

Aircraft Noise Abatement Office

Glossary of common Acoustic and Air Traffic Control

terms

A

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

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

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

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

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.

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

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.

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

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

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

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

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

B

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

Base Leg - 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.

C

Center - See ARTCC.

CNEL - Community Noise Equivalent Level - A noise metric required by the California Airport Noise Standards for use by airport proprietors to measure aircraft noise levels.

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

D

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.

dB(A) - A-weighted decibels adjust sound pressure towards the frequency range of human hearing.

dB(C) - C-weighted decibels adjust sound pressure towards the low frequency end of the spectrum. Although less consistent with human hearing than A-weighting, dB(C) 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 Procedure - A published IFR 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.

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

DNL - Day/night noise level - The daily average noise metric in which noise occurring between 10:00 p.m. and 7:00 a.m. is penalized by 10 db. DNL is often expressed as annual average noise levels.

DNL Contour - The "map" of noise exposure around an airport. A contour is computed through an FAA model called the Integrated Noise Model (INM), 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 - 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.

E

Enroute - The portion of a flight between departure and arrival terminal areas.

F

FAA - The Federal Aviation Administration is the agency responsible for aircraft safety, movement and control.

FAR - Federal Aviation Regulations are the rules and regulations, which govern the operation of aircraft, airways, and airmen.

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

FAR Part 150 - A 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.

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

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.

G

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

GAP Departure - An aircraft departure via Runways 28 at San Francisco International Airport to the west over San Bruno, South San Francisco, Daly City and Pacifica.

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.

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

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

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

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

H

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.

I

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

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

IMC - Instrument Meteorological Conditions - 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.

K

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

L

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

Lmax - The peak noise level reached by a single aircraft event.

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

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

M

Middle Marker - A beacon that defines a point along the glide slope of an ILS, 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.

N

NAS - National Airspace System - 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.

NDB - Non-Directional Beacon - 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.

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

NMS - See RMS

Noise Contour - See DNL Contour.

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

O

Off Set ILS - Offset Parallel Runways - 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 ILS 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 transit the airspace without landing.

P

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

PAPI - Precision Approach Path Indicator - An airport lighting facility in the terminal area used under VFR 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.

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

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.

PRM - Precision Runway Monitoring - A system of high-resolution monitors for air traffic controllers to use in landing aircraft on parallel runways separated by less than 4,300'.

R

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.

RMS - Remote Monitoring Site - A microphone placed in a community and recorded at San Francisco Airport's Noise Monitoring Center. A network of 27 RMS's 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.

S

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

Shoreline Departure - Departure via Runways 28 that utilizes a right turn toward San Francisco Bay as soon as feasible. Considered a noise abatement departure procedure.

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

SENEL - Single Event Noise Exposure Level - The noise exposure level of a single aircraft event measured over the time between the initial and final points when the noise level exceeds a predetermined threshold.

It is important to distinguish single event noise levels from cumulative noise levels such as CNEL. Single event noise level numbers are generally higher than CNEL numbers, because CNEL represents an average noise level over a period of time, usually a year.

Single Event - Noise generated by a single aircraft overflight.

Significant Exceedance - As defined by the Airport Community Roundtable, is a noise event more than 100 dB SENEL outside of the 65 CNEL contour.

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

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

T

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 - The air space that is controlled by a TRACON.

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

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

TRACON - Terminal Radar Approach Control - 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.

V

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

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

VASI - Visual Approach Slope Indicator - 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.

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

VOR - Very High Frequency Omni-directional Range - 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.

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