

GLOSSARY OF TERMS

ABBREVIATIONS

A&P	-	Aircraft & Powerplant
AAAE	-	American Association of Airport Executives
AC	-	Advisory Circular
ACA	-	Governor’s Advisory Council on Aviation
ACC	-	Airport Consultants Council
ACI	-	Airports Council International
ACIP	-	Airport Capital Improvement Program
ADEQ	-	Arizona Department of Environmental Quality
ADG	-	Airplane Design Group
ADOT	-	Arizona Department of Transportation
ADRE	-	Arizona Department of Real Estate
AEP	-	Airport Emergency Plan
AGL	-	Above Ground Level
AIP	-	Airport Improvement Program
AIR-21	-	Aviation Investment and Reform Act for the 21 st Century
ALP	-	Airport Layout Plan
ALRIS	-	Arizona Land Resource Information System
ALS	-	Approach Lighting System
ALSF-1	-	Approach Light System with Sequence Flasher Lights
AMSL	-	Above mean sea level
AOPA	-	Aircraft Owners and Pilots Association
APA	-	Arizona Pilots Association
APMS	-	Airport Pavement Management System
APPP	-	Arizona Pavement Preservation Program
APV	-	Approach Procedures with Vertical Guidance
ARC	-	Airport Reference Code
ARCA	-	Arizona Rural Consortium of Airports
ARFF	-	Airport Rescue and Fire Fighting
ARS	-	Arizona Revised Statutes
ARTCC	-	Air Route Traffic Control Center
ASCET	-	Airport Small Community Economic Development & Transportation Program
ASAC	-	Aviation Advisory Committee
ASOS	-	Automated Surface Observation System
ASM	-	Airports System Manager Database
ASM	-	Available Seat Miles
ASU	-	Arizona State University
ASV	-	Annual Service Volume
ATC	-	Air Traffic Control
ATCT	-	Air Traffic Control Tower
ATIS	-	Automated Terminal Information System
AvGas	-	Aviation Gasoline
AWOS	-	Automatic Weather Observation System
AzAA	-	Arizona Airports Association
BLM	-	Bureau of Land Management

CAASD	-	Center for Advanced Aviation Development
CAGR	-	Compound Average Growth Rate
CASPP	-	Continuous Airport System Planning Process
CIP	-	Capital Improvement Program
CM	-	Commercial Service Airport
CTAF	-	Common Traffic Advisory Frequency
DME	-	Distance Measuring Equipment
DNL	-	Day-Night Sound Levels
DHS	-	Department of Homeland Security
DOT	-	Department of Transportation
DW	-	Dual Wheel
EA	-	Environmental Assessment
EAA	-	Experimental Aircraft Association
EAS	-	Essential Air Service
EIS	-	Environmental Impact Statement
EMS	-	Emergency Medical Services
EPA	-	The United States Environmental Protection Agency
FAA	-	Federal Aviation Administration
FAR	-	Federal Aviation Regulation
FBI	-	Federal Bureau of Investigation
FBO	-	Fixed Base Operator
FMS	-	Flight Management System
FSS	-	Flight Service Station
FY	-	Fiscal Year
GA	-	General Aviation
GAMA	-	General Aviation Manufacturers Association
GACA	-	Governor’s Advisory Council on Aviation
GBAS	-	Ground Based Approach Systems
GIS	-	Geographic Information Systems
GPS	-	Global Positioning System
GS	-	Glide Slope
HAI	-	Helicopter Association International
HAT	-	Height Above Threshold
HIRL	-	High Intensity Runway Lights
HITL	-	High Intensity Taxiway Lights
ICAO	-	International Civil Aviation Organization
IDS	-	Intrusion Detection System
IFR	-	Instrument Flight Rules
ILS	-	Instrument Landing System
IMC	-	Instrument Meteorological Conditions
INM	-	Integrated Noise Model
IR	-	IFR Military Training Routes
LAAS	-	Local Area Augmentation System

LAWRS	-	Limited Aviation Weather Reporting Station
LCC	-	Low-Cost Carrier
LEO	-	Law Enforcement Officer
LIRL	-	Low Intensity Runway Lights
LLWAS	-	Low Level Wind Shear Alert System
LNAV	-	Lateral Navigation
LOC	-	Localizer Beam
LPV	-	Localizer Performance with Vertical guidance
LTL	-	Less-Than-Truckload
MAG	-	Maricopa Association of Governments
MALS	-	Medium Intensity Approach Light System
MALSF	-	Medium Intensity Approach Light System with Sequence Flashing Lights
MALSR	-	Medium Intensity Approach Light System with Runway Alignment Indicators
MCAS	-	Marine Corp Air Station
MDA	-	Minimum Descent Altitude
MIRL	-	Medium Intensity Runway Lights
MITL	-	Medium Intensity Taxiway Lights
MOA	-	Military Operations Area
MoGas	-	Motor Gasoline
MSL	-	Mean Sea Level
NADIN	-	National Airspace Data Interchange Network
NAFTA	-	North American Free Trade Agreement
NAICS	-	North American Industry Classification System
NAS	-	National Airspace System
NASAO	-	National Association of State Aviation Officials
NATA	-	National Air Transportation Association
NAVAID	-	Navigational Aid
NBAA	-	National Business Aircraft Association
NDB	-	Non-Directional Beacon
NEPA	-	National Environmental Policy Act
NOTAM	-	Notice to Airmen
NPA	-	Non-Precision Approach
NPI	-	Non-Precision Instrument Approach
NPIAS	-	National Plan of Integrated Airport Systems
NTSB	-	National Transportation Safety Board
O&D	-	Origination/Destination
OAG	-	Official Airline Guide
ODALS	-	Omni-Directional Approach Lighting System
OFA	-	Object Free Area
OFZ	-	Obstacle Free Zone
OPBA	-	Operations Per Based Aircraft
PAC	-	Project Advisory Committee
PAG	-	Pima Association of Governments
PAPI	-	Precision Approach Path Indicator
PCI	-	Pavement Condition Index
PFC	-	Passenger Facility Charge
PIR	-	Precision Instrument Runway

- PR - Primary Service Airport

- RASP - Regional Airport System Plan
- RCO - Remote Communications Outlet
- REIL - Runway End Identifier Lights
- RL - Reliever Airport
- RNAV - Area Navigation
- RNP - Required Navigation Performance
- ROI - Return on Investment
- RPM - Revenue Passenger Miles
- RSA - Runway Safety Area
- RPZ - Runway Protection Zone
- RTM - Revenue Ton Miles
- RW - Runway

- SANS 2000 - State Aviation Needs Study 2000
- SASP - State Airports System Plan
- SBAS - Satellite Based Approach Systems
- SCASDP - Small Community Air Service Development Program
- STB - State Transportation Board
- SW - Single Wheel
- SWPPP - Storm Water Pollution Prevention Plan

- TACAN - Tactical Air Navigation
- TAF - Terminal Area Forecasts
- TDWR - Terminal Doppler Weather Radar
- TRACON - Terminal Radar Approach Control
- TSA - Transportation Security Administration
- TSAAC - TSA Access Certificate
- TW - Taxiway

- UA - University of Arizona
- UAV - Unmanned Aerial Vehicle
- UNICOM - Universal Integrated Communication
- USDOT - United States Department of Transportation
- USPA - United States Parachute Association
- USPS - United States Postal Service

- VASI - Visual Approach Slope Indicator
- VFR - Visual Flight Rules
- VGSI - Visual Glide Slope Indicator
- VHF - Very High Frequency
- VLJ - Very Light Jet
- VNAV - Vertical Navigation
- VR - VFR Military Training Routes
- VOR - Very High Frequency Omni-Directional Range Navigation System
- VORTAC - Very High Frequency Omni-Directional Range/Tactical Air Navigation

- WAAS - Wide Area Augmentation System

DEFINITIONS

Ad-Hoc/On-Demand Carriers – Unscheduled charter flights carrying freight or mail.

Advisory Circular (AC) – A series of FAA publications providing guidance and standards for the design, operation, and performance of aircraft and airport facilities.

Aeronautics Division (ADOT Aeronautics) – Division of ADOT that promotes aviation in the state, licenses aircraft dealers, assists in the development of public airport projects, and manages Grand Canyon National Park Airport.

Air Cargo – Commercial freight (including packages and mail) transported by passenger and all-cargo airliners.

Air Carrier – A commercial airline with published schedules operating at least five round trips per week. Certified in accordance with Federal Aviation Regulation (FAR) Parts 121 and 127.

Air Freight – Items principally transported by all-freight carriers and as belly freight on scheduled passenger services, including heavy-weight items as well as routine palletized shipments.

Air Mail – Items carried as belly freight on some commercial carriers and carried as freight by freight forwards (i.e. FedEx) under contract with the US Postal Service (USPS).

Air Route Traffic Control Center (ARTCC) – An FAA facility established to provide air traffic control service to aircraft operating on Instrument Flight Rules (IFR) flight plans within controlled airspace during the en route portion of flight.

Air Taxi – An aircraft operator who conducts operations for hire or compensation in accordance with FAR Part 135 in an aircraft with 30 or fewer passenger seats and a payload capacity of 7,500 pounds or less. An air taxi operates on an on-demand basis and does not meet the “scheduled-flight” qualifications of a commuter.

Air Traffic Control (ATC) – A service operated by the appropriate authority to promote the safe, orderly, and expeditious flow of air traffic. The ATC system includes ARTCCs, Towers, airport ground radar and other elements such as navigational aids to pilots.

Air Traffic Control Tower (ATCT) – The airport traffic control facility located on an airport that is responsible for traffic separation within the immediate vicinity of the airport and on the surface of the airport.

Aircraft Approach Category – An element of the ARC. A grouping of airplanes based on wingspan, per the following:

- Category A - Speed less than 91 knots
- Category B - Speed 91 knots or more, but less than 121 knots
- Category C - Speed 121 knots or more, but less than 141 knots
- Category D - Speed 141 knots or more, but less than 166 knots
- Category E - Speed 166 knots or more.

Aircraft Mix – The classification of aircraft into groups which are similar in size and operational characteristics.

Aircraft Operations – Airborne movements of aircraft at an airport including aircraft landings (arrivals) at and takeoffs (departures). These operations can be further defined by the following:

- *Local Operations* include those performed by aircraft that operate in the local traffic pattern or within sight of the airport; and/or are known to be departing for or arriving from a local practice area.
- *Itinerant Operations* are all others.

Airplane Design Group (ADG) – An element of the ARC. A grouping of airplanes based on wingspan, per the following:

- Group I - Up to, but not including 49 feet
- Group II - 49 feet up to, but not including, 79 feet
- Group III - 79 feet up to, but not including, 118 feet
- Group IV - 118 feet up to, but not including, 171 feet
- Group V - 171 feet up to, but not including, 214 feet
- Group IV - 214 feet up to, but not including, 262 feet

Airport Capital Improvement Program (ACIP) – The ACIP serves as the primary planning tool for systematically identifying, prioritizing and assigning funds to critical airport development and associated capital needs of an airport. The FAA relies on the ACIP to serve as the basis for the distribution of limited grant funds under the Airport Improvement Program.

Airport Elevation – The highest point on an airport’s usable runways, expressed in feet above mean sea level (MSL).

Airport Improvement Program (AIP) – A congressionally mandated program through which FAA provides funding assistance for the development and enhancement of airport facilities. AIP is periodically reauthorized by Congress through appropriations from the Aviation Trust Fund, which is funded through excise taxes on airline tickets, aviation fuel, etc.

Airport Layout Plan (ALP) – A scaled drawing of existing and proposed land and facilities necessary for the operation and development of the airport. The ALP shows boundaries and proposed additions to all areas owned or controlled by the airport operator for airport purposes, the location and nature of existing and proposed airport facilities and structures, as well as the location of existing and proposed non-aviation areas and improvements on the airport.

Airport Master Plan – A standard planning document that presents a concept of the ultimate development of an airport, including the research and logic from which the plan was evolved, as well as the plan in graphic and written formats. An airport master plan is normally presented to the FAA for approval and would typically also be approved and adopted by the airport sponsor.

Airport Pavement Management Program (APMP) – program in Arizona that helps preserve airport infrastructure, protects the initial investment used to fund critical aircraft pavement projects and extends to the maximum amount the useful life of the airport system's pavement.

Airport Reference Code (ARC) – An FAA design criteria based upon the approach speed (aircraft approach category) and wing span (airplane design group) of an aircraft which produces a minimum annual 500 operations per year at an airport.

Airport Sponsor – A public agency 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 current laws and regulations.

Airside – The portion of the airport meant for taxiing, takeoff, landing, parking, loading and unloading, or any other aircraft operation, including the aircraft parking aprons, taxiways, runways, and safety areas.

Airspace – The area above the ground in which aircraft travel. It is divided into corridors, routes and restricted zones for the control and safety of aircraft operations.

All-Cargo Carrier - An air carrier certificated in accordance with FAR Part 121 to provide scheduled air freight, express, and mail transportation over specific routes, as well as the conduct of nonscheduled operations that may include passengers.

Annual Service Volume (ASV) – An FAA planning tool that reflects the ability of airfield facilities (i.e. runways, taxiways, and approach aids) to accommodate aviation demand that includes commercial, general aviation, and military operations. It accounts for differences in runway use, aircraft mix, weather conditions, etc. that would encountered over a year's time.

Approach End of Runway – The near end of the runway as viewed from the cockpit of a landing aircraft.

Approach Lighting System (ALS) – An ALS is a lighting system installed on the approach end of an airport runway and consists of a series of light bars, strobe lights, or a combination of the two that extends outward from the runway end. ALS usually serves a runway that has an instrument approach procedure associated with it and allows the pilot to visually identify the runway environment once he or she has arrived at a prescribed point on an approach.

Approach Minimums – The altitude below which an aircraft may not descend while on an IFR approach unless the pilot has the runway in sight.

Approach Surface – An FAR Part 77 imaginary surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface.

Arizona Department of Transportation (ADOT) – Arizona state government agency charged with managing the state's highway system, public transportation, overseeing the aviation transportation system, and managing the Grand Canyon National Park Airport.

Arizona Revised Statutes (ARS) – document that provides the governing framework for the laws by which citizens are expected to obey and live by. Title 28 – Chapter 25 establishes the guidance and requirements for the Aeronautics Division and the Director of Aviation to follow in order to encourage and advance the safe and orderly development of aviation in the state.

Assurance – An assurance (or grant assurance) is a provision contained in a Federal grant agreement to which the recipient of AIP funding has voluntarily agreed to comply with in consideration of the funding provided.

Automated Surface Observation System (ASOS) – The primary surface weather observing system in the U.S. that supports aviation operations and weather forecasting. An ASOS has automated sensors that record wind direction and speed, visibility, cloud ceiling, precipitation, etc and sends that data automatically to the National Weather Service. At many locations, a computer-generated voice broadcasts the minute-by-minute weather reports to pilots on a discrete radio frequency.

Automated Terminal Information Service (ATIS) – The continuous broadcast of recorded non-control information at towered airports. Information typically includes wind speed, direction, and runway in use.

Automated Weather Observing System (AWOS) – An automated weather reporting system that provides airport weather observations (i.e. cloud height, visibility, wind speed and direction, temperature, dew point, etc.) to pilots on a discrete radio frequency via a computer-generated voice. Less sophisticated than ASOS, it is oftentimes installed using state or local funding.

Available Seat Miles (ASMs) – A measure of airline capacity, equal to the number of seats available multiplied by the number of miles flown.

Avigation Easement – A form of limited property right purchase that establishes legal land-use control prohibiting incompatible development of areas required for airports and aviation-related purposes.

Based Aircraft – An aircraft that is “operational & air worthy,” which is based at an airport for the majority of the year.

Belly Cargo – Freight which is carried in the hold of a commercial passenger aircraft below the main passenger deck.

Breakeven Load Factor – The number of seats airlines have to sell to cover operating expenses.

Capacity – A measure of the maximum number of aircraft operations that can be accommodated by an airport’s airfield over a designated time period (i.e. hour or year).

Capital Improvement Program (CIP) – A schedule of planned projects and costs for an airport typically prepared and adopted by the airport sponsor and other public agencies.

Ceiling – The height above the ground of the base of the lowest layer of clouds or obscuring phenomena aloft that is reported as broken or overcast and not classified as scattered, thin, or partial. Ceiling figures in aviation weather reports may be determined as measured, estimated, or indefinite.

Charter – A nonscheduled flight offered by either a supplemental or certificated air carrier.

Circling Approach – An instrument approach procedure in which an aircraft executes the published instrument approach to one runway, then maneuvers visually to land on a different runway. Circling approaches are also used at airports that have published instrument approaches with a final approach course that is not aligned within 30 degrees of any runway.

Commercial Air Carrier – An air carrier certified in accordance with FAR Parts 121 or 127 to conduct scheduled services on specified routes. These air carriers may also provide nonscheduled or charter services as a secondary operation.

Commercial Service Airports – Publicly owned airports that enplane 2,500 or more passengers annually and receive scheduled passenger aircraft service. It is a NPIAS classification. Commercial service airports are either one of the following:

- *Primary* - airport that enplanes more than 10,000 passengers annually
- *Nonprimary* - airport that enplanes between 2,500 and 10,000 passengers annually.

Commuter Air Carrier – An air carrier certified in accordance with FAR Part 135 that operates aircraft seating with a maximum of 60 passengers and provides at least five scheduled round trips per week between two or more points, or carries mail.

Controlled Airspace – 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 designated as Class A, Class B, Class C, Class D, or Class E. Aircraft operators are subject to certain pilot qualifications, operating rules, and equipment requirements as specified in FAR Part 91, depending upon the class of airspace in which they are operating.

- *CLASS A* - Airspace between 18,000 and 60,000 feet MSL over the conterminous United States. IFR clearances are required for all aircraft operating in CLASS A airspace.
- *CLASS B* - Airspace area around the busiest U.S. hub airports, typically to a radius of 20 nautical miles and up to 10,000 feet above ground level. Operations within CLASS B airspace require an ATC clearance and at least a Private pilot certificate (local waivers available), radio communication, and an altitude-reporting (Mode C) transponder.
- *CLASS C* - Airspace area around busy U.S. airports (other than CLASS B). Radio contact with approach control is mandatory for all traffic. Typically includes an area from the surface to 1,200 feet AGL out to 5 miles and from 1,200 to 4,000 feet AGL to 10 miles from the airport.
- *CLASS D* - Airspace around an airport with an operating control tower; typically to a radius of 5 miles from the surface to 2,500 feet AGL. Radio contact with the control tower required prior to entry.
- *CLASS E* - General controlled airspace comprising control areas, transition areas, Victor airways, the Continental Control Area, etc.
- *CLASS F* - International airspace designation not used in the U.S.
- *CLASS G* - Uncontrolled airspace, generally the airspace from the surface up to 700 or 1,200 feet AGL in most of the U.S., but up to as high as 14,500 feet in some remote Western and sparsely populated areas.

Crack Spread – the difference between crude and jet fuel cost per barrel.

Decision Height (DH) – During a precision approach, the height (or altitude) at which a decision must be made to either continue the approach or execute a missed approach.

Demand – Level of activity that needs to be accommodated.

Demand Management – The art or science of controlling demand as a strategy to avoid congestion.

Design Aircraft – An aircraft whose dimensions and/or other operational requirements make it the most demanding aircraft currently using an airport's facilities (i.e. runways and taxiways). The design aircraft must be an aircraft that has or is expected to conduct 500 or more annual operations (250 landings) at a given airport, and is used as the basis for airport planning and design at that airport.

Displaced Threshold – A threshold that is located at a point on the runway other than the designated beginning of the runway, often for the purpose of avoiding obstructions on approach. The portion of pavement behind a displaced threshold may be available for takeoffs in both directions and landings from the opposite direction.

Distance measuring equipment (DME) – A flight instrument that measures the line-of-sight distance of an aircraft from a navigational radio station in nautical miles.

Easement – The legal right of one party to use a portion of the total rights in real estate owned by another party. This may include the right of passage over, on, or below the property; certain air rights above the property, including view rights; and the rights to any specified form of development or activity, as well as any other legal rights in the property that may be specified in the easement document.

Enplanements - The total number of revenue passengers boarding aircraft, including originating, stop-over, and transfer passengers, in scheduled and non-scheduled services.

Enroute System – That part of the National Airspace System where aircraft are operating between origin and destination airports.

Entitlement Funds – Federal aid funds (see AIP) apportioned to each airport for authorized and approved projects, based on a statutory formula that takes into account the airport's passenger enplanements and cargo.

Environmental Assessment (EA) – A concise document that assesses the environmental impacts of a proposed Federal Action. It discusses the purpose and need for the proposed action and alternatives, as well as their environmental impacts. An environmental assessment should provide sufficient evidence and analysis for a Federal determination whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). Public participation and consultation with other Federal, state, and local agencies is a cornerstone of the EA process.

Environmental Impact Statement (EIS) – An EIS is a document that provides a discussion of the significant environmental impacts which would occur as a result of a proposed project, and informs decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts. Public participation and consultation with other Federal, state, and local agencies is a cornerstone of the EIS process.

Essential Air Service (EAS) – Program administered by the U.S. Department of Transportation is designed to ensure that selected small communities that were served by one or more air carriers prior to airline deregulation would retain a minimum level of scheduled airline service, even if such service requires the payment of subsidy.

Federal Aviation Administration (FAA) – A branch of the U.S. Department of Transportation responsible insuring the safe and efficient use of the nation’s airspace, for fostering civil aeronautics and air commerce, and for supporting the requirements of national defense. In addition to regulating airports, aircraft manufacturing and parts certification, aircraft operation and pilot certification, the FAA operates Air Traffic Control, purchases and maintains navigation equipment, certifies airports and aids airport development, among other activities. The FAA also administers the AIP that provides for airport development.

Federal Aviation Regulations (FARs) – The body of Federal regulations relating to aviation, published as Title 14 of the Code of Federal Regulations.

Final Approach – The flight path of an aircraft which is inbound to the airport on an approved final instrument approach course, beginning at the point of interception of that course and extending to the airport or the point where circling for landing or missed approach is executed.

Fixed Base Operator (FBO) – Any aviation business duly licensed and authorized by written agreement with the airport owner to provide aeronautical activities at the airport under strict compliance with such agreement and pursuant to these regulations and standards. Typically provide services such as hangar space, fuel, flight training, repair, and maintenance to general aviation airport users.

Fixed Wing – Any aircraft not considered to be a rotorcraft.

Flight Service Station (FSS) – Air traffic facility operated by the FAA to provide flight service assistance such as pilot briefings, en route communications, search and rescue assistance and weather information.

Fractional Ownership – An aircraft ownership concept whereby multiple companies can partially own an aircraft through use of a common aircraft management company used to maintain the aircraft and administer the leasing of the aircraft among the owners. The aircraft owners participating in the program agree not only to share their aircraft with others having an ownership interest in that aircraft, but also to lease their aircraft to other owners in the program.

Freight Forwarder – A company that accepts small packages from shippers and consolidates them into container loads. These loads are then transferred to the non-integrated carrier or a passenger airline to deliver to an agent or subsidiary at another airport.

General Aviation (GA) – All civil aviation operations other than scheduled air services and non-scheduled air transport operations for remunerations or hire. Often misunderstood to be only small, propeller-driven aircraft; even a large jet or cargo plane operated under FAR Part 91 can be a general aviation aircraft.

General Aviation Airports – Those airports not classified as commercial service.

Glider – An aircraft that does not use an engine, but flies by floating on air currents. Gliders or sailplanes are heavier-than-air aircraft primarily intended for unpowered flight.

Glideslope (GS) – Provides vertical guidance for aircraft during approach and landing. Generally a 3-degree angle of approach to a runway established by means of airborne instruments during instrument approaches, or visual ground aids for the visual portion of an instrument approach and landing.

Geographic Information Systems (GIS) – An information system that is designed for storing, integrating, manipulating, analyzing, and displaying data referenced by spatial or geographic coordinates.

Global Positioning System (GPS) – Satellite-based navigation system operated by Department of Defense, providing extremely accurate position, time, and speed information to civilian and military users. Based on a "constellation" of 24 satellites, GPS will replace ground-based navigation systems (VOR, ILS) as the primary worldwide air navigation system in the 21st Century.

Hazard to Air Navigation – An object which, as a result of an aeronautical study, the FAA determines will have a substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft, operation of air navigation facilities, or existing or potential airport capacity.

Instrument Approach – A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

Instrument Flight Rules (IFR) – Rules from Federal Aviation Regulations (14 CFR 91) that govern the procedures for conducting instrument flight. Pilots are required to follow these rules when operating in controlled airspace during Instrument Meteorological Conditions (i.e. visibility of less than three miles and/or ceiling lower than 1,000 ft). These procedures may also be used under visual conditions and provide for positive control by ATC.

Instrument Landing System (ILS) – ILS is designed to provide an exact approach path for alignment and descent of aircraft. Generally consist of a localizer, glide slope, outer marker, middle marker, and approach lights. There are three types of ILS:

- *Cat I* – Category I ILS which provides for approach to a height above touchdown of not less than 200 feet and with visibility of not less than ½ mile or a Runway Visual Range of not less than 2400 (RVR 1800 with operative touchdown zone and runway centerline lights).
- *Cat II* – Category II ILS approach procedure which provides for approach to a height above touchdown of not less than 100 feet and with a Runway Visual Range of not less than 1200.
- *Cat III* – Category III ILS approach procedure which provides for approaches to minima less than CAT II.

Instrument Runway – A runway equipped with electronic and visual navigation aids for which a precision or non-precision approach procedure having straight-in landing minimums has been approved.

Integrated Express Carrier – Operators move the customer’s goods door-to-door, providing shipment collection, transport via air or truck, and delivery. Integrated express operators include FedEx Express, UPS, and DHL.

Integrated Noise Model (INM) – A computer model developed, updated and maintained by the FAA to predict the noise exposure generated by aircraft operations at an airport.

Itinerant Operation – All aircraft operations at an airport other than local.

Joint Use Airport - Airport with existing formal written joint use agreement between the military and the local civilian sponsor.

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

Landside – The general public common use areas of the airport such as terminals, public roadways, parking lots and buildings which are not contained in the airside area.

Large Airplane – An airplane of more than 12,500 pounds (5,700 kg) maximum certificated takeoff weight (MTOW).

Leakage – Refers to passengers that travel outside their market area to access airline services.

Load Factor –The ratio of how much of an airline’s carrying capacity is used, calculated using the ratio of revenue passenger miles to available seat miles on a particular flight.

Local Area Augmentation System (LAAS) – An enhancement of the Global Positioning System (GPS) providing greater navigation accuracy and system integrity for civilian operations.

Local Operation – Includes aircraft operating in the local air traffic pattern or within sight of the air traffic control tower; aircraft that are known to be departing for, or arriving from local practice areas located within a 25-mile radius of the ATCT; or aircraft making simulated instrument approaches or low passes at the airport.

Localizer – The component of an ILS which provides course guidance to the runway.

Mean Sea Level (MSL) – The average height of the surface of the sea for all stages of the tide over a 19 year period; used as a reference for elevations.

Military Operations Area (MOA) – Depicted on navigational charts, MOAs are airspace in which military flight operations (training and practice combat) are conducted. They may be transited by VFR civilian traffic, but special vigilance is recommended.

Minimum Standards – The qualifications or criteria established by an airport sponsor as the minimum requirements to be met by businesses engaged in on-airport aeronautical uses as a condition for the right to conduct those activities.

MOgas – The everyday gasoline used in cars. Motor gasoline, MOgas, distinguishes automobile fuel from aviation gasoline or AVgas.

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

National Plan of Integrated Airport Systems (NPIAS) – FAA planning document that identifies more than 3,300 airports that are significant to national air transportation and thus eligible to receive Federal grants under the Airport Improvement Program (AIP). It also includes estimates of the amount of AIP money needed to fund infrastructure development projects that will bring these airports up to current design standards and add capacity to congested airports. FAA is required to provide Congress with a 5-year estimate of AIP eligible development every 2 years. The NPIAS comprises all commercial service airports, all reliever airports, and selected general aviation airports.

National Transportation Safety Board (NTSB) – The independent federal agency charged with investigating and finding "probable cause" of transportation accidents.

Navigational Aids (NAVAIDs) – A term used to describe any electrical or visual air navigational aids, lights, signs, and associated supporting equipment (i.e. PAPI, VASI, ILS, etc.).

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

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

Non-Directional Beacon (NDB) – A radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his bearing to and from the station. When the radio beacon is installed in conjunction with the ILS marker, it is normally called a compass locator.

Non-Precision Approach Procedure – A standard instrument approach procedure with only horizontal guidance or area-type navigational guidance for straight-in approaches, and no electronic vertical guidance (i.e. glideslope) is provided, such as VOR, TACAN, NDB, or LOC.

Non-Towered Airport – An airport without a control tower, which encompasses the majority of America's 13,000 airports (only approximately 680 airports have control towers). Note that Non-Towered airports are far from being "uncontrolled" in that pilots follow traffic pattern procedures and self-announce positions and intentions using the Common Traffic Advisory Frequency (CTAF), usually called the UNICOM frequency.

Notice to Airmen (NOTAM) – A notice containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations. NOTAMs are distributed via two methods: telecommunications (Class I) and/or postal services (Class 11).

Object Free Area (OFA) – An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

Obstacle Free Zone (OFZ) – The OFZ is the airspace below 150 feet above the established airport elevation and along the runway and extended runway centerline that is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or taking off from the runway, and for missed approaches. The OFZ is sub-divided as follows:

- *Runway OFZ* - The airspace above a surface centered on the runway centerline.
- *Inner-approach OFZ* - The airspace above a surface centered on the extended runway centerline. It applies to runways with an approach lighting system.
- *Inner-transitional OFZ* - The airspace above the surfaces located on the outer edges of the runway OFZ and the inner-approach OFZ. It applies to runways with approach visibility minimums lower than $\frac{3}{4}$ statute mile.

Obstruction to Air Navigation – An object of greater height than any of the heights or surfaces presented in Subpart C of Code of Federal Regulation (14 CFR), Part 77. Obstructions to air navigation are presumed to be hazards to air navigation until an FAA study has determined otherwise.

Operation – A take-off or landing of an aircraft. Every aircraft flight requires at least two operations, a take-off and landing.

Origination/Destination (O&D) – A measure of the point of origination of a passenger to the final destination that comprises that passenger’s actual trip, regardless of changing flights/planes during the journey.

Outer Marker – An ILS navigation facility in the terminal area navigation system located four to seven miles from the runways edge on the extended centerline indicating the beginning of final approach.

Overflight – Aircraft whose flights originate or terminate outside the metropolitan area that transit the airspace without landing.

Part 61, 141, 142 – The parts of FARs covering pilot certification and flight school operations: the pilot certification and standard flight school (Part 61), the integrated curriculum type school (Part 141) requiring slightly fewer flying hours, and Part 142 program allowing replacement of more flight time with advanced flight simulators.

Part 77 – The part of Federal Aviation Regulations (FARs) covering objects affecting navigable airspace. It provides for the establishment of “imaginary surfaces” on and around an airport to identify potential aeronautical hazards in order to prevent or minimize the adverse impacts to the safe and efficient use of navigable airspace. Imaginary surfaces include the primary surface, approach surfaces, transitional surfaces, the horizontal surface, and the conical surface.

Part 91, 121, 125, 135 – The parts of Federal Aviation Regulations (FARs) covering non-commercial operations (Part 91), major scheduled air carriers (Part 121), commuters (Part 125), non-scheduled carriers and air taxis (Part 135).

Passenger Facility Charges (PFCs) – Airport user fees regulated under 14 C.F.R. Part 158.

Pavement Condition Index (PCI) – Numerical index between 0 and 100 used to indicate the condition of a selected portion of pavement with 100 representing excellent pavement.

Peak Hour – Part of the day with the busiest traffic.

Precision Approach Path Indicator (PAPI) – Provides visual approach slope guidance to aircraft during an approach. It is similar to a VASI but provides a sharper transition between the colored indicator lights.

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

Prohibited Area – An airspace area where flight is prohibited except by prior arrangement with the controlling agency. An example is the P-56 area over downtown Washington, D.C., prohibiting flight over the White House.

Public Use Airport – An airport open to public use without prior permission, and without restrictions within the physical capabilities of the facility. It may or may not be publicly owned.

Priority Rating System – A rating system utilized to numerically score individual airport development projects requested by system eligible airports. This numerical rating system is designed to assist the Aeronautics Division in recommending the allocation of funds to the highest priority airport development projects within the statewide airport system.

Private-Use Airport – Typically, a privately-owned airport not open to the public or operated for the public benefit.

Reliever Airport – A public use airport that relieves airport congestion at a commercial service airport and provides general aviation access to the overall community. It is a NPIAS classification.

Remote Communications Outlet (RCO) – An unstaffed transmitter receiver/facility remotely controlled by air traffic personnel. RCOs serve flight service stations (FSSs). RCOs were established to provide ground-to-ground communications between air traffic control specialists and pilots at satellite airports for delivering enroute clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/landing times.

Restricted Area – Airspace which (when "Active" or "Hot") usually excludes civilian aircraft, oftentimes for military training/operations (i.e. rocket flights, practice air-to-air combat or ground-based artillery practice). Temporary restricted areas are established for events such as forest fires, natural disasters or major news stories. Flight through a restricted area may be authorized by the "controlling agency" or by FAA.

Revenue Passenger Miles (RPMs) – One fare-paying passenger carried one mile.

Revenue Ton Miles (RTMs) – One ton of cargo carried one mile.

Rotocraft – A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors. Includes helicopters and gyroplanes.

Rules and Regulations – Directions approved and enforced by an airport sponsor to protect public health, safety, interest, and welfare on the airport, as well as to augment any ordinances and resolutions pertaining to the airport.

Runway (RW) – A defined rectangular surface on an airport prepared or suitable for the landing or takeoff of airplanes.

Runway End Identifier Lights (REIL) – Two synchronized flashing lights (one on each side of the runway threshold) that identify the approach end of the runway.

Runway Protection Zone (RPZ) – An area off the runway end to enhance the protection of people and property on the ground. The RPZ is a trapezoidal shape. Its dimensions are determined by the aircraft approach speed and runway approach type and minima.

Runway Safety Area (RSA) – A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

Segmented Circle – A system of visual indicators designed to provide traffic pattern information at airports without operating control towers.

Small Airplane – An airplane of 12,500 pounds or less maximum certificated takeoff weight.

Special Use Airspace – All airspace in which restrictions or prohibitions to flight are imposed for military or government needs (See MOA, Restricted Area, Prohibited Area).

State Aviation Fund – A separately established program for airport construction and development is that derives funds from taxes on aviation goods and services. Flight property taxes, aircraft lieu tax, registration fees and aviation fuel tax are the primary sources of revenue for the State Aviation Fund.

State Transportation Board (STB) – has policy powers and duties in addition to serving in an advisory capacity to the Director of the Arizona Department of Transportation. The Board awards contracts and monitors the status of c projects and has the exclusive authority to issue revenue bonds for financing needed transportation improvements throughout the state.

Super Unicom – FAA certified for altimeter settings and other weather data required for instrument approach implementation.

T-Hangar – An aircraft hangar in which aircraft are parked alternatively tail to tail, each in the T-shaped space left by the other row of aircraft or aircraft compartments.

Tactical Area Navigation (TACAN) – the military equivalent of the VOR/DME system, and provides both distance and direction guidance.

Taxilane (TL) – The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

Taxiway (TW) – A defined path established for the taxiing of aircraft from one part of an airport to another.

Terminal Area Capacity – The ability of an airport terminal area to accommodate aircraft, passengers, and cargo. Individual elements within terminal areas that comprise the overall terminal capacity typically include airline gate positions, airline apron areas, cargo apron areas, general aviation apron areas, airline passenger terminals, general aviation terminals, cargo buildings, automobile parking and aircraft maintenance facilities, among others.

Terminal Area Forecast (TAF) – The official forecast of aviation activity at FAA facilities, which are prepared to meet the budget and planning needs of FAA and provide information for use by state and local authorities, the aviation industry, and the public. The TAF includes forecasts for the following:

- *FAA towered airports*
- *Federally contracted towered airports*
- *Nonfederal towered airports*
- *Non-towered airports.*

Terminal Radar Approach Control (TRACON) – An FAA Air Traffic Control Facility which uses radar and two-way communication to provide separation of air traffic within a specified geographic area in the vicinity of one or more airports. TRACONs control IFR and participating VFR flights.

Tie-down – An apparatus used to secure an aircraft while parked on the apron.

Touch-and-Go Operation – A flight training operation in which a landing approach is made, the aircraft touches-down on the runway, but does not fully reduce speed to turn off the runway. Instead, after the landing, full engine power is applied while still rolling and a takeoff is made, thereby practicing both maneuvers as part of one motion. It counts as two separate aircraft operations

Traffic Pattern – The traffic flow for aircraft landing and departure at an airport. Typical components of the traffic pattern include: upwind leg, crosswind leg, downwind leg, base leg, and final approach.

Transportation Security Administration (TSA) – U.S. government agency is a component of the Department of Homeland Security and is responsible for security of the nation's transportation systems.

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.

Uncontrolled Airspace – Generally the airspace from the surface up to 700 or 1,200 feet AGL in most of the U.S., but up to as high as 14,500 feet in some remote Western and sparsely populated areas. Uncontrolled airspace is designated as Class G airspace by the FAA.

Unmanned Aerial Vehicle (UAV) – An unpiloted aircraft that can be controlled remotely using GPS or other satellite guidance, or flown autonomously based on pre-programmed flight

plans or more complex dynamic automation systems. UAVs are currently primarily used in a number of military roles, but are also used in a small but growing number of civil applications such as firefighting, police observation of civil disturbances and crime scenes, and reconnaissance support in natural disasters.

Very High Frequency Omni-directional Range (VOR) – A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the National Airspace System. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature.

Very High Frequency Omni-directional Range Station with Tactical Air Navigation (VORTAC) – A navigational aid providing VOR azimuth and TACAN distance measuring equipment (DME) at one site.

Very Light Jet (VLJ) – A small jet aircraft approved for single-pilot operation, seating 4-8 people, with a maximum take-off weight of under 10,000 pounds. They are lighter than what is commonly termed business jets.

Visual Approach – An approach conducted on an IFR flight plan, operating in VFR conditions under the control of an air traffic facility and having an air traffic control authorization, may proceed to destination airport under VFR.

Visual Approach Slope Indicator (VASI) – A visual aid for the final approach to the runway threshold consisting of two wing bars of lights located in tandem on either side of the runway. Each bar produces a split beam of light – the upper segment is white, the lower is red.

Visual Flight Rules (VFR) – Rules and procedures specified in 14 CFR 91 for aircraft operations under visual meteorological conditions, or weather conditions with a ceiling of 1,000 feet above ground level and visibility of three miles or greater. Under VFR, it is the pilot's responsibility to maintain visual separation and not that of the air traffic controller.

Visual Glide Slope Indicator (VGSI) – system of lights on the side of the runway threshold near the touchdown zone that help to ensure that any obstructions in the approach area are cleared by indicating if the aircraft is higher than or lower than the appropriate glide slope angle. The two most common types of VGSI are PAPI and VASI.

Visual Runway – A runway without an existing or planned straight-in instrument approach procedure.

Wide Area Augmentation System (WAAS) – An enhancement to the GPS system providing greater navigation accuracy and system integrity and permitting GPS to be used for precision instrument approaches to most airports.

Wind Coverage – Percent of time for which aeronautical operations are considered safe due to acceptable crosswind components.

BIBLIOGRAPHY

The Airport Technology and Planning Group Incorporated. Rural Air Service Study August 1999. 265 p.

Applied Pavement Technology. Arizona Airport Pavement Management System November 2003. 23 p.

Federal Aviation Administration. FAA Aerospace Forecasts, Fiscal Years 2008-2025 March 2008. 96p.

General Aviation Manufacturers Association. 2008 General Aviation Statistical Databook & Industry Outlook 2008. 76 p.

Governor's Advisory Council on Aviation. Final Report January 2007. 38 p.

Honeywell Aerospace. Business Aviation Outlook October 2007.

Morrison Institute for Public Policy, Arizona State University. Megapolitan: Arizona's Sun Corridor May 2008. 52p.

National Association of State Aviation Officials. State Aviation Funding and Organizational Data Report FY2007 180p.

QED Airport and Aviation Consultants. Automatic Weather Observation System Network Study August 2007. 29 p.

Simat Helliesen & Eichner, Inc. The Economic Impact of Aviation in Arizona 2004 20 p.

Wilbur Smith Associates. Arizona Rural Air Service Study June 2005. 70-71. 250 p.

Wilbur Smith Associates. Pima Association of Governments' Regional Aviation System Plan June 2002. 299 p.

Wilbur Smith Associates, Inc. Maricopa Association of Governments' Regional Aviation System Plan 2004 350 p.

Wilbur Smith Associates. Airport Small Community Economic Development & Transportation Program October 1999. 59 p.