

74 entries — every glossary entry under this letter, no curation. Reproduced verbatim from the Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25C (July 2023)), Glossary.

SA

See selective availability.

FAA definition of **Selective availability (SA)**:

A satellite technology permitting the Department of Defense (DOD) to create, in the interest of national security, a significant clock and ephemeris error in the satellites, resulting in a navigation error.

St. Elmo's Fire

A corona discharge which lights up the aircraft surface areas where maximum static discharge occurs.

Satellite ephemeris data

Data broadcast by the GPS satellite containing very accurate orbital data for that satellite, atmospheric propagation data, and satellite clock error data.

Sea breeze

A coastal breeze blowing from sea to land caused by the temperature difference when the land surface is warmer than the sea surface. The sea breeze usually occurs during the day and alternates with the land breeze that blows in the opposite direction at night.

Sea level engine

A reciprocating aircraft engine having a rated takeoff power that is producible only at sea level.

Scan

The first fundamental skill of instrument flight, also known as "cross-check;" the continuous and logical observation of instruments for attitude and performance information.

Sectional aeronautical charts

Designed for visual navigation of slow- or medium-speed aircraft. Topographic information on these charts features the portrayal of relief, and a judicious selection of visual check points for VFR flight. Aeronautical information includes visual and radio aids to navigation, airports, controlled airspace, restricted areas, obstructions and related data.

SDF

See simplified directional facility.

FAA definition of **Simplified directional facility (SDF)**:

A NAVAID used for nonprecision instrument approaches. The final approach course is similar to that of an ILS localizer; however, the SDF course may be offset from the runway, generally not more than 3°, and the course may be wider than the localizer, resulting in a lower degree of accuracy.

Selective availability (SA)

A satellite technology permitting the Department of Defense (DOD) to create, in the interest of national security, a significant clock and ephemeris error in the satellites, resulting in a navigation error.

Semicircular canal

An inner ear organ that detects angular acceleration of the body.

Semimonocoque

A fuselage design that includes a substructure of bulkheads and/or formers, along with stringers, to support flight loads and stresses imposed on the fuselage.

Sensitive altimeter

A form of multipointer pneumatic altimeter with an adjustable barometric scale that allows the reference pressure to be set to any desired level.

Service ceiling

The maximum density altitude where the best rate-of-climb airspeed will produce a 100-feet-per-minute climb at maximum weight while in a clean configuration with maximum continuous power.

Servo

A motor or other form of actuator which receives a small signal from the control device and exerts a large force to accomplish the desired work.

Servo tab

An auxiliary control mounted on a primary control surface, which automatically moves in the direction opposite the primary control to provide an aerodynamic assist in the movement of the control.

SIDS

See standard instrument departure procedures.

SIGMET

The acronym for Significant Meteorological information. A weather advisory in abbreviated plain language concerning the occurrence or expected occurrence of potentially hazardous en route weather phenomena that may affect the safety of aircraft operations. SIGMET is warning information, hence it is of highest priority among other types of meteorological information provided to the aviation users.

Signal-to-noise ratio

An indication of signal strength received compared to background noise, which is a measure of the adequacy of the received signal.

Significant weather prognostic

Presents four panels showing forecast significant weather.

Simplex

Transmission and reception on the same frequency.

Simplified directional facility (SDF)

A NAVAID used for nonprecision instrument approaches. The final approach course is similar to that of an ILS localizer; however, the SDF course may be offset from the runway, generally not more than 3°, and the course may be wider than the localizer, resulting in a lower degree of accuracy.

Single-pilot resource management (SRM)

The ability for a pilot to manage all resources effectively to ensure the outcome of the flight is successful.

Situational awareness

Pilot knowledge of where the aircraft is in regard to location, air traffic control, weather, regulations, aircraft status, and other factors that may affect flight.

Skidding turn

An uncoordinated turn in which the rate of turn is too great for the angle of bank, pulling the aircraft to the outside of the turn.

Skills and procedures

The procedural, psychomotor, and perceptual skills used to control a specific aircraft or its systems. They are the airmanship abilities that are gained through conventional training, are perfected, and become almost automatic through experience.

Skin friction drag

Drag generated between air molecules and the solid surface of the aircraft.

Slant range

The horizontal distance from the aircraft antenna to the ground station, due to line-of-sight transmission of the DME signal.

Slaved compass

A system whereby the heading gyro is "slaved to," or continuously corrected to bring its direction readings into agreement with a remotely located magnetic direction sensing device (usually a flux valve or flux gate compass).

Slipping turn

An uncoordinated turn in which the aircraft is banked too much for the rate of turn, so the horizontal lift component is greater than the centrifugal force, pulling the aircraft toward the inside of the turn.

Small airplane

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

Somatogravic illusion

The misperception of being in a nose-up or nose-down attitude, caused by a rapid acceleration or deceleration while in flight situations that lack visual reference.

Spatial disorientation

The state of confusion due to misleading information being sent to the brain from various sensory organs, resulting in a lack of awareness of the aircraft position in relation to a specific reference point.

Special flight permit

A flight permit issued to an aircraft that does not meet airworthiness requirements but is capable of safe flight. A special flight permit can be issued to move an aircraft for the purposes of maintenance or repair, buyer delivery, manufacturer flight tests,

evacuation from danger, or customer demonstration. Also referred to as a ferry permit.

Special use airspace

Airspace in which flight activities are subject to restrictions that can create limitations on the mixed use of airspace. Consists of prohibited, restricted, warning, military operations, and alert areas.

Special fuel consumption

The amount of fuel in pounds per hour consumed or required by an engine per brake horsepower or per pound of thrust.

Speed

The distance traveled in a given time.

Spin

An aggravated stall that results in an airplane descending in a helical, or corkscrew path.

Spiral instability

A condition that exists when the static directional stability of the airplane is very strong as compared to the effect of its dihedral in maintaining lateral equilibrium.

Spiraling slipstream

The slipstream of a propeller-driven airplane rotates around the airplane. This slipstream strikes the left side of the vertical fin, causing the aircraft to yaw slightly. Rudder offset is sometimes used by aircraft designers to counteract this tendency.

Spoilers

High-drag devices that can be raised into the air flowing over an airfoil, reducing lift and increasing drag. Spoilers are used for roll control on some aircraft. Deploying spoilers on both wings at the same time allows the aircraft to descend without gaining speed. Spoilers are also used to shorten the ground roll after landing.

SRM

See single-pilot resource management.

FAA definition of **Single-pilot resource management (SRM)**:

The ability for a pilot to manage all resources effectively to ensure the outcome of the flight is successful.

SSR

See secondary surveillance radar.

SSV

See standard service volume.

FAA definition of **Standard service volume (SSV)**:

Defines the limits of the volume of airspace which the VOR serves.

Stabilator

A single-piece horizontal tail surface on an airplane that pivots around a central hinge point. A stabilator serves the purposes of both the horizontal stabilizer and the elevators.

Stability

The inherent quality of an airplane to correct for conditions that may disturb its equilibrium, and to return or to continue on the original flight path. It is primarily an airplane design characteristic.

Stagnant hypoxia

A type of hypoxia that results when the oxygen-rich blood in the lungs is not moving to the tissues that need it.

Stall

A rapid decrease in lift caused by the separation of airflow from the wing's surface, brought on by exceeding the critical angle of attack. A stall can occur at any pitch attitude or airspeed.

Standard atmosphere

At sea level, the standard atmosphere consists of a barometric pressure of 29.92 inches of mercury ("Hg) or 1013.2 millibars, and a temperature of 15 °C (59 °F). Pressure and temperature normally decrease as altitude increases. The standard lapse rate in the lower atmosphere for each 1,000 feet of altitude is approximately 1 "Hg and 2 °C (3.5 °F). For example, the standard pressure and temperature at 3,000 feet mean sea level (MSL) are 26.92 "Hg (29.92 "Hg – 3 "Hg) and 9 °C (15 °C – 6 °C).

Standard empty weight (GAMA)

This weight consists of the airframe, engines, and all items of operating equipment that have fixed locations and are permanently installed in the airplane including fixed ballast, hydraulic fluid, unusable fuel, and full engine oil.

Standard holding pattern

A holding pattern in which all turns are made to the right. Standard instrument departure procedures (SIDS). Published procedures to expedite clearance delivery and to facilitate transition between takeoff and en route operations.

Standard rate turn

A turn in which an aircraft changes its direction at a rate of 3° per second (360° in 2 minutes) for low- or medium-speed aircraft. For high-speed aircraft, the standard rate turn is 1½° per second (360° in 4 minutes).

Standard service volume (SSV)

Defines the limits of the volume of airspace which the VOR serves.

Standard terminal arrival route (STAR)

A preplanned IFR ATC arrival procedure published for pilot use in graphic and/or textual form.

Standard weights

Weights established for numerous items involved in weight and balance computations. These weights should not be used if actual weights are available.

STAR

See standard terminal arrival route.

FAA definition of **Standard terminal arrival route (STAR)**:

A preplanned IFR ATC arrival procedure published for pilot use in graphic and/or textual form.

Static longitudinal stability

The aerodynamic pitching moments required to return the aircraft to the equilibrium angle of attack.

Static pressure

Pressure of air that is still or not moving, measured perpendicular to the surface of the aircraft.

Static stability

The initial tendency an aircraft displays when disturbed from a state of equilibrium.

Station

A location in the airplane that is identified by a number designating its distance in inches from the datum. The datum is, therefore, identified as station zero. An item located at station +50 would have an arm of 50 inches.

Stationary front

A front that is moving at a speed of less than 5 knots.

Steep turns

In instrument flight, any turn greater than standard rate; in visual flight, anything greater than a 45° bank.

Stepdown fix

The point after which additional descent is permitted within a segment of an IAP.

Strapdown system

An INS in which the accelerometers and gyros are permanently "strapped down" or aligned with the three axes of the aircraft.

Stratosphere

A layer of the atmosphere above the tropopause extending to a height of approximately 160,000 feet.

Stress

The body's response to demands placed upon it.

Stress management

The personal analysis of the kinds of stress experienced while flying, the application of appropriate stress assessment tools, and other coping mechanisms.

Structural icing

The accumulation of ice on the exterior of the aircraft.

Sublimation

Process by which a solid is changed to a gas without going through the liquid state.

Suction relief valve

A relief valve in an instrument vacuum system required to maintain the correct low pressure inside the instrument case for the proper operation of the gyros.

Supercharger

An engine- or exhaust-driven air compressor used to provide additional pressure to the induction air so the engine can produce additional power.

Supercooled water droplets

Water droplets that have been cooled below the freezing point, but are still in a liquid state.

Surface analysis chart

A report that depicts an analysis of the current surface weather. Shows the areas of high and low pressure, fronts, temperatures, dewpoints, wind directions and speeds, local weather, and visual obstructions.

Synchro

A device used to transmit indications of angular movement or position from one location to another.

Synthetic vision

A realistic display depiction of the aircraft in relation to terrain and flight path.