



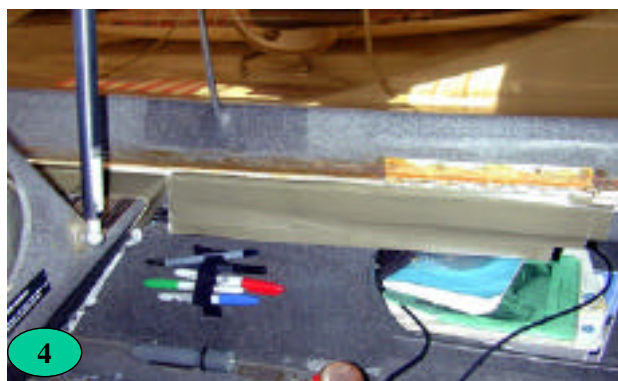
1
Release the top longerons as shown using duct tape. Build up approximately 0.1" thickness on the right (hinged) side.



2
The build up on the inside of the left (canopy latch) side must be .250 (1/4") in both the front and rear cockpits. I used strips of PVC foam and duct tape.



3
Make sure you create a duct tape build up in this area, on both sides of at least 0.15 inches.



4
Rear cockpit, hinged side--note build up over and around front seat bulkhead structure.



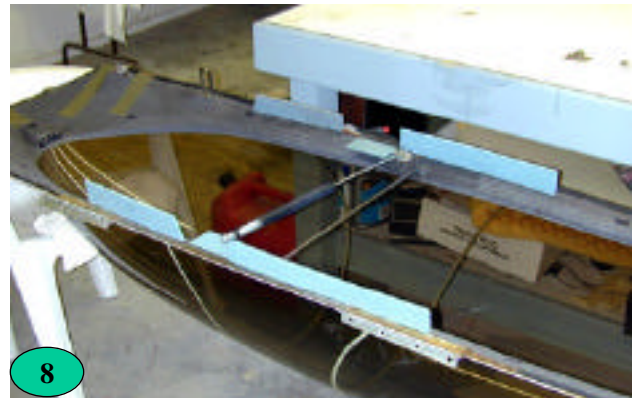
I made several practice samples and checked the thickness of the duct tape build-up with a caliper.



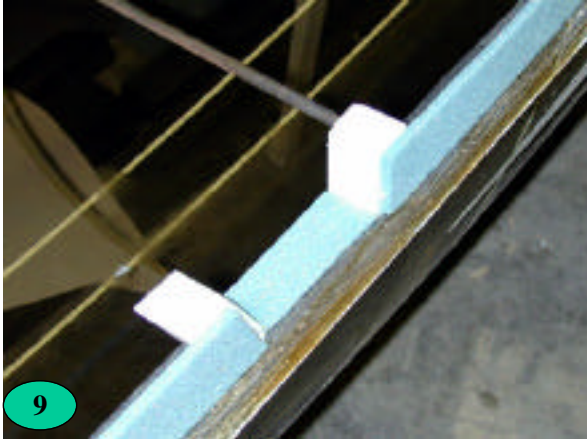
The pieces of PVC foam shown in the next three photos, are temporarily fixed into position using a quick drying cement, such as "Hot stuff" model airplane cement.



These foam strips must be cemented to the canopy rails with the canopy closed and locked. You will have to be in the cockpit(s) in order to do this. The duct tape buildups position the foam strips correctly.



Remove the canopy, and jig it as shown preparatory to laying up the roll over structure. Do all you can to protect your Plexiglas canopy! Consider applying spraylat to protect the inside as well as the outside of the Plexiglas.



I used white “Clark” foam to build up the corners as shown. You can probably use Blue Styrofoam, the stuff you hotwire wings.



Another view, showing generously rounded corners. These foam “dams” or forms, with release tape on them, will allow you to do the appropriate lay-ups. See below, photo # 12.



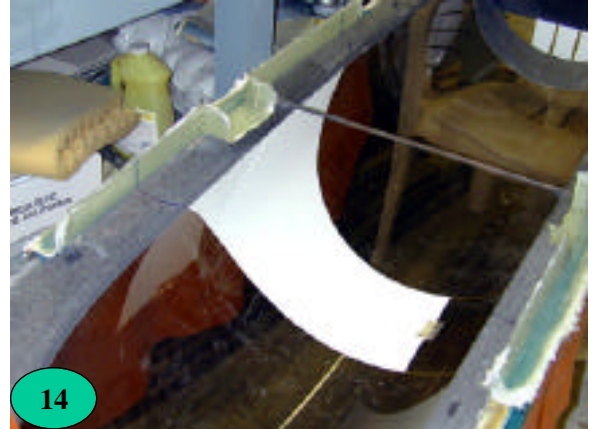
I used blue flash tape as a release simply because it was available. Any plastic tape will work, including duct tape.





13

The first two (2) ply BID lay-up, across the edge of each canopy rail and onto the released foam dams, or forms. I added 3 extra plies where this lay-up bridges the front seat bulkhead.



14

The two ply BID lay-ups are complete, and the foam dams have been removed. The poster board template is placed and trimmed so that it covers only the Plexiglas, and not the canopy rails.



15

This photo does not show it clearly, but under the orange plastic vacuum bag, there is a thin spacer in the form of a sheet of .090" rubber, which I purchased from McMaster-Carr.



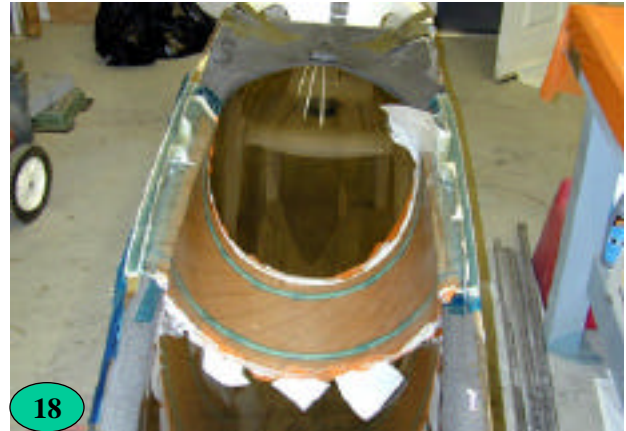
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The first 8 ply lay-up has been completed, and is shown under an orange vacuum bag. The lay-up was done over the orange plastic bag shown in photo # 15.



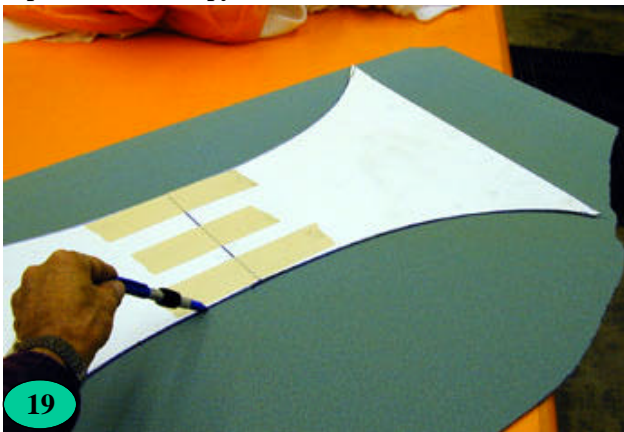
17

Another view of the first 8 ply lay-up under the bag. Note: the bag must encompass all of the two 2 ply BID lay-ups on each canopy rail, and is sealed to the top side of the canopy frame.



18

After cure the bag is removed. I also foolishly removed the under bag that was protecting my canopy and managed to spill epoxy into my canopy! Do not follow this bad example!



19

Using a magic marker and the poster board template to lay out the foam core, prior to cutting the 1/4" foam core shape.



20

Prepping for the installation of the foam core. Note: I had to replace the protective bag, which I had foolishly removed. See photo #18.



21

Two pieces of 1/4 inch PVC foam core. The top piece has been slurried just prior to installing it in the canopy “mold”.



22

Forcing the foam core into the canopy “mold” using a 2 by 4 and a 25 pound lead shot bag!



23

If you look closely, you can see the foam core in position under the orange vacuum bag!



24

The roll over is taken out of the “mold, and trimmed close to finished size. The foam cores are sanded to the appropriate tapered shape at each side.



Roll over structure, trimmed and prepped for the final inside 8 ply lay-up.



Roll over ready to go back in the "mold". Micro joint is where I accidentally broke the second piece of core during installation.



Detail shot of prepped glass surface and tapered foam cores.

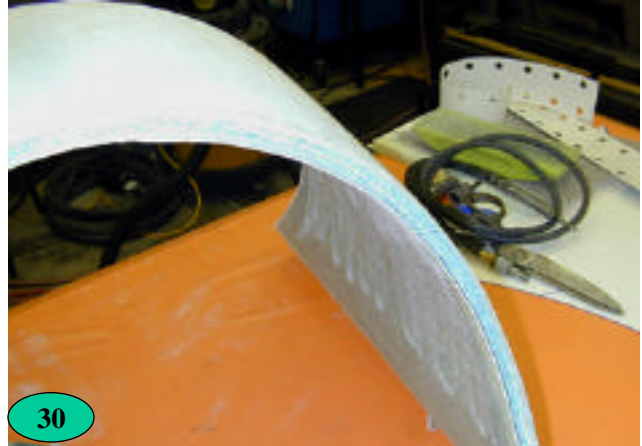


The second 8 ply inside lay-up is in the bag!



29

Roll over with inside and outside lay-ups cured. It has been final trimmed, and is ready to groove both edges.



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The groove or trough has been cut in this edge. All foam core was removed to a depth of 0.7 inches, and the inside of the glass has been prepped for the next lay-up.



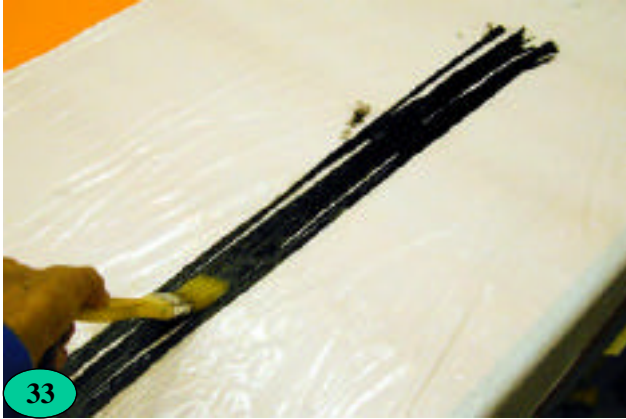
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Wetting out a 1 ply BID lay-up into the trough, prior to laying in the wet the roving.



32

Pulling carbon roving off the spool, and cutting it to length prior to wetting it out with epoxy.



Wetting out the carbon, or “s” glass roving using a brush.



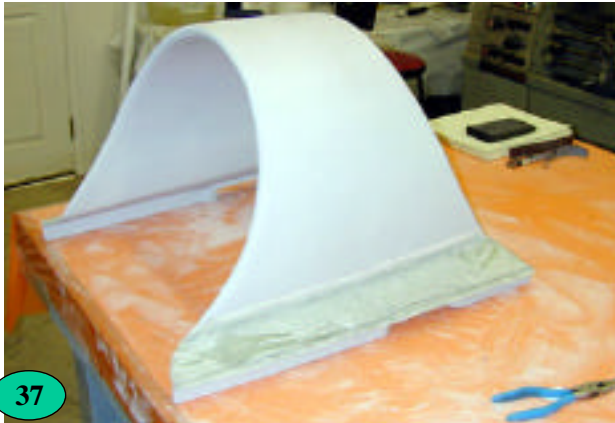
Roving is packed into the trough, to a slight over-fill, then the excess glass tape is wrapped over the roving.



A second BID ply is layed up over the edge to wrap 1 inch onto the inside and outside skins.

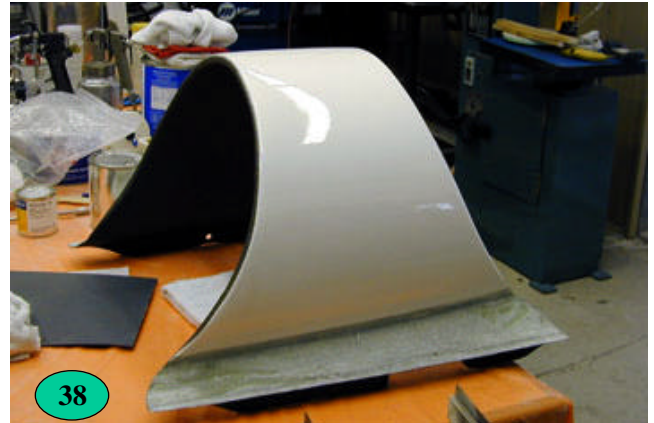


Small squares of peel ply are wrapped and pulled tightly around the edge to help form the still wet roving into a nice rounded shape. Overlap these peel ply squares about 1/2”.



37

Roll over has been primed and the glass surfaces that will be bonded to the canopy rails were masked off.



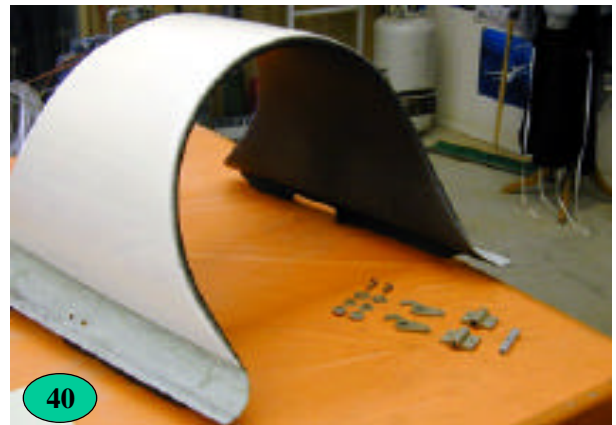
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Roll over has been finish painted with white Imron out side to match my EZ, and Lilith charcoal Zolatone on the inside.



39

Canopy jugged up high enough to enable me to easily get under it to install the roll over structure. Be careful not to drop it!



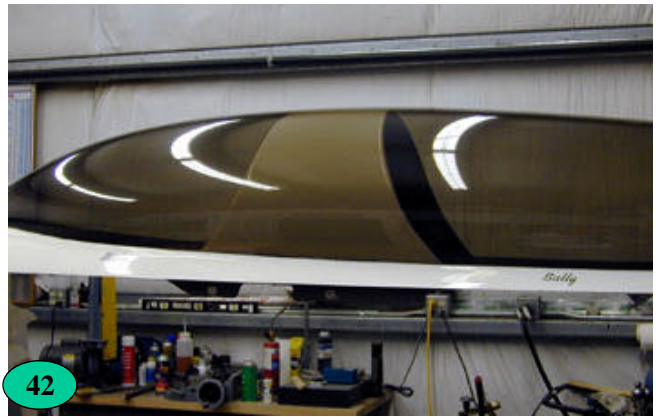
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Note sanded and prepped surfaces ready to bond into canopy. The canopy latch hardware is also shown here.



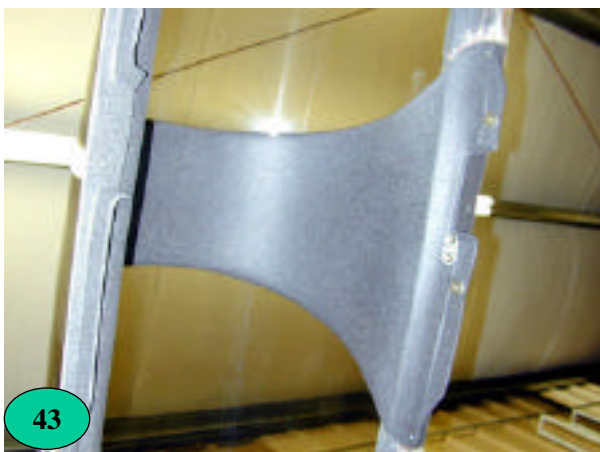
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Canopy latch hardware as used on N26MS only, yours will be different. See the full scale drawings.



42

Roll over trial fitted into canopy, doesn't look half bad!



43

Trial fit into canopy frame using small self tapping screws to secure in position. Be sure you take the time to do this before you bond it in permanently!



44

Note that the roll over flanges fore and aft, were trimmed to their final configuration prior to painting.



45
Roll over latch installed in rear cockpit of N26MS, yours will be thinner, and a doubled up design. See full scale drawings.



46
Both roll over lock down latches shown for relative position.



47
Two locator pins on right side in rear cockpit, showing holes in roll over flange to match locator pins.



48
Locator pin and hole drilled in roll over flange. Note molded shape in roll over that locates over the top of the front seat bulkhead when the canopy is closed.



View of roll over installed, note cross tie installed, but not yet painted.



Roll over installed, shows cross tie brace, and optional gas spring canopy restraint.



My canopy lock down latch parts installed in the left flange.



The position of these latch parts is the same, but your parts are an improved design. See full scale drawings.



53

The completed roll over installed in the canopy of N26 MS.



54

While the canopy was off I just couldn't resist trying it!



55

It flies OK, but there is a very serious breeze in your face! I wouldn't do it again. I was very glad to get it back on the ground!



56

At last she is ready to fly! The roll over is not noticeable to the pilot and Sally was pleasantly surprised at how little it bothers her.