

Flow divider (reciprocating engine). The valve in an RSA fuel injection system that divides the fuel from the fuel control unit and distributes it to all of the cylinders. It compares with the manifold valve in a Teledyne-Continental fuel injection system.

Flow divider (turbine engine). A component in a turbine engine fuel system that routes all of the fuel to the primary nozzles or primary orifices when starting the engine or when the rpm is low. When the engine speed builds up, the flow divider shifts and opens a passage to send the majority of the fuel to the secondary nozzles or orifices.

FMC. Flight management computer. An electronic flight instrumentation system that enables the flight crew to initiate and implement a given flight plan and monitor its execution.

FOD. Foreign object damage. Damage to components in the gas path of a turbine engine, caused by ingested objects. Debris from the runway or ramp cause FOD on the ground. Ice and birds cause most in-flight FOD.

Four-stroke cycle. A constant-volume cycle of energy transformation that has separate strokes for intake, compression, power, and exhaust.

Fractional distillation. Procedure used for separating various components from a physical mixture of liquids. Crude oil is a mixture of many different types of hydrocarbon fuels which can be separated by carefully raising its temperature. The first products to be released, those having the lowest boiling points, are some of the gaseous fuels; next are gasoline, kerosene, diesel fuel, heavy fuel oils, lubricating oils, and finally, tar and asphalt.

Frangible. Capable of being broken.

Free-turbine engine. A gas turbine engine with a turbine stage on a shaft independent of the shaft used to drive the compressor. Free turbines are used to drive the propeller reduction gear in a turboprop engine and the rotor transmission in a helicopter.

Freezing point. The temperature at which solids, such as wax crystals, separate from a hydrocarbon fuel as it is cooled.

Fuel-air mixture ratio. Ratio of the number of pounds of fuel to the number of pounds of air in the mixture burned in cylinders of a reciprocating engine.

Full-register position. The position of a magnet in a magneto when its poles are aligned with the pole shoes and the maximum amount of magnetic flux is flowing through the magnetic circuit.

Gauge pressure. Pressure referenced from existing atmospheric pressure.

Gas generator. The basic gas turbine engine. It consists of the compressor, diffuser, combustor, and turbine. The gas generator is also called the core engine.

Gas turbine engine. An internal combustion engine that burns its fuel in a constant-pressure cycle and uses the expansion of the air to drive a turbine which, in turn, rotates a compressor. Energy beyond that needed to rotate the compressor is used to produce torque or thrust.

General Aviation Airworthiness Alerts. While these documents are no longer published, they are still available at www.faa.gov. These are used to alert technicians of problems that have been found in specific models of aircraft, and reported on Malfunction and Defect Reports. Airworthiness Alerts suggest corrective action, but compliance with the suggestion is not mandatory.

general aviation. A term used to describe the total field of aviation operation except the military and airlines.

Geometric pitch. The distance a propeller would advance in one revolution if it were rotating in a solid.

Geopotential of the tropopause. The point in the standard atmosphere where the temperature stops dropping and becomes constant. This is the tropopause, or the dividing line between the troposphere and the stratosphere.

Gerotor pump. A form of constant-displacement pump that uses an external-tooth drive gear that meshes with and drives an internal-tooth gear that has one more space for a tooth than there are teeth on the drive gear. Both gears turn inside a close-tolerance housing. As the gears rotate, fluid flows between the teeth that are beginning to un-mesh, and is carried around the pump as the space continues to open up. On the discharge side of the pump, the teeth become smaller, fluid is forced out of the pump.

Glass cockpit. An aircraft instrument system that uses a few color cathode-ray-tube displays to replace a large number of mechanically actuated instruments.

Governor. A control used to automatically change the pitch of a constant speed propeller to maintain a constant engine rpm as air loads vary in flight.

GPU. Ground power unit. A service component used to supply electrical power and compressed air to an aircraft when it is operating on the ground.