

## ESM 82" TMB Avenger Modification Project Paul Fleming

This is a short photo essay of some modifications I am making to a friends airplane. The model is an ARF of a WW II torpedo bomber. We have decided to convert it to a post war target tug.



Four major things needed to be done. First the gun turret must be removed and a new canopy fabricated. A working bomb bay needed to be built. Working bomb racks and a target sleeve apparatus needed to be built.





First the turret area was decked over and filled in. Then a series of pine boards were rough cut to the basic canopy shape. A piece of 1/8 inch ply was accurately cut to shape to use as a sanding guide.



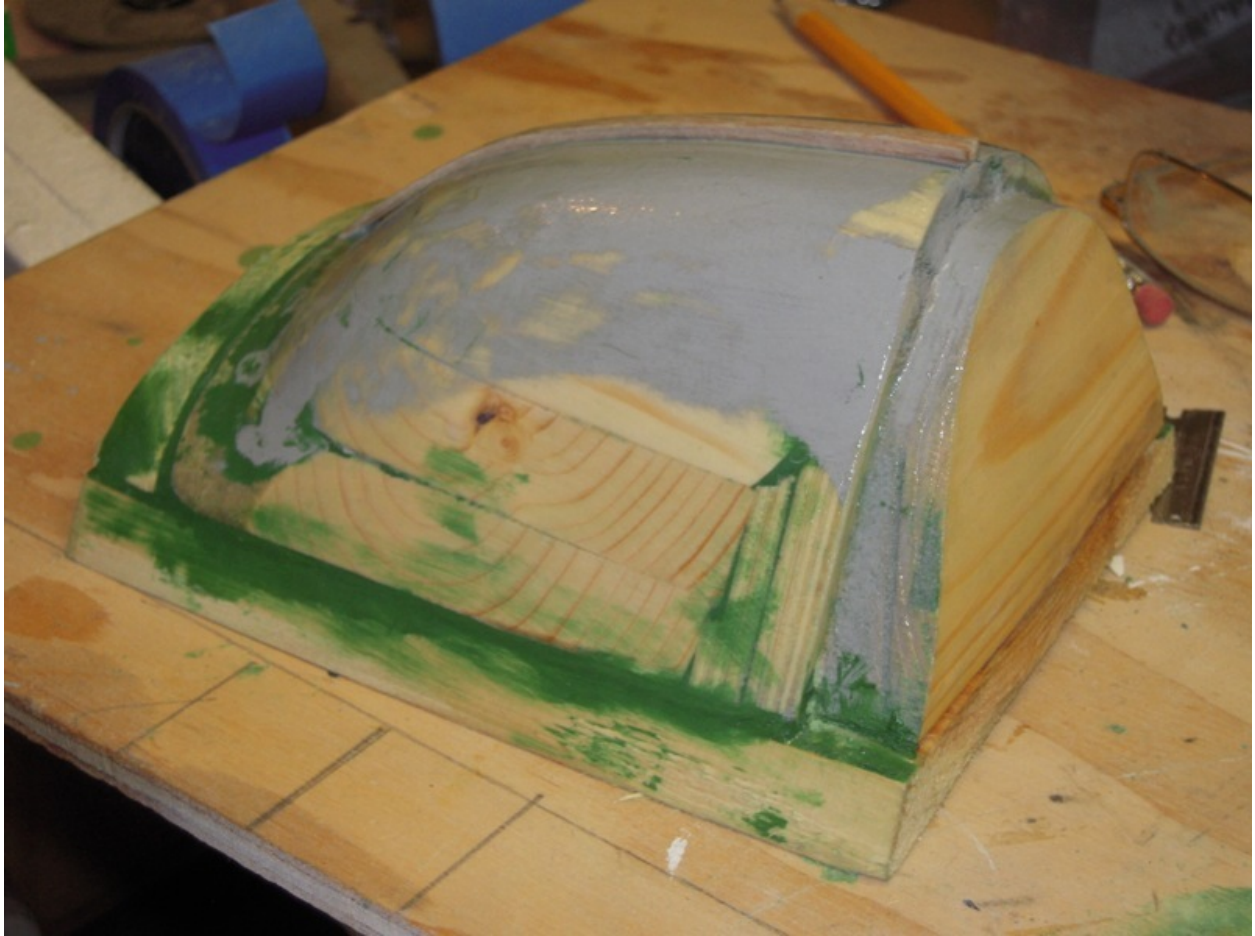


Now the rough sanding and grinding takes place. This is about an hour job on a good belt sander. In this process there is a bunch of sand and fit and sand and fit. You need to work slowly here. you can't unsand the wood back on. After the basic shape is completed you now need to prepare your piece as a mold master. Since we are doing to be vaccuforming in clear plastic the mold has to be as smooth as possible.



Additional wood is added to make the part oversize so there is excess plastic web to cut off.

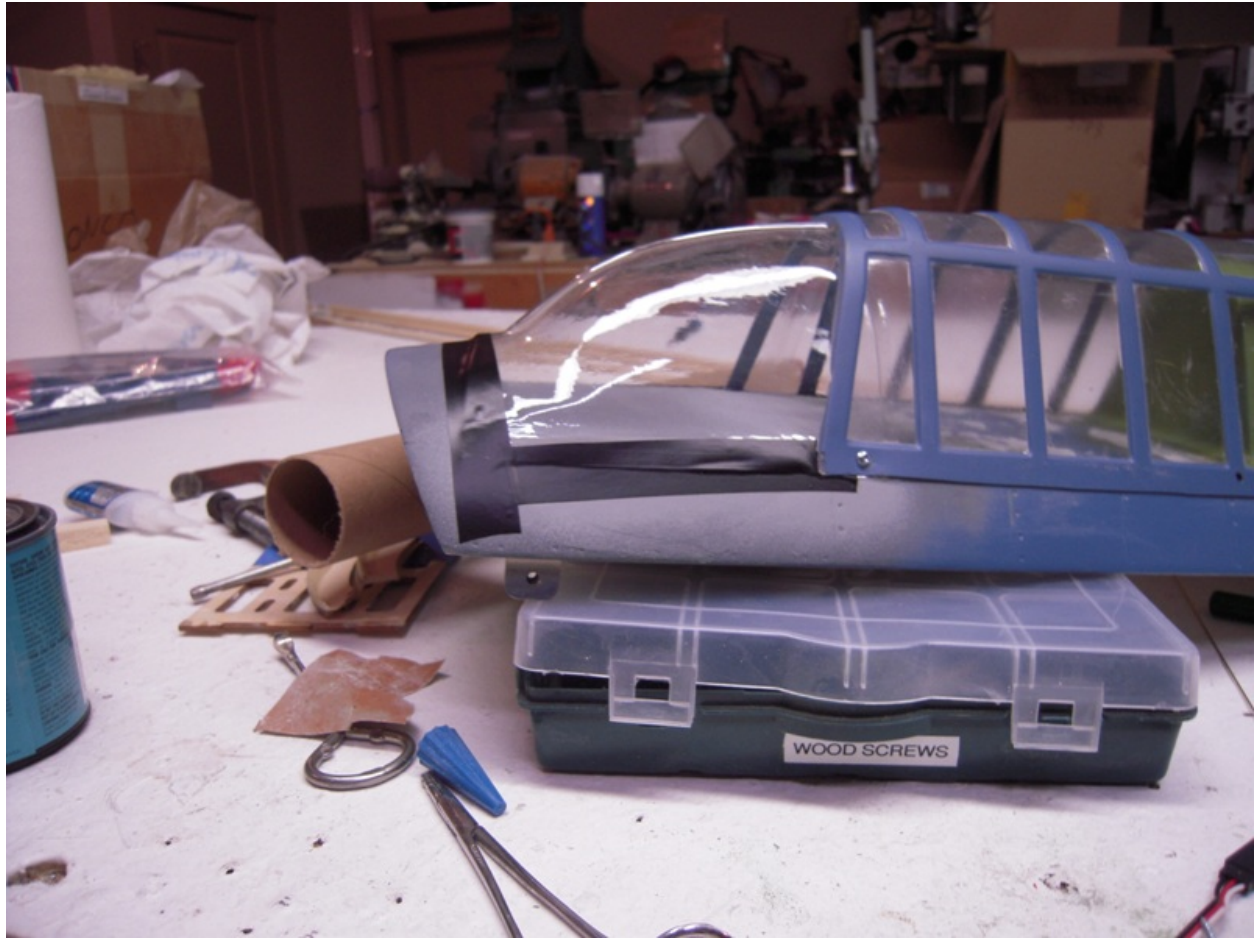
Again all parts need to be sanded as smooth as possible. Any imperfections in the sanding will show up on the canopy.



Notice how additional wood has been added on the front back and bottom of the master.

For filling I used Squadron Green Puddy, automotive primer and clear urithane. Final sanding is done with 320 grit wet dry paper.





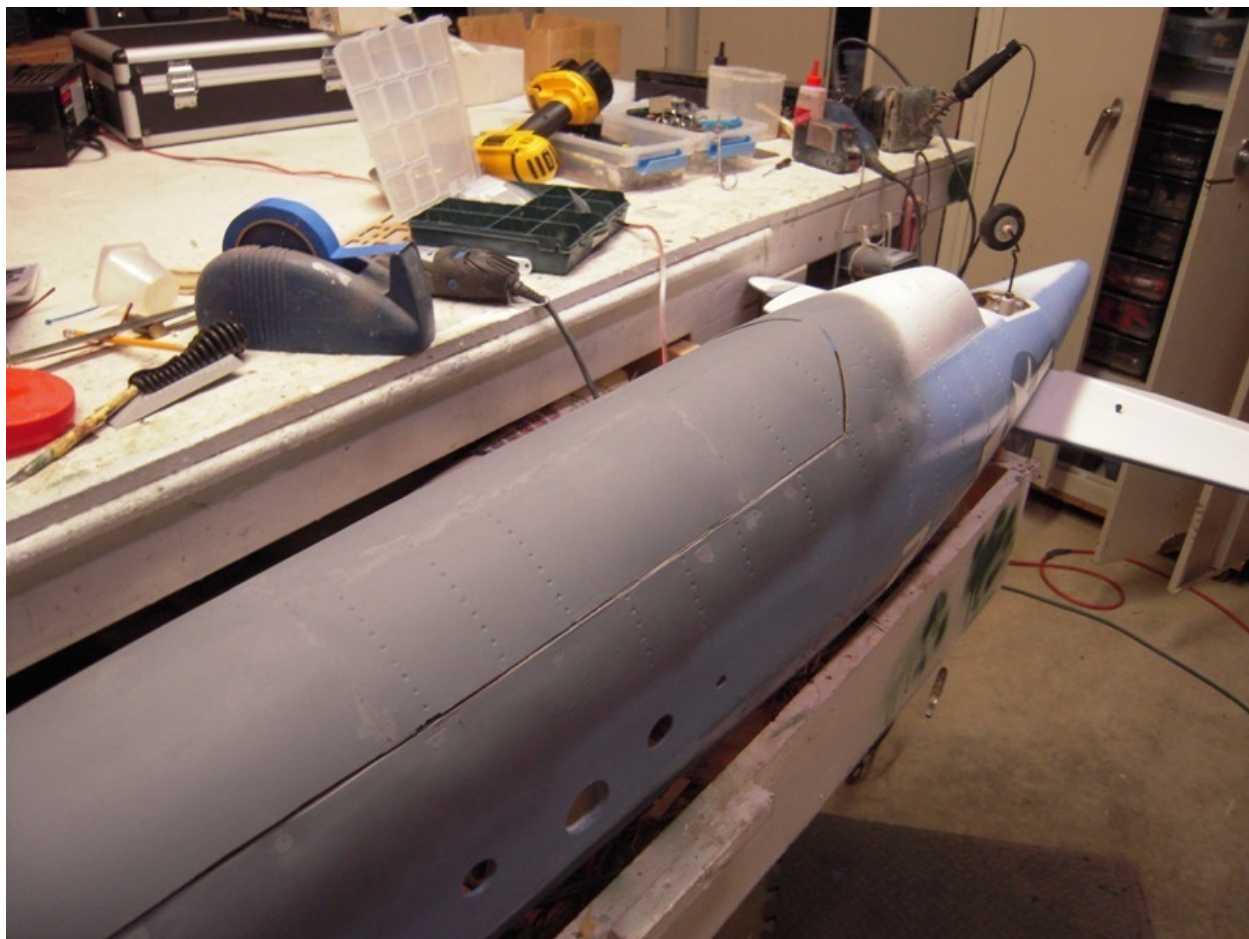
It took the better part of a Saturday to complete the mold master.

Next I marked out and cut the bomb bay doors.



I removed some of the fuselage strength when I cut out the bottom, So I attached 1/4 x 3/8 oak stringers just inside and above the door cut outs. These stringers run fro the firewall to about a foot behind the doors.



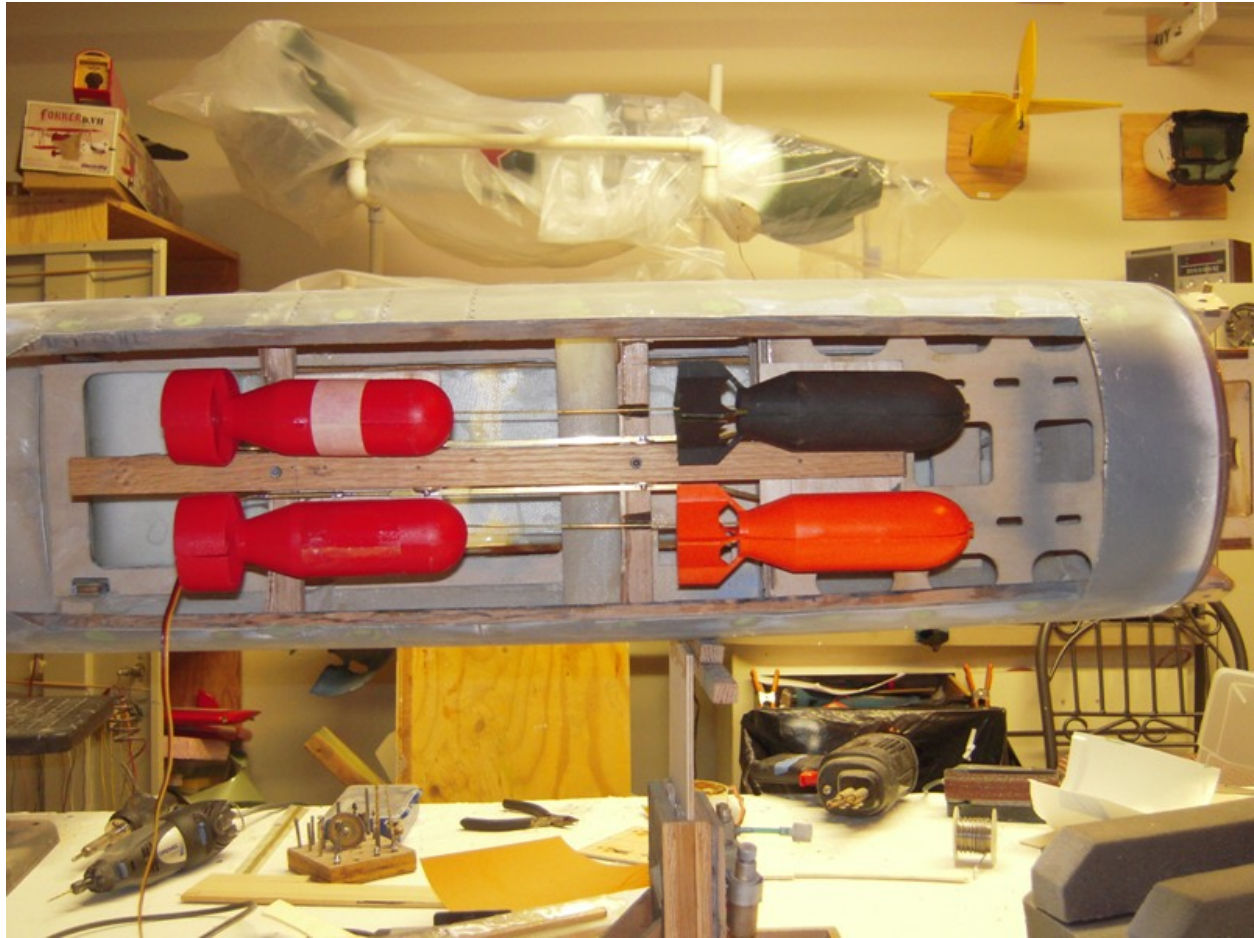


I test fitted a couple of bombs to see how much room I had to work with.



Then I started to mock up an internal bomb rack.

I am still waiting for the brass door hinges to arrive. About all that is left to do in the plane is install the door operating servo with linkages then build the target sleeve and release mechanism.



I used four Vortech bomb releases. The bombs come off in pairs. A servo pushes the release lever on the forward bomb rack which pulls the forward lever on the aft bomb release.





It has taken far longer than we figured to make all this stuff work as well as we wanted. When the air plane is finished and repainted she will be christened "*The Time Leach*".