

Propeller rpm is controlled by a Woodward governor which regulates hydraulic oil pressure to the blades. A push-pull knob on the control console allows the pilot to select the governor's rpm range.

If oil pressure is lost, the propeller will go to the full high rpm position. This is because propeller low rpm is obtained by governor boosted engine oil pressure working against the centrifugal twisting moment of the blades.

FUEL SYSTEM

The airplane is designed for operation on grade 100LL (blue) or 100 (green) aviation gasoline.

CAUTION

The grounding jack is located just above the leading edge of the wing in the fuselage. Before refueling, make certain the airplane and fuel dispensing unit are properly grounded. Failure to do so creates a fire hazard.

FUEL CELLS

Fuel supply is carried in two bladder-type cells with a total capacity of 25 gallons each, located in the wings just outboard of the fuselage. Usable fuel of each 25 gallon main tank is 22 gallons.

Fuel is fed from the cells to a selector valve just forward of the front seat, on the left side, then through a strainer to the fuel pump and the engine. The fuel tank fillers are located in the wing leading edges.

AUXILIARY FUEL CELLS

If installed an additional 19 gallons of usable fuel is available in two auxiliary 10 gallon fuel cells in the wings, outboard of the wheel wells. Both auxiliary cells are connected to a common port in the fuel selector valve, so that both feed simultaneously when the selector valve is set to AUX.

The two optional 10-gallon auxiliary tanks may be filled after removing the pressure-type filler caps, located aft and outboard of the main tank filler caps. Do not overfill the tanks.

Individual liquidometer units in each auxiliary cell transmit fuel quantity information to the auxiliary fuel cell gage. The fuel level of either cell may be read by switching the auxiliary fuel gage selector switch on the left subpanel to the desired position, R (right) or L (left).

CAUTION

Do not allow the fuel cells to remain completely empty for any length of time, since this may result in cracking and checking of the inner liner of the cell. If fuel cells are to be left empty for longer than a week, a thin coating of light engine oil should be sprayed, flushed or rubbed on the inner liner of the cells.

FUEL QUANTITY

Fuel quantity is measured by float operated sensors, located in each wing tank system. These transmit electrical signals to the individual indicators that indicate fuel remaining in the tank. There are sensors in each wing tank system connected to the individual wing tank indicator.

AUXILIARY FUEL PUMP

The electric auxiliary fuel pump is controlled by a 3 position switch on the left subpanel. It provides pressure for starting and emergency operation. Immediately after starting, the auxiliary fuel pump can be used to purge the system of vapor caused by an extremely high ambient temperature or a start with the engine hot. The auxiliary fuel pump provides near maximum engine performance should the engine driven pump fail.

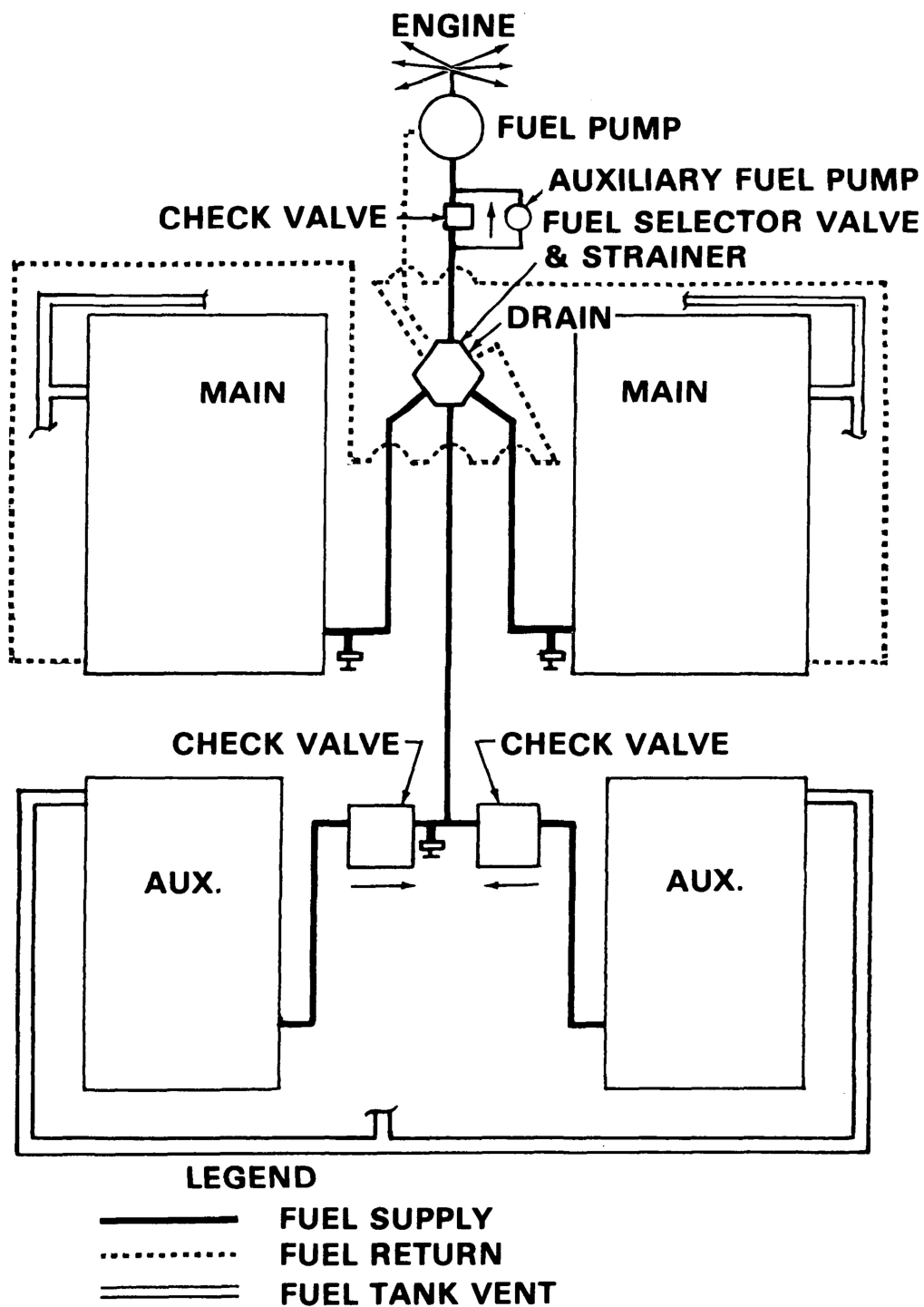
FUEL TANK SELECTION

The fuel selector valve handle is located forward and to the left of the pilot's seat. Take-offs should be made using the left main tank and landings should be made using the main tank that is more nearly full. In no case should a take-off be made if the fuel indicators are in the yellow band or, with less than 13 gallons of fuel in each main tank.

The fuel injection system returns about 10 gallons per hour of excess fuel, fuel return lines are routed through the selector valve to each main cell; except the auxiliary cells, fuel is returned to the cell from which it is drawn. The auxiliary cells return fuel to the left main cell only. To provide space for the returned fuel from the auxiliary cells, the left main cell should be used to approximately half full before switching to auxiliary.

If the engine is allowed to stop firing, due to insufficient fuel, refer to the EMERGENCY PROCEDURES section for the Air Start procedures.

FUEL SYSTEM SCHEMATIC



FUEL REQUIRED FOR FLIGHT

It is the pilot's responsibility to ascertain that the fuel quantity indicators are functioning and maintaining a reasonable degree of accuracy, and be certain of ample fuel for a flight. Takeoff is prohibited if the fuel quantity indicators do not indicate above the yellow arc. An inaccurate indicator could give an erroneous indication of fuel quantity. A minimum of 13 gallons of fuel is required in each main tank before takeoff.

The caps should be removed and fuel quantity checked to give the pilot an indication of fuel on board. The airplane must be approximately level for visual inspection of the tank. If the pilot is not sure that at least 13 gallons are in each tank, add necessary fuel so that the amount of fuel will be not less than 13 gallons per tank at takeoff. Plan for an ample margin of fuel for any flight.

LANDING GEAR SYSTEM

CAUTION

Never taxi with a flat strut.

The landing gears are operated through adjustable linkage connected to an actuator assembly mounted beneath the front seats. The actuator assembly is driven by an electric motor. The landing gears may be electrically retracted and extended, and in an emergency may be lowered manually.

CONTROL SWITCH

The landing gear is controlled by a two-position switch on the right side of the subpanel. A latch on the control switch must be moved aside to place the switch in the up position.