

Pilot's Handbook of Aeronautical Knowledge

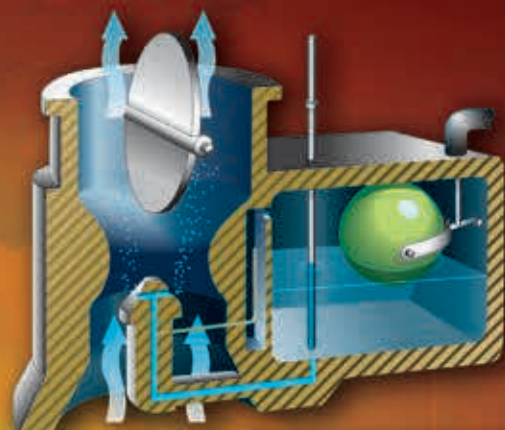


U.S. Department of Transportation

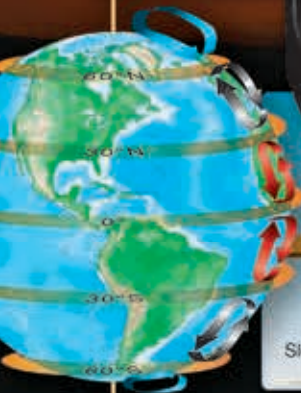
Federal Aviation Administration



At 30° bank
caution in member
low & slow not good



Type of Sign	Action or Purpose	Type of Sign
A 1-22	Classified Hazardous Waste Material Warning Location for 100-1000 lbs. of TWA	22
25-8	Removal/Remedy Work Area Warning Location for 100-1000 lbs. of TWA	22
B 25-8	Removal/Remedy Work Area Warning Location for 100-1000 lbs. of TWA	22
C ILS	Instrument Landing System Warning Location for the ILS	22
B	Runway Location Warning Location for the Runway	22
22	Runway Location Warning Location for the Runway	22
4	Runway Location Warning Location for the Runway	22



Power On Stall

Slow to lift-off speed,
maintain altitude

Set takeoff power,
raise nose

When stall occurs,
reduce angle of attack
and add full power.

As flying speed
returns, stop descent
and establish a climb.

Climb at V_Y , raise
landing gear and
remaining flaps, trim

Level off at desired
altitude,
set power, and trim

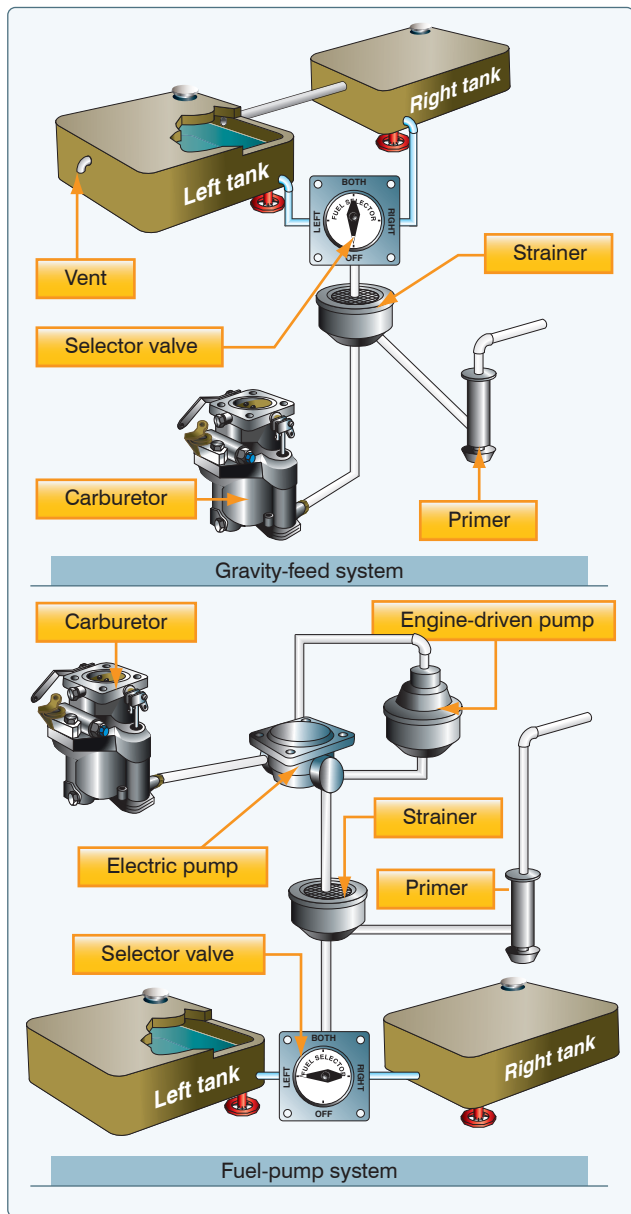


Figure 7-30. Gravity-feed and fuel-pump systems.

The tanks are vented to the outside to maintain atmospheric pressure inside the tank. They may be vented through the filler cap or through a tube extending through the surface of the wing. Fuel tanks also include an overflow drain that may stand alone or be collocated with the fuel tank vent. This allows fuel to expand with increases in temperature without damage to the tank itself. If the tanks have been filled on a hot day, it is not unusual to see fuel coming from the overflow drain.

The fuel quantity gauges indicate the amount of fuel measured by a sensing unit in each fuel tank and is displayed in gallons or pounds. Aircraft certification rules require

accuracy in fuel gauges only when they read “empty.”

If a fuel pump is installed in the fuel system, a fuel pressure gauge is also included. This gauge indicates the pressure in the fuel lines. The normal operating pressure can be found in the AFM/POH or on the gauge by color coding.

Fuel Selectors

The fuel selector valve allows selection of fuel from various tanks. A common type of selector valve contains four positions: LEFT, RIGHT, BOTH, and OFF. Selecting the LEFT or RIGHT position allows fuel to feed only from the respective tank, while selecting the BOTH position feeds fuel from both tanks. The LEFT or RIGHT position may be used to balance the amount of fuel remaining in each wing tank. [Figure 7-31]

Fuel placards show any limitations on fuel tank usage, such as “level flight only” and/or “both” for landings and takeoffs.

Regardless of the type of fuel selector in use, fuel consumption should be monitored closely to ensure that a tank does not run completely out of fuel. Running a fuel tank dry does not only cause the engine to stop, but running for prolonged periods on one tank causes an unbalanced fuel load between tanks. Running a tank completely dry may allow air to enter the fuel system and cause vapor lock, which makes it difficult to restart the engine. On fuel-injected engines, the fuel becomes so hot it vaporizes in the fuel line, not allowing fuel to reach the cylinders.

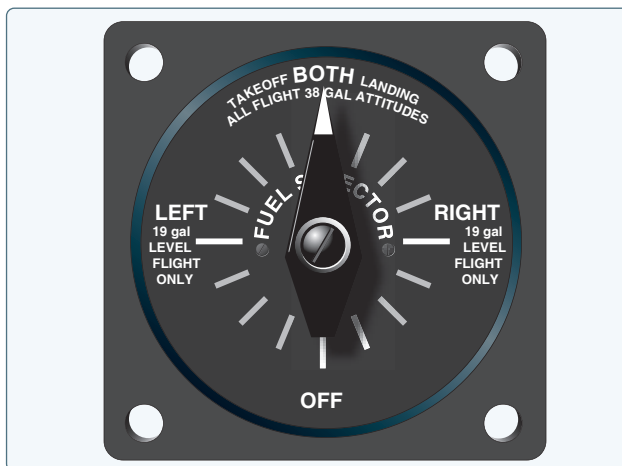


Figure 7-31. Fuel selector valve.