Canopy Hints

by John York:

I found the revised canopy layups and procedure listed in the Canard Pusher (CP 35 pg 6) to be very good and I'm glad I used them. The only problem I had was in locating the hard points for the latches and hinges (plans 18-5, 6, steps 7 & 8). The plans dimensions assume that you've already cut off the aft 8" of the canopy frame--since you haven't, you have to take this into account in your measurements. I forgot to do this on a couple of the hard points, which caused some extra work and a lot of wailing and cursing.

A Dremel, with an emory cut-off disc, does a super job of cutting the canopy (18-1 step 1, CP 29 pg 4). It makes a foul smell, so I wore a disposable respirator.

Rather than protect the edge of the canopy with gray tape (18-1, step 2), I would use 3M Interior Weather Sealing Tape. This clear plastic tape is used to tape plastic over the windows in your house and is designed to be strong but not leave a residue on glass. When you layup the fiberglass next to the tape be as neat as possible, and REMOVE THE TAPE JUST BEFORE KNIFE TRIM TIME. Any epoxy, flox, or whatever that went beyond the edge comes off with the tape and you can neaten the edge of the fiberglass a little bit using a dry tongue depressor. Don't let the fiberglass cure while it's on top of the tape! I did, and since I had used gray tape it tore when I tried to remove it, leaving tape embedded in the canopy. It took a lot of tedious, messy Dremel work (and much cursing) to get it out. (Thanks to Terry Schubert for this nifty tape idea! It worked great on my windows in the strake baggage compartments.)

When I put the foam on the canopy, before carving the outside shape (18-2 step 3), I spent a lot of time trying to make sure I had adequate foam and pour-in-place to cover the inside part also. When it came time to take the canopy off of the fuselage to start carving the inside shape (18-5 step 7) I found I'd spilled a lot of pour-in-place in the cockpit and there were still gaps in the foam where I needed to carve the inside, especially along the sides (more cursing). It was very easy to cut out about 3/4" of the foam and glue in new pieces of 1" foam with pour-in-place. Then I sanded the foam nice and flat by using a long sanding block with one end resting to the opposite canopy rail so I could be sure I sanded it level (fig 1). If I were to do it over again, when I put the foam on in step 3, I wouldn't worry about the inside and would plan on doing this procedure.

When it came time to knife trim the outside layup of the canopy frame (18-3 step 5) I had a hard time seeing exactly where the tops of the fuselage longerons were. My knife trim was uneven and I sanded the edge straight using a LONG sanding block (this also gave me a nice straight reference for sanding the inside foam.) I ended up with about a 1/4" gap between the canopy and the longerons instead of the desired 1/8" allowance for the seal thickness, but it should be easy to fill with micro.

I had a hard time sanding the flox hinge and latch reinforcements (hardpoints) on page 18-6 step 8. Flox is tough stuff and I did a lot of damage to the inside foam in the sanding process. I got tired of that in a hurry and decided to use my router instead. I laid two straight 1x4 boards spanwise across the canopy frame to give me a level surface for the router to ride on. Then I carefully set the router cutting depth and cut the flox level using a 1/4" straight bit. I didn't try to cut the entire depth at once, but took 2 or 3 passes (flox is tough!) This was fast and easy, and it gave very nice results, especially on the hinge pads that have to be recessed 0.15" !

I installed the instrument access panel from Debbie Iwatate's idea book and was very pleased with it. (CP 62 page 4 says she still sells the book for $20. Her address is 1699 April Loop, Richland WA 99352. I highly recommend it. I installed her panel, forward mounted brake cylinders and roll trim mods and I like them all.

I made a nice overlapping joggle for the fore and aft canopy seals that worked fine in March, but now it's July (hot, hot, hot) and the canopy has expanded so much that I can't get it shut. Terry Schubert recommended a design that looks like it would solve this problem and eliminate rear canopy leaks. (fig 2).