

MAC Glossary of Terms

In addition to the below glossary, the Federal Aviation Administration has a list of acronyms and abbreviations for various operations, lines of business, and programs available at <https://www.faa.gov/jobs/abbreviations/>.

A-Weighted Decibels (dBA): A measure of noise levels adjusted relative to the frequencies most audible to the human ear.

Above Ground Level (AGL): A height above the ground as opposed to above Mean Sea Level (MSL).

Accelerate-Stop Distance: The runway length declared available and suitable for the acceleration and deceleration of an aircraft aborting a takeoff.

Advisory Circular: External publications issued by the FAA consisting of non-regulatory material providing for recommendations relative to policy, guidance, and information relative to a specific aviation subject.

Aircraft Approach Category (AAC): An alphabetic classification of aircraft based upon 1.3 times the stall speed in a landing configuration at their maximum certified landing weight. The categories are as follows:

- Category A: Approach speed less than 91 knots
- Category B: Approach speed 91 knots or more but less than 121 knots
- Category C: Approach speed 121 knots or more but less than 141 knots
- Category D: Approach speed 141 knots or more but less than 166 knots
- Category E: Approach speed 166 knots or more

Airplane Design Group (ADG): A classification of aircraft based on wingspan and tail height. The groups are as follows:

- Group I: Wingspan up to but not including 49 feet or tail height up to but not including 20 feet
- Group II: Wingspan 49 feet up to but not including 79 feet or tail height from 20 feet up to but not including 30 feet
- Group III: Wingspan 79 feet up to but not including 118 feet or tail height from 30 feet up to but not including 45 feet
- Group IV: Wingspan 118 feet up to but not including 171 feet or tail height from 45 feet up to but not including 60 feet
- Group V: Wingspan 171 feet up to but not including 214 feet or tail height from 60 feet up to but not including 66 feet

- Group VI: Wingspan 214 feet up to but not including 262 feet or tail height from 66 feet up to but not including 80 feet

Aircraft Operation: An aircraft landing or takeoff, or touch-and-go procedure on a runway at an airport. A touch and go is counted as two aircraft operations: one takeoff, and one landing.

Airport Classifications: Definitions of airport classifications vary by agency.

- Federal Aviation Administration (FAA) General Aviation Airport Classifications:
 - National: National airports support the national and state system by providing communities with access to national and international markets. They accommodate a full range of aviation activity including large corporate jet and multi-engine aircraft operations, significant charter passenger services, all-cargo operations, and some helicopter activity. They often work in conjunction with, and in support of, hub airports serving the aviation needs of larger metropolitan areas.
 - National Airports include Anoka County – Blaine, Flying Cloud and St. Paul Downtown airports.
 - Regional: Regional airports support regional economies by connecting communities to statewide and interstate markets. These airports accommodate a full range of regional and local business activities, limited scheduled passenger service, or cargo operations. They serve corporate jet and multi-engine aircraft, as well as single-engine propeller aircraft and helicopters.
 - Regional Airports include Airlake and Crystal airports.
 - Local: Local airports supplement communities by providing access to primarily intrastate and some interstate markets. These airports accommodate small businesses, flight training, emergency service, charter service, cargo operations, and personal flying activities. They typically accommodate smaller general aviation aircraft.
 - Local Airports include Lake Elmo Airport.
 - Basic: Basic airports support general aviation activities such as emergency service, charter or critical passenger service, cargo operations, flight training, and personal flying. These airports typically accommodate mostly single-engine propeller aircraft and some helicopters. They may be located in and provide service to remote areas of the United States with limited or no surface transportation options, and therefore may be critical to the transportation of goods required for local day-to-day life.
- Minnesota State Aviation System Plan (SASP) Classifications:
 - Key Airports: These airports have paved and lighted primary runways 5,000 feet or longer in length. They are capable of accommodating aircraft of all sizes up to and including large multi-engine and jet aircraft.
 - Key Airports include Minneapolis-St. Paul International, St. Paul Downtown, Flying Cloud, and Anoka County – Blaine airports.

- Intermediate Airports: These airports have paved and lighted primary runways which are between 2,400 and 5,000 feet long. Intermediate airports are intended for use by single engine aircraft or light to medium multi-engine aircraft.
 - Intermediate Airports include Airlake, Lake Elmo, and Crystal airports.
- Landing Strips: These airports have turf runways which can accommodate most single-engine aircraft, helicopters, and some twin-engine aircraft. They may be unusable during wet weather, winter months, and during the spring melt.
- Metropolitan Council Regional Aviation System Plan (RASP) Classifications:
 - Major Airport: An airport with a primary runway length of 8,000 feet or greater with a precision approach. A Major Airport serves a primary air service access area that is international and national in scope. Its role in the airport system is to provide facilities and services primarily to scheduled air carrier and regional commuter users, but also includes air cargo and charter carriers.
 - Major Airports include Minneapolis-St. Paul International Airport.
 - Intermediate Airport: An airport with a primary runway length between 5,000 and 8,000 feet with a precision approach. The role of an Intermediate Airport is to provide facilities and services primarily to corporate and business general aviation aircraft. Typical users of these airports fly a variety of business jets, turboprop aircraft, and single- and twin-engine piston aircraft.
 - Intermediate Airports include St. Paul Downtown Airport.
 - Minor Airport: An airport with runways all of which are 5,000 feet in length or less. Their system role is to provide general aviation facilities and services primarily to personal, business, and instructional users. The most common users of these airports fly single-engine and light twin-engine aircraft, and helicopters. Minnesota state statute prohibits upgrading a minor airport to intermediate airport status without legislative approval.
 - Minor Airports include Flying Cloud, Anoka County – Blaine, Airlake, Lake Elmo, and Crystal airports.
 - Special Purpose Airport: A facility open to public use, including heliports, seaplane bases, or airport landing areas whose primary geographic and service focus is normally state and metropolitan in scope. Personal, business and instruction uses are accommodated at these facilities.
- Metropolitan Airports Commission (MAC) Reliever Airport Classifications:
 - Primary Relievers: MAC Reliever airports that provide the infrastructure and serves that are key to corporate aviation needs.
 - Primary Relievers include St. Paul Downtown, Flying Cloud, and Anoka County – Blaine airports.
 - Complimentary Relievers: MAC Reliever airports that provide limited MSP relief and complement the three Primary Relievers by offering options for aviation activity but not to the level of infrastructure and services typically expected at a Primary Reliever.
 - Complimentary Relievers include Airlake, Lake Elmo, and Crystal airports.

Airport Elevation: The highest point of an airfield's usable landing area measured in feet above Mean Sea Level (MSL).

Airport Layout Plan (ALP): A scaled drawing of the existing and planned land and facilities necessary for the operation and development of an airport.

Airport Reference Code (ARC): A designation that signifies the airport's highest Runway Design Code (RDC). The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely on the airport.

Air Route Traffic Control Center (ARTCC or "Center"): A facility established to provide air traffic control service to aircraft operating on Instrument Flight Rule (IFR) flight plans within controlled airspace and principally during the en-route phase of flight.

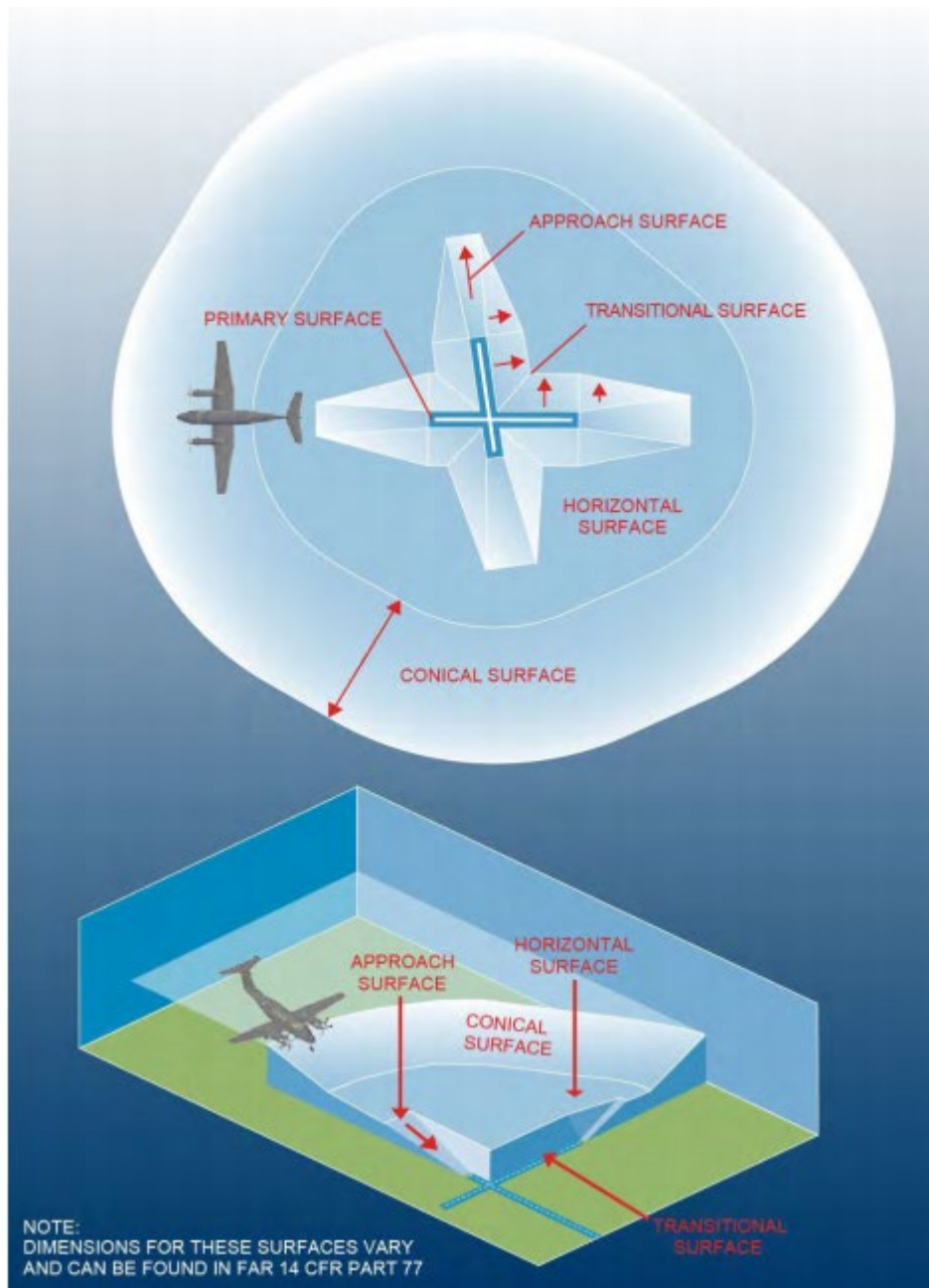
Air Traffic Control (ATC): A service provided for the purpose of promoting the safe, orderly, and expeditious flow of air traffic, including airport surface, approach, departure and en-route air traffic control services.

Air Traffic Control Tower (ATCT): A structure from which air traffic control personnel control the movement of aircraft on or around the airport.

Annual Service Volume (ASV): The maximum number of annual operations that can be reasonably expected to occur at an airport based on a given level of delay.

Approach Surface: An imaginary obstruction-limiting surface defined in 14 CFR Part 77 which is longitudinally centered on an extended runway centerline and extends outward and upward from the primary surface at each end of a runway at a designated slope and distance based on the type of available or planned approach by aircraft to a runway. See Figure 1 below.

Figure 1: FAR Part 77 Airspace Surfaces



Approach Visibility Minimums: A set of conditions specified for operations of aircraft during Instrument Flight Rule (IFR) weather conditions.

Apron: A specified portion of an airfield used for aircraft parking and the refueling, maintenance, servicing, and loading/unloading of aircraft.

Area Navigation (RNAV): A method of navigation that permits aircraft operations on any desired course within the coverage of station-referenced navigation signals.

Automated Weather Observation System (AWOS): Equipment that takes and broadcasts automated weather readings at an airport.

Average Day Peak Month (ADPM): Defined as peak month passengers or operations divided by the number of days in the month.

Aviation Environmental Design Tool (AEDT): A computer software application that models aircraft performance in space and time to estimate fuel consumption, emissions, noise, and air quality consequences.

Based Aircraft: The general aviation aircraft that use a specific airport as a home base.

Categorical Exclusion (CatEx): A federal action may be “categorically excluded” from a detailed environmental analysis if the federal action does not, “individually or cumulatively have significant effect on the human environment.”

Circling Approach: A maneuver initiated by a pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or is not desirable.

Civil Aviation: Non-military aviation including both scheduled air transport and general aviation.

Clear Zone: As defined by MnDOT Aeronautics, Clear Zones off runway ends are intended to enhance operational safety of aircraft and to protect life and property in runway approach areas. The MnDOT Clear Zones have a similar function too, but are not always the same dimensions as the FAA Runway Protection Zone (RPZ).

Common Traffic Advisory Frequency (CTAF): A radio frequency designated for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating control tower.

Compass Calibration Pad: An airport facility used for calibrating an aircraft compass.

Crosswind Runway: An additional runway at an airport that compensates for primary runways that provide less wind coverage than desired.

Day-Night Average Sound Level (DNL): The average sound exposure for a typical 24-hour period. A weighting factor equivalent to a penalty of 10 decibels is applied to sounds occurring between 10:00 PM and 7:00 AM.

Decibel (dB): A unit used to measure the intensity of a sound or the power level of an electrical signal by comparing it with a given level on a logarithmic scale.

Declared Distances: Distances for a runway representing the maximum lengths available and suitable for meeting takeoff and landing distance requirements. They are determined in accordance with FAA design standards, with length added to or subtracted from the physical length of the runway to provide standard safety areas and protection zones. As a result, the declared distances for a runway may be more or less than the physical length of the runway depicted on aeronautical charts. There are four defined declared distances:

- Takeoff run available (TORA) – length for the ground run of a departing aircraft;
- Takeoff distance available (TODA) – length through the start of the takeoff climb;
- Accelerate stop distance available (ASDA) – length for acceleration to takeoff speed and then deceleration associated with an aborted takeoff; this is often the longest length for twin and turbine engine aircraft;
- Landing distance available (LDA) – length suitable for landing an aircraft

Design Aircraft: An aircraft with characteristics that determine the application of airport design standards for a specific runway, taxiway, apron, or other facility. This aircraft can be a specific aircraft model or a composite of several aircraft using, expected, or intended to use the airport or part of the airport (also called critical aircraft or critical design aircraft).

Dual Wheel Gear (DW): The configuration of an aircraft landing gear where two wheels are used at each wheel position to support the aircraft load.

Federal Aviation Administration (FAA): The federal agency responsible for the safety and efficiency of the United States' airspace and air transportation system.

Federal Aviation Regulations (FAR): The general and permanent rules established by the executive departments and agencies of the federal government for aviation, which are published in the Federal Register. These are the aviation subset of the Code of Federal Regulations.

Fixed Base Operator (FBO): A commercial business enterprise located on an airport that provides services to pilots including aircraft rental, training, fueling, maintenance, parking, and the sale of pilot supplies. Also known as a Full Service Commercial Operator.

Fleet Mix: A collective term generally used to describe the proportions of aircraft types operating at an airport.

Flight Service Station (FSS): Air traffic facilities that provide pilot briefings, flight plan processing, inflight radio communications, search and rescue (SAR) services, and assistance to lost aircraft and aircraft in emergency situations.

General Aviation: The segment of aviation that encompasses all aspects of civil aviation except for certified air carriers and other commercial operators such as air cargo.

Glide Slope: The proper vertical path of descent for an aircraft preparing to land to ensure the aircraft stays free of obstacles and touches down on the runway threshold. A standard glide slope is 3°.

Global Positioning System (GPS): A satellite based navigation system that provides signals in the cockpit of aircraft defining aircraft position in terms of latitude, longitude, and altitude.

Instrument Flight Rules (IFR): Procedures for the conduct of flight in weather conditions below Visual Meteorological Conditions (VMC). The term IFR is often used to define weather conditions and the type of flight plan under which an aircraft is operating.

Instrument Landing System (ILS): A precision runway approach aid based on two radio beams which together provide pilots with both vertical (Glide Slope) and horizontal (Localizer) guidance during an approach to land.

Instrument Meteorological Conditions (IMC): Meteorological conditions expressed in terms of specific visibility and ceiling conditions that are less than the minimums specified for Visual Meteorological Conditions (VMC). The term IFR is often used interchangeably with IMC.

Itinerant Operation: An aircraft operation where the destination point is greater than 20 miles from the aircraft's point of origin.

Joint Airport Zoning Board (JAZB): A Joint Airport Zoning Board is comprised of the authority that owns or controls an airport along with surrounding municipalities within which an airport hazard area may be located. Once formed, the Joint Airport Zoning Board has the power to adopt, administer, and enforce airport zoning regulations applicable to the airport hazard areas in its jurisdiction.

Knots: Nautical miles per hour, equal to 1.15 statute miles per hour.

Lateral Navigation (LNAV): Horizontal navigation without positive vertical guidance. This type of navigation is associated with non-precision approach procedures.

Local Operation: An aircraft operation that remains in the local traffic pattern, executes simulated instrument approaches or low passes at the airport, and operations to or from the airport and a designated practice area within a 20-mile radius of the airport.

Localizer (LOC): The lateral component of the Instrument Landing System (ILS).

Long-Term Plan (LTP): A long-term planning process and document that shares long-term development concepts and ideas for use of an airport's land and facilities.

MACNOMS: The Metropolitan Airports Commission Noise and Operations Monitoring System collects, and processes aircraft noise data and runway use data for MAC-owned airports. The system also collects flight track data for aircraft activity in an area approximately 40 miles around MSP, up to 20,000 feet.

Mean Sea Level (MSL): A measure used in aviation for pilots to identify the flight or airfield elevation above sea level as opposed to above ground level (AGL).

Medium Intensity Runway Lights (MIRL): Lights that are located along the edge of a runway to assist pilots in identifying the edge of the surface available for takeoffs and landings.

Metropolitan Airports Commission (MAC): The Metropolitan Airports Commission was created in 1943 by the Minnesota Legislature to promote air transportation in the seven-county metropolitan area. MAC owns and oversees the operation of seven airports in the twin cities area: Minneapolis-St. Paul International Airport (MSP), Airlake Airport, Anoka County-Blaine Airport, Crystal Airport, Flying Cloud Airport, Lake Elmo Airport and St. Paul Downtown Airport.

Microjet: A category of small jet aircraft approved for single-pilot operation, typically seating 4-8 people, with a maximum takeoff weight of under 10,000 pounds. Also referred to as very light jets or personal jets.

Modification to Design Standards (MOS): Any approved nonconformance to FAA standards applicable to an airport design, construction, or equipment procurement project that is necessary to accommodate an unusual local condition for a specific project on a case-by-case basis while maintaining an acceptable level of safety.

Movement Area: The runways, taxiways, and other areas of an airport that are used for taxiing or hover taxiing, takeoff, and landing of aircraft including helicopters, exclusive of aprons and aircraft parking areas.

MSP: Minneapolis-St. Paul International Airport.

MSP Airport 2040 LTP: Minneapolis-St. Paul International Airport 2040 Long-Term Plan.

National Airspace System (NAS): A network of both controlled and uncontrolled airspace, both domestic and oceanic. It includes: air navigation facilities, equipment and services; airports and landing areas; aeronautical charts, information and services; rule and regulations; procedures and technical information; and manpower and material.

National Plan of Integrated Airport Systems (NPIAS): The national airport system plan developed by the Secretary of Transportation on a biannual basis for the development of public-use airports to meet national air transportation needs.

Navigational Aid (NAVAID): A visual or electronic facility or device designated for use for air navigation.

Noise Contour: A depiction of calculated aircraft noise exposure for a geographical area surrounding an airport. The standard level of noise depicted in noise contour maps is 65 dB Day-Night Level (DNL), but maps may include noise contours for other levels such as 60 dB DNL and 70 dB DNL. Noise contours are calculated using the Aviation Environmental Design Tool (AEDT) and considers data inputs such as runway use, flight track use, aircraft fleet mix, aircraft performance and thrust settings, topography, and atmospheric conditions.

Non-Directional Beacon (NDB): A general purpose, low-frequency radio beacon that can be used by a pilot to determine a bearing from the transmitter.

Non-Precision Approach: A straight-in instrument approach procedure that provides course guidance, without vertical path guidance, with visibility minimums no lower than $\frac{3}{4}$ mile.

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 remaining clear 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 three-dimensional airspace along the runway and extended runway centerline that is required to be clear of obstacles for protection for aircraft landing or taking off from the runway and for missed approaches.

Other-Than-Utility Runway: A runway that is intended to be used by propeller driven aircraft with a maximum gross weight greater than 12,500 pounds and/or jet aircraft of any gross weight.

Part 77: Regulations for the protection of airspace around a public-use civilian or military airport are specified in 14 CFR Part 77 *Safe, Efficient Use, and Preservation of the Navigable Airspace*. These defined surfaces are used by the FAA to identify obstructions to airspace around an airport facility. Part 77 surfaces are comprised of primary, approach, transitional, horizontal and conical three-dimensional imaginary surfaces.

Pavement Condition Index (PCI): PCI evaluation includes a visual inspection of pavements and assignment of a numerical indicator that reflects the structural and operational condition of the pavement including the type, severity, and quantity of pavement distress.

Precision Approach: An instrument approach procedure that provides course and vertical path guidance with visibility below $\frac{3}{4}$ mile.

Precision Approach Path Indicator (PAPI): A navigational aid to visually identify the glideslope to the touchdown zone of the runway.

Primary Runway: A runway constructed to meet airport capacity needs. The design objective for a primary runway is to provide a runway length that will not result in operational weight restrictions.

Primary Surface: An imaginary obstruction limiting surface defined in 14 CFR Part 77 that is specified as a rectangular surface longitudinally centered about a runway (see Figure 1 on Page 5).

Propeller-driven Aircraft: Aircraft powered by propeller engines on the exterior of the aircraft. Such aircraft often use 100LL type fuel. Turboprop aircraft are a notable exception.

Regular Use: Regular use is defined by the FAA as at least 500 or more annual itinerant and local operations on the runway by the critical design aircraft, excluding touch-and-go operations.

Reliever Airport: General Aviation airports in major metropolitan areas that provide pilots with attractive alternatives to using congested hub airports. To be eligible for reliever designation, an airport must be open to the public, have 100 or more based aircraft, or have 25,000 or more annual itinerant operations.

Remote Transmitter/Receiver (RTR): An air-to-ground communications system having transmitters and/or receivers and other ancillary equipment. These on-airport facilities allow radio communications between a pilot and ATCT and are usually located at airports without an ATCT.

Responsible Government Unit (RGU): Any state agency and any general or special purpose unit of government in the state that is responsible for preparation and review of environmental documents.

Runway: A defined rectangular area at an airport designated for the landing and takeoff of an aircraft. Runway numbers are determined by their magnetic heading with respect to north (0°). If an airport has two parallel runways, such as Minneapolis-St. Paul International Airport (MSP), the runways are marked Left (L) and Right (R). Three parallel runways would be marked Left (L), Center (C) and Right (R). The existing runways at MSP are 12L/30R, 12R/30L, 17/35, and 4/22.

Runway Design Code (RDC): The selected AAC, ADG, and desired approach visibility minimums (in feet of runway visual range) are combined to form the Runway Design Code (RDC) for a particular runway. The RDC is used to determine the standards that apply to a specific runway and parallel taxiway to allow unrestricted operations by the design aircraft under defined meteorological conditions.

Runway End Identifier Lights (REIL): Two synchronized flashing lights, one on each side of a runway threshold that provide positive identification of the runway approach end.

Runway Object Free Area (ROFA): An area on the ground centered on a runway centerline provided to enhance the safety of aircraft operations by remaining clear of objects, except for objects that need to be located in the ROFA for air navigation or aircraft ground maneuvering purposes.

Runway Obstacle Free Zone (ROFZ): The ROFZ is the three-dimensional airspace along the runway and extended runway centerline that is required to be clear of obstacles for protection for aircraft landing or taking off from the runway and for missed approaches.

Runway Protection Zone (RPZ): An area at ground level prior to the threshold or beyond the runway end to enhance the safety and protection of people and property on the ground.

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

Runway Visual Range (RVR): An estimate of the maximum distance at which the runway, or the specified lights or markers delineating it, can be seen from a position above a specific point on the extended runway centerline.

Single Wheel Gear (SW): The configuration of an aircraft landing gear where a single wheel is used at each wheel position to distribute the aircraft load.

Small Aircraft: An aircraft with a maximum certificated takeoff weight of 12,500 pounds or less.

State Aviation System Plan (SASP): The primary objective of the Minnesota State Aviation System Plan is to provide the state with excellent planning tools to assist in making informed decisions guiding the development of Minnesota's system of airports and expending funds in a cost-effective manner.

T-Hangar: A linear structure with nested interior bays that are of a "T" shape and provide shelter for aircraft.

Taxilane: A surface used by aircraft for low speed and precise taxiing. Taxilanes are usually, but not always, located outside the movement area, providing access from taxiways to aircraft parking positions and other terminal areas.

Taxiway: A defined path established for the taxiing of aircraft from one part of an airport to another.

Taxiway Design Group (TDG): A classification of airplanes based on outer-to-outer main landing gear width and cockpit to main gear distance.

Taxiway/Taxilane Safety Area (TSA): A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft deviating from the taxiway.

Threshold: The beginning of the portion of the runway available for landing. In some cases, the threshold may not be at the physical end of the runway.

Touch and Go: A practice maneuver consisting of a landing and a takeoff performed simultaneously without coming to a complete stop. A touch and go is counted as two aircraft operations: one takeoff, and one landing.

Traffic Pattern: Projections on the ground of the aerial path associated with an aircraft flying the crosswind, downwind, base, and final approach legs of the takeoff and landing process.

Turbine-Powered Aircraft: Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft, rotary-wing aircraft. Such aircraft normally use Jet-A type fuel.

Uncontrolled Airport: An airport without an airport traffic control tower at which the control of Visual Flight Rules (VFR) traffic is not exercised.

Useful Load: The aircraft maximum takeoff weight minus the aircraft empty weight. An aircraft's useful load can be used to transport either fuel or payload (passengers, baggage, and/or cargo).

Utility Runway: A runway that is constructed for and intended to be used by propeller-driven aircraft of 12,500 pounds maximum gross weight and less.

Very High Frequency Omnidirectional Radio Range (VOR): A ground-based aircraft navigation system that is being phased out as part of the FAA's continual upgrade of the nation's navigation infrastructure.

Visual Flight Rules (VFR): Procedures for the conduct of flights in weather conditions above Visual Meteorological Conditions (VMC). The term VFR is often used to define weather conditions and the type of flight plan under which an aircraft is operating.

Visual Meteorological Conditions (VMC): Meteorological conditions expressed in terms of specific visibility and ceiling conditions that are equal to or greater than the threshold values for instrument meteorological conditions.

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

VOR Minimum Operational Network (MON): An FAA program to reduce the number of VORs to only retain those that: a) support international oceanic routes and coverage above 5,000 feet; and b) ensure aircraft can perform Instrument Landing System, Localizer or VOR approaches to suitable airports; and c) those required for military use.