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Glossary of Terms

**A-weighted Sound Level (dBA):** A measurement of loudness which accounts for the frequency sensitivity of the human ear. A-weighting accounts for frequency dependence by adjusting the very high and very low frequencies (below approximately 500 Hz and above approximately 10,000 Hz) to approximate the human ear’s lower sensitivities to those frequencies. Sound in each one third octave band is A-weighted and summed.

**Advisory Circular (AC):** An FAA-issued document providing methods, procedures, and practices for compliance with regulations and grant requirements.

**Air Traffic Control (ATC):** The function of providing positive control and aircraft separation services to participating aircraft through safe, orderly, and expeditious traffic flow procedures and instructions.

**Air Traffic Control Tower (ATCT):** A facility that provides local air traffic control services to aircraft operating into and out of an airport. ATCT facilities are located on the airfield maintaining an unrestricted view of airside facilities (i.e., runway, taxiways). They are typically FAA-operated, but can also operate under contract.

**Airport Noise and Capacity Act of 1990 (ANCA):** The congressional act that established the first national noise policy. ANCA created a timeline for the phase out of Stage 2 aircraft and created a review and approval process governing the implementation of local airport use or access restrictions by airport proprietors.

**Airport Sponsor:** The recipient of AIP grant funding. In a Part 150 study, the airport operator is identified as the Airport Sponsor, but local jurisdictions can also assume ‘airport sponsor’ status when applying for AIP funding for noise mitigation programs.

**Airspace:** A three-dimensional portion of the atmosphere that is controlled by a jurisdictional entity, generally a nation. In aviation, airspace is either defined as regulatory or non-regulatory, with many subcategories.

**Ambient Noise:** Background noise levels not including aircraft activity. These levels can also be referred to as “community noise levels.”

**Arrival (or Approach):** A flight operation in the terminal control area that encompasses the descent and landing of an aircraft on an airport runway or pad.

**Aviation Safety and Noise Abatement Act of 1979:** A congressional act authorizing the FAA to award grants under the AIP for noise mitigation projects. ASNA states that in order to access funding for noise mitigation projects, the project must be identified in an airport’s Noise Compatibility Program (NCP) per 14 CFR Part 150.

**Contour:** see noise contour

**Day-Night Average Sound Level (DNL):** The 24-hour average sound level, in A-weighted decibels, with a 10-dB penalty for sound levels occurring between 10 p.m. and 7 a.m. local time.

**Decibel (dB):** A logarithmic unit used to describe the intensity of sound.

**Distance Measuring Equipment:** Equipment used to measure slant range distance in nautical miles from an aircraft to a navigational aid.

**Engine Run-up Area:** A designated area on an airfield used for prolonged aircraft engine testing.

**Environmental Assessment (EA):** An analysis prepared, pursuant to the National Environmental Policy Act (NEPA), to assess the potential environmental impacts of a proposed Federal action, which contains sufficient detail in order for a Federal determination of either a Finding of No Significant Impact (FONSI) or the need to pursue an Environmental Impact Statement (EIS).

**Environmental Impact Statement (EIS):** An analysis prepared pursuant to NEPA that discloses the significant impacts of a proposed Federal action and evaluates a series of alternatives. The process for completing an EIS is outlined in Order 5050.4B and Order 1050.1E.
Environmental Protection Agency (EPA): The federal agency responsible for natural resource protection and oversight of the release of toxins and other pollutants into the environment.

Equivalent Sound Level ($L_{eq}$): The average sound level of all noise occurring over a specified period of time. The $L_{eq}$ metric can provide an accurate quantification of noise exposure for a specific period, particularly for daytime periods when the nighttime penalty under the DNL metric is inappropriate.

FAR Part 150 (also known as “Part 150” or “14 C.F.R Part 150”): Titled Airport Noise Compatibility Planning, establishes standards for the documentation of noise exposure in the airport environs, as well as procedures for obtaining FAA approval of programs to reduce or eliminate incompatibilities between aircraft noise and surrounding land uses. A Part 150 study is comprised of both a set of Noise Exposure Maps which depict existing and future five-year forecast conditions and a Noise Compatibility Program, which identifies strategies to reduce, mitigate, and prevent existing and future incompatible land uses in the vicinity of an airport. An approved NCP is required to access AIP funding for mitigation programs.

Federal Aviation Administration (FAA): The federal agency responsible for regulating aviation activity, certifying pilots, air carriers, air traffic controllers and aircraft, as well as operating the National Airspace System (NAS) in the United States.

Fleet mix: A representation of aircraft types operating at the airport over a given period of time.

Flight Track (or path): The three-dimensional flight trajectory traveled by aircraft from the start of the departure (takeoff-off roll) to the destination. Flight tracks for noise modeling usually are derived from radar data and are generalized for input into the INM.

Geographical Information Systems (GIS): A group of software applications used to analyze, interpret, and visualize spatial data such as land use, zoning, and demographic data.

Integrated Noise Model (INM): An integrated model used as the standard tool for the modeling of noise exposure resulting from aircraft operations at civilian airports in the U.S.

Maximum Sound Level ($L_{max}$): The highest A-weighted sound level measured during a single event in which the sound level changes value as time goes on (e.g., an aircraft over-flight).

National Airspace System (NAS): The sovereign airspace under the control of the United States as defined by international law and governed by access and use restrictions.

National Environmental Policy Act (NEPA): A congressional Act which established the national policy for disclosing the potential impacts of Federal actions. Compliance with NEPA requires the completion of an environmental document that outlines impacts that may significantly affect the quality of the human environment.

Navigation Aid: Typically, a ground-based facility designed to provide signal data to assist aircraft with navigation, approach and departure operations both within terminal airspace and in the enroute environment.

Noise: Typically defined as disagreeable or unwanted sound.

Noise Compatibility Program (NCP): A program that promulgates recommendations on the abatement and/or mitigation of existing impacts of aviation noise, and the prevention of future incompatibilities in areas identified as being significantly impacted by aircraft noise. An NCP is created or updated as part of the FAR Part 150 process, following the completion of existing and future Noise Exposure Maps.

Noise Contour: A line connecting a series of points of equal sound level values. Locations inside of a noise contour have greater sound levels, and locations outside of the contour have lesser sound levels. Noise exposure contours are computed using noise models such as INM or NoiseMap.

Noise Exposure Map (NEM): Noise exposure contours overlaid on a background map which identifies existing or future noise exposure conditions at an airport. An NEM is typically developed as part of the FAR Part 150 process.

Run-up: A maintenance operation conducted to test aircraft engines following routine or major maintenance or repair. Run-ups consist of engine tests at varying durations and power settings.
Sound: Minute vibrations that travel through air and can be sensed by the human ear. Sounds are measured by their intensity, frequency, and duration.

Sound Exposure Level (SEL): A logarithmic measure of the total acoustic energy transmitted to the listener during the event. SEL represents the sound level of the constant sound that would, in one second, generate the same acoustic energy as did the actual time-varying noise event. SEL is the building block for calculating DNL, which consists of the logarithmic sum of the aircraft SEL values for one day of operations, averaged over 24 hours, and with a 10 dB weighting applied to nighttime events.