

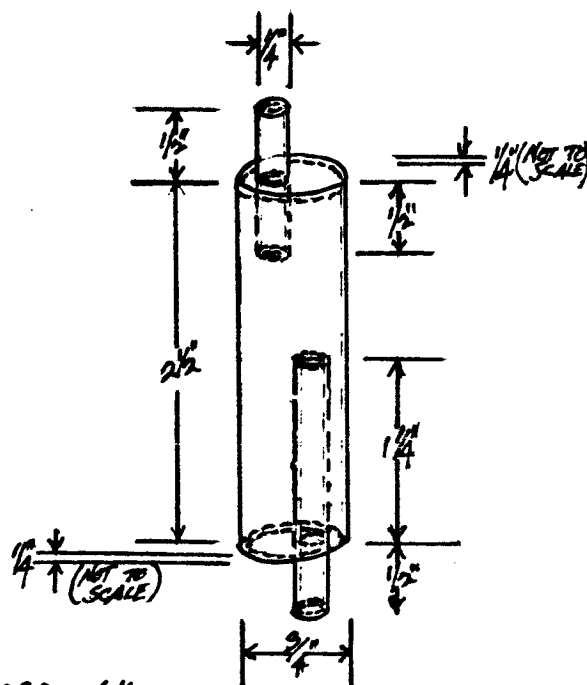
ENGINE DRIVEN FUEL PUMPS

The engine driven fuel pump on the Avco-Lycoming engines is a diaphragm type actuated by a reciprocating arm extending thru the engine case to the center of the pump case. Failures of this pump are not uncommon and usually begin initially with a pin sized hole in the rubber diaphragm. Eventually the pin hole progresses into a full span failure of the diaphragm and the total loss of function of the pump. While in the pin hole stage the pump will continue to function but at a decreased output and with some fuel being ejected thru the overboard line fitting. If this condition can be detected, a total failure may be averted.

George has come up with a devilishly ingenious device for determining the existence of a pin hole condition in the diaphragm of the pump. (See drawing) The barrel is clear Acrylic tubing available at a local plastics store, likewise for the smaller tube fittings. Acrylic cement or Krazy glue will seat the smaller tubes into the discs at the ends of the barrel. The discs were made by cutting one quarter inch thick pieces from an acrylic rod on a small lathe. In the event of a pin hole leak the trap will fill up to the top of the discharge tube before overboarding the remainder of the fuel thru the discharge line. A check of the trap after flying or on a pre-flight check will reveal the presence of fuel where there should be none in the case of a good pump.

I am installing one of the traps in the cockpit just above and behind the main spar. The overboard flexible tubing will be routed along the rear side of the main spar to the wheel well. The upper flexible line will extend from the pump down to the top tube on the trap.

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ENGINE DRIVEN FUEL PUMP
OVERBOARD FUEL TRAP