

Noise Model Calculation Data

Hemet-Ryan Airport

AIRCRAFT MIX (Estimated 2002 Activity Level)			
Aircraft Type	Total Operations		
	Annual	Average Day	Percentage
Single-Engine, Propeller, Fixed Pitch	16,200	44.38	30.57%
Single-Engine, Propeller, Variable Pitch	33,200	90.96	62.64%
Twin-Engine, Propeller, Piston	1,000	2.74	1.89%
Twin-Engine, Turboprop	500	1.37	0.94%
Small Business Jet (e.g., Citation III)	100	0.27	0.19%
Helicopter	2,000	5.48	3.77%
Total	53,000	145.2	100.00%

AIRCRAFT MIX (Forecast 2022 Activity Level)			
Aircraft Type	Total Operations		
	Annual	Average Day	Percentage
Single-Engine, Propeller, Fixed Pitch	23,750	65.07	29.69%
Single-Engine, Propeller, Variable Pitch	43,750	119.86	54.69%
Twin-Engine, Propeller, Piston	2,000	5.48	2.50%
Twin-Engine, Turboprop	4,000	10.96	5.00%
Small Business Jet (e.g., Citation III)	2,500	6.85	3.13%
Helicopter	4,000	10.96	5.00%
Total	80,000	219.18	100.00%

TIME OF DAY (Estimated 2002 and 2022)				
<i>Aircraft Type</i>		<i>Percentage of Operations by Aircraft Type</i>		
		<i>Day 7:00 a.m. 7:00 p.m.</i>	<i>Evening 7:00 p.m. 10:00 p.m.</i>	<i>Night 10:00 p.m. 7:00 a.m.</i>
Single-Engine, Propeller, Fixed Pitch	Takeoff Landing	93.0% 93.0%	5.0% 5.0%	2.0% 2.0%
Single-Engine, Propeller, Variable Pitch	Takeoff Landing	93.0% 93.0%	5.0% 5.0%	2.0% 2.0%
Twin-Engine, Propeller, Piston	Takeoff Landing	93.0% 93.0%	5.0% 5.0%	2.0% 2.0%
Twin-Engine, Turboprop	Takeoff Landing	93.0% 93.0%	5.0% 5.0%	2.0% 2.0%
Small Business Jet (e.g., Citation III)	Takeoff Landing	93.0% 93.0%	5.0% 5.0%	2.0% 2.0%
Helicopter	Takeoff Landing	93.0% 93.0%	5.0% 5.0%	2.0% 2.0%

RUNWAY UTILIZATION (Estimated 2002 and 2022)						
<i>Aircraft Type</i>		<i>Percentage of Takeoffs and Landings</i>				
		<i>Runway 5</i>	<i>Runway 23</i>	<i>Runway 4</i>	<i>Runway 22</i>	<i>Helipad</i>
Single-Engine, Propeller, Fixed Pitch	Day Evening Night	5.0 5.0 5.0	95.0 95.0 95.0	—	—	—
Single-Engine, Propeller, Variable Pitch	Day Evening Night	3.0 3.0 3.0	48.0 48.0 48.0	1.0 1.0 1.0	48.0 48.0 48.0	—
Twin-Engine, Propeller, Piston and Turboprop	Day Evening Night	5.0 5.0 5.0	95.0 95.0 95.0	—	—	—
Small Business Jet (e.g., Citation III)	Day Evening Night	5.0 5.0 5.0	95.0 95.0 95.0	—	—	—
Helicopter	Day Evening Night	— — —	— — —	— — —	— — —	100.0 100.0 100.0

FLIGHT TRACKS – TAKEOFFS (Estimated 2002 and 2022)						
<i>Aircraft Type</i>	<i>Percentage of Track Usage by Runway</i>					
	<i>Runway 5</i>		<i>Runway 23</i>	<i>Runway 4</i>	<i>Runway 22</i>	<i>Helipad</i>
	<i>Right Downwind Departure</i>	<i>Straight Out</i>	<i>Straight Out</i>	<i>Left Downwind Departure</i>	<i>Right Turn Departure</i>	<i>South Departure</i>
Single-Engine, Propeller, Variable Pitch	100.0	—	100.0	100.0	100.0	—
Small Business Jet (e.g., Citation III)	—	100.0	100.0	—	—	—
Helicopter	—	—	—	—	—	100.0
All Other Aircraft	100.0	—	100.0	—	—	—

FLIGHT TRACKS – LANDINGS (Estimated 2002 and 2022)						
<i>Aircraft Type</i>	<i>Percentage of Track Usage by Runway</i>					
	<i>Runway 5</i>	<i>Runway 23</i>		<i>Runway 4</i>	<i>Helipad</i>	<i>Sailplane Runway</i>
	<i>Straight In</i>	<i>Left Turn Approach</i>	<i>Straight In</i>	<i>Left Turn Approach</i>	<i>North Approach</i>	<i>Right Turn Approach</i>
Single-Engine, Propeller, Variable Pitch	100.0	100.0	—	100.0	—	100.0
Small Business Jet (e.g., Citation III)	100.0	—	100.0	—	—	—
Helicopter	—	—	—	—	100.0	—
All Other Aircraft	100.0	100.0	—	—	—	—

Source: Data compiled by Mead & Hunt (June 2003)

RECEIVED

December 13, 2000

APR 14 2003

David Dietz
Shutt Moen Associates
707 Aviation Blvd.
Santa Rosa, California 95403

MEAD & HUNT, INC.

Subject: Biological Reconnaissance for Hemet-Ryan Airport Master Plan Project Site –
Updated Report

Dear Mr. Dietz:

At the request of Shutt Moen Associates, an LSA Associates, Inc. (LSA) biologist visited the site of the Hemet-Ryan Airport Master Plan project (see attached "Figure 1- Hemet-Ryan Airport Master Plan Study Areas"). The purpose of the site visits was to provide an overview-level assessment of the biological and wetland resources present, and to determine what focused sensitive species surveys or wetland/jurisdictional waters delineations may be necessary for further project review. The airport is located in the southwest portion of the City of Hemet immediately northeast of the intersection of Warren Road and Stetson Avenue.

A literature review was conducted to assist in determining the existence or potential occurrence of sensitive plant and animal species on the project site or in the vicinity of the site. Database records for the Hemet, Winchester, and Lakeview USGS quadrangles were searched using the California Department of Fish and Game's (CDFG) *Rarefind 2* software (January 25, 2000 update) and the California Native Plant Society's *Electronic Inventory of Rare and Endangered Vascular Plants of California* (June 3, 2000 update). Published soil surveys and a report of previous surveys in the project vicinity were also consulted. A reconnaissance of the project area was conducted on foot on October 20 and December 4, 2000, by LSA biologist Stanley Spencer. Notes were taken on general site conditions, vegetation, and habitat suitability for special interest species.

Mapped soils in the study areas vary from saline-alkaline to strongly alkaline, and include Traver series loamy fine sands and fine sandy loams, Chino series silt loams, Grangeville series fine sandy loams, Domino series fine sandy loams and silt loams, and Willows series silty clays (*Soil Survey of Western Riverside Area, California* by USDA Soil Conservation Service, 1971, Washington, D.C.). The predominant plant community in the study areas is disturbed non-native annual grassland, dominated by Russian thistle (*Salsola tragus*), shortpod mustard (*Hirschfeldia incana*), and annual grasses, with some elements of alkali grassland and vernal pool communities occurring in depressions and channels.

A few depressions capable of holding standing water for several days or more cover approximately 18 acres on and adjacent to the project site (see "potential vernal pools/wetlands" in the attached figure). The largest of these are located along the east edge of Warren Road, and receive runoff from

channels bordering the existing runways. Another depression, at the western edge of the study area just south of Whittier Road, contained standing water at the time of the first site visit. The general area of the depressions along Warren Road was mapped as "vernal pool areas" in a report of surveys conducted by RECON (*The Distribution, Status, and Conservation of Vernal Pool and Alkali Playa Wetlands of the Upper Salt Creek Drainage, Hemet, California*, June 15, 1995, prepared for the City of Hemet). However, all of the site was not covered by these 1995 surveys, individual pools were not mapped, and the distribution of vernal pool plant communities may have changed since the surveys were conducted. We recommend that a combination of survey data be used to determine whether vernal pools and/or vernal pool watersheds are present on the site, and, if they are present, to delineate their limits. These data would come from the wetland delineation, plant surveys, and fairy shrimp surveys discussed below. Off-site vernal pools may be impacted by the proposed project if portions of their watersheds occur on the project site. In order to provide information for delineating any such vernal pools, we recommend that the wetland delineation and the focused sensitive plant and fairy shrimp surveys be extended beyond the project site limits to include potential vernal pools along Warren Road (see the attached figure).

A wetlands delineation will be required to determine whether any of these depressions or channels meet the formal criteria for wetlands or other jurisdictional waters of the U. S., and to determine the extent of project impacts to any such jurisdictional areas. Portions of the channels that border the runways may be jurisdictional waters of the U.S. if they are tributary to vernal pools or wetlands.

Potential habitat exists in the study areas for several species of rare plants known from nearby locations, that are adapted to clay soils, high alkalinity, and/or seasonal flooding. Several of these species, including San Diego ambrosia (*Ambrosia pumila*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), thread-leaved brodiaea (*Brodiaea filifolia*), spreading navarretia (*Navarretia fossalis*), and California orcutt grass (*Orcuttia californica*) are listed or proposed for listing as "threatened" or "endangered" by the state or federal resource agencies. Other rare but unlisted species potentially occurring on the site include south coast saltscale (*Atriplex pacifica*), Parish's brittlescale (*Atriplex parishii*), smooth tarplant (*Hemizonia pungens* ssp. *laevis*), and Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*). We recommend that a total of three focused surveys be conducted for these species in late May, late June or early July, and August in order to coincide with the various flowering seasons, when these species may be identified in the field. The first of these surveys should also include identification of vernal pool indicator plant species and mapping their distributions, for use in the identification and delineation of any vernal pools in the project area. This survey should be extended beyond the project site limits to incorporate depressions along the east edge of Warren Road (see attached figure).

The potential vernal pools on and adjacent to the site constitute potential habitat for Riverside fairy shrimp (*Streptocephalus woottoni*; federally listed as "endangered") and vernal pool fairy shrimp (*Branchinecta lynchi*; federally listed as "threatened"). We recommend that a focused survey be conducted for these species following U. S. Fish and Wildlife Service (USFWS) guidelines (*Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods*, April 19, 1996). A complete survey consists of either two wet season surveys within a five-year period, or a wet season survey immediately followed or preceded by a dry season survey. A wet season survey consists of several site visits to sample seasonal pools, beginning no later than two weeks after pools are initially inundated to a depth of 3 cm for 24 hours after a storm event, and generally continuing until the end of the rainy season. Please note that the USFWS requires notification of intent to survey 10 days prior to the

anticipated start date of the survey. A dry season survey requires written permission from the USFWS, and consists of the collection and examination of soil samples from the pool basins.

The study areas contain potential habitat for burrowing owl (*Athene cunicularia hypugea*), which is not afforded protection under the state or federal endangered species acts, but is of concern to the CDFG, and is protected under other sections of the Fish and Game Code. This species was reported by RECON (*The Distribution, Status, and Conservation of Vernal Pool and Alkali Playa Wetlands of the Upper Salt Creek Drainage, Hemet, California*, June 15, 1995) from near the west end of the Hemet-Ryan Airport. We recommend that a focused survey consisting of four site visits be conducted for this species during the breeding season peak (April 15 and July 15). This survey is recommended for the preparation of CEQA documents. An additional survey may be required within one year prior to ground disturbing activities. If owls are found to be utilizing burrows on the site, the CDFG may recommend avoiding ground disturbing activities during the breeding season (February-August), using trap doors to exclude owls from burrows prior to the breeding season, or other measures to offset potential impacts to this species.

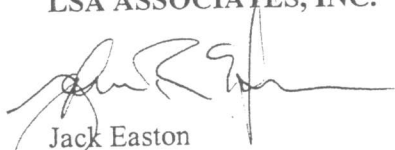
Any discharge of fill material into wetlands or other jurisdictional waters of the U. S. is subject to regulation by the Army Corps of Engineers (Section 404) and the associated permitting requirements. Permitting requirements of the CDFG, which regulates alteration of streams (defined by the presence of a channel bed and banks, and at least an intermittent flow of water) under Sections 1601-1603, may also apply. Any project impacts to vernal pools will require an individual permit from the Corps.

Mitigation will be required by the Corps for significant negative impacts to wetlands and vernal pools. Mitigation will be required by the USFWS for impacts to habitats occupied by listed species. Mitigation for significant negative impacts to these habitats may be achieved by on-site or off-site mitigation. If on-site mitigation is chosen for this project, it would probably have to be done in conjunction with off-site mitigation. On-site mitigation for impacts to wetlands or vernal pools might involve restoration or enhancement (revegetation) of disturbed areas. Off-site mitigation typically involves the purchase of similar property elsewhere. Mitigation ratios are typically negotiated on a case-by-case basis and may be as high as 5:1 (5 acres to be replaced for each acre impacted) for impacts to particularly sensitive areas (such as vernal pools and their watersheds). Such off-site mitigation properties should have similar plant communities and/or sensitive species as the affected environment, and are to be preserved in perpetuity through dedication to a natural resources conservation entity.

If you have any questions or comments, please call me or Stan Spencer at (909) 781-9310.

Sincerely,

LSA ASSOCIATES, INC.

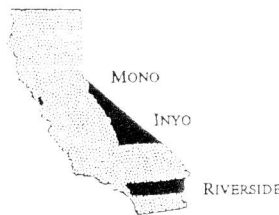


Jack Easton
Associate

Attachment: Figure 1 - Hemet-Ryan Airport Master Plan Study Areas

Cultural Resources Data Search

**CALIFORNIA
HISTORICAL
RESOURCES
INFORMATION
SYSTEM**



Eastern Information Center
Department of Anthropology
University of California
Riverside, CA 92521-0418

Phone (909) 787-5745
Fax (909) 787-5409

RECEIVED

April 29, 2003
RS #2886

MAY - 1 2003

MEAD & HUNT, INC.

David P. Dietz
Mead & Hunt Inc.
707 Aviation Blvd.
Santa Rosa, CA 95403

Re: Cultural Resources Records Search Hemet-Ryan Airport, Riverside County

Dear Dietz:

We received your request on April 25, 2003, for a cultural resources records search for the Master Plan for the Hemet-Ryan Airport project, located in Section 18, T.5S, R.1W, SBBM, in the San Jacinto Valley area of Riverside County. We have reviewed our maps, records, and reports against the project area defined on the map you provided.

Our information indicates that no cultural resources have been recorded within the boundaries of the project area, and that the project area has not been examined for cultural resources. Additional sources of information consulted are identified below.

National Register of Historic Places (03/12/02): no listed properties are located within the boundaries of the project area.

Office of Historic Preservation, Archaeological Determinations of Eligibility (01/06/03): no listed sites are located within the boundaries of the project area.

Office of Historic Preservation, Directory of Properties in the Historic Property Data File (01/06/03): no listed properties are located within the boundaries of the project area.

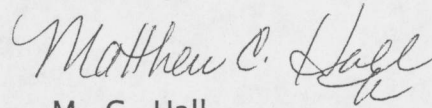
A review of the 1901 USGS Elsinore 30' topographic map indicated a historical structures/features present within the boundaries of the project area.

Based on the information reviewed, cultural resources may be present within the boundaries of the project area and further study is recommended. The project area should be surveyed systematically by a qualified archaeologist to identify all cultural resources and provide recommendations regarding their significance and management prior to any development of the property. Enclosed is a list of cultural resources consultants.

David P. Dietz
April 29, 2003
Page 2

State and federal law requires that if any cultural resources are found during construction, work is to stop and the lead agency and a qualified archaeologist be consulted to determine the importance of the find and its appropriate management.

Sincerely,

A handwritten signature in cursive script that reads "Matthew C. Hall". The signature is written in dark ink and is positioned above the printed name and title.

M. C. Hall
Coordinator

Enclosure

GLOSSARY OF TERMS USED IN AIRPORT MASTER PLANNING

PREFACE

Many technical terms and expressions are used in airport master planning and noise management programs. The definitions in this glossary were compiled from various sources including government publications such as Federal Aviation Administration (FAA) Advisory Circulars, FAA Orders, the Federal Aviation Regulations (FARs) and professional literature.

AAAE (Triple-A E) - American Association of Airport Executives.

A-WEIGHTED SOUND LEVEL (dBA) - The human ear does not respond equally to all sound frequencies. It is less efficient at low and high frequencies than it is at medium or speech-range frequencies. Thus, to obtain a single number representing the sound level of a noise having a wide range of frequencies in a manner representative of the ear's response, it is necessary to reduce the effects of the low and high frequencies with respect to the medium frequencies. The resultant sound level is said to be A-weighted, and the units are decibels (dB); hence, the abbreviation is dBA. The A-weighted sound level is also called the noise level. Sound level meters have an A-weighting network for measuring A-weighted sound level.

ABOVE GROUND LEVEL (AGL) - An elevation datum given in feet above ground level.

ABSORPTION - Absorption is a property of materials that reduces the amount of sound energy reflected. Thus, the introduction of an "absorbent" into the surfaces of a room will reduce the sound pressure level in that room because sound energy striking the room surfaces will not be totally reflected. The process of absorption is entirely different from that of transmission loss through a material, which determines how much sound enters a room via the walls, ceiling, and floor. The effect of absorption merely reduces the resultant sound level in the room produced by energy that has already entered the room.

AC - See **ADVISORY CIRCULAR**

ACOUSTICS - (1) The science of sound, including the generation, transmission, and effects of sound waves both audible and inaudible; (2) The physical qualities of a room or other enclosure (such as size, shape, amount of noise) that determine the audibility and perception of speech and music.

ADT - See **AVERAGE DAILY TRAFFIC**

ADVISORY CIRCULAR (AC) - A series of external FAA publications consisting of all non-regulatory material of a policy, guidance, and informational nature.

AERONAUTICAL CHART - A representation of a portion of the earth, its culture and relief, specifically designated to meet the requirements of air navigation.

AFFECTED LOCAL GOVERNMENT AGENCIES - The local government agencies that have the authority to control land uses in areas that are adversely affected by aviation activities.

AGL - See **ABOVE GROUND LEVEL**

AIM - See **AIRMAN'S INFORMATION MANUAL**

AIP PROGRAM - See **AIRPORT IMPROVEMENT PROGRAM**

AIR-21 - The Wendell H. Ford Aviation Investment and Reform ACT for the 21st Century is a three-year (2001-2003) bill that increases aviation investments by \$10 billion. AIR 21 provides grant funds specifically for general aviation airports listed in the latest published national plan of airports that show a need for airfield development/improvements (e.g., runway, taxiway, apron, environmental studies, and drainage improvements). General aviation airports with an identified

need can get up to \$150,000 per year each year that Congress budgets \$3.2 billion or higher for AIP.

AIR CARRIER - A legal entity that undertakes directly by lease or other arrangements, to engage in air transportation.

AIR CARRIER, CERTIFICATED ROUTE - An air carrier holding a Certificate of Public Convenience and Necessity, issued by the U.S. Department of Transportation under Part 121 of the Federal Aviation Regulations (FAR), to conduct scheduled services over specified routes and a limited amount of nonscheduled operations.

AIR CARRIER, COMMUTER - An air taxi operator who, under FAR Part 135, (1) performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week, and places between which such flights are performed; or (2) transports mail by air pursuant to a contract with the U.S. Postal Service.

AIRCRAFT ACCIDENT - An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, and in which any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached thereto, or in which the aircraft receives substantial damage.

AIRCRAFT APPROACH CATEGORY - A grouping of aircraft based on a speed of 1.3 times the stall speed in the landing configuration at maximum gross landing weight. An aircraft shall fit in only one category. If it is necessary to maneuver at speeds in excess of the upper limit of a speed range for a category, the minimums for the next higher category should be used. For example, an aircraft which falls in Category A, but is circling to land at a speed in excess of 91 knots, should use the approach Category B minimums when circling to land. The categories are as follows:

1. Category A. Speed less than 91 knots.
2. Category B. Speed 91 knots or more but less than 121 knots.
3. Category C. Speed 121 knots or more but less than 141 knots.
4. Category D. Speed 141 knots or more but less than 166 knots.
5. Category E. Speed 166 knots or more.

AIRCRAFT CLASSES – For the purposes of Wake Turbulence Separation Minima, ATC classifies aircraft as Heavy, Large, and Small as follows:

1. Heavy. Aircraft capable of takeoff weights of 300,000 pounds or more whether or not they are operating at this weight during a particular phase of flight.
2. Large. Aircraft of more than 12,500 pounds, maximum certificated takeoff weight, up to 300,000 pounds.
3. Small. Aircraft of 12,500 pounds or less maximum certificated takeoff weight.

AIRCRAFT PARKING LINE LIMIT (APL) - A line established by the airport authorities beyond which no part of a parked aircraft should protrude.

AIRFIELD CAPACITY (HOURLY) - The maximum number of aircraft operations (landings or takeoffs) that can take place on an airfield in one hour under specific conditions.

AIRMAN'S INFORMATION MANUAL (AIM) - A primary FAA publication whose purpose is to instruct airmen about operating in the National Airspace System of the U.S. It provides basic flight information, ATC Procedures and general instructional information concerning health, medical facts, factors affecting flight safety, accident and hazard reporting, and types of aeronautical charts and their use.

AIRPORT - An area of land or water that is used or intended to be used for the landing and taking off of aircraft, and includes its buildings and facilities, if any.

AIRPORT ELEVATION - The highest point of an airport's usable runways, measured in feet above mean sea level.

AIRPORT ENVIRONS - The area surrounding an airport that is considered to be directly affected by the presence and operation of that airport.

AIRPORT HAZARD - Any structure or natural object located on or in the vicinity of a public airport, or any use of land near such airport, that obstructs the airspace required for the flight of aircraft landing, taking off, or taxiing at the airport.

AIRPORT IMPROVEMENT PROGRAM (AIP) - The AIP program is administered to provide financial grants-in-aid for airport development projects such as runways, taxiways, aircraft parking aprons, terminal buildings and land acquisition associated with airport development including runway protection zones and approach protection.

AIRPORT LAND USE COMMISSION (ALUC) - In California, a state-authorized body existing in each county having the responsibility to develop plans for achieving land use compatibility between airports and their environs.

AIRPORT LAND USE PLAN (ALUP) - In California, the formal plan, developed and adopted by an ALUC, setting forth criteria, policies and specifications for the preservation of long-term, land use compatibility between an airport and its environs.

AIRPORT LAYOUT PLAN - A plan (drawings) for an airport showing boundaries and proposed additions to all areas owned or controlled by the sponsor for airport purposes, the location and nature of existing and proposed airport facilities and structures, and the location on the airport of existing and proposed non-aviation areas and improvements thereon.

AIRPORT MASTER PLAN - An assembly of appropriate documents and drawings covering the development of a specific airport from a physical, economic, social, and political jurisdictional perspective. The Airport Layout Plan is a part of this plan.

AIRPORT NOISE COMPATIBILITY PLANNING STUDY - A study designed to increase the compatibility of land and facilities in the areas surrounding an airport that are most directly affected by the 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 control measures and off-airport land use control programs. The basic products of an Airport Noise Compatibility Planning Study typically include:

- (1) workable on-airport noise abatement actions such as preferential runway use programs, new or preferential flight tracks, curfews, etc.;

- (2) off-airport land use control programs and regulations such as land acquisition, soundproofing, or special actions and programs; and
- (3) policies and procedures related to the implementation of on-airport and off-airport programs.

A community involvement program is usually carried on throughout all phases of the study. Conduct of such studies is eligible for federal funding participation. (Also see FAR Part 150.)

AIRPORT PROPRIETOR - Owner of an airport or other party having authority to control airport operations. In California, the holder of an airport permit issued by the Department of Transportation, Division of Aeronautics pursuant to Article 3, Chapter 4, Part 1, Division 9, Public Utilities Code.

AIRPORT RADAR SERVICE AREA (ARSA) - Regulatory airspace surrounding designated airports wherein FAA Air Traffic Control provides radar vectoring and sequencing on a full-time basis for all IFR and VFR aircraft. As of September 1993, the term ARSA has been replaced by the term Class C Airspace.

AIRPORT REFERENCE POINT - A point established on an airport, having an equal relationship to all existing and proposed landing and takeoff areas, and used to geographically locate the airport for other planning purposes.

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

AIRPORT SURVEILLANCE RADAR (ASR) - Approach control radar used to detect and display an aircraft's position in the terminal area. ASR provides range and azimuth information but does not provide elevation data. Coverage of the ASR can extend up to 60 miles.

AIRPORT TRAFFIC AREA - Unless otherwise specifically designated in FAR Part 93, that airspace within a horizontal radius of 5 statute miles from the geographical center of any airport at which a control tower is operating, extending from the surface up to, but not including, an altitude of 3,000 feet above the elevation of an airport. Unless otherwise authorized by ATC, no person may operate an aircraft within an airport traffic area except for the purpose of landing at or taking off from an airport within that area. ATC authorizations may be given as individual approval of specific operations or may be contained in written agreements between airport users and the tower concerned.

AIRPORT TRAFFIC CONTROL TOWER (ATCT) - A terminal facility that uses air-to-ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity of an airport or on the movement area.

AIR ROUTE SURVEILLANCE RADAR (ARSR) - Air route traffic control center (ARTCC) radar used primarily to detect an aircraft's position, which en route between terminal areas, enabling controllers to provide radar air traffic control service when aircraft are within the ARSR coverage.

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC) - An FAA facility established to provide air traffic control service to aircraft operating on an instrument flight rule (IFR) flight plan within controlled airspace and principally during the en route phase of flight.

AIR TAXI - Operations performed by operators of aircraft holding an air taxi certificate under Part 135 of the Federal Aviation Regulations. This category includes commuter airline operations (excluding certificated commuter airlines), mail carriers under contract with the U.S. Postal Service, and operators of nonscheduled air taxi services. Typically, air taxis do not utilize aircraft with a payload capacity over 7,500 pounds or capable of carrying more than 30 passengers.

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

AIR TRAFFIC CLEARANCE/ATC CLEARANCE - An authorization by air traffic control, for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace.

AIR TRAFFIC CONTROL (ATC) - A service operated by appropriate authority (the FAA) to promote the safe, orderly, and expeditious flow of air traffic.

AIRWAY/FEDERAL AIRWAY - A Class E airspace area established in the form of a corridor, the centerline of which is defined by radio navigational aids. (See also **CONTROLLED AIRSPACE**.)

ALERT AREA - A special use airspace that may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft.

ALPA - Airline Pilot's Association.

ALTITUDE - The height of a level, point, or object measured in feet Above Ground Level (AGL) or from Mean Sea Level (MSL).

ALUC - See **AIRPORT LAND USE COMMISSION**

ALUP - See **AIRPORT LAND USE PLAN**

AMBIENT NOISE - The total of all noise in a system or situation, independent of the presence of the specific sound to be measured. In acoustical measurements, strictly speaking, ambient noise means electrical noise in the measurement system. However, in popular usage ambient noise means is also used with the same meaning as "background noise" or "residual noise." (See also **AMBIENT NOISE LEVEL**.)

AMBIENT NOISE LEVEL - The composite of noise from all sources near and far. The ambient noise level constitutes the normal or existing level of environmental noise at a given location. (i.e., the background noise level.)

APPROACH CLEARANCE - Authorization by ATC for a pilot to conduct an instrument approach at an airport with appropriate facilities.

APPROACH LIGHT SYSTEM (ALS) - An airport lighting system which provides visual guidance enabling a pilot to align the aircraft with the extended runway centerline during final approach to landing.

APPROACH SPEED - The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration.

APRON/RAMP - A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading passengers or cargo, refueling, parking, or maintenance.

ARSR - See **AIR ROUTE SURVEILLANCE RADAR**

ARTCC - See **AIR ROUTE TRAFFIC CONTROL CENTER**

ASNA - See **AVIATION SAFETY AND NOISE ABATEMENT ACT OF 1979**

ASR - See **AIRPORT SURVEILLANCE RADAR**

ATA - Air Transport Association.

ATC - See **AIR TRAFFIC CONTROL**

ATIS - See **AUTOMATIC TERMINAL INFORMATION SERVICE**

AUTOMATED WEATHER OBSERVING SYSTEM (AWOS) - Airport electronic equipment which automatically measures meteorological parameters, reduces and analyzes the data via computer, and broadcasts weather information which can be received on aircraft radios.

AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS) - The continuous broadcast of recorded non-control information in selected terminal areas (e.g. time, weather, ceiling, visibility, etc.).

AVERAGE DAILY TRAFFIC (ADT) - An expression of traffic volume, ADT means the average number of vehicles per day that pass over a given point.

AVIATION SAFETY AND NOISE ABATEMENT ACT OF 1979 (ASNA) - Public Law 96-193, enacted February 18, 1980. The purpose of the Act is to provide assistance to airports in preparing and carrying out noise compatibility programs and in assuring continued safety for aviation. The Act also contains provisions that extend, until January 1, 1988, the requirement for certain types of aircraft to comply with Part 36 of the Federal Aviation Regulations (see also FAR Part 36 and FAR Part 150). Funding for the noise studies has been appropriated by the U.S. Congress and has commenced in 1983. Funding for program implementation, including acquisition and soundproofing of affected residences, has been approved by FAA and is being implemented at several U.S. airports.

AVIGATION EASEMENT - A type of acquisition of an interest in land or property that involves less-than-fee purchase (see also **LESS-THAN-FEE ACQUISITION**). One form of avigation easement grants an airport the right to perform aircraft operations over the designated property, including operations that might cause noise, vibration, and other effects. A stronger form of easement is a deed restriction that may include (1) the right to perform aircraft operations on the property, and (2) public acquisition of a landowner's rights restricting future development of the property for any use more intensive than that existing at the time of the transaction. This easement may also include specific prohibitions on the uses for which the property may be developed. Maximum heights of structures and other objects may also be specified.

AZIMUTH - Horizontal direction or bearing; usually measured from the reference point of 0 degrees clockwise through 360 degrees.

BACKCOURSE APPROACH - A non-precision instrument approach utilizing the rearward projection of the ILS localizer beam.

BACKGROUND NOISE - See **AMBIENT NOISE**.

BAFFLE - A baffle is a shielding structure or series of partitions used to increase the effective length of the external transmission path between two points in an acoustic system. For example, baffles may be used in sound traps (as in air conditioning ducts) or in automotive mufflers to decrease the sound transmitted while affording a path for airflow.

BASED AIRCRAFT - Aircraft stationed at an airport on a long-term or permanent basis, usually by some form of agreement between the aircraft owner and airport management.

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. (See also **TRAFFIC PATTERN**.)

BLAST PAD - A paved area, of runway width, extending beyond the runway takeoff threshold for a sufficient distance (typically 150 to 300 feet) to prevent soil erosion caused by jet engine backblast.

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, light, and ventilation. Sound insulation may also be included.

BUILDING RESTRICTION LINE (BRL) - A line established with respect to the runway centerline to assure that structures will not project above the imaginary surfaces required by Federal Aviation Regulations, Part 77, "*Obstruction Clearance Criteria*," (FAR Part 77).

BUSINESS AVIATION - The sector of general aviation (as defined by ICAO) which concerns the operation of aircraft by companies for the carriage of passengers or goods as an aid to the conduct of their business, flown for purposes generally considered not for public hire, and piloted by individuals having at the minimum a valid commercial pilot license with an instrument rating.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) – An Act of the State of California designed to:

- (1) Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- (2) Identify the ways that environmental damage can be avoided or significantly reduced.
- (3) Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- (4) Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved. (CEQA Guidelines, Sec. 15002[a]).

CATEGORICAL EXEMPTION - An exemption from CEQA for classes of projects based on findings by the secretary of the resources agency that the listed classes of projects do not have a significant effect on the environment.

CBD - Central Business District

CEILING - Height above the earth's surface to the lowest layer of clouds or obscuring phenomena that is reported as "broken," "overcast," or "obscuration" and not classified as "thin" or "partial."

CEQ - See **COUNCIL ON ENVIRONMENTAL QUALITY**

CEQ 1500 - Regulations of the Federal Council on Environmental Quality (CEQ) for implementing the procedural provisions of the National Environmental Policy Act (NEPA).

CEQA - See **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

CERTIFICATED ROUTE AIR CARRIER - See **AIR CARRIER, CERTIFICATED ROUTE**

CIRCLING APPROACH/CIRCLE-TO-LAND MANEUVER - A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or not desirable.

CLEAR ZONE - See **RUNWAY PROTECTION ZONE**

CLEARWAY - For turbine engine powered airplanes certificated after August 29, 1959, an area beyond the runway, not less than 500 feet wide, centrally located about the extended centerline of the runway, and under the control of the airport authorities. The clearway is expressed in terms of clearway plane, extending from the end of the runway with an upward slope not exceeding 1.25 percent, above which no object nor any terrain protrudes. However, threshold lights may protrude above the plane if their height above the end of the runway is 26 inches or less and if they are located to each side of the runway.

CNEL - See **COMMUNITY NOISE EQUIVALENT LEVEL**.

COMMON TRAFFIC ADVISORY FREQUENCY (CTAF) - A frequency designed for the purpose of carrying out airport advisory practices while operating to or from an uncontrolled airport. The

CTAF may be a UNICOM, Multicom, FSDS, or tower frequency and is identified in appropriate aeronautical publications.

COMPASS LOCATOR - A low power, low or medium frequency radio beacon installed at the site of the outer or middle marker of an instrument landing system (ILS).

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL) - A method of predicting, by a single number rating, cumulative aircraft noise that affects communities in airport environs. As defined in the California Airport Noise Standards, CNEL represents the average daytime noise level during a 24-hour day, adjusted to an equivalent level to account for the lower tolerance of people to noise during evening and nighttime periods relative to the daytime period. Weighting factors equivalent to penalties of about five decibels and ten decibels are applied to operations conducted from 7:00 PM to 10:00 PM and from 10:00 PM to 7:00 AM, respectively, to account for increased sensitivity during those periods.

COMMUTER AIR CARRIER - See **AIR CARRIER, COMMUTER**

COMPREHENSIVE LAND USE PLAN (CLUP) - See **ALUP**.

COMPUTER MODELING - An analytical process, which employs an electronic digital computer to perform difficult, laborious calculations involving mathematical functions or formulas. Computation of cumulative noise exposure (Ldn or CNEL) contours requires the use of computer modeling in order to process enormous quantities of data concerning aircraft traffic, performance and operating procedures.

CONTROLLED AIRSPACE - Any of several types of airspace within which some or all aircraft may be subject to air traffic control. An airspace of defined dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification. Controlled airspace is a generic term that covers Classes A-E airspace. Controlled airspace is also that airspace within which all aircraft operators are subject to certain pilot qualifications, operating rules, and equipment requirements in Part 91 (for specific operating requirements, please refer to Part 91). For IFR operations in any class of controlled airspace, a pilot must file an IFR flight plan and receive an appropriate ATC clearance. Each Class B, Class C, and Class D airspace area designated for an airport contains at least one primary airport around which the airspace is designated (for specific designations and descriptions of the airspace classes, refer to FAR Part 71).

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) - Established by the National Environmental Policy Act (NEPA) of 1969, the Council is composed of three members appointed by the President. A major purpose of the Council is to formulate and recommend national policies to promote the improvement of environmental quality.

CTAF - See **COMMON TRAFFIC ADVISORY FREQUENCY**.

DATABASE - A computer file (or set of files) containing a field of related numerical information (data) for use in automated analysis or processing. A computerized "land use database" is a computer file containing the coordinates, dimensions and areas of all individual land use polygons which comprise the pattern of land use within a specific geographic area.

DAY-NIGHT AVERAGE SOUND LEVEL (DNL or Ldn) - A method for predicting, by a single number rating, cumulative aircraft noise that affects communities in airport environs. The Ldn

value represents decibels of noise as measured by an A-weighted sound-level meter (see also). In the Ldn procedure, the noise exposure from each aircraft takeoff or landing at ground level around an airport is calculated, and these noise exposures are accumulated for a typical 24-hour period. (The 24-hour period often used is the average day of the year being analyzed.) Daytime and nighttime noise exposures are considered separately. A weighting factor equivalent to a penalty of 10 decibels is applied to operations between 10:00 p.m. and 7:00 a.m. to account for the increased sensitivity of people to nighttime noise. The Ldn values can be expressed graphically on maps using contours of equal noise exposure. Ldn may also be used for measuring other noise sources, such as automobile traffic, to determine combined noise effects.

dB - See **DECIBEL, dB**

DECIBEL, dB - A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

DEREGULATIONS ACT - Airline regulatory reform act of 1978. Designed, among other things, to encourage competition among domestic air carriers, the Act allows an air carrier greater freedom to enter and leave any given market.

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; 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 (see also), the airport sponsor purchases only the development rights; the ownership of the land remains unchanged.

DIGITIZE - A mechanical-electronic process whereby the locations, sizes and identities of individual polygons, noise contours or other physical features are translated into a set of numerical data within a computer data file or database for subsequent automated analysis, sorting or manipulation.

DISPLACED THRESHOLD - A runway-landing threshold that is located at a point other than the designated beginning of the runway (where departures would begin).

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

DME - See **DISTANCE MEASURING EQUIPMENT**

DNL - See **DAY-NIGHT AVERAGE SOUND LEVEL**

DOWNWIND LEG - A flight path parallel to the landing runway in the direction opposite the landing direction.

DURATION - Length of time, in seconds, a noise event such as an aircraft flyover is experienced. (May refer to the length of time a noise event exceeds a specified threshold level.)

EA - See **ENVIRONMENTAL ASSESSMENT**

EFFECTS - See **IMPACT**

EIR - See **ENVIRONMENTAL IMPACT REPORT**

EIS - See **ENVIRONMENTAL IMPACT STATEMENT**

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.

ENVIRONMENTAL ASSESSMENT (EA) - An assessment of the environmental effects of a proposed action for which federal financial assistance is being requested or for which federal authorization is required. The EA serves as the basis for the FAA's Environmental Impact Statement (EIS) or Finding of No Significant Impact (FONSI), as specified in FAA Orders 1050.1D and 5050.4.

ENVIRONMENTAL IMPACT REPORT (EIR) – An EIR is a detailed statement prepared in accordance with CEQA describing a proposed project, analyzing significant environmental effects of the proposed project, identifying a reasonable range of alternatives, and discussing possible ways to mitigate or avoid the significant environmental effects.

ENVIRONMENTAL IMPACT STATEMENT (EIS) – A document prepared under the requirements of the National Environmental Policy Act of 1969 (NEPA), Section 102(2)(c). The EIS represents a federal agency's evaluation of the effect of a proposed action on the environment. New regulations relating to the preparation of an EIS are published in FAA Orders 1050.1D and 5050.4.

ENPLANED/DEPLANED PASSENGERS - The volume of passengers outbound from an airport (enplaned) or inbound to an airport (deplaned). The annual passenger volume of an airport is the total of enplaned and deplaned passengers.

EQUIVALENT ENERGY LEVEL, Leq - The sound level corresponding to a steady state sound level containing the same total energy as a time varying signal over a given sample period. Leq is typically computed over 1, 8 and 24-hour sample periods.

EPA - The U.S. Environmental Protection Agency

FAA - See **FEDERAL AVIATION ADMINISTRATION**

FAA NOISE POLICY - The Aviation Noise Abatement Policy of the Department of Transportation, Federal Aviation Administration issued on November 18, 1976. The policy outlines the responsibilities and actions that may be taken to reduce adverse effects of aviation-related noise.

FAA ORDER - An internal FAA directive which sets standards, procedures and guidelines for FAA execution of its various regulatory and grant administration mandates.

FAA ORDER 1050.1D - An order published by the FAA, dated December 21, 1983, entitled "*Policies and Procedures for Considering Environmental Impacts.*" This order was prepared in response to the CEQ 1500 Regulations.

FAA ORDER 5050.4A - This document, entitled "*Airport Environmental Handbook,*" was revised by the FAA on October 8, 1985. It contains all of the essential information an airport sponsor

needs to meet both procedural and substantive environmental requirements, including relevant text from Order 1050.1D.

FAR – See FEDERAL AVIATION REGULATIONS (FAR)

FAR PART 36 - Federal Aviation Regulations, Part 36. Establishes noise standards for the civil aviation fleet. Some extensions for compliance are included in the Aviation Safety and Noise Abatement Act of 1979 (see also).

FAR PART 77 - Federal Aviation Regulations, Part 77. Establishes standards for identifying obstructions to aircraft in navigable airspace.

FAR PART 77 SURFACES - Imaginary surfaces established with relation to each runway of an airport. There are five types of surfaces: (1) primary, (2) approach, (3) transitional, (4) horizontal, and (5) conical.

FAR PART 91 – Establishes criteria for general operating and flight rules.

FAR PARTS 121 AND 135 - The parts of Federal Aviation Regulations that deal with certification and operational requirements for commercial operators of large aircraft and air taxis, respectively.

FAR PART 150 - Federal Aviation Regulations, Part 150. Effective February 28, 1982, FAR Part 150 is the regulation that implements the noise compatibility standards and provisions contained in the Aviation Safety and Noise Abatement Act of 1979 (ASNA). FAR Part 150 prescribes procedures for airport sponsors who wish to develop Noise Exposure Maps and Airport Noise Compatibility Plans to identify and mitigate airport - land use compatibility problems. FAR Part 150 was published in the Federal Register in amended form September 14, 1993.

FBO - See **FIXED BASE OPERATOR**.

FEDERAL AVIATION ADMINISTRATION - The FAA is the agency of the U.S. Department of Transportation that is charged with (1) regulating air commerce to promote its safety and development; (2) achieving the efficient use of navigable airspace of the United States; (3) promoting, encouraging, and developing civil aviation; (4) developing and operating a common system of air traffic control and air navigation for both civilian and military aircraft; and (5) promoting the development of a national system of airports.

FEDERAL AVIATION REGULATIONS (FAR) - Regulations established by the Federal Aviation Administration (FAA). These regulations are the rules that govern the operation of aircraft, airways, and airmen.

FEE-SIMPLE LAND ACQUISITION (PURCHASE) - The full purchase by the airport sponsor of land and improvements. The land is usually maintained for airport purposes or leased for uses that are compatible with airport operations. Alternatively, the airport sponsor can resell the land with an aviation easement (see also) and deed restrictions that specify the compatible land uses that are permitted. The resale option has the benefit that the land is returned to the tax rolls.

FERRY FLIGHT – A flight for the purpose of:

1. Returning an aircraft to base.

2. Delivering an aircraft from one location to another.
3. Moving an aircraft to and from a maintenance base.

FINDING OF NO SIGNIFICANT IMPACT (FONSI) - An administrative determination by the FAA that a proposed action by the airport sponsor will have no significant impact (on the environment). Specific guidelines for the preparation of a FONSI report (see EA) are included in FAA Orders 1050.1D and 5050.4A.

FIXED BASE OPERATOR (FBO) – (1) A business operating at an airport that provides aircraft services to the general public, including but not limited to sale of fuel and oil; aircraft sales, rental, maintenance and repair; parking and tie down or storage of aircraft; flight instruction; air taxi/charter operations; and specialty services, such as instrument and avionics maintenance, painting, overhaul, aerial application, aerial photography, aerial hoists or pipeline patrol. (2) The owner of such an operation.

FLIGHT PATH/TRACK - A line, course, or track along which an aircraft is flying or intended to be flown.

FLIGHT SERVICE STATION (FSS) - FAA facilities that provide pilot briefings on weather, airports, altitudes, routes, and other flight planning information. More specifically, these FSS facilities also provide en route communications and VFR search and rescue services, assist lost aircraft and aircraft in emergency situations, relay ATC clearances, originate Notices to Airmen, broadcast aviation weather and NAS information, receive and process IFR flight plans, and monitor NAVAID's. In addition, at selected locations, FSS's provide Enroute Flight Advisory Service (Flight Watch), take weather observations, issue airport advisories, and advise Customs and Immigration of transborder flights.

FLIGHT STANDARDS DISTRICT OFFICE (FSDO) - An FAA field office serving an assigned geographical area and staffed with Flight Standards personnel who serve the aviation industry and the general public on matters relating to the certification and operation of air carrier and general aviation aircraft. Activities include general surveillance of operational safety, certification of airmen and aircraft, accident prevention, investigation, enforcement, etc.

FLIGHT WATCH - A shortened term for use in air-ground contacts to identify the flight service station providing En Route Flight Advisory Service; e.g., "Oakland Flight Watch."

FLIGHT VISIBILITY - See **VISIBILITY**.

FLOW CONTROL - Measures designed to adjust the flow of traffic into a given airspace, along a given route, or bound for a given aerodrome (airport) so as to ensure the most effective utilization of the airspace.

FONSI - See **FINDING OF NO SIGNIFICANT IMPACT**

FRACTIONAL OWNERSHIP - A company or individual buys, or leases, a fractional interest in one aircraft just as they might acquire a partial interest in one condo unit. They can use their own aircraft or another similar or identical aircraft a certain number of hours or days per year. The economics of each situation differs depending on the number of people who will use the aircraft, the value of their time to the company, and the dollars saved in airline tickets, hotels, etc.

GENERAL AVIATION (GA) - All civil aviation except that classified as air carrier or air taxi. The types of aircraft typically used in general aviation activities vary from multi-engine jet aircraft to single-engine piston aircraft.

GENERAL AVIATION OPERATIONS - Operations performed by all civil aircraft not classified as air carrier or air taxi aircraft.

GLIDE SLOPE (GS) - An electronic signal radiated by a component of an ILS to provide descent path guidance to approaching aircraft.

GLOBAL POSITIONING SATELLITE SYSTEM (GPS) - A navigational system utilizing satellites to provide non-precision guidance in azimuth, elevation, and distance measurement.

GROUND VISIBILITY - See **VISIBILITY**.

HEAVY AIRCRAFT - Aircraft capable of takeoff weights of 300,000 pounds or more whether or not they are operating at this weight during a particular phase of flight.

HELICOPTER - Rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors.

HELIPAD - A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters.

HELIPORT – An area of land, water, or structure used or intended to be used for the landing and takeoff of helicopters and includes its buildings and facilities if any.

HUD - The U.S. Department of Housing and Urban Development

ICAO – International Civil Aviation Organization.

IFR - See **INSTRUMENT FLIGHT RULES**

IFR CONDITIONS - Weather conditions that require aircraft to be operated in accordance with instrument flight rules.

IFR MINIMUMS AND DEPARTURE PROCEDURES (FAR PART 91) - Prescribed takeoff rules. For some airports, obstructions or other factors require the establishment of nonstandard takeoff minimums or departure procedures, or both. Both may be required to assist pilots in avoiding obstacles during climb to the minimum en-route altitude.

ILS - See **INSTRUMENT LANDING SYSTEM**.

ILS CATEGORIES –

1. **ILS Category I** – An ILS approach procedure, which provides for approach to a height above touchdown of not less than 200 feet and with runway visual range of not less than 1,800 feet.

2. ILS Category II – An ILS approach procedure which provides for approach to a height above touchdown of not less than 100 feet and with runway visual range of not less than 1,200 feet.
3. ILS Category III.
 - a. IIIA – An ILS approach procedure, which provides for approach without a decision height minimum and with runway visual range of not less than 700 feet.
 - b. IIIB – An ILS approach procedure, which provides for approach without a decision height minimum and with runway visual range of not less than 150 feet.
 - c. IIIC – An ILS approach procedure, which provides for approach without a decision height minimum and without runway visual range minimum.

IMPACT - In environmental and noise control studies, the word “impact” is used to express the extent or severity of an environmental problem, e.g., the number of persons exposed to a given noise environment. As indicated in CEQ 1500 (Section 1508.8), impacts and effects are considered to be synonymous. Effects or impacts may be ecological, aesthetic, historic, cultural, economic, social, or health related, and they may be direct, indirect, or cumulative.

IMPACT INSULATION CLASS (IIC) - A single-figure rating that is intended to permit comparisons of the sound-insulating merits of floor-ceiling assemblies in terms of a reference contour.

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

INSTRUMENT APPROACH PROCEDURE - 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. It is prescribed and approved for a specific airport by competent authority.

INSTRUMENT FLIGHT RULES (IFR) - Rules specified by the FAA for flight under weather conditions in which visual reference cannot be made to the ground and the pilot must rely on instruments to fly and navigate.

INSTRUMENT LANDING SYSTEM (ILS) - An electronic system, which provides the aircraft with lateral, longitudinal and vertical guidance necessary for an instrument landing.

INSTRUMENT OPERATION - An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal traffic control facility.

INSTRUMENT RUNWAY - A runway equipped with electronic and visual navigation aids for which a precision or non-precision approach procedure having straight-in landing minima has been approved.

INVERSE SQUARE LAW - Describes the reduction in sound pressure where the mean square sound pressure changes in inverse proportion to the square of the distance from the source. Under this ideal condition, the sound pressure level decreases 6dB with each doubling of distance from the source.

ITINERANT OPERATION - An arrival or departure performed by an aircraft from or to a point beyond the local airport area. Also defined as all aircraft arrivals and departures other than local operations.

LAND USE COMPATIBILITY - The compatibility of land uses surrounding an airport with airport activities and particularly with the noise from aircraft operations.

LAND USE COMPATIBILITY ASSURANCE - Documentation provided by an airport sponsor to the FAA. The documentation is related to an application for an airport development grant. Its purpose is to assure that a reasonably appropriate action, including the adoption of zoning laws, has been taken or will be taken to restrict the use of land adjacent to the airport or in the immediate vicinity of the airport. Such uses are limited to activities and purposes compatible with normal airport operations, including the landing and takeoff of aircraft. This assurance is required of airport sponsors by Section 511 (a) (5) of the Airport and Airway Improvement Act of 1981. (Also see AIP Program.)

LAND USE CONTROLS - Controls established by local or state governments to carry out land use planning. The controls include zoning, subdivision regulations, land acquisition (in fee simple, lease-back, or easements), building codes, building permits, and capital improvement programs (or provide sewer, water, utilities, or other service facilities).

LAND USE PLANNING - Comprehensive planning carried out by units of local government, for all areas under their jurisdiction, to identify the optimum uses of land and to serve as a basis for the adoption of zoning or other land use controls.

LARGE AIRCRAFT - An aircraft of more than 12,500 pounds maximum certificated takeoff weight, up to 300,000 pounds.

Ldn - See **DAY-NIGHT AVERAGE SOUND LEVEL**

Lmax - The maximum A-weighted noise level recorded during a noise event.

LEAD AGENCY - In California, the public agency that has the principal responsibility for carrying-out or approving a project. The Lead Agency will decide whether an EIR or Negative Declaration will be required for the project and will cause the document to be prepared. Criteria for determining which agency will be the Lead Agency for a project are contained in Section 15051 of the CEQA guidelines.

Leq - See **EQUIVALENT ENERGY LEVEL, Leq**

LESS-THAN-FEE ACQUISITION (PURCHASE) - The purchase of development rights (see also) from landowners by airport sponsors in areas that should remain at very low densities or in open space uses. The airport sponsor negotiates with the landowner to determine the fair market value of the unused development rights. Once sold, the land cannot be developed except in specified ways. (See also **FEE-SIMPLE m LAND ACQUISITION**.)

Lmax - See **MAXIMUM A-WEIGHTED NOISE LEVEL**

LOC - See **LOCALIZER**.

LOCAL AGENCY - In California, any public agency other than a state agency, board, or commission. "Local Agency" includes but is not limited to cities, counties, charter cities and counties, districts, school districts, special districts, redevelopment agencies, local agency formation commissions, and any board, commission, or organizational subdivision of a local agency when so designated by order or resolution of the governing legislative body of the local agency.

LOCAL OPERATION - An aircraft operation which remains no more than 25 nautical miles from the departure point, or which terminates at the point of departure, or which does not include a stop of a greater duration than 15 minutes. Touch-and-go operations are local operations.

LOCAL TRAFFIC - Aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the airport.

LOCALIZER (LOC) - The component of an ILS, which provides horizontal course guidance to the runway.

LOCALIZER TYPE DIRECTIONAL AID (LDA) - A NAVAID used for non-precision instrument approaches with utility and accuracy comparable to a localizer, but which is not part of a complete ILS and is not aligned with the runway.

LOUDNESS - The judgment of the intensity of a sound by a person. Loudness depends primarily on the sound pressure of the stimulus. Over much of the loudness range it takes about a ten-fold increase in sound pressure (approximately 10 decibels) to produce a doubling of loudness.

LOW APPROACH - An approach over an airport or runway following an instrument approach or a VFR approach including the go-around maneuver where the pilot intentionally does not make contact with the runway.

MAJOR AIRPORT DEVELOPMENT - Airport development of such a scale as to require shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity.

MARKER BEACON - The component of an ILS, which informs pilots that they are at a significant point on the approach course.

MASKING - The action of making one sound (audible when heard alone) inaudible or unintelligible by the introduction of another sound. The masking is most marked when the masked sound is of higher frequency than the masking sound.

MEAN SEA LEVEL (MSL) - An elevation datum given in feet above mean sea level.

MICROWAVE LANDING SYSTEM (MLS) - An advanced electronic system of ground-based devices and aircraft avionics, which provides the aircraft with lateral, longitudinal and vertical guidance necessary for an instrument landing. In the U.S., MLS technology has been supplanted by GPS (which see).

MILITARY OPERATION - Operations performed by military groups, such as the Air National Guard, the U.S. Air Force, U.S. Army, U.S. Marine Corps, or the U.S. Navy.

MILITARY OPERATIONS AREA (MOA) - A type of special use airspace established to separate certain military activities from IFR traffic and to identify for VFR traffic where these activities are conducted.

MINIMUM DESCENT ALTITUDE (MDA) - The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided.

MINIMUM SAFE ALTITUDE - The minimum altitude specified in Part 91 for various aircraft operations.

MINIMUMS - Weather condition requirements established for a particular operation or type of operation; e.g., IFR takeoff or landing, alternate airport for IFR flight plans, VFR flight, etc.

MISSED APPROACH –

1. A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. The route of flight and altitude are shown on instrument approach procedure charts. A pilot executing a missed approach prior to the Missed Approach Point (MAP) must continue along the final approach to the MAP. The pilot may climb immediately to the altitude specified in the missed approach procedure.
2. A term used by the pilot to inform ATC that he is executing the missed approach.
3. At locations where ATC radar service is provided, the pilot should confirm to radar vectors when provided by ATC in lieu of the published missed approach procedure.

MITIGATION MEASURE - An action that can be planned or taken to alleviate (mitigate) an adverse environmental impact. As set forth in CEQ 1500 (Section 1508.20), “mitigation” includes:

- (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.

A proposed airport development project, or alternatives to that project, may constitute a mitigation measure as defined by the CEQ. CEQA contains a similar definition of mitigation measure (Cal. Pub. Res. Code 21002, et seq.).

MLS - See **MICROWAVE LANDING SYSTEM**

MSL – See **MEAN SEA LEVEL**

NATIONAL AIRSPACE SYSTEM/NAS - The common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures, technical information, and manpower and material. Included are system components shared jointly with the military.

NAVAID - See **NAVIGATIONAL AID**

NAVIGATIONAL AID (NAVAID) - Any visual or electronic device (airborne or on the ground) that provides point-to-point guidance information or position data to pilots of aircraft in flight.

NDB – See **NONDIRECTIONAL RADIO BEACON (NDB)**

NEPA - National Environmental Policy Act of 1969 (PL 91-190).

NOISE - Any sound or signal that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying.

NOISE ABATEMENT PROCEDURES - Changes in operational procedures affecting runway use, in flight approach and departure routes and procedures, and in other air traffic procedures that are made to shift adverse aviation effects away from noise-sensitive areas (such as residential neighborhoods).

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

NOISE COMPLAINT - A recorded complaint concerning aircraft noise made by an individual and kept on file at an airport.

NOISE CONTOURS - Lines drawn on a map that connect points of equal noise exposure (Ldn or CNEL) values. They are usually drawn in 5-dB intervals, such as Ldn 75 dB values, Ldn 70 dB values, Ldn 65 dB values, and so forth.

NOISE CONTROL PLANS - Documentation by the airport sponsor of actions to be taken by the sponsor to reduce the effect of aviation noise. These actions are to be taken by the sponsor either alone or in cooperation with the FAA, airport users, and affected units of local government, with appropriate comments from affected citizens. Alternative actions should be considered, particularly where proprietary use restrictions (see also) on aircraft operations are involved).

NOISE LEVEL REDUCTION (NLR) - The noise reduction between indoor and outdoor environments of two rooms is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of “noise level reduction” combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

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

NONCOMPATIBLE LAND USE - See **INCOMPATIBLE LAND USE**.

NONDIRECTIONAL RADIO BEACON (NDB) - A low or medium frequency radio beacon transmitting non-directional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his bearing to or from the radio beacon and “home” on or track to or from the station.

NONPRECISION APPROACH PROCEDURE - A standard instrument approach procedure in which no electronic glideslope is provided, such as VOR, GPS, or LOC (which “see”).

NONPRECISION INSTRUMENT RUNWAY - A runway with an instrument approach procedure utilizing air navigation facilities, with only horizontal guidance, or area-type navigation equipment for which a straight-in non-precision instrument approach procedure has been approved or planned, and no precision approach facility or procedure is planned.

NOTAM – See **NOTICE TO AIRMEN**

NOTICE TO AIRMEN - A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) the timely knowledge of which is essential to personnel concerned with flight operations.

OBSTACLE - An existing object, object of natural growth, or terrain, at a fixed geographical location, or which may be expected at a fixed location within a prescribed area, with reference to which vertical clearance is or must be provided during flight operation.

OBSTACLE FREE ZONE (OFZ) - A volume of space above and adjacent to a runway and its approach lighting system if one exists, free of all fixed objects except FAA-approved frangible aeronautical equipment and clear of vehicles and aircraft in the proximity of an airplane conducting an approach, missed approach, landing, takeoff, or departure.

OBSTRUCTION - An object that exceeds a limiting height or penetrates an imaginary surface described by current Federal Aviation Regulations (Part 77).

OPERATION - A take-off or a landing.

ORDER - See **FAA ORDER**.

OUTER MARKER - A marker beacon at or near the glide slope intercept position of an ILS approach.

PAPI - See **PRECISION APPROACH PATH INDICATOR**

PILOT IN COMMAND - The pilot responsible for the operation and safety of an aircraft during flight time.

POLYGON - An irregular geometric figure, encoded into a computer database, coincident with the physical conterminous boundaries of a single land use category. Individual polygons are encoded into a computer database using a process termed “digitizing.”

PRECISION APPROACH PATH INDICATOR (PAPI) - An airport landing aid similar to a VASI, but which has light units installed in a single row rather than two rows.

PRECISION APPROACH PROCEDURE – A standard instrument approach procedure in which an electronic glideslope/glidepath is provided; e.g., ILS/MLS and PAR.

PRECISION INSTRUMENT PROCEDURE - A standard instrument procedure for an aircraft to approach an airport in which an electronic glide slope is provided, e.g., an instrument landing system (ILS) or military precision approach radar.

PRECISION INSTRUMENT RUNWAY - A runway with an instrument approach procedure utilizing an instrument landing system (ILS), microwave landing system (MLS), precision approach radar (PAR), or GPS.

PRECISION RUNWAY MONITOR – Provides air traffic controllers with high precision secondary surveillance data for aircraft on final approach to parallel runways that have extended centerlines separated by less than 4,300 feet.

PREFERENTIAL RUNWAY USE (PROGRAM) - A noise abatement action whereby the FAA Air Traffic Division, in conjunction with the FAA Airports Division, assists the airport sponsor in developing a program that gives preference to the use of a specific runway(s) to reduce overflight of noise-sensitive areas.

PROPRIETARY USE RESTRICTIONS - Restrictions by an airport sponsor on the number, type, class, manner, or time of aircraft operations at the airport. The imposition of a curfew is an example of a proprietary use restriction.

PUBLIC AGENCY - In California, includes any state agency, board, or commission and any local or regional agency, as defined in the CEQA guidelines. It does not include the courts of the state. The term does not include agencies of the federal government.

RADAR APPROACH CONTROL FACILITY - A terminal ATC facility that uses radar and non-radar capabilities to provide approach control services to aircraft arriving, departing, or transiting airspace controlled by the facility. Provides radar ATC services to aircraft operating in the vicinity of one or more civil and/or military airports in a terminal area. Specific facility nomenclatures are used for administrative purposes only and are related to the physical location of the facility and the operating service generally as follows:

- Army Radar Approach Control/ARAC (Army),
- Radar Air Traffic Control Facility/RATCF (Navy/FAA),
- Radar Approach Control/RAPCON (Air Force/FAA),
- Terminal Radar Approach Control/TRACON (FAA),
- Tower/Airport Traffic Control Tower/ATCT (FAA) [only those towers delegated approach control authority].

REIL - See **RUNWAY END IDENTIFIER LIGHTS**

RELIEVER AIRPORT - An airport serving general aviation aircraft that might otherwise use a congested air carrier airport.

RESPONSIBLE AGENCY - In California, a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For purposes of CEQA, the term “Responsible Agency” includes all public agencies other than the Lead Agency, which have discretionary approval power over the project.

RESTRICTED AREA - Designated airspace within which the flight of aircraft, while not wholly prohibited, is subject to restriction.

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

RUNWAY - A defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length. Runways are normally numbered in relation to their magnetic direction rounded off to the nearest 10 degrees; e.g., Runway 01, Runway 25.

RUNWAY EDGE LIGHTS - Lights used to define the lateral limits of a runway.

RUNWAY END IDENTIFIER LIGHTS (REILs) - Two synchronized flashing lights, one on each side of the runway threshold, which provide a pilot with a rapid and positive visual identification of the approach end of a particular runway.

RUNWAY HEADING - The magnetic direction indication by the runway number. When cleared to “fly/maintain runway heading,” pilots are expected to comply with the ATC clearance by flying the heading indicated by the runway number without applying any drift correction; e.g., Runway 4, 040^o magnetic heading; Runway 20, 200^o magnetic heading.

RUNWAY PROTECTION ZONE - A trapezoidal area at ground level whose perimeter conforms to the projection on the ground of the innermost portion of the Approach Surface as defined in FAR Part 77. The runway protection zone is centered on the extended runway centerline and begins at the end of the FAR Part 77 Primary Surface, terminating below the line where the Approach Surface reaches a height of 50 feet above the elevation of the runway end. FAA regulations require that runway protection zones be kept free of obstructions and any uses that cause an assemblage of persons.

RUNWAY SAFETY AREA - A cleared, drained, graded, and preferably turfed area symmetrically located about the runway which, under normal conditions, is capable of supporting snow removal, fire fighting, and rescue equipment and of accommodating the occasional passage of aircraft without causing major damage to the aircraft.

RUNWAY THRESHOLD - The beginning of that portion of a runway usable for landing or take-off. (See also **DISPLACED THRESHOLD**.)

RUNWAY USE PROGRAM - See **PREFERENTIAL RUNWAY USE PROGRAM**

SEL – See **SOUND EXPOSURE LEVEL (SEL)**

SEVERE NOISE EXPOSURE - Exposure to aircraft noise that is likely to interfere with human activity in noise-sensitive areas; repeated vigorous complaints can be expected and group action is probable. This exposure may be specified by a cumulative noise descriptor as a level of noise exposure, such as the Ldn (or CNEL) 75 dB level. (See also **SIGNIFICANT NOISE EXPOSURE**.)

SHIELDING - The attenuation of a sound by placing walls, buildings, plants, or other barriers between a sound source and the receiver.

SIGNIFICANT ENVIRONMENTAL EFFECT - A significant effect on the environment is a substantial or potentially substantial adverse change in the physical conditions of the area affected by a project.

SIGNIFICANT NOISE EXPOSURE - Exposure to aircraft noise that is likely to interfere with human activity in noise-sensitive areas; individual complaints may be expected and group action is possible. This exposure may be specified by a cumulative noise descriptor as a level of noise exposure, such as the Ldn (or CNEL) 65 dB level. (See also **SEVERE NOISE EXPOSURE**.)

SMALL AIRCRAFT - Aircraft of 12,500 pounds or less maximum certificated takeoff weight.

SOUND EXPOSURE LEVEL (SEL) – The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the level of time-integrated A-weighted squared sound pressure for a stated time interval or event, based on the reference pressure of 20 micronewtons per square meter and reference duration of one second.

SOUND INSULATION - (1) 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, (2) the degree of reduction in sound transmission by means of sound insulating structures and materials.

SOUND LEVEL (NOISE LEVEL) - The weighted sound pressure level obtained by the use of a sound level meter having a standard frequency filter for attenuating or accentuating part of the sound spectrum.

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

SOUND TRANSMISSION CLASS (STC) - The preferred single figure rating system designed to give an estimate of the sound insulation properties of a partition or a rank ordering of a series of partitions. It is intended for use primarily when speech and office noise constitute the principal noise problem.

SOUND TRANSMISSION LOSS - A measure in decibels of sound insulation provided by a structural configuration.

SPECIAL USE AIRSPACE - Airspace of defined horizontal and vertical dimensions wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities.

SPECIAL VFR CONDITIONS - Meteorological conditions that are less than those required for basic VFR flight in Class B, C, D, or E surface areas and in which some aircraft are permitted flight under visual flight rules.

SPECIAL VFR OPERATIONS - Aircraft operating in accordance with clearances within Class B, C, D, and E surface areas in weather conditions less than the basic VFR weather minima. Such operations must be requested by the pilot and approved by ATC.

STANDARD - A specific statement by an authority of permitted environmental conditions.

STANDARD INSTRUMENT DEPARTURE (SID) - A pre-planned instrument flight rules (IFR) air traffic control departure procedure printed for pilot use in graphic and/or textual form. SIDs provides transition from the terminal to the appropriate en route structure.

STANDARD TERMINAL ARRIVAL ROUTE (STAR) - A pre-planned instrument flight rules (IFR) air traffic control arrival route published for pilot use in graphic and/or textual form. STARs provide transition from the en route structure to an outer fix or an instrument approach fix/arrival waypoint in the terminal area.

STOPWAY - An area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, able to support the aircraft during an aborted takeoff, without causing structural damage to the aircraft, and designated by the airport authorities for use in decelerating the aircraft during an aborted takeoff.

STRAIGHT-IN INSTRUMENT APPROACH - An instrument approach wherein final approach is begun without first having executed a procedure turn; it is not necessarily completed with a straight-in landing or made to straight-in landing weather minima.

SUBDIVISION REGULATIONS (ORDINANCE) - Regulations promulgated by local governments to guide development in defined ways and by prescribed methods to control the use of private land in the public interest. Subdivision regulations were initially established to prevent (1) the uncontrolled subdivisions of land that often left communities without adequate streets, water mains, or sewers, and (2) disorderly, chaotic growth - urban sprawl.

SUBSTANTIAL EVIDENCE - Under CEQA, if there is substantial evidence that a project may have a significant environmental effect, an EIR must be prepared. Substantial evidence includes facts, reasonable assumptions based on facts, and expert opinions supported by facts. The following are *not* substantial evidence: argument, speculation, unsubstantiated opinion or narrative, clearly inaccurate or erroneous information, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment.

TAXI - The movement of an airplane under its own power on the surface of an airport. Also, it describes the surface movement of helicopters equipped with wheels.

TAXILANE - The portion of the aircraft parking area used for access between taxiways, aircraft parking positions, hangars, storage facilities, etc.

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

TERMINAL AIRSPACE - See **TERMINAL AREA**.

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

TERMINAL INSTRUMENT PROCEDURES (TERPS) - Procedures for instrument approach and departure of aircraft to and from civil and military airports. There are four types of terminal instrument procedures: (1) precision approach, (2) non-precision approach, (3) circling, and (4) departure.

TERPS - Terminal Instrument Procedures.

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

TOUCH-AND-GO OPERATION - A practice maneuver consisting of a landing and a takeoff performed in one continuous movement—the aircraft lands and begins takeoff roll without stopping. A touch-and-go is considered as two operations.

TOWER - See **AIRPORT TRAFFIC CONTROL TOWER (ATCT)**.

TRAFFIC PATTERN - The traffic flow that is 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.

1. Upwind Leg – A flight path parallel to the landing runway in the direction of landing.
2. Crosswind Leg – A flight path at right angles to the landing runway off its upwind end.
3. 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.
4. 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.
5. 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.

TRANSFER OF DEVELOPMENT RIGHTS (TDR) - TDR involves separate ownership and use of the various rights associated with a parcel of real estate. Under the TDR concept, some of the property's development rights (see also) are transferred to another location where they may be used to intensify allowable development. For example, lands within an area affected by aircraft noise could be kept in open space or agricultural uses, and development rights for residential or other uses could be transferred to locations outside the area. Landowners could be compensated for the transferred rights by their sale at the new locations, or the airport could purchase the rights. Depending on market conditions and legal requirements, the airport could either hold or resell the rights.

TRANSIENT AIRCRAFT - Aircraft not based at the airport.

TRANSITIONAL AIRSPACE - That portion of controlled airspace wherein aircraft change from one phase of flight or flight condition to another.

TRANSMISSOMETER - An apparatus used to measure runway visibility on an ILS runway.

TRANSPORT AIRPORT - An airport designed, constructed, and maintained to serve airplanes having approach speeds of 121 knots or more.

TRANSPORTATION SECURITY ADMINISTRATION (TSA) – After the signing of the Aviation and Transportation Security Act (P.L. 107-71) on November 19, 2001, for the first time the U.S. Department of Transportation was charged with direct federal responsibility of management and implementation of a comprehensive transportation security system, including passenger and cargo screening and expanding the Federal Air Marshal (FAM) program. The purpose of TSA

is to prevent attacks by criminals or terrorists against any form of commercial transportation or infrastructure such as airports, bridges, highways and mass transportation.

TURBOJET AIRCRAFT - An aircraft having a jet engine in which the energy of the jet operates a turbine, which in turn operates the air compressor.

TURBOPROP AIRCRAFT - An aircraft having a jet engine in which the energy of the jet operates a turbine, which drives the propeller.

UNICOM (Aeronautical Advisory Station) - A non-government air/ground radio communication facility, which may provide airport information (winds, weather, etc.) at specific airports.

UTILITY AIRPORT - An airport designed, constructed, and maintained to serve airplanes having approach speeds less than 121 knots.

URBAN GROWTH MANAGEMENT (UGM) - The identification and management of the demands on municipal facilities, improvements or services created by any proposed residential, commercial, industrial, or other type of development. UGM is intended to (1) provide the means for satisfying such demands, (2) identify any harmful effects of development, and (3) protect the jurisdictions and their residents against such harmful effects by minimizing the costs of municipal facilities, improvements, and services. The intent of UGM is usually not to prevent development or growth, but rather to avoid free or disorganized development or growth in the UGM area, which is generally located in and around the fringe of an urban area. The UGM area usually is either relatively undeveloped or predominantly agricultural and lacks most, if not all, municipal facilities, improvements, or services.

ULTRALIGHT VEHICLE - An aeronautical vehicle operated for sport or recreational purposes, which does not require FAA registration, an airworthiness certificate, or pilot certification. They are primarily single-occupant vehicles, although some two-place vehicles are authorized for training purposes. Operation of an ultralight vehicle in certain airspace requires authorization from ATC.

VASI - See **VISUAL APPROACH SLOPE INDICATOR**

VECTOR - A heading issued to a pilot to provide navigational guidance by radar.

VERY HIGH FREQUENCY (VHF) OMNIDIRECTIONAL RANGE (VOR) - The standard navigational aid used throughout the airway system to provide bearing information to aircraft. When combined with Tactical Air Navigation (TACAN) the facility, called VORTAC, provides distance as well as bearing information.

VFR - See **VISUAL FLIGHT RULES**

VFR CONDITIONS - Weather conditions that permit aircraft to be operated in accordance with visual flight rules.

VICTOR AIRWAY - A control area or portion thereof established in the form of a corridor, the centerline of which is defined by VOR's.

VISIBILITY - The ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night. Visibility is reported as statute miles, hundreds of feet or meters.

1. *Flight Visibility*. The average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.
2. *Ground Visibility*. Prevailing horizontal visibility near the earth's surface as reported by the United States National Weather Service or an accredited observer.

VISUAL APPROACH - An approach to an airport wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of a radar facility and having an air traffic control authorization, may deviate from the prescribed instrument approach procedure and proceed to the airport of destination, served by an operational control tower, by visual reference to the surface.

VISUAL APPROACH SLOPE INDICATOR (VASI) - An airport landing aid, which provides a pilot with visual descent (approach slope) guidance while on approach to landing. See also **PAPI**.

VISUAL FLIGHT RULES (VFR) - Rules that govern the procedures for conducting flight under visual conditions (Federal Aviation Regulations, Part 91).

VISUAL RUNWAY - A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan.

VOR - See **VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE**

WAKE TURBULENCE - Phenomena resulting from the passage of an aircraft through the atmosphere. The term includes vortices, thrust stream turbulence, jet blast, jet wash, propeller wash, and rotor wash both on the ground and in the air.

WARNING AREA - Airspace that may contain hazards to non-participating aircraft in international airspace.

WIDE AREA AUGMENTATION SYSTEM (WAAS) - A satellite navigation system consisting of the equipment and software, which augments the GPS Standard Positioning Service (SPS). This system provides accuracy, availability, and integrity currently provided by GPS, thereby improving capacity and safety.

WIND SHEAR - A change in wind speed and/or wind direction in a short distance resulting in a tearing or shearing effect. It can exist in a horizontal or vertical direction and occasionally in both.

ZONING AND ZONING ORDINANCES - Ordinances that divide a community into zones or districts according to the present and potential use of properties for the purpose of controlling and directing the use and development of those properties. Zoning is concerned primarily with the use of land and buildings, the height and bulk of buildings, the proportion of a lot that buildings may cover, and the density of population of a given area. As an instrument of plan implementation, zoning deals principally with the use and development of privately owned land and buildings. The objective of zoning legislation is to establish regulations that provide locations for all

essential uses of land and buildings and to ensure that each use is located in the most appropriate place. In FAR Part 150 planning, zoning can be used to achieve two major aims: (1) to reinforce existing compatible land uses and promote the location of future compatible uses in vacant or undeveloped land, and (2) to convert existing non-compatible uses to compatible uses over time.