

Dynamic stability. The stability that causes an aircraft to return to a condition of straight and level flight after it has been disturbed from this condition. When an aircraft is disturbed from the straight and level flight, its static stability starts it back in the correct direction; but it overshoots, and the corrective forces are applied in the opposite direction. The aircraft oscillates back and forth on both sides of the correct condition, with each oscillation smaller than the one before it. Dynamic stability is the decreasing of these restorative oscillations.

EADI. Electronic Attitude Director Indicator.

ECAM. Electronic Centralized Aircraft Monitor.

Eccentric brushing. A special bushing used between the rear spar of certain cantilever airplane wings and the wing attachment fitting on the fuselage. The portion of the bushing that fits through the hole in the spar is slightly offset from that which passes through the holes in the fitting. By rotating the bushing, the rear spar may be moved up or down to adjust the root incidence of the wing.

Eddy current damping (electrical instrument damping). Decreasing the amplitude of oscillations by the interaction of magnetic fields. In the case of a vertical-card magnetic compass, flux from the oscillating permanent magnet produces eddy currents in a damping disk or cup. The magnetic flux produced by the eddy currents opposes the flux from the permanent magnet and decreases the oscillations.

Edge distance. The distance between the center of a rivet hole and the edge of the sheet of metal.

EFIS. Electronic Flight Instrument System.

EHSI. Electronic Horizontal Situation Indicator.

EICAS. Engine Indicating and Crew Alerting System.

Ejector. A form of jet pump used to pick up a liquid and move it to another location. Ejectors are used to ensure that the compartment in which the boost pumps are mounted is kept full of fuel. Part of the fuel from the boost pump flowing through the ejector produces a low pressure that pulls fuel from the main tank and forces it into the boost pump sump area.

Elastic limit. The maximum amount of tensile load, in pounds per square inch, a material is able to withstand without being permanently deformed.

Electromotive force (EMF). The force that causes electrons to move from one atom to another within an electrical circuit. Electromotive force is an electrical pressure, and it is measured in volts.

Electron current. The actual flow of electrons in a circuit. Electrons flow from the negative terminal of a power source through the external circuit to its positive terminal. The arrowheads in semiconductor symbols point in the direction opposite to the flow of electron current.

ELT (emergency locator transmitter). A self-contained radio transmitter that automatically begins transmitting on the emergency frequencies any time it is triggered by a severe impact parallel to the longitudinal axis of the aircraft.

Elevator downspring. A spring in the elevator control system that produces a mechanical force that tries to lower the elevator. In normal flight, this spring force is overcome by the aerodynamic force from the elevator trim tab. But in slow flight with an aft CG position, the trim tab loses its effectiveness and the downspring lowers the nose to prevent a stall.

Elevons. Movable control surfaces on the trailing edge of a delta wing or a flying wing airplane. These surfaces operate together to serve as elevators, and differentially to act as ailerons.

EMI. Electromagnetic interference.

Empennage. The tail section of an airplane.

Enamel. A type of finishing material that flows out to form a smooth surface. Enamel is usually made of a pigment suspended in some form of resin. When the resin cures, it leaves a smooth, glossy protective surface.

Energizing brake. A brake that uses the momentum of the aircraft to increase its effectiveness by wedging the shoe against the brake drum. Energizing brakes are also called servo brakes. A single-servo brake is energizing only when moving in the forward direction, and a duo-servo brake is energizing when the aircraft is moving either forward or backward.

Epoxy. A flexible, thermosetting resin that is made by polymerization of an epoxide. Epoxy has wide application as a matrix for composite materials and as an adhesive that bonds many different types of materials. It is noted for its durability and its chemical resistance.

Equalizing resistor. A large resistor in the ground circuit of a heavy-duty aircraft generator through which all of the generator output current flows. The voltage drop across this resistor is used to produce the current in the paralleling circuit that forces the generators to share the electrical load equally.

Ethylene dibromide. A chemical compound added to aviation gasoline to convert some of the deposits left by the tetraethyl lead into lead bromides. These bromides are volatile and will pass out of the engine with the exhaust gases.