

On the 'Wing...

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Redwing XC, Part 3

With the wing nearly completed, we've temporarily shifted our attention to constructing the fuselage.

As mentioned in the previous installment, rather than making the nose proportional to the two meter version, we've decided to make the nose somewhat shorter. This will require somewhat more lead to achieve the appropriate CG location, but pitch inertia will be less than if the nose is made longer.

Our first task after completing the aluminum sheet template was to cut out the plywood keel and figure out what material would be used to construct the fuselage "cheeks." This proved to be a bit more difficult than originally anticipated.

The cheeks are hollowed for placement of battery pack, receiver, and rudder servo, and are held fast to the plywood keel by means of a number of 1/4" diameter dowels spaced around the perimeter.

In the past, we've used balsa blocks for these parts, with the dowel holes

strengthened with thin CA. Because of the price of balsa blocks and the large size of these pieces, however, this turned out to be an expensive option.

We next looked at high density styrofoam. Because of the landing loads placed on the forward portion of the fuselage, the styrofoam would need to be strengthened by some means in order to withstand the pressure of the mounting pins. This would be a complicated affair, with specially cut plywood plates, fiberglass shell, etc.

What we needed was an inexpensive but strong material which would be not too difficult to carve and sand.

In our garage, we found a well dried fir 2x6 which was relatively clear of knots. Using the keel as a guide, we cut out the two fuselage sides with a saber saw, then drilled holes for the mounting pins using a drill press. See Photo 1.

A belt sander with 80 grit paper quickly brought the fir down to the exact contour of the keel.

We drew the top view onto the upper and lower faces of the blocked out fuselage using the lower edge of the keel template. Further sanding along the sides brought them down to the guide lines. See Photo 2.

Using plastic and cardboard semicircular female templates, a low angle plane and a coarse PermaGrit sanding bar, we worked the squared block into a rounded shape over a period of about two and a half hours.

Final sanding with a foam pad sanding block, followed with a preliminary coat of primer, yielded the results you see in Photos 3 and 4.

All that's left at this point is to hollow out the two side blocks and make cutouts in the keel for the radio gear.

Hollowing out the side blocks will be done using a drill press and a half-round router blade. This is not a time-consuming process. In this case, we'll start with the bottom of the blade about 1.5" off the table, and lower it about a half inch for each pass. We'll stop when the wall thickness is about 1/8th inch.

Interior photos of the completed fuselage will appear in the next installment.

Up next on the building board is the vertical fin and rudder, then it's back to the wing to finish off the leading edge and otherwise get it ready for covering.

Covering... Colors... Color scheme... Looks like we have lots yet to do.

