

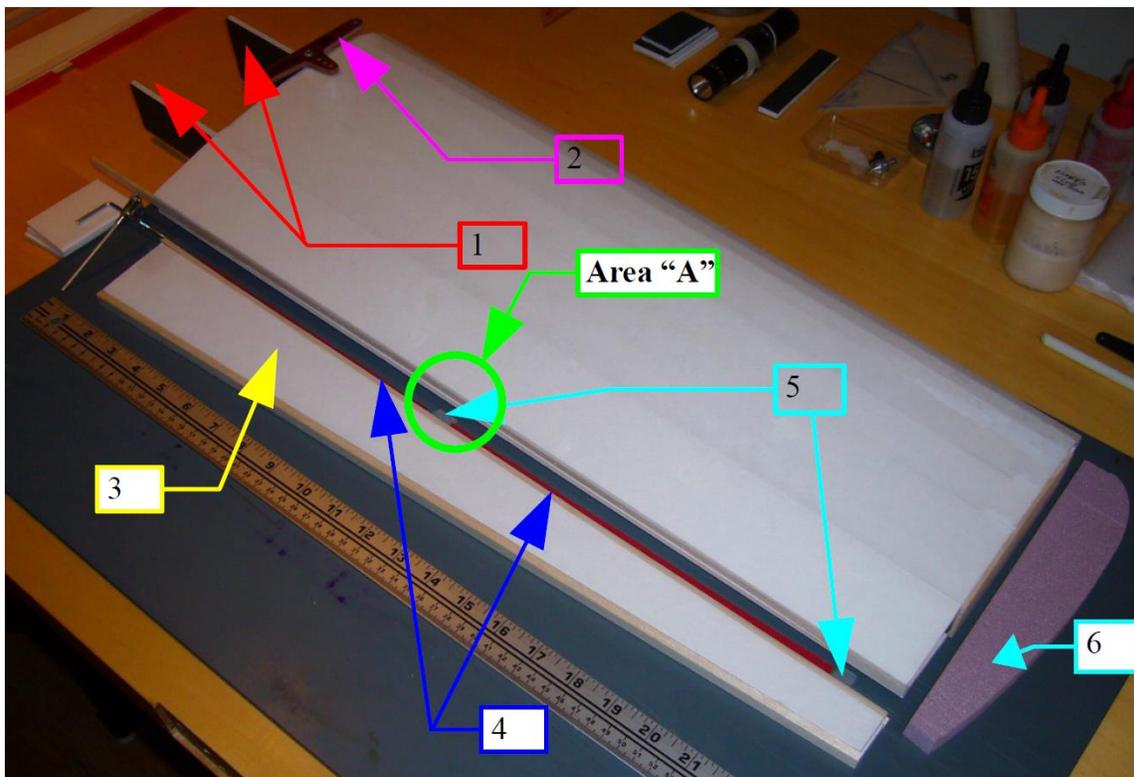
Both wing halves are finished (right wing half is shown below) and ready to be joined using the primary and secondary spars [1].

The 4" bellcrank [2] is custom made using the 0.20" thick Phenolic cotton laminate (Textolite).

I have bought one square foot of this material for \$ 11.00 CAD and will be able to machine 9-10 different bellcranks – more than enough to cover my needs for the next ten years.

The bellcrank has been successfully tested using the 40 lbf. static load that simulated the pull test for the 64 oz. stunter. I will also test it for wear on holes under 15 lbf. load after 1,000,000 cycles.

Both loads can be calculated considering the limits of the C/L stunt model flight dynamics.

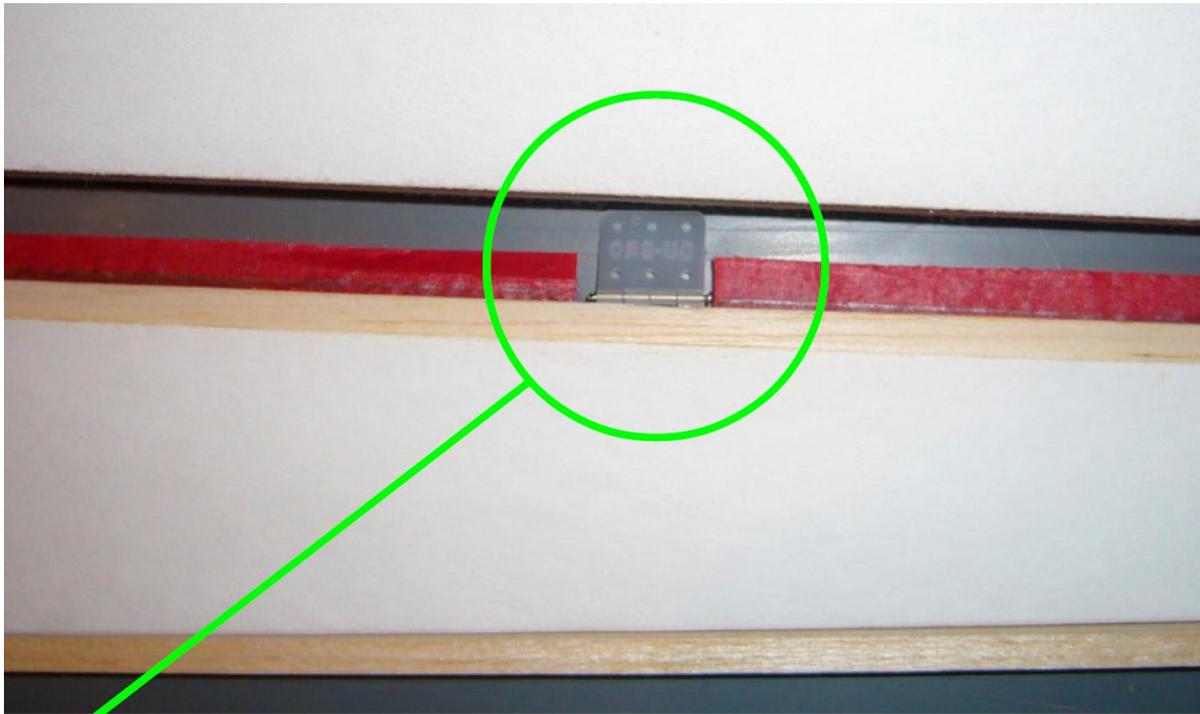


The flaps [3] have been constructed using two PFP pieces with edges reinforced with the medium density balsa beams. The ripstop nylon [red, 4] is glued in between the PFP pieces as shown above and on the next page. This allows to almost completely seal the wings to flaps gaps after the flaps are mounted to the T.E. of the wings and eliminates the need to tape these gaps for competition purposes.

Two plastic hinges [5] are used to stabilize the wings to flaps connection.

Ripstop nylon does not have the ability to react the flight loads without shifting and wrinkling and plastic hinges are essential for the proper flaps movement.

The wing tips [6] will be made using the high density foam or PFP combined with balsa.



Area "A"

Weight:

Two complete wings halves + 2 complete flaps with the ripstop nylon membrane + 4 plastic hinges:
280 grams. Two wingtips: ~15 g. + glue.

Total weight of the 50" wing with flaps before covering with Mylar, mounting the bellcrank, lead-outs and the flaps horn will be around 300 g. (10.6 oz.).

Comment re: glue: PFP can be glued with Elmer's glue to balsa and to itself.

Foam Safe CA can be used but it is a little pricey and I used it only to tack.

Ripstop nylon and hinges were glued with 15 min. epoxy.

Caution should be used while gluing with Elmer's.

It is a water based glue and if too much is used, the paper in PFP becomes spongy and can separate from the foam core.

Comment re: covering and painting: PFP will be brushed with Minwax oil based paint to seal and waterproof the paper. The minimum amount of thinned Minwax will be used by brushing and immediately wiping out the brushed area with the paper towel. **MINWAX IN SPRAY CANS CANNOT BE USED AS THE ACETONE IN IT DISSOLVES THE GLUE IN PFP.**

When the Minwax dries, light sanding with 400 sandpaper with water will be needed. After cleaning and drying the sanded surfaces, I will spray paint the wings as minwaxed and sanded PFP accept any rattle can paint (Canadian Tire MotoMaster paints are ok).

Finally, the top layer of very thin and transparent Mylar with glue will be applied by ironing it at ~220 deg. F. to get smooth and glossy appearance and to strengthen the wing.

To be continued