearing than A-weighting, dBC can be used to consider the impacts of certain low frequency operations.

Decision Height - The height at which a decision must be made during an instrument approach either to continue the approach or to execute a missed approach.

Departure - The act of an aircraft taking off from an airport.

Departure Destinations - Segregated into trip length categories corresponding to approximate flight distances. Aircraft traveling a long distance are usually heavier due to additional fuel requirements and are usually closer to the ground during take offs than aircraft traveling a short distance.

Departure Procedure - A published Instrument Flight Rule which is departure procedure describing specific criteria for climb, routing, and communications for a specific runway at an airport.

Displaced Threshold - A threshold that is located at a point on the runway other than the physical beginning. Aircraft can begin departure roll before the threshold, but cannot land before it.

Distance Measuring Equipment (DME) - Equipment (airborne and ground) used to measure, in nautical miles, the distance of an aircraft from the DME navigational aid.

DNL Contour - The "map" of total noise exposure around an airport. A contour is computed through an FAA model called the Integrated Noise Model, which calculates annual noise exposure. FAA defines significant noise exposure as any area within the 65dB DNL contour; that is the area within an annual average noise exposure of 65 decibels or higher.

Downwind Leg - Is a flight path parallel to the landing runway in the direction opposite the landing direction.

Duration - The length of time in seconds that a noise event lasts. Duration is usually measured in time above a specific noise threshold.

Enroute - Is the portion of a flight that is between the departure and arrival terminal areas.

Equivalent Sound Level (Leq) - The steady A-weighted sound level over any specified period (not necessarily 24 hours) that has the same acoustic energy as the fluctuating noise during that period (with no consideration of nighttime weighting). It is a measure of cumulative acoustic energy. Because of the time interval may vary, it should be specified by a subscript (such as Leq8 for an 8-hour exposure to noise) or be clearly understood from the context.

Federal Aviation Administration (FAA) - Is the agency responsible for aircraft safety, movement, and control.

Federal Aviation Regulations (FAR) - Are Rules and regulations that govern the operation of aircraft, airways, and airmen.

FAR Part 36 - A Federal Aviation Regulation defining maximum noise emissions for aircraft.

FAR Part 150 - The Federal Aviation Regulation governing noise and land use compatibility studies and programs.

FAR Part 91 - A Federal Aviation Regulation governing the phase out of Stage 1 and 2 aircraft as defined under FAR Part 36.

Fix - A geographical position determined by visual references to the surface, by reference to one or more NavAids, or by other navigational methods.

Fixed Threshold - Is Static baseline noise level above which microphones measure a noise event.

Fleet Mix - The mix of differing aircraft types operated at a particular airport or by an airline.

Flight Corridors and Usage - Describe concentrated areas of aircraft activity for arrivals and departures.

Flight Plan - Specific information related to the intended flight of an aircraft. A flight plan is filed with a Flight Service Station or Air Traffic Control facility.

Flight Track Utilization - Is the use of established routes for arrival and departure by aircraft to and from the existing runway at an airport.

Floating Threshold - Baseline noise level determined by current ambient noise level, above which microphones measure a noise event.

General Aviation (GA) - Civil aviation excluding air carriers, commercial operators, and military aircraft.

Glide Slope - Generally a 3-degree angle of approach to a runway established by means of airborne instruments during instrument approaches, or visual ground aids for the visual portion of an instrument approach and landing.

Global Positioning System (GPS) - A satellite based radio positioning, navigation, and time-transfer system.

Ground Effect - The excess attenuation attributed to absorption or reflection of noise by man made or natural features on the ground surface.

Ground Power Unit (GPU) - Is a source of power, generally from the terminals, for aircraft to use while their engines are off.

Ground Track - The seeming path an aircraft would follow on the ground if its airborne flight path were plotted on the terrain.

High Speed Exit Taxiway - A taxiway designed and provided with lighting or marking to define the path of aircraft traveling at high speed from the runway center to a point on the center of the taxiway.

Hushkit - An aircraft engine quieting device added to aircraft engines originally certified at Stage 2 in order to meet more stringent Stage 3 standards.

Instrument Flight Rules (IFR) - Rules and regulations established by the FAA to govern flight under conditions in which flight by visual reference is not safe.

Instrument Landing System (ILS) - A precision instrument approach system which normally consists of a localizer, glide slope, outer marker, middle marker, and approach lights.

Instrument Meteorological Conditions (IMC) - Weather conditions expressed in terms of visibility, distance from clouds, and cloud ceilings during which all aircraft are required to operate using instrument flight rules.

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.

Knots - A measure of speed used in aerial navigation. One knot is equal to one nautical mile per hour (1.15 knots = 1 mile).

Land Use Compatibility - The ability of land uses surrounding the airport to coexist with airport related activities with minimum conflict.

Ldn - (See Day/Night Average Noise Level) Ldn is used in place of DNL in mathematical equations only.

Lmax - The peak noise level (instantaneous second) reached by a single aircraft event.

Load Factor - The percentage of seats occupied in an aircraft.

Localizer - A navigational aid that consists of a directional pattern of radio waves modulated by two signals. When received with equal intensity, are displayed by compatible airborne equipment as an "on-course" indication. When received in unequal intensity, are displayed as an "off-course" indication.

Localizer Type Directional Aid (LDA) - A facility of comparable utility and accuracy to a localizer, but not part of a complete Instrument Landing System and not aligned with the runway.

Mean Sea Level - The average height of the surface of the sea for all stages of the tide. It is used as a reference for elevations. It is also called sea level datum.

Middle Marker - A beacon that defines a point along the glide slope of an Instrument Landing System, normally located at or near the point of decision height.

Missed Approach Procedure - A procedure used to redirect a landing aircraft back around to attempt another landing. This may be due to visual contact not established at authorized minimums or instructions from air traffic control, or for other reasons.

National Airspace System (NAS) - The common network of U.S. airspace: air navigation facilities, equipment and services, airports or landing areas, aeronautical charts, information and services, rules, regulations and procedures, technical information, manpower, and material.

Nautical Mile - A measure of distance used in air and sea navigation. One nautical mile is equal to the length of one minute of latitude along the earth's equator. The nautical mile was officially set as 6076.115'.

Navaid - Navigational Aid.

NMS - See Remote Monitoring Site.

Noise - Unwanted sound.

Noise Abatement - A measure or action that minimizes the amount or impact of noise on the environs of an airport. Noise abatement measures include operating procedures and use or disuse of certain runways or flight tracks.

Noise Contour - See Day/Night Average Noise Level Contour.

Noise Contour Map - A map representing average annual noise levels summarized by lines connecting points of equal noise exposure.

Noise Exposure Map (NEM) - Is a FAR Part 150 requirement prepared by airports to depict noise contours. NEMs also take into account potential land use changes around airports.

Non-Directional Beacon (NDB) - Signal that can be read by pilots of aircraft with direction finding equipment. Used to determine bearing and can "home" in or track to or from the desired point.

Non-Precision Approach Procedure - A standard instrument approach procedure in which no electronic glide slope is provided.

Offset Parallel Runways (Off Set ILS) - Staggered runways having centerlines which are parallel.

Operation - An arrival, departure, or overflight of an aircraft. Every flight requires at least two operations, a take-off and landing.

Outer Marker - An Instrument Landing System navigation facility located four to seven miles from the runway on the extended centerline indicating the beginning of final approach.

Overflight - Aircraft originating or terminating outside the metropolitan area that transits the airspace without landing.

Passive Surveillance Radar System (PASSUR) - A system capable of plotting radar tracks of individual aircraft in flight.

Precision Approach Path Indicator (PAPI) - An airport lighting facility in the terminal area used under Visual Flight Rules conditions. It is a single row of two to four lights, radiating high intensity red or white beams to indicate whether the pilot is above or below the required runway approach path.

Precision Approach Procedure - A standard instrument approach procedure in which an electronic glide slope is provided, such as an ILS. GPS precision approaches may be provided in the future.

Precision Runway Monitoring (PRM) - Is a system of high-resolution monitors for air traffic controllers to use when landing aircraft on parallel runways separated by less than 4,300 feet.

Preferential Runways - The most desirable runway from a noise abatement perspective to be assigned whenever possible.

Radar Vectoring - Navigational guidance where air traffic controller issues a compass heading to a pilot.

Reliever Airport - An airport for general aviation and other aircraft which might otherwise use a larger and busier air carrier airport.

Remote Monitoring Site/Terminal (RMS/RMT) - A microphone placed in a community and recorded at FLL's Airport's Noise Monitoring Center. A network of 10 RMTs generate data used in preparation of the airport's Noise Exposure Map.

Run-up - A procedure used to test aircraft engines after maintenance to ensure safe operation prior to returning the aircraft to service. The power settings tested range from idle to full power and may vary in duration.

Run-up Locations - Specified areas on the airfield where scheduled run-ups may occur. These locations are sited, so as to produce minimum noise impact in surrounding neighborhoods.

Runway - A long strip of land (usually paved and lighted) used by aircraft to land or to take off.

Runway Use - Wind speed and direction are two primary factors that determine the direction of take offs and landings using an airport's runways.

Sequencing Process - Procedure in which air traffic is merged into a single flow, and/or in which adequate separation is maintained between aircraft.

Simultaneous Offset Instrument Approach (SOIA) - An approach system permitting simultaneous Instrument Landing System approaches to airports having staggered but parallel runways. SOIA combines Offset ILS and regular ILS definitions.

Single Event - Is an occurrence of audible noise, usually above a specified minimum noise level. This is caused by an intrusive source such as an aircraft overflight, passing train or ship's horn.

Sound - Sound is the result of a sound source vibration in the air. The vibration produces alternating bands of relatively dense and sparse particles of air spreading outward from the source in the same way as ripples do on water after a stone is thrown into it. The result of the movement is fluctuation in the normal atmosphere pressure or sound waves.

Sound Exposure Level (SEL) - A measure of the physical energy of the noise event that takes into account both intensity and duration, expressed in decibels (dB).

Stage 2 Aircraft - Aircraft that meet the noise levels prescribed by FAR Part 36 and are less stringent than those established for the quieter designation (Stage 3). The Airport Noise and Capacity Act required the phase out of all Stage 2 aircraft over 75,000 pounds by December 31, 1999.

Stage 3 Aircraft - Aircraft that meet the most stringent noise levels set in FAR Part 36.

Standard Instrument Departure (SID) - An aeronautical chart designed to expedite clearance delivery and to facilitate transition between takeoff and enroute operations.

Standard Terminal Arrival Route (STAR) - A published Instrument Flight Rules arrival procedure describing specific criteria for descent, routing, and communications for a specific runway at an airport.

Taxiway - A paved strip that connects runways and terminals providing the ability to move aircraft so they will not interfere with takeoffs or landings.

Terminal Airspace - Is air space that is controlled by a Terminal Radar Approach Control.

Terminal Area - A general term used to describe airspace in which approach control service or airport traffic control service is provided.

Terminal Radar Approach Control (TRACON) - An FAA air traffic control service to aircraft arriving and departing or transiting airspace controlled by the facility. TRACONs control IFR and participating VFR flights.

Threshold - Two Meanings: 1) Specified boundary of a runway and 2) baseline noise level above which microphones record a noise event.

Vector - A heading issued to a pilot to provide navigational guidance by radar. Vectors are assigned verbally by FAA air traffic controllers.

Very High Frequency Omni-directional Range (VOR) - A ground based electronic navigation aid transmitting navigation signals for 360 degrees oriented from magnetic north. VOR is the historic basis for navigation in the national airspace system.

Visual Approach – Where an aircraft on an Instrument Flight Rules plan, operating in Visual Flight Rules conditions under the control of an air traffic facility and having an air traffic control authorization, may proceed to destination airport under VFR.

Visual Approach Slope Indicator (VASI) - An airport lighting facility in the terminal area navigation system used primarily under VFR conditions. It provides vertical visual guidance to aircraft during approach and landing, by radiating a pattern of high intensity red and white focused light beams, indicating that the aircraft is above, on, or below the glide path.

Visual Flight Rules (VFR) - Rules governing procedures for conducting flight under visual meteorological conditions, or weather conditions with a ceiling of 1,000 feet above ground level and visibility of three miles or greater. It is the pilot's responsibility to maintain visual separation, not the air traffic controller's, under VFR.

Visual Meteorological Conditions (VMC) - Weather conditions equal to or better than specifications for Visual Flight Rules.