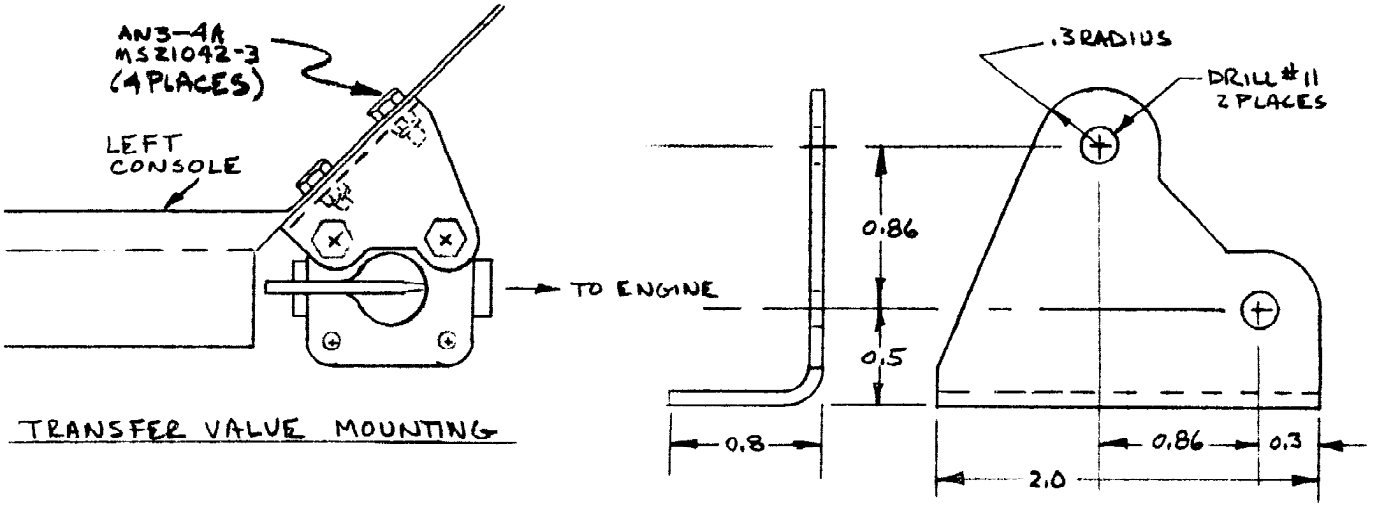
Miscellaneous Details

Fuel Caps: The fuel caps are a bought item from BROCK: Part FT-18. You'll need two. The front tank is easy; you just brighten the outside of the aluminum cap assembly, insert the retaining wire and flox bond to the inside surface of the glass tube at the front cover top surface.

The aft cap requires cutting a 2 1/4 diameter circle in the top center of the aft tank just behind the canopy lip. Remove a little foam around the edges of the hole. Clean the tank thoroughly. Get all of those foam chips out. Bond the cap into the hole with flox.

Fuel System Plumbing: All fuel lines are 3/8 I.D., 1/2 O.D. tygothane tubing. Don't confuse it with tygon or other plastic tube. The tygothane tubing is tough you can cut it with a sharp razor knife, but Dykes or Lineman's pliers work best. Weatherhead "Barbtite" brass fittings are used with the fuel system throughout. Tbese fittings do not require hose clamps to seal properly but once installed the hoses must be split to be removed. The 3/8 O.D. aluminum tube used in the tanks for fuel drain and vent lines require the use of worm type hose clamps to seal properly.

You have already installed the supervalve up forward on the left side of the intercostal. One more valve will be added to control the aft tank fuel supply. This valve is a very simple on or off affair which will be mounted from the instrument panel support flange forward of the side console (by your left knee). The valve controls flow out of the rear tank. You can leave the forward tank valve open which will allow fuel to both feed the engine and transfer to the forward tank from the aft, or you can close the front tank valve and feed the engine only. Make the mounting bracket shown below from a piece of 2 x 2 x .063 formed 2024-T3 angle.



TRANSFER VALVE MOUNTING

Install a weatherhead 10006B-104 barbtite 1/4 NPT to 3/8 tube adapter in each end. Use teflon tape on the threads to seal the fitting. Now, before you connect tubing to the barbtite fittings hook a length of tubing to the fuel outlet of each tank and run it out through the bottom cockpit access hole into a bucket. Run a gallon or two of fuel through each tank to wash the crud out. Filter the big pieces out of the flushing fuel each time you run it through the tanks.

Connect the aft tank drain tube to one barbtite fitting on the drain block behind the seat bulkhead. Connect another length of tygothane from the aft port on the transfer valve to the other side of the drain block. The tubing under the side console should be clamped against the upper inboard corner of the console with a loop of safety wire near the aileron idler belcrank to keep it out of the trim and aileron hardware. Connect a short length of tubing to the aft tank vent tube on one end and to one leg of a 0715-020 3/8 tube "T" fitting. One other leg of the "T" is connected to the vent tube behind the seat bulkhead and the other to a length of tube which runs forward along with the fuel line under the side console. The vent line is continued past the transfer valve, up over the top of the front tank, to the front tank's vent tube. Split the vent tube at its highest point above the front tank and insert another 3/8 tube "T" fitting.

Drill a 1/2 inch hole through the left hand console close to the side wall of the fuselage and at the forward end of the console. Drill another 1/2 inch hole through the instrument panel flange close to the left sidewall about 3 1/2 inches below the top edge of the side panel (W.L. 24). Route a length of tubing from the forward vent "T" through the upper hole then down through the console to make your fuel guage. The guage line is then run forward along the left sidewall and another "T" (0715-020) is used to join it with the fuel outlet of the front tank. Clamp all three sides of the tee. The third side of the "T" is connected to the inlet (aft side) of the super valve assembly. The outlet (forward) end of the super valve gets a length of tubing which makes a gentle quarter circle forward to penetrate the firewall bulkhead and continue forward to connect with another 10006B-104 1/4 NPT to 3/8 tube barbtite fitting in the carburator. Split the tube forward of the firewall and install one Alondra VA-6 fuel filter (inline type). Since your engine hasn't been installed yet, finding the carb may be a bit difficult, so run the line forward of the firewall, install a filter and then add a 20 inch length of tubing.

The super valve is actuated by a panel mounted push-pull control. The cable assembly is a Bowden type spiral wire casing with a solid wire core and a plain push button on the operator end. Drill a mounting hole in the center of your panel along the bottom. Mount the cable in that hole, then run the housing through the cable clamp on the intercostal. The cable housing should be cut off about one inch short of the super valve's stop pin. Connect the wire to the valve's eye bolt with a bolt and checknut type connector that looks a lot like an AN3 bolt with extra threads and a cotter pin hole. One checknut is used to clamp the bolt to the valve arm and then the second nut sandwiches the cable through the cotter pin hole.

Shut the fuel valves off, add about 3 1/2 gallons to a tank, then turn the fuel on and record the time it takes to flow a quart or half gallon. Punch your calculator to come up with gallons per hour for each tank. 10 GPH is <u>minimum</u> and 15 to 20 is more reasonable.

<u>Tail Fairings:</u> Two fairings are required to finish out the Adventure's tail end. A removable tailcone fairing is used to cover the control system and fair in the fuselage with the elevator and ruddres. A permanent fairing is bonded to the base of the vertical stabilizer which fairs the gaps between both the vertical and horizontal stabilizers and the fuselage. Use the following sketch as a guide when shaping your fairings but the ultimate in precision is not required here. Anything that looks good will be fine.