AVIATION AND NOISE:

GLOSSARY OF TERMS AND ACRONYMS

ACOUSTICS - (i) The science of sound, including the generation, transmission, and effects of audible and inaudible sound waves. (ii) The physical qualities (such as size and shape) of a room or other enclosure that determine the audibility and perception of speech and music.

ADVISORY CIRCULAR (AC) - An external FAA publication consisting of non-regulatory material of a policy, guidance, or informational nature.

AIR CARRIER AIRCRAFT - Generally, U.S.-registered large (12,500 pounds or more, by FAA definition) transport category civil aircraft (excluding single-engine) of designated class and types, that support scheduled passenger-carrying and cargo operations in air commerce, pursuant to a FAA air carrier certificate issued under 14 CFR Parts 119 and 121 of the Federal Aviation Regulations. (*See* 14 CFR 119.3, for Domestic, Flag, and Supplemental definitions).

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC OR CENTER) - A FAA facility established to provide air traffic control service to aircraft operating on Instrument Flight Rules flight plans within controlled airspace, principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory and assistance services may be provided to VFR aircraft. (*See* Enroute Air Traffic Control System)

AIR TAXI AIRCRAFT - A term no longer used by the *FAA*, though still used by the US Department of Transportation (USDOT). The *FAA* uses the term *"on demand"* to describe those operations formerly described as "air taxi."

AIR TRAFFIC - Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

AIR TRAFFIC CONTROL (ATC) - An FAA service operated for the public, to ensure adequate separation of aircraft and to promote the safe, orderly, and expeditious flow of air traffic. The air traffic facility with jurisdiction over mapped and designated airspace may authorize aircraft to precede under specified traffic conditions within controlled airspace.

AIR TRAFFIC CONTROL TOWER (ATCT) - An air traffic control facility established on an airport to provide for safe, orderly, and expeditious flow of air traffic arriving at and departing from an airport, including airport surface areas such as runways and taxiways.

AIR TRAFFIC SERVICE (ATS) ROUTES - "ATS route," a generic term, includes "VOR Federal airways," "colored Federal airways," "alternate airways," "jet routes," "Military Training Routes," "named routes," and "RNAV routes." The term "ATS route" but serves as an overall title for listing the types of routes that comprise the United States route structure.

AIRCRAFT APPROACH CATEGORY - A grouping of aircraft based on a speed calculation that takes into account the stall speed in the landing configuration at maximum gross landing weight. An aircraft must fit only one category; its category determines speed minimums that must be observed for various maneuvers. For example, an aircraft which falls in *Category A,* but is circling to land at a speed in excess of 91 knots must use the approach *Category B* minimums when circling to land. The categories are: *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 166 knots or more. (*See* 14 CFR Part 97.)

AIRMAN'S INFORMATION MANUAL (AIM) - A publication containing basic flight information and air traffic control procedures, designed primarily as a pilot's information and instructional manual for use in the National Airspace System.

AIRPORT IMPROVEMENT PROGRAM (AIP) - A Federal funding program for airport improvements. AIP is periodically reauthorized by Congress with funding appropriated from the Aviation and Airway Trust Fund (AATF). Proceeds to the Trust Fund are derived from excise taxes on airline tickets, aviation fuel, etc.

AIRPORT LAND USE PLAN - A generalized plan depicting proposed land uses within the airport boundary. The land use plan is a required element of an Airport Layout Plan set.

AIRPORT LAYOUT PLAN (ALP) - A scaled drawing of existing and proposed land and facilities necessary for the operation and development of the airport. The ALP shows boundaries and proposed additions to all areas owned or controlled by the airport operator for airport purposes, the location and nature of existing and proposed action, and the location on the airport of existing and proposed non-aviation areas and improvements thereon. An approved ALP is generally required by FAA for projects to be eligible for funding under the AIP program.

AIRPORT OPERATIONS - Takeoffs (departures) and landings (arrivals) from or to an airport.

AIRPORT REFERENCE CODE (ARC) - A coding system identified in the FAA Advisory Circular 150/5300-13 *Airport Design* used to relate airport design criteria to the operational and physical characteristics of the design aircraft intended to operate at the airport (i.e. the most critical aircraft type currently using, or projected to use, an airport, with a minimum of 500 operations per year. Can either be one aircraft or a group of aircraft). The first component of the ARC is a capital letter (A, B, C, or D with "A" being the lowest, and "D" being the highest), which refers to the aircraft approach speed in its landing configuration. The second component, which is depicted by a Roman numeral (I, II, III, or IV, with "I" being the lowest and "IV" being the highest), refers to aircraft wingspan. Together, the two components relate aircraft operational and physical characteristics to the required design criteria of various airport components, such as runway/taxiway widths, runway to taxiway separation standards, and obstacle clearance items. Under this methodology, safety margins are provided in the physical design of airport facilities.

AIRPORT NOISE AND CAPACITY ACT OF 1990 (ANCA) - Commonly referred to as the national noise policy; the Act was enacted on November 5, 1990 (Public Law 101-508). Two important provisions of the Act were the establishment of a national aviation noise policy (Sections 9308 and 9309) and the creation of a passenger facility charge (Sections 9110 and 9111), which enables airport sponsors to impose fees on the tickets issued to eligible enplaning passengers. An amendment to FAR Part 91, "Transition to an All Stage 3 Fleet Operating in the 48 Contiguous US and the District of Columbia," and new FAR Part 161, "Notice and Approval of Airport Noise and Access Restrictions", implement the national noise policy. New FAR Part 158, "Passenger Facility Charges," implements that portion of the Act authorizing the imposition of such a charge.

AIRPORT NOISE CONTROL AND LAND USE COMPATIBILITY (ANCLUC) STUDY - A study designed to minimize aircraft noise and maintain compatible land use around airports. Certain noise control and land use compatibility studies are eligible for federal funding participation. ANCLUC studies are a precursor to today's 14 CFR Part 150 Studies. (*See* 14 CFR Part 150.)

AIRPORT NOISE MANAGEMENT SYSTEM (ANMS) - An Airport Noise Management System is a comprehensive system to provide actual measurement of the aircraft noise levels in neighborhoods and suburban communities around an airport. This integrated system includes many components, often including a network of permanent noise monitors that measure the noise environment and a system directly connected to the FAA's air traffic control radar that collects aircraft flight tracks.

AIRPORT SPONSOR - A public agency or tax-supported organization, such as an airport authority, authorized to own and operate an airport, obtain property interests, obtain funds, and be legally, financially, and otherwise able to meet all applicable requirements of current laws and regulations.

AIRPORT SURVEILLANCE RADAR (ASR) - Approach control radar used by air traffic controllers to detect and display an aircraft's position in the airport terminal area. ASR provides range (distance) and azimuth (direction) information with regard to arriving or departing aircraft.

AIRWAY - A corridor of controlled airspace whose centerline is established by radio navigational aids. Low altitude airways (between 3,000 and 18,000 feet mean sea level) are identified by number with the letter V as a prefix. High altitude airways (above 18,000 feet MSL) are known as Jet airways and are identified by number with the letter J as a prefix.

ALTITUDE MSL - Height above mean sea level. (*See* Mean Sea Level)

AMBIENT NOISE - Generally, the total sum of noise from all sources in a given place and time. For aviation studies, ambient noise is often considered to include all sources except for aircraft generated noise. This is also known as Existing Ambient Noise. *See* also Natural Ambient Noise.

APPROACH LIGHT SYSTEMS (ALS) - One of various lighting aids that may be installed on an airport. The ALS is a series of lights that provide visual guidance to landing aircraft by radiating light beams in a directional pattern, to assist the pilot when aligning aircraft with the extended runway centerline on final approach.

AREA NAVIGATION (RNAV) - A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground- or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

ARRIVAL - The act of landing at an airport.

ARRIVAL PROCEDURE - A series of directions from air traffic control or a predetermined action plan, using fixes and navigational aids, to guide an aircraft from the Enroute environment to an airport for landing.

ARRIVAL STREAM - A flow of aircraft following similar arrival procedures.

ATTENUATION - Acoustical phenomenon whereby sound energy is reduced between the noise source and the receiver. This energy loss can be attributed to atmospheric conditions, terrain, vegetation, other natural features, and man-made features (e.g., sound insulation).

AUXILIARY POWER UNIT (APU) - A self-contained generator in aircraft producing a power for ground operation and for starting the engines.

AVIATION SAFETY AND NOISE ABATEMENT ACT OF 1979 (ASNA) - Public Law 96-193 enacted February 18, 1980. The purpose of the Act is to assist airport sponsors in preparing and carrying out noise compatibility programs and in assuring continued safety for aviation. The Act also contains provisions extending to January 1, 1988, the requirement for certain types of aircraft to comply with Part 36 of the Federal Aviation Regulations. (*See FAR PART 36*).

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

A-WEIGHTING - *See DBA*

ANNOYANCE - Any bothersome or irritating occurrence.

AUDITORY THRESHOLD - Minimum audible perceived sound.

AZIMUTH - An arc of the horizon measured between a fixed point (such as true north) and the vertical circle passing through the center of an object.

BACKBLAST - Noise generated by jet exhaust on takeoff characterized by high acoustic energy, low frequency, and high velocity air behind the aircraft engine.

BACKGROUND NOISE - *See* ambient noise

BASE LEG - A flight path at right angles to the landing runway. The base leg normally extends from the down-wind leg to the intersection of the extended runway centerline off of the approach end of the runway.

BASELINE CONDITION - the existing conditions or conditions prior to future development, which serve as a foundation for analysis.

BUILDING CODE - A legal document that sets forth requirements to protect the public health, safety, and general welfare as they relate to the construction and occupancy of buildings and structures. The code establishes the minimum acceptable conditions for matters found to be in need of regulation. Topics generally covered are exits, fire protection, structural design, sanitary facilities, lighting, and ventilation. Sound insulation may also be included.

BUILDING RESTRICTION LINE (BRL) - A line drawn on an airport layout plan that distinguishes between areas that are suitable for buildings and areas that are unsuitable. The BRL is drawn to exclude the runway protection zones, which are the runway visibility zones required for clear line of sight from the airport traffic control tower, and all airport areas with a clearance of less than 35 feet (10.5 meters) beneath the Federal Aviation Regulations Part 77 surfaces.

CAPACITY - The number of aircraft that can land or depart from an airport under specific conditions during a particular time. Capacity is determined by a number of complex factors including the length of runways in use, air traffic rules, the mix of airplanes using the airport, the current weather and visibility, the number of available gates, and other limiting factors such as getting to and from the airport.

CAPITAL IMPROVEMENT PROGRAM (CIP) - A multiyear (sometimes a single year) schedule of capital expenditures for construction or equipment at an airport.

CHICAGO DEPARMENT OF AVIATION (CDA) - the Chicago Department of Aviation is the organization assigned to overseeing the operation of O'Hare and Midway International Airports for the City of Chicago.

CLOSE-IN NOISE ABATEMENT DEPARTURE PROFILE - A unique departure profile (abbreviation NADP) designed to minimize noise impact for communities within the immediate vicinity of the runway end (within 3.5 miles from the start of takeoff roll). General guidelines for this type of procedure are published in FAA's Advisory Circular 91-53A *Noise Abatement Departure Profiles*.

COMMUNITY NOISE EQUIVALENCY LEVEL (CNEL) - An energy-based cumulative noise metric required by the California airport Noise Standards for use by airport proprietors to measure aircraft noise levels. It provides for a ten (10) decibel weighting addition for all events that occur between 10 p.m. and 6:59 a.m. and a 4.77 decibel weighting addition for all events that occur between 7 p.m. and 9:59 p.m.

COMMUTER AIRCRAFT - Commuter aircraft range from small turboprop aircraft with 19 or fewer seats to Regional Jets with up to 70 seats. Although Regional Jets that seat up to 90 passengers are sometimes referred to as "commuter jets" because they tend to serve the same types of markets as smaller jets, they cannot

be operated by Federal Aviation Regulations Part 135 commuter carriers. Commuter aircraft operate pursuant to a FAA air carrier certificate issued under 14 CFR Parts 119 and 135 of the Federal Aviation Regulations. (*See* 119.3, Definitions.)

COMPREHENSIVE PLAN - A document, or series of documents, that serves as a guide for making land use changes, preparation of capital improvement programs, and the rate, timing, and location of future growth. It is based upon establishing long-term goals and objectives to guide the future growth of a city. It is also known as a *Master* or *General Plan*. Elements of a Comprehensive Plan include Economic Development, Environment, Housing, Land Use, Recreation and Open Space, and Transportation.

CONSTRUCTIVE USE - Refers to the possible indirect impacts to DOT Section 303(c) properties such as parks. Constructive use is considered to occur when a transportation project does not incorporate land from a Section 303(c) resource but the projects proximity impacts are so severe that the protected activities feature or attributes that qualify a resource for protection under section 303(c) are substantially impaired. Substantial impairment occurs only when the protected activities, features, or attributes of the resource are substantially diminished. For example, a substantial increase in noise levels at a park due to transportation project may represent a constructive use, even though the park is not directly affected through acquisition or development.

CONTOUR - *See* Noise Contour

CONTROLLED AIRSPACE - A volume of space of defined dimensions around an airport within which air traffic control service is provided to flights operating under both Instrument Flight Rules and Visual Flight Rules in accordance with the airspace classification. Controlled airspace designated as Class A, Class B, Class C, Class D, and Class E, generally according to altitude above the surface, distance from a primary airport, and volume of aircraft operations. Controlled airspace is also that airspace within which all aircraft operators are subject to certain pilot qualifications, operating rules, and equipment requirements (for specific operating requirements, *see* 14 CFR Part 91).

CROSSWIND LEG - A flight path at right angles to the extended runway centerline off of its departure end.

DAY-NIGHT AVERAGE SOUND LEVEL (DNL, denoted by the symbol **Ldn)** - Twenty-four hour average sound level for a given day, after addition of 10 decibels to levels from 2200 hours to 0700 hours local time. Ldn is computed as follows:

$Ldn = LAE + 10*\log10(N_{day} + 10*N_{night}) - 49.4$ (dB)

where:

LAE = Sound exposure level in dB;

N_{day} = Number of vehicle pass-bys between 0700 and 2200 hours, local time;

N_{night} = Number of vehicle pass-bys between 2200 and 0700 hours, local time; and

49.4 = A normalization constant which spreads the acoustic energy over a 24-hour period, i.e., 10*log10(86,400 seconds per day) = 49.4 dB.

DBA (A-WEIGHTING) - The A-weighted decibel scale of measuring sound that adjusts sound pressure to account for changes in human auditory sensitivity as a function of frequency. The A-weighting curve has been widely adopted for environmental noise measurement, and is standard in many noise monitors. The A-weighting system is used in any measurement of environmental noise including aircraft noise.

DBC (C-WEIGHTING) - The C-weighted decibel scale of measuring sound that adjusts sound pressure towards the low frequency end of the spectrum. Although less consistent with human hearing than the A-weighted scale. The dBC scale can be used to consider the impacts of certain low frequency sources.

DECIBEL (dB) - A logarithmic unit that expresses the ratio of two amounts of acoustic signal power equal to 10 times the common logarithm of this ratio. Decibel is a way of comparing the relative magnitude of two signals and is generally used for acoustic (sound) signals as a measure of power or intensity.

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.

DECLARED DISTANCES - The distance the airport owner declares available for the airplane's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements.

DENSITY - The general term used to refer to the number of housing units allowed per unit of land area. It is expressed in terms of minimum amount of lot area required per housing unit.

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

DEPARTURE FIX - A departure fix, or so-called departure gate, is a section of airspace used to separate departing from arriving aircraft. This fix determines the initial flight path and direction of the aircraft.

DEVELOPABLE LAND - Land that is suitable as a location for structures and that can be developed free of hazards to, and without disruption of, or significant impact on, natural resource areas.

DEVELOPMENT – Any tract of land made suitable for or containing institutional, residential, commercial, or industrial buildings, parking, and/or infrastructure.

DEVELOPMENT PLAN - A detailed land use plan for all/or specific areas of an airport. The plan usually includes a plot map depicting parcel size and configuration, access, land use categories, utilities, improvements, and performance standards for each parcel and use category.

DEVELOPMENT RIGHTS - Rights of landowners to develop a parcel of land according to the zoning of that parcel. Land is often assessed on a combination of its "resource" value and its "commodity" value. The resource value is the value of the property in its natural state; while the commodity value is an artificial value placed on it by the marketplace (that is, its value for development purposes). In less-than-fee acquisition, the airport sponsor may purchase only the development rights; the ownership of the land remains unchanged.

DISCLOSURE STATEMENT - A statement, attached to a deed of property or subdivision plat, stating that the property is in the vicinity of an airport facility and is subject to elevated levels of aircraft noise.

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

DISTANCE MEASURING EQUIPMENT (DME) - Equipment (ground and airborne) used to measure and report to the pilot the slant range distance, in nautical miles, of an aircraft from the DME navigational aid.

DISTANT NOISE ABATEMENT DEPARTURE PROFILE - unique departure profile designed to minimize noise impact for communities that are not within the immediate vicinity of the runway end (beyond 3.5 miles from the start of takeoff roll). General guidelines for this type of procedure are published in FAA's Advisory Circular 91-53A *Noise Abatement Departure Profiles*.

DNL - See Day-Night Average Sound Level

DOWNWIND APPROACH/ARRIVAL - A flight path parallel to the landing runway in the direction opposite to landing.

DURATION - The length of time that a noise event, such as an aircraft flyover, is experienced (typically reported in seconds). "Duration" may also refer to the length of time that the noise event exceeds a specified threshold noise level.

EASEMENT - The legal right of one party to use part of the rights of a piece of real estate belonging to another party. This may include, but is not limited to, 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.

EMINENT DOMAIN (POWER OF) - In common law, power of a governmental unit (federal, state, or local) to condemn land for public purposes after having paid the owner of the land just compensation.

ENGINE RUN-UP AREA - An area on an airport where aircraft engines are serviced or tested. The noise from such servicing or testing can affect neighborhoods adjacent to the airport.

ENGINE RUN-UPS - A routine procedure for testing aircraft systems by running one or more engines at a variety of power settings. Engine run-ups are normally

conducted by airline maintenance personnel checking an engine or other on board systems following maintenance.

ENPLANEMENTS - The number of passengers boarding an aircraft at an airport.

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

ENROUTE AIR TRAFFIC CONTROL SYSTEM - Unlike air traffic control tower or terminal radar approach control service, Air Route Traffic Control Centers provide enroute service, generally for aircraft on Instrument Flight Rules flight plans, when these aircraft are operating between departure and destination airports at designated higher altitudes. When equipment, capabilities, and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft. Enroute airspace is that airspace not delegated to approach control.

ENVIRONMENTAL ASSESSMENT (EA) - A concise document that assesses and discloses the environmental impacts of a proposed Federal action pursuant to NEPA requirements. It discusses the need for, and environmental impacts of, the proposed Federal actions and alternatives. An environmental assessment should provide sufficient evidence and analysis for a Federal determination whether to prepare an Environmental Impact Statement or issue a Finding of No Significant Impact as specified in FAA Order 5050.4A.

ENVIRONMENTAL IMPACT STATEMENT (EIS) - As stated in CEQ regulation 40 CFR 1508.11, a detailed written statement that complies with NEPA section 102 (42 USC section 4332) by including in every report on proposals for major Federal actions significantly affecting the quality of the human environment, a detailed statement on (i) environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposal, (iv) relationship between local short-term uses of the environment and maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitment of resources involved in the proposed action, should it be implemented.

EFFECTIVE PERCEIVED NOISE LEVEL (EPNDB) - A unit of measure for aircraft noise. It is based on how people judge the annoyance of sounds they hear with corrections for the duration of the event and for pure tones. The FAA uses EPNdB in the certification of large transport planes for Federal Noise Regulations (FAR Part 36).

EQUIVALENT SOUND LEVEL (LEQ, denoted by the symbol **LAeqT)** - Ten times the logarithm to the base ten of the ratio of time-mean-squared instantaneous A-weighted sound pressure, during a stated time interval T, to the square of the standard reference sound pressure. LAeqT is related to LAE by the following equation:

$LAeqT = LAE - 10*\log_{10}^{(t2-t1)}$ (dB)

where,

LAE = Sound exposure level in dB (*see* previous definition).

EXISTING AMBIENT NOISE - *See* Ambient Noise and Natural Ambient Noise.

FEDERAL AVIATION ADMINISTRATION (FAA) - The FAA is the Federal agency responsible for insuring the safe and efficient use of the nation's airspace, for fostering civil aeronautics and air commerce, and for supporting the requirements of national defense. The activities required to carry out these responsibilities include: safety regulations, airspace management and the establishment, operation and maintenance of a system of air traffic control and navigation facilities; research and development in support of the fostering of a national system of airports, promulgation of standards and specifications for civil airports, and administration of Federal grants-in-aid for developing public airports; various joint and cooperative activities with the Department of Defense, and technical assistance (under State Department auspices) to other countries.

FAA ADVISORY CIRCULAR (AC) 150/5300-13 - This document, titled *Airport Design*, contains airport design standards, including descriptions of various subdivisions of FAR Part 77 such as obstacle free zones (OFZs), object free areas (OFAs), and runway protection zones (RPZs)--formerly referred to as "clear zones" - on airports. According to Paragraph 211, "Safe and efficient operations at an airport require that certain areas on and near the airport be clear of objects or restricted to objects with a certain function, composition, and/or height." To achieve this requirement, object clearing criteria contained in the AC describe the types of objects tolerated within various subdivisions of FAR Part 77. Aircraft are controlled by aircraft operating rules and not by these criteria. However, objects not in conformance with these criteria may result in aircraft operating restrictions.

FAA ORDER 1050.1E - This Order, entitled FAA Order 1050.1E, CHG 1, *Environmental Impacts: Policies and Procedures*, (Effective Date: March 20, 2006) provides the FAA agency-wide policies and procedures for compliance with the National Environmental Policy Act (NEPA) and implementing regulations issued by the Council on Environmental Quality (40 CFR Parts 1500-1508). The provisions of this order and the CEQ regulations apply to actions directly undertaken by the FAA and where the FAA has sufficient control and responsibility to condition the license or project approval of a non-Federal entity.

FAA ORDER 5050.4B - This Order, entitled *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects,* (Effective Date: April 28, 2006) contains all of the essential information an airport sponsor needs to meet both procedural and specific environmental requirements by providing NEPA instructions especially for proposed Federal actions to support airport development projects. Order 5050.4B follows the Council on Environmental Quality (CEQ) NEPA implementing regulations 40 CFR Parts 1500-1508. It also follows DOT Order 5610.C, *Policies for Considering Environmental Impacts*, and FAA Order 1050.1E, Chg 1, *Environmental Impacts: Policies and Procedures* (March 20, 2006).

FAR PART 36 - This regulation, titled "Noise Standards: Aircraft Type and Airworthiness Certification," establishes noise standards for the civil aviation fleet. Certain extensions for compliance are included in the Aviation Safety and Noise Abatement Act of 1979.

FAR PART 91 - This regulation, titled "General Operating and Flight Rules," includes an amendment issued by the FAA on September 25, 1991 (to 14 CFR Part

91) in conformance with requirements of the Airport Noise and Capacity Act of 1990. The amendment to the aircraft operating rules requires a phased transition to an all Stage 3 aircraft fleet operating in the 48 contiguous US and the District of Columbia by December 31, 1999. The amendment places a cap on the number of Stage 2 aircraft allowed to operate in the United States and provides for a continuing reduction in the population exposed to noise from Stage 2 aircraft.

FAR PART 150 (ALSO KNOWN AS 14 CFR PART 150) - This regulation, titled "Airport Noise Compatibility Planning," sets forth criteria for developing an 14 CFR Part 150 Noise Compatibility Program, an FAA-assisted program designed to increase the compatibility of land and land uses in the areas surrounding an airport that are most directly affected by operation of the airport. The specific purpose is to reduce the adverse effects of noise as much as possible by implementing both on-airport noise abatement measures and off-airport noise mitigation measures. The basic products of an 14 CFR Part 150 program typically include (i) noise exposure maps for the existing condition and for five years in the future; (ii) workable on-airport noise abatement measures (preferential runway use programs, new or preferential flight tracks), (iii) off-airport noise mitigation measures (land acquisition, sound insulation, or special zoning); (iv) an analysis of the costs and the financial feasibility of the recommended measures; and (v) policies and procedures related to the implementation of on- and off-airport programs. Community involvement opportunities are provided throughout all phases of noise compatibility program development.

FAR PART 161 - This regulation, titled "Notice and Approval of Airport Noise and Access Restrictions," establishes a program for reviewing airport noise and access restrictions on the operations of Stage 2 and Stage 3 aircraft. This regulation is in response to specific provisions in the Airport Noise and Capacity Act of 1990 and is a major element of the national aviation noise policy required by that Act. Even if such an airport noise and access restriction is proposed as an element of a 14 CFR Part 150 Noise Compatibility Program, it is still subject to the guidelines of FAR Part 161 prior to approval. Some of the public notice requirements, however, may be met during development of the 14 CFR Part 150 program.

FEDERAL AVIATION REGULATIONS (FAR) - The body of Federal regulations enacted by the U.S. Secretary of Transportation, under the statutory authority of the Federal Aviation Act and published in Title 14 of the Code of Federal Regulations (CFR).

FEDERAL INTERAGENCY COMMITTEE ON URBAN NOISE (FICUN) - A federal interagency committee formed in 1979 to develop federal policy and guidance on aviation noise. FICUN was formed to provide a single forum in which noise abatement policy could be addressed by all federal agencies that had some responsibility for noise abatement. In 1980 FICUN published "Guidelines for Considering Noise in Land Use Planning and Control". Through this report FICUN established DNL as the descriptor to be used for all noise sources.

FEDERAL INTERAGENCY COMMITTEE ON NOISE (FICON) - A federal interagency committee formed in 1990 to review Federal policies that govern the assessment of airport noise impacts. The committee consisted of representatives

from the Departments of Transportation (Office of the Secretary and the FAA), Defense, Justice, Veterans Affairs, Housing and Urban Development; the Environmental Protection Agency; and the Council on Environmental Quality. The committee published its findings in the 1992 FICON Report. To foster new research, FICON recommended that a new federal interagency committee be formed (FICAN) with a mandate to provide forums for debate of future research needs and to encourage new development efforts in these areas.

FEDERAL INTERAGENCY COMMITTEE ON AVIATION NOISE (FICAN) – A federal interagency committee devoted specifically to aviation noise formed in 1993 that provides a forum for debate over future research needs to better understand and control aviation noise. FICAN is responsible for carrying out interagency coordination on matters related to aviation noise research in the United States.

FEE SIMPLE LAND ACQUISITION - In reference to airports, the full purchase of land and improvements by an airport sponsor. The land is usually maintained or leased for uses that are compatible with airport operations. Alternatively, the airport sponsor can resell the land with an aviation easement and deed restrictions that specify the compatible land uses that are permitted. One benefit of the resale option is that the land is returned to the local tax rolls.

FINAL APPROACH - A flight path in the direction of landing that follows the extended runway centerline. It usually extends from the base leg to the runway.

FINDING OF NO SIGNIFICANT IMPACT (FONSI) - As stated in CEQ regulation 40 CFR 1508.13, a statement by a Federal agency briefly describing why an action will not have a significant effect on the human environment, supported by an environmental assessment or other appropriate document.

FIX - A point in the airspace, which describes a geographical position determined through (i) visual reference to the surface, (ii) reference to one or more radio navigational aids, (iii) celestial plotting, or (iv) another navigational device.

FIXED-BASE OPERATOR (FBO) - A business located on the airport that provides services such as hangar space, fuel, flight training, repair, and maintenance to airport users.

FLEET MIX - The mix or differing types of aircraft operating in a particular environment.

FLIGHT MANAGEMENT SYSTEM/ GLOBAL POSITIONING SYSTEM (FMS/GPS) - Equipment onboard an aircraft takes advantage of various radio navigation and/or Global Positioning System routes to guide the aircraft.

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 - The use of established routes for arrival and departure by aircraft to and from the runways at the airport.

FLY QUIET PROGRAM - The use of designated noise abatement flight procedures to further reduce the impact of aircraft noise. A Fly Quiet Program provides comprehensive guidance for pilots to use designated quiet flight and operating procedures.

GENERAL AVIATION AIRCRAFT - Generally, those US registered civil aircraft which operate for private and noncommercial purposes and whose operations are not governed by Parts 119, 121, 125, or 135 of the Federal Aviation Regulations. General aviation aircraft range from small single-engine propeller aircraft to large turbojet private aircraft.

GEOGRAPHIC INFORMATION SYSTEM (GIS) - An information system that is designed for storing, integrating, manipulating, analyzing, and displaying data referenced by spatial or geographic coordinates.

GLIDE SLOPE (GS) - Provides vertical guidance for aircraft during approach and landing. The glide slope consists of the following: electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as Instrument Landing System, or visual ground aids, such as Visual Approach Slope Indicator, which provide vertical guidance for visual flight rules approach or for the visual portion of an instrument approach and landing.

GLOBAL POSITIONING SYSTEM (GPS) - A system of 24 satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.

GRID ANALYSIS - A type of aircraft noise analysis that evaluates the noise levels at individual points rather than through generation of noise contours.

GROUND ABSORPTION - As sound propagates near the ground the interaction of the sound wave with the ground results in attenuation of the sound. Hard ground, like water, has less attenuation that soft ground (most other surfaces). Also known as Lateral Attenuation.

GROUND EFFECT - Noise attenuation attributed to absorption or reflection of noise by man-made or natural features on the ground surface.

GROUND POWER UNIT (GPU) - A source of power generally provided at the terminal building for aircraft to use while the engines are off.

GROUND RUN-UP ENCLOSURE (GRE) - Generally a three or four-sided structure that uses acoustical dampening principles to reduce the noise impacts of aircraft engine ground run-ups. Aircraft ground run-ups are routine aircraft engine maintenance tests that require the operation of an engine at high power for extended periods of time generating continuous elevated noise levels.

GROUND TRACK - The trajectory of an aircraft flight path projected onto the ground surface.

HOUSING UNIT - One or more rooms arranged, designed or used as independent living quarters for a single household. Buildings with more than one kitchen or more than one set of cooking facilities are deemed to contain multiple housing units unless the additional cooking facilities are clearly accessory and not intended to serve additional households.

HUB - The term hub can have two separate meanings. A hub refers to an airport that services airlines with hubbing operations. Additionally, the U.S. Department of Transportation classifies an Air Traffic Hub as a community or geographic area whose airport(s) serve at least 0.05 percent of all enplaned (boarded) passengers in the United States. The hub classification is based on the share of the total enplaned passengers: Large Hub, 1 percent or more; Medium Hub, 0.25 percent - 0.99 percent; and Small Hub, 0.05 percent - 0.24 percent.

HUBBING - A method of airline scheduling that programs the arrival and departure times of several aircraft in a close period of time to allow the transfer of passengers between different flights of the same airline to reach their ultimate destination. Several airlines may conduct hubbing operations at an airport.

HUSHKIT - An aircraft-engine quieting device added to aircraft engines originally certified as Stage 2 in order to meet more stringent Stage 3 standards. (*See also Retrofit*)

HEARING THRESHOLD - For a given listener and specified signal, the minimum: (i) sound pressure level; or (ii) force level that is capable of evoking an auditory sensation in a specified function of trials.

HERTZ (**Hz**) - Unit of frequency representing the number of times a phenomenon repeats itself in a one second unit of time. Hertz is the unit used to measure frequency, the rate at which something, vibrates or oscillates.

INCOMPATIBLE LAND USE - Residential, public, recreational, and certain other noise sensitive land uses that are designated as unacceptable within specific ranges of cumulative (DNL) noise exposure as set forth in 14 CFR Part 150, Appendix A, Table 2.

INFILL - Urban development occurring on vacant lots in substantially developed areas; may also include the redevelopment of areas to a greater density.

INFRASTRUCTURE - The basic facilities and equipment necessary for the effective functioning of a city, such as the means of providing water service, sewage disposal, telephone service, electric and gas connections, and the street network.

INSTRUMENT APPROACH - A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight rules 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) - That portion of the Federal Aviation Regulations (14 CFR Part 91) specifying the procedures to be used by aircraft during flight in Instrument Meteorological Conditions. These procedures may also

be used under visual conditions and provide for positive control by Air Traffic Control. (*See* also Visual Flight Rules).

INSTRUMENT LANDING SYSTEM (ILS) - An electronic system installed at some airports which helps to guide pilots to runways for landing during periods of limited visibility or adverse weather.

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 (abbreviation IFR).

INTEGRATED NOISE MODEL (INM) - A computer model developed, updated, and maintained by the FAA to predict the noise exposure generated by aircraft operations.

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) - An agency of the United Nations (UN) charged with the development of standards for international air navigation and air transport to assure safety, it adopts and recommends standards to UN member states regarding environmental issues.

ITINERANT OPERATION - An aircraft flight that ends at a different airport than where it began.

KNOTS - Airspeed measured as the distance in nautical miles (6,076.1 feet) covered in one hour. (Approximately equal to 1.15 miles per hour.)

LAE (*see* Sound Exposure Level)

LAND USE - A description and classification of how land is occupied or utilized, e.g., residential, office, parks, industrial, commercial, etc.

LAND USE CLASSIFICATION - A system for classifying and designating the appropriate use of properties.

LAND USE COMPATIBILITY - The ability of land uses surrounding the airport to coexist with airport-related activities with minimum conflict.

LAND USE PLAN - The element of a comprehensive plan that designates and justifies the future use or reuse of land.

LAND USE REGULATIONS - Ordinances and laws which govern and direct development of land in a city. Examples include Zoning and Subdivision Regulations.

LANDING AND TAKEOFF (LTO) CYCLE - The time that an aircraft is in operation at or near an airport. An LTO cycle begins when an aircraft starts its final approach (arrival) and ends after the aircraft has made its climb-out (departure).

LATERAL ATTENUATION - As sound propagates near the ground the interaction of the sound wave with the ground results in attenuation of the sound. Hard

ground, like water, has less attenuation that soft ground (most other surfaces). Also known as Ground Absorption.

LDN (*See* DNL) - Ldn is used in place of DNL in mathematical equations only.

LEQ/ LAEQ - (*See* Equivalent Sound Level)

LOAD FACTOR - The percentage of seats occupied in an aircraft.

LOCAL OPERATION - An aircraft flight that begins and ends at the same airport.

LOCALIZER (LOC) - is the component of an ILS that provides runway centerline guidance (lateral guidance) to aircraft, but not the glideslope (vertical guidance) information.

LOCALIZER-TYPE DIRECTIONAL AID (LDA) - A navigational aid used for Nonprecision instrument approaches with utility and accuracy comparable to a localizer; however, it is not part of a complete ILS and its signal is not typically aligned with the runway.

LOUDNESS - The subjective assessment of the intensity of sound.

MAXIMUM NOISE LEVEL (LMAX) - The maximum sound pressure for a given event adjusted toward the frequency range of human hearing.

MEAN SEA LEVEL (MSL) - The average height of the surface of the sea for all stages of the tide; used as a reference for elevations; also called sea level datum.

MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATOR LIGHTS (MALSR) - A lighting system installed at some airports that pilots use during instrument approaches to align the aircraft with the centerline of the runway. Steady-burning white lights are used to create a reference plane and white strobe lights create a sequential flash pattern that rolls toward the runway threshold, which is marked by steady-burning green lights. Varying intensity settings allow the approach to be used under changing weather conditions.

MIDDLE MARKER - A radio-beacon that defines a point along the glide slope of an ILS, normally located at or near the point of decision height.

MIDWAY (MDW) – Chicago Midway International Airport

MISSED APPROACH - A maneuver conducted by a pilot when an instrument approach cannot be completed for landing at an airport. Instrument approach procedure charts show the route of flight and altitude that the pilot must follow in this circumstance.

MITIGATION - The avoidance or minimization of an adverse impact.

MITIGATION MEASURE - An action that can be planned or taken to alleviate (mitigate) an adverse environmental impact. Mitigation can include:

a. Avoiding the impact altogether by not taking a certain action or parts of an action.

b. Minimizing the impact by limiting the degree or magnitude of the action and its implementation.

c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

e. Compensating for the impact by replacing or providing substitute resources or environments.

f. A proposed airport development project or alternatives to that project may constitute a mitigation measure.

NATIONAL AIRSPACE SYSTEM (NAS) - The common network of US airspace, air navigation facilities, equipment, services, airports, or landing areas; aeronautical charts, information, and services; rules, regulations, and procedures; technical information, manpower, and materials, all of which are used in aerial navigation.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA) - The original legislation establishing the environmental review process for proposed Federal actions.

NATURAL AMBIENT NOISE – the Existing Ambient Noise, minus manmade sounds. In the case of a National Park, the natural ambient noise also includes noise associated with roadways through the Park. *See* Ambient Noise and Existing Ambient Noise.

NAUTICAL MILE - A measure of distance equal to one minute of arc on the earth's surface (6,076.1 feet or 1,852 meters). A nautical mile is shorter than a statute mile (1 nautical mile is equal to 1.15078 statute miles). The nautical mile remains in use by sea and air navigators worldwide because of its convenience when working with charts.

NAVIGATIONAL AIDS (NAVAIDS) - Any facility used by an aircraft for navigation.

NAVIGATIONAL FIX - A geographical position determined by reference to one or more radio navigational aids.

NOISE - Noise is any sound that is considered to be undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying.

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

NOISE ABATEMENT DEPARTURE PROFILES (NADP) - Unique aircraft departure profiles designed to minimize noise impacts on communities.

NOISE ATTENUATION OF BUILDINGS - The use of building materials to reduce noise through absorption, transmission loss, and reflection of sound energy.

NOISE COMPATIBILITY PROGRAM (NCP) - Operations and Land Use measures designed to reduce or mitigate noise levels near an airport. These measures are developed as part of the Part 150 Process and submitted to FAA for approval. All approved measures are eligible for FAA funding. Many NCP measures typically rely on the NEMs.

NOISE CONTOUR - A diagram representing specific noise levels of a given metric indicated by a line connecting points of equal noise exposure.

NOISE EXPOSURE MAP (NEM) - A map prepared in accordance with 14 CFR Part 150 that depicts actual (existing or historical conditions) or anticipated (future conditions) aircraft noise exposure and the affected land uses. NEMs for future conditions may take into account anticipated land use changes around the airport.

NOISE LEVEL REDUCTION (NLR) - The noise reduction between two areas or rooms is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. Noise reduction is measured by combining the effect of the transmission loss performance of structures separating the two areas or rooms and the effect of acoustic absorption in the receiving room.

NOISE MONITORING SYSTEM (NMS) - *see* airport noise monitoring system

NOISE-SENSITIVE LAND USE - A land use that can be adversely affected by high levels of aircraft noise. Residences, schools, hospitals, religious facilities, libraries, and other similar uses are typically considered to be noise-sensitive.

NONDIRECTIONAL BEACON (NDB) - A beacon transmitting non-directional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine the bearing to and from the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a compass locator.

NONPRECISION APPROACH - A standard instrument approach procedure providing runway alignment but no glide slope or descent information.

NOTICE TO AIRMEN (NOTAM) - A notice containing information concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) and the timely knowledge of which is essential to personnel concerned with flight operations.

OFFSET SEGMENT/SIDE STEP MANEUVER - Visual maneuver at the completion of an instrument approach which allows straight-in landing minimums on a parallel approach not more than 1200 feet to either side of the approach runway.

ON-DEMAND - Generally, US-registered civil aircraft of designated size (usually 30 or fewer passenger seats with payload capacity of 7,500 pounds or less) that support on-demand, unscheduled, or infrequently scheduled passenger-carrying or cargo service (including public charters) for compensation or hire, pursuant to a air carrier certificate issued under 14 CFR Parts 119 and 135 of the Federal Aviation Regulations. (*See* 14 CFR 119.3, Definitions.) This term includes operations formerly classified as air taxi, a term no longer used by the FAA but still used by the U.S. Department of Transportation (USDOT).

OPERATION - A takeoff or landing by an aircraft.

OUTER FIX - An air traffic control term for a point in the airspace from which aircraft are normally cleared to the approach fix or final approach course.

OUTER MARKER (OM) - An Instrument Landing System 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.

OVERFLIGHT - Aircraft originating or terminating outside the metropolitan areas that transit the airspace without landing.

PASSENGER FACILITY CHARGE (PFC) - Authority for a commercial service airport to charge each enplaning passenger a facility charge that can be used to preserve or enhance safety, security, capacity, and to reduce noise or to enhance competition among carriers.

PEAK SOUND PRESSURE LEVEL - Level of the maximum, or highest, sound pressure with stated frequency weighting, within a stated time interval.

POINT OF CLOSEST APPROACH (PCA) - The closest recorded radar target point between an aircraft and a given Remote Monitoring Tower.

POSITIVE CONTROL - The separation of all air traffic within designated airspace as directed by air traffic controllers.

PRECISION APPROACH PATH INDICATOR (PAPI) - Provides visual approach slope guidance to aircraft during an approach. It is similar to a Visual Approach Slope Indicator but provides a sharper transition between the colored indicator lights.

PREFERENTIAL RUNWAY - The most desirable runway to be used by aircraft for the purposes of noise abatement. Preferential runways would be assigned by the local Air Traffic Control Tower whenever possible.

PREFERENTIAL RUNWAY USE PROGRAM – A program of defined arrival and departure runways designed to minimize noise impacts on nearby residential areas.

PROFILE - The position of the aircraft during an approach or departure in terms of altitude above the runway and distance from the runway end.

PROPAGATION - Sound propagation is the spreading or radiating of sound energy from the noise source. It usually involves a reduction in sound energy with increased distance from the source. Atmospheric conditions, terrain, natural objects, and manmade objects affect sound propagation.

PROPRIETARY USE RESTRICTIONS - Restrictions by an airport sponsor on the number, type, class, manner, or time of aircraft operations at the airport. The ability of an airport sponsor to impose proprietary use restrictions was significantly affected by passage of the Airport Noise and Capacity Act of 1990.

PUBLIC USE AIRPORT - An airport open to public use without prior permission, and without restrictions within the physical capabilities of the facility. It may or may not be publicly owned.

RADAR VECTORING - Navigational guidance where air traffic controllers issue an instruction to the pilot to follow a compass heading.

RECORD OF DECISION (ROD) –The Federal finding issued by the lead Federal agency with the oversight for project approval. As stated in CEQ regulation 40 CFR 1505.2, the FAA findings, explanations, and related justifications after review of a Draft Environmental Assessment or Environmental Impact Statement. The ROD specifies the environmentally preferred alternative and the required mitigative actions and permits, if necessary.

REGIONAL JET - A jet aircraft of a size and payload that would include it in the air carrier aircraft category. Regional jets typically have 35 to 90 seats; however, the next-generation regional jets are expected to seat 100 passengers. For use in air commerce, the regional jet must be operated pursuant to an air carrier certificate pursuant to an air carrier certificate issued under 14 CFR Parts 119 and 121 of the Federal Aviation Regulations. (*See* 14 CFR 119.3, for Domestic, Flag, and Supplemental operations.) Regional jets are not operated as commuter aircraft pursuant to 14 CFR Part 135.

RELIEVER AIRPORT - An airport which, when certain criteria are met relieves the aeronautical demand on a busier air carrier airport.

RELOCATED THRESHOLD - Generally is a temporary shifting of a runway threshold to allow for construction, maintenance, or other activities. The portion of pavement behind a relocated threshold is not available for takeoff or landing in either direction. It may be available for taxiing of aircraft.

REMOTE MONITORING SITE (RMS) - A microphone placed in a community and recorded at an airports noise monitoring office.

REQUIRED NAVIGATION PERFORMANCE (RNP) – is a type of performance-based navigation that allows an aircraft to fly a specific path between defined points in space. An RNP requires that aircraft be equipped with navigation performance monitoring and alerting.

RETROFIT - The retroactive modification of existing jet aircraft engines for noise reduction purposes.

RETROFITTED AIRCRAFT - An aircraft originally certified as Stage 2 that has been modified to meet Stage 3 requirements. This includes the modification of engines with "hushkits" (often referred to as hushkitted") or the replacement of engines to meet the Stage 3 standard.

REVERSE THRUST - the application of power on landing, reversing the engine direction to assist the stopping of the aircraft on the runway.

RNAV - *See Area Navigation.*

RNP - *See Required Navigation Performance.*

RUN-UP - A routine procedure for testing aircraft systems by running one or more engines at a high power setting. Engine run-ups are normally conducted by airline maintenance personnel checking an engine or other on board systems following maintenance.

RUN-UP LOCATION - A designated location on an airfield where engine maintenance run-ups are to be conducted.

RUNWAY - A defined rectangular area on an airport for the purpose of landing and taking off of aircraft. Runways are numbered in relation to their magnetic direction, rounded to the nearest 10 degrees (i.e., Runway 14, Runway 32).

RUNWAY END IDENTIFIER LIGHTS (REIL) - Two synchronized flashing lights, one on each side of the runway threshold, which identify the approach end of the runway.

RUNWAY PROTECTION ZONE (RPZ) - An area, trapezoidal in shape and centered about the extended runway centerline, designated to enhance the safety of aircraft operations. It begins 200 feet (60 m) beyond the end of the area usable for takeoff or landing. The RPZ dimensions are functions of the aircraft, type of operation, and visibility minimums. (Formerly known as the clear zone).

RUNWAY THRESHOLD - The beginning of that portion of the runway usable for landing.

RUNWAY USE PROGRAM *see Preferential Runway Use Program.*

SCOPING - Scoping is an early and open process for determining the scope or range of issues to be addressed in the Environmental Impact Statement and identifying the significant issues related to a proposed action. Issues important to the public and local, state, and Federal agencies are solicited through direct mailing, public notices, or meetings. Scoping is generally conducted before development of the Environmental Impact Statement scope of work.

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 the definitions for Offset ILS and regular ILS.

SINGLE EVENT - One noise event. For many kinds of analysis, the sound from single events is expressed using the Sound Exposure Level metric.

SINGLE EVENT NOISE EXPOSURE LEVEL (SENEL) - The sound exposure level of a single noise event (such as an aircraft overflight) measured over the time interval between the initial and final times for which the sound level of the single event exceeds the background noise level.

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

SOUND - Sound is the result of 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 atmospheric pressure or sound waves.

SOUND EXPOSURE LEVEL (SEL, DENOTED BY THE SYMBOL LAE) - Over a stated time interval, T (where T=t2-t1), ten times the base-10 logarithm of the ratio of a given time integral of squared instantaneous A-weighted sound pressure, and the product of the reference sound pressure of 20 micropascals, the threshold of human hearing, and the reference duration of one sec. The time interval, T, must be long enough to include a majority of the sound source's acoustic energy. As a minimum, this interval should encompass the ten dB down points. In addition, LAE is related to LAeqT by the following equation:

$LAE = LAeqT + 10*\log_{10}^{(t2-t1)}$ (dB)

where,

LAeqT = Equivalent sound level in dB (*see* definition above).

SOUND INSULATION - (i) The use of structures and materials designed to reduce the transmission of sound from one room or area to another or from the exterior to the interior of a building. (ii) The degree of reduction in sound transmission, or noise level reduction (), by means of sound-insulating structures and materials.

SOUND LEVEL METER - An instrument consisting of a microphone, an amplifier, an output meter, and frequency-weighting networks used to measure noise and sound levels in a specified manner.

SOUND PRESSURE LEVEL (SPL) - Ten times the base-10 logarithm of the ratio of the time-mean-square pressure of a sound, in a stated frequency band, to the square of the reference sound pressure in gases of 20 micropascals.

SPECIAL USE AIRSPACE - Airspace of defined dimensions identified by an area on the earth's surface wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations, which are not part of those activities.

STAGE 2 AIRCRAFT - Aircraft that meet the noise levels prescribed by Federal Aviation Regulations Part 36, which are less stringent than those established for the quieter Stage 3 designation. The Airport Noise and Capacity Act required the phase-out of all Stage 2 aircraft over 75,000 pounds by December 31, 1999, with the potential for case-by-case exceptions through the year 2003.

STAGE 3 AIRCRAFT - Aircraft that meet the second most stringent noise levels set in Federal Aviation Regulations Part 36. A Stage 3 aircraft can be a previous Stage 2 aircraft with the engines retrofitted with a "Hush-kit" such as a Boeing 727 (B72Q), Boeing 737-200 (B73Q) and DC-9 (DC9Q).

STAGE 4 AIRCRAFT - This noise standard applies to any application for a new airplane type design on and after January 1, 2006. The recent adoption of Stage 4 standards by FAA for noise certification purposes represents the most stringent noise standards to date. This noise standard is intended to provide uniform noise certification standards for Stage 4 airplanes certificated in the United States and those airplanes that meet the International Civil Aviation Organization Annex 16 Chapter 4 noise standard.

STANDARD INSTRUMENT DEPARTURE PROCEDURE (SID) - A preplanned and published instrumental departure route. SIDs provide the transitions from the terminal to the en route air traffic control structure.

STANDARD TERMINAL ARRIVAL ROUTE (STAR) - A preplanned and published instrumental arrival route.

STATUTE MILE - A measure of distance equal to 5,280 feet. A statute mile is longer than a nautical mile (1 statute mile is equal to 0.868976 nautical miles).

TACTICAL AIR NAVIGATION (TACAN) - A navigational system used by the military. TACAN provides both azimuth and distance information to a receiver on board an aircraft.

TERMINAL RADAR APPROACH CONTROL (TRACON) - A FAA Air Traffic Control Facility which uses radar and two-way communication to provide separation of air traffic within a specified geographic area in the vicinity of one or more airports.

TERMINAL RADAR SERVICE AREA (TRSA) - Airspace surrounding certain airports where Air Traffic Control provides radar vectoring, sequencing, and separation on a full-time basis for all Instrument Flight Rules and participating Visual Flight Rules aircraft.

THRESHOLD - Two Meanings: (i) Specified boundary of a runway and (ii) baseline noise level above which microphones record a noise event.

TIME ABOVE (TA) - The amount of time that sound exceeds a given decibel level during a 24-hour period (e.g., time in minutes that the sound level is above 75 decibels).

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

a. Upwind Leg - A flight path parallel to the landing runway in the direction of landing.

b. Crosswind Leg - A flight path at right angles to the landing runway off its upwind end.

c. 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.

d. 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.

e. 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. An aircraft making a straight-in approach VFR is also considered to be on final approach.

TURBOJET - An aircraft powered by a jet turbine engine. The term is customarily used in air traffic control for all aircraft, without propellers, that are powered by variants of jet engines, including turbofans.

TURBOPROP - An aircraft powered by one or more jet turbine engines that drive a propeller. Aircraft of this type are typically used by airlines on short routes between two relatively close locations.

UNICOM - A non-government communication facility that may provide information to pilots on UNICOM frequencies at certain towers, generally, those without operating air traffic control towers, or those closed at certain periods of day or night. Aeronautical charts and publications show UNICOM frequencies and locations.

UNIFORM RELOCATION ACT - The Uniform Relocation Assistance and Real Property Acquisition Act, passed by Congress in 1970, is a federal law that establishes minimum standards for federally funded programs and projects that require the acquisition of real property (real estate) or displace persons from their homes, businesses, or farms. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects.

UPWIND LEG - A flight path parallel to the approach runway in the direction of approach.

VECTOR - Compass heading instructions issued by Air Traffic Control in providing navigational guidance by radar.

VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE (VOR) STATION - A ground-based radio navigation aid transmitting signals in all directions. A VOR provides azimuth guidance to pilots by reception of electronic signals.

VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE STATION WITH TACTICAL AIR NAVIGATION (VORTAC) - A navigational aid providing VOR azimuth and Tactical Air Navigation distance measuring equipment at one site.

VERTICAL NAVIGATION (VNAV) - A form of precise vertical (altitude) navigation using the aircraft Flight Management System (FMS). VNAV is the vertical navigation flight profile which is the predicted flight trajectory of the airplane in the vertical plane as a function of distance along the horizontal flight path defined by the LNAV flight plan. VNAV computes guidance commands for the Autopilot or Flight Director and Autothrottle to follow the vertical profile.

VISUAL APPROACH - An approach conducted on an Instrument Flight Rules flight plan, which authorizes the pilot to proceed visually and clear of clouds to the airport.

VISUAL APPROACH SLOPE INDICATOR (VASI) - A visual aid for final approach to the runway threshold, consisting of two wing bars of lights on either side of the runway. Each bar produces a split beam of light - the upper segment is white, the lower is red.

VISUAL FLIGHT RULES (VFR) - Rules and procedures specified in Federal Aviation Regulations Part 91 for aircraft operations under visual conditions. Aircraft operations under VFR are not generally under positive control by Air Traffic Control. The term VFR is also used in the U.S. 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 a type of flight plan.

VISUAL METEOROLOGICAL CONDITIONS (VMC) - Weather conditions expressed in terms of visibility, distance from cloud, and cloud ceiling equal to or greater than those specified in Federal Aviation Regulations Part 91.155 for aircraft operations under Visual Flight Rules.

ZONING - Mechanism through which cities regulate the location, size, and use of properties and buildings. These regulations are designed to promote the health, safety, morals, or general welfare of the community; to lessen congestion in streets; to prevent the overcrowding of land; to avoid undue concentration of population; and to facilitate the adequate provisions of transportation, water, sewage, schools, parks, and other public requirements.

ZONING DISTRICT - A section of a city designated in the zoning ordinance text and delineated on the zoning map, in which requirements for the use of land and building and development standards are prescribed.

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ACRONYMS

AAAE	American Association of Airport Executives
AAB	Airport Administration Building
AADT	Average Annual Daily Traffic
AC or A/C	Advisory Circular or Aircraft
ACI-NA	Airports Council International – North America
ADT	Airspace Design Tool
AFE	Above Field Elevation
AGL	Above Ground Level
AIM	Airman's Information Manual
AIP	Airport Improvement Program
ALP	Airport Layout Plan
ALPA	Airline Pilots Association
ALS	Approach Light Systems
ALSF-2	Approach Light System with Sequenced Flashing Lights
ANCA	Airport Noise and Capacity Act of 1990
ANMS	Airport Noise Management System
APU	Auxiliary Power Unit
ARC	Airport Reference Code
ARFF	Aircraft Rescue and Fire Fighting
ARTCC	Air Route Traffic Control Center
ARTS	Automated Radar Terminal System
ASNA	Aviation Safety and Noise Abatement Act of 1979
ASR	Airport Surveillance Radar
AST	Advanced Subsonic Transport
ASV	Annual Service Volume
ATA	Air Transport Association
ATADS	Air Traffic Activity Data System
ATC	Air Traffic Control
ATCA	Air Traffic Control Association
ATCT	Air Traffic Control Tower (or Airport Traffic Control Tower)
ATO	Air Traffic Organization

ATS	Air Traffic Service
BMP	Best Management Practice
BRL	Building Restriction Line
C90	Chicago Terminal Radar Approach Control (located in Elgin, Illinois)
CAC	Community Advisory Committee
CAEP	Committee on Aviation Environmental Protection
CATEX	Categorical Exclusion
CDA	Chicago Department of Aviation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
CNEL	Community Noise Equivalency Level
dB	Decibel
dBA	A-weighted decibel
DEIS	Draft Environmental Impact Statement
DME	Distance Measuring Equipment
DNL	Day-Night Average Sound Level
DOD	Department of Defense
DOT	Department of Transportation
DP	Departure Procedures
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
EPNDB	Effective Perceived Noise Level
FAA	Federal Aviation Administration
FAF	Final Approach Fix
FAR	Federal Airport Regulation
FOD	Foreign Object Debris
FBO	Fixed-Base Operator
FDC	Flight Data Center
FEIS	Final Environmental Impact Statement

FICAN	Federal Interagency Committee on Aviation Noise
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
FMS	Flight Management System
FONSI	Finding of No Significant Impact
FPM	Feet per Minute
GA	General Aviation
GIS	Geographic Information System
GP	General Planned Development District
GPS	Global Positioning System
GPU	Ground Power Unit
GRE	Ground Run-Up Enclosure
GS	Glide Slope
GSE	Ground Support Equipment
HIRL	High Intensity Runway Lights
HUD	Department of Housing and Urban Development
Hz	Hertz
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
INM	Integrated Noise Model
KIAS	Knots Indicated Airspeed
LAAS	Local Area Augmentation Systems
LAHSO	Land and Hold Short
Lavg	Average Noise Level
LDA	Localizer-Type Directional Aid
LDC	Land Development Code
Ldn	See DNL
Leq	Equivalent Sound Level
Lmax	Maximum Noise Level
LSP	Land Sales Proceeds

LTO	Landing and Takeoff Cycle
LUMM	Land Use Management Measure
MALS	Medium Intensity Approach Light System
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
MDW	Chicago Midway International Airport
MIRL	Medium Intensity Runway Lights
MLS	Microwave Landing System
MNCC	Midway Noise Compatibility Commission
MOA	Memorandum of Agreement
MPO	Metropolitan Planning Organization
MSL	Mean Sea Level
NA	Noise Abatement
NADP	Noise Abatement Departure Profiles
NAM	Noise Abatement Measure
NAS	National Airspace System
NASA	National Aeronautics and Space Administration
NATCA	National Air Traffic Controllers Association
NAVAIDS	Navigational Aids
NCP	Noise Compatibility Program
NDB	Non-directional Beacon
NEA	Number of Events Above
NEM	Noise Exposure Map
NEPA	National Environmental Policy Act of 1969
NLR	Noise Level Reduction
NM	Nautical Miles
NMS	Noise Monitoring System
NOTAM	Notice to Airmen
NRHP	National Register of Historic Places
NST	Noise Screening Tool
O&D	Origin & Destination (passengers)
OAG	Official Airline Guide

OM	Outer Marker
ONCC	O'Hare Noise Compatibility Commission
ORD	Chicago O'Hare International Airport
PAC	Planning Advisory Committee
PAPI	Precision Approach Path Indicator
PBN	Performance-Based Navigation
PCA	Point of Closest Approach
PFC	Passenger Facility Charge
PGL	Program Guidance Letter
PMM	Program Management Measure
PRM	Precision Runway Monitor
QA/QC	Quality Assurance/Quality Control
QAT	Quiet Aircraft Technology
QC	Quota Count
RAILS	Runway Alignment Indicator Lights
RCLS	Runway Centerline Light System
REIL	Runway End Identifier Lights
RJ	Regional Jet
RMS	Remote Monitoring Site
RMT	Remote Monitoring Terminal
RNAV	Area Navigation
RNP	Required Navigation Performance
ROA	Record of Approval (issued by FAA on a Part 150 Noise Compatibility Program)
ROD	Record of Decision (issued by FAA on an EIS)
RPZ	Runway Protection Zone
RSA	Runway Safety Areas
SEIS	Supplemental Environmental Impact Statement
SEL	Sound Exposure Level
SENEL	Single Event Noise Exposure Level
SID	Standard Instrument Departure Procedure
SPL	Sound Pressure Level

STAR	Standard Terminal Arrival Route
TA	Time Above
TDR	Transfer of Development
TEQ	Equivalent Sound Level
TRACON	Terminal Radar Approach Control
TRSA	Terminal Radar Service Area
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDOT	Department of Transportation
USEPA	Environmental Protection Agency
USPAP	Uniform Standards of Professional Appraisal Practice
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
VNAV	Vertical Navigation
VOR	Very High Frequency Omnidirectional Radial Antenna
VORTAC	Very High Frequency Omnidirectional Range Station with Tactical Air Navigation
V2	Takeoff Safety Speed
Vs	Stalling Speed
Vfs	Final Segment Speed
WAAS	Wide Area Augmentation Systems
ZAU	Chicago Air Route Traffic Control Center (located in Aurora, Illinois)