

wise as far as it will go to prevent loss of oil thru the filler neck. Oil should be added if dipstick reading is below three gallons and should be full if an extended flight is planned.

OIL SPECIFICATION AND GRADE.

Always use good quality aviation oil of the correct viscosity which will help you keep maintenance to a minimum. The manufacturer of your engine recommends an oil change every fifty hours. However, if dusty conditions or extreme climatic changes are encountered, the oil should be changed more often.

OIL VISCOSITY CHART	
TEMPERATURE	RECOMMENDED WEIGHT
BELOW 32° F	SAE 30
32° F TO 70° F	SAE 40
ABOVE 70° F	SAE 50
ABOVE 100° F	SAE 60

OIL TEMPERATURE INDICATOR.

A capillary type, oil temperature gage (18, figure 1) is located on the right side of the instrument panel. A green arc on the dial indicates the normal operating range of oil temperatures. Refer to Section IV for instrument markings.

OIL PRESSURE GAGE.

An oil pressure gage (19, figure 1) is installed below the oil temperature gage. The gage is calibrated in pounds per square inch. Refer to Section IV for instrument markings.

FUEL SYSTEM.

Fuel is supplied to the engine from two bladder-type fuel cells, one located in each wing. Fuel flows from the fuel tanks through the fuel selector valve and fuel strainer to the engine carburetor. The gravity-feed fuel system supplies enough pressure for the Continental engine used in the Model 190. The Jacobs engine, used in the Model 195, because of the greater horsepower, requires a fuel pump.

NOTE

Should the fuel pump fail, the fuel pressure gage will drop to approximately one pound, but a by-pass around the fuel pump will permit continuance of normal gravity feed to the engine. In such cases, full-power high-angle climbing flight is not practical, but normal cruising flight to a nearby base is entirely practical.

FUEL SPECIFICATION AND GRADE.

Aviation grade fuel should always be used except under emergency conditions. The recommended fuel is 80 octane minimum rating. Highly leaded fuels are not recommended. Filling the fuel tanks immediately after flight will reduce the air space and minimize moisture condensation in the fuel tanks.

FUEL SELECTOR VALVE.

A rotary-type fuel selector valve is located on the left cabin wall directly below the circuit breaker panel. The valve has four positions labeled

DESCRIPTION

"BOTH OFF", "LEFT TANK", "BOTH ON", and "RIGHT TANK". The "BOTH OFF" position shuts off both fuel tanks from the fuel system and allows no fuel to pass the fuel selector valve. The "LEFT TANK" or "RIGHT TANK" position allows fuel to flow from only one fuel tank at a time, while "BOTH ON" permits simultaneous flow from both tanks. *Important* — The fuel valve handle is the pointer for the fuel selector valve and indicates the setting of the valve by its position above the dial. *Take-off should be made in the "BOTH ON" position to prevent inadvertent take-off on an empty tank.*

FUEL STRAINER DRAIN VALVE.

A fuel strainer drain valve is located on the fuel strainer which is mounted on the forward side of the firewall. The drain valve handle (3, figure 9) is conveniently located on the floor just forward of the control column. This valve provides a quick method of draining any water or sediment that might have collected in the fuel strainer. *To open valve*, turn handle to the "ON" position for a period of 3 or 4 seconds. This should be done before the initial flight of the day or after each refueling operation to drain any water or sediment that might have collected in the fuel strainer.

FUEL PUMP (MODEL 195 ONLY)

An engine driven fuel pump is used on the Model 195 to supply fuel to the engine carburetor under a pressure of 3 to 5 pounds per square inch. In

case of fuel pump failure, a by-pass valve in the fuel pump will allow fuel to be gravity-fed from the fuel tanks to the engine carburetor, permitting normal cruising level flight.

FUEL PRESSURE GAGE.

A fuel pressure gage (20, figure 1) is used on all models of the 195. It is located on the extreme right side of the instrument panel and reads in pounds per square inch. If the fuel pump should fail, the fuel pressure will drop to approximately one pound due to the gravity fuel pressure.

FUEL TANK SUMP DRAIN PLUG.

A fuel tank sump drain plug is located on the underside of each wing just forward of the flap and out a few inches from the fuselage. These plugs are used to drain any sediment or water that may collect in the fuel tanks. Under normal operating conditions, it is recommended that the wing tank sumps be drained at each 100 hour inspection period.

FUEL QUANTITY INDICATOR.

An electric fuel gage (16, figure 1) is located on the right side of the instrument panel and gives readings in gallons of fuel. The gage has two dials for indicating the fuel content of each wing tank. The gages are calibrated in U. S. gallons. Each scale is marked from E (empty) to F (full) and is operated electrically from a liquidometer transmitter located on each fuel tank. Each fuel tank rheostat is operated by a float and lever mechanism.

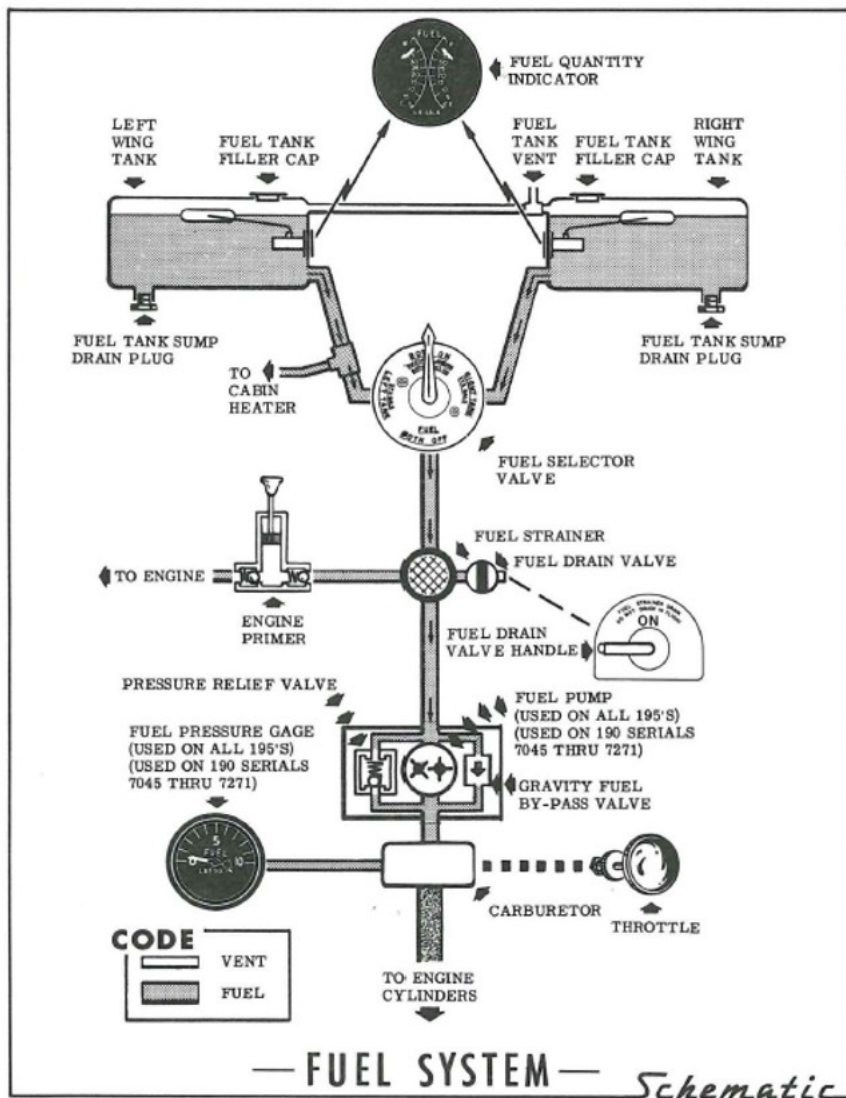


Figure 5.