Cockpit Bottom Panel

Use a piece of scrap cardboard box to make a pattern for the cockpit's bottom panel foam core. Fit the cardboard closely to the edges of the bottom center hole but very loosely around the landing gear spring. Add a close fitting patch around the gear legs on both sides by taping it to the larger piece of cardboard. Use this pattern to cut out the 9 mm thick red foam (6 lb/ft^3 P.V.C.) core for the bottom cover. You will have to file a bit on the inside edges to get clearance around the gear spring. Keep a good fit at the outside surface but the inside fit isn't critical at all, the inside foam edges will be carved away later to make a glass to glass edge joint.

Fixture the foam panel flat with 5 min/micro and lumber as required. Protect the outside edges of the hole with masking tape and automobile paste wax. Locate the foam core with its outside surface flush with the edges of the hole fixture the foam panel in place with a few 5 min/micro dabs inside the fuselage if required. Mark a knife trimming reference line on the tape protecting the fuselage. The trim line should allow a one inch overlap of the bottom panel and the lip around the hole. Tape the main gear spring to protect it from overslop. Go cut one 76 inch length of full width (37 inch) UNI and a 36 X 26 inch piece of 0-90^0 BID. Also cut two 36 inch strips of 2 inch wide peel ply. Split the peel ply into four 1" wide strips. Cut a peel ply patch to fit around the spring cut out in the foam panel (1/2" wide). Lay up the peel ply strips along the fuselage hole edges which adjoin the foam panel. Also, lay up the peel ply patches around the spring cut out. Lay up two crossing plies of UNI that are oriented diagonally from corner to corner then add the 0-90^0 BID ply with fibers 0^0 and 90^0 to the aircraft center line. Knife trim and cure.

Before removing the panel from the fuselage, get inside and mark the bottom foam panel to show the location of the seat belt attach inserts in the side consoles. Remove the bottom panel from the fuselage and sand a smooth transition from the full depth of the panel inside to the glass skins outside all around the edges, carve the first 1/2" of foam away from the edges of the landing gear cut out and provide a smooth transition to the outside skins. Remove the peel ply all around. Cut another 76 X 37 UNI piece and one 36 X 26 piece of 0-90^0 BID. Cut two 4 X 4 peel ply patches. Lay up the 3 ply skins as before getting a good overlap of the outside skins all around. Peel ply the seat belt insert areas marked. Knife trim and cure.

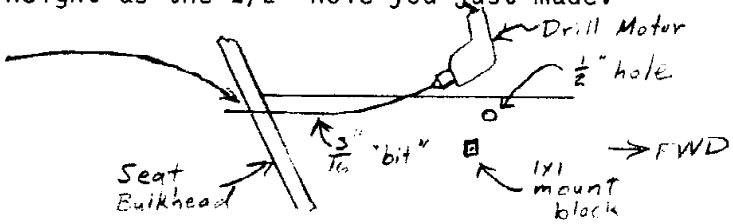
Fit the completed bottom panel back on to the fuselage bottom. Mark and drill #11 holes in the four corners of the panel each hole being 1/2" from the edges of the panel. Mark and drill four more holes, one each side of the spring cut out. Maintain 1/2" from all edges. Now add 4 more holes, each being centered between the corner and spring cut out holes already drilled. Add six equally spaced #11 holes to each of the edges forward and aft. Install 24 K1000-3 nut plates to the inside of the fuselage flange using AN426A-3-4 rivets (48 required) use 24 AN525-10R-6 screws to install the bottom panel. Cut two 2" long pieces of .063 formed 2024-T3 angle (2" legs). Fit one angle in behind each side console (underneath) so it is against both the seat belt insert and the bottom panel. Close the right side angle slightly (3^0) to fit the acute angle of the console. Brighten the bottom side of the fitting, remove the peel ply from the panel and 5 min/flox bond to the bottom only. Remove the bottom panel and drill two #11 mounting screw

holes through the angle and bottom panel install two AN525-10R-10 screws each side with MS21042-3 locknuts. Reinstall the panel with a few screws to locate it. Drill through the center of the seat belt attach inserts and the aluminum angles behind. Size these holes up to 5/16"diameter to accept AN5-10A bolts which attach the seat belt fittings. Remove the panels and install K1000-5 nut plates on the outboard sides of the angles with twocherry MSC 42, flush pop rivets each side (AN426Ad-4-5's may be used).

Tailwheel Lock Final Installation

Refer back to page 116B (TW) for visual reference. Attach the knob to the top of the lock lever. Temporarily install the AN525 bolt without the 21042 locknut. Drill the #30 hole in the 1/4" aluminum insert in the left console up to #22. Tap the hole 10-32. Assemble the AN526 pivot bolt, lock lever and AN960 washers and thread into the pivot hole. Get a pencil and mark where the 1/2" diameter hole will need to be cut in the console to clear the latching screw head. This **should** be dead center in the 1" diameter spot where the inside and outside glass surfaces meet each other. ± 3/16 or so is OK. If I've done things right you should have an interference between the knob and the top of the console at the same time as the latching screw is centered in the 1" diameter spot. Cut out a "loose" 1/2" hole to clear the latching screw. Check out the lever for action and hack away until you're satisfied. Remove the lever. Get out your 3' long 3/16" drill bitand drill a hole through the seat bulkhead that is parallel to the top of the console and at the same height as the 1/2" hole you just made.

This hole should be very close to the console.



Now take the 3/16" OD hard nylon tube that was coiled up in the tailcone and stick it through this hole. Attach the tube to the fuselage sides just like you did the rudder cable tubes on page 104. Roughen the tube from the bulkhead on forward. Flox the tube tothe seat bulkhead and console forward to about 2 1/2" to 3" from the 1/2" hole in the console. Cover with 1 ply BID. Don't get flox inside the tube. Cure.

Install a thimble and micropress sleeve on one end of 8' of 1/16" cable. Assemble the lock lever tothis end (see page 116B (TW) for arrangement). Push the cable through the nylon tube. Put a small dab of 5 min in the pivot hole and permanently install the locking lever.

Put the locking lever in the tailwheel unlatched position. This is where the locking lever is in the 1/2" hole and the cable is restrained. Now go to the tail of the plane and get ready to adjust the system from that end. See page 113C (TW) for reference. Install a thimble and micropress sleeve on the 1/16" cable but leave it loose with plenty of extra length. Put a 3/16" pin through the releas cam and thimble and pull everything up "snug". Make sure the release cam pulls the locking pin well clear of the fork assembly. Mark the cable with tape or something. Pull the 3/16" pin out of the release cam. Go forward and disengage the latch lever. Go rearward, reinstall the 3/16"

pin and thimble in the release cam. Check to see that the locking pin is fully engaged in the fork assembly. If you've got problems go forward and get more travel somehow. When you're satisfied, start over on this paragraph except this time swedge the micropress in place and use an AN3-17 bolt, washer and castellated nut for the pin through the release cam. That finishes the tailwheel installation

CONGRATULATIONS--YOU'VE JUST MADE YOUR ADVENTURE 7-10 MPH FASTER!!!