

From: "Tandy C. Walker" <tandyw@flash.net>

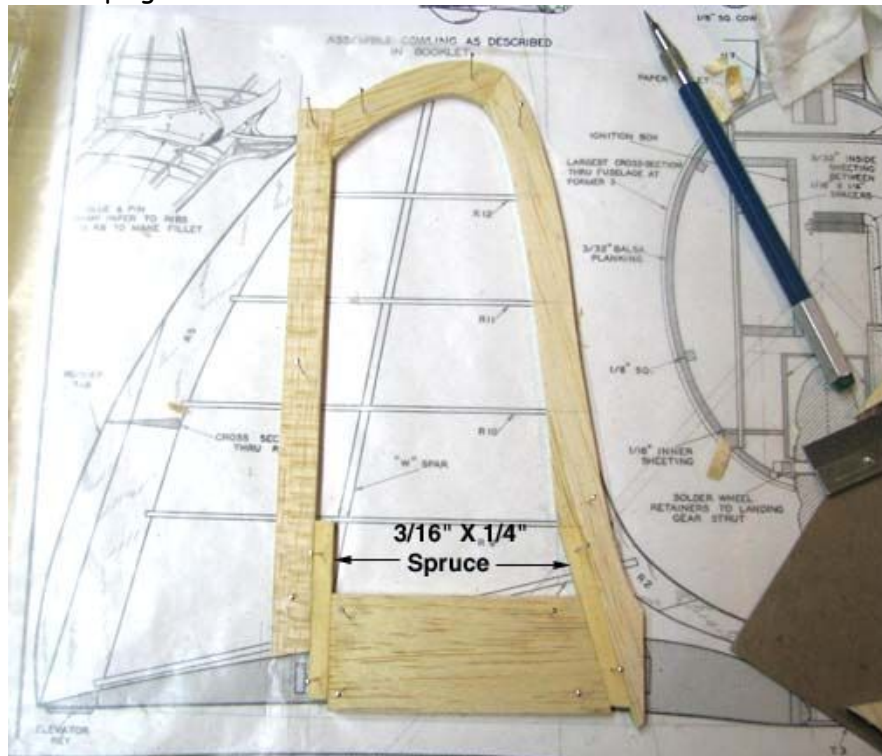
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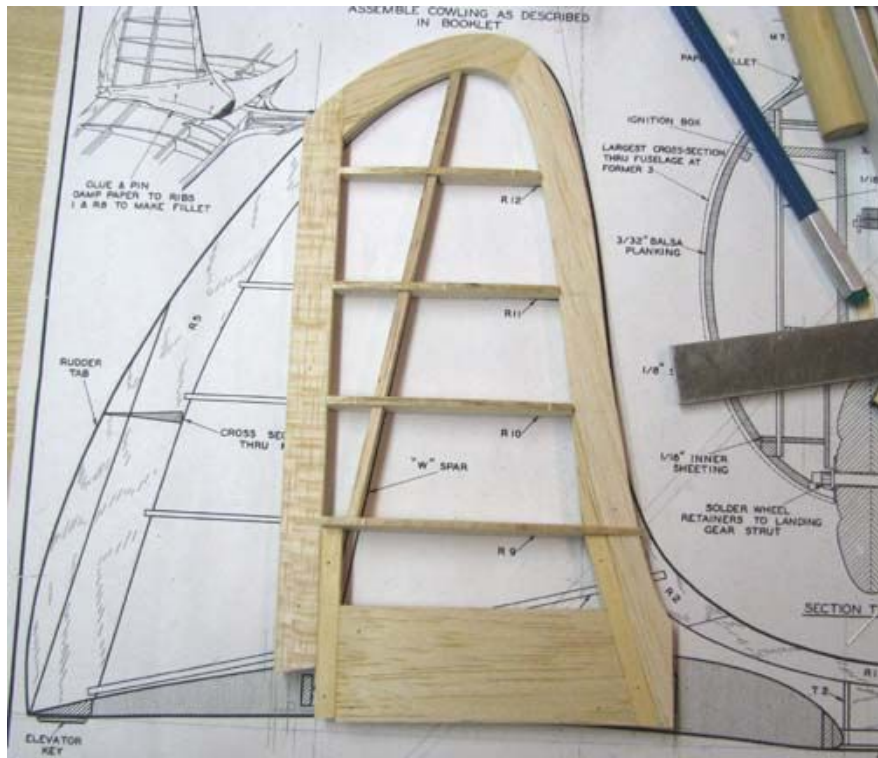
Subject: 20 Sailplane Fin Design Structure

I had to discontinue the work on the stab because I needed to develop the fin structure to fit into the stab's center slot before the stab's center section can be planked. The root of the fin will have two plywood hard points embedded in it with 2-56 threaded holes for securing the fin in the stab's center slot. This in turn will set the placement of the two or three plywood cross pieces on the bottom of the stab's center section to secure the stab to the fuselage stab platform, but I am getting ahead of myself. All of this will be covered in reports later on.

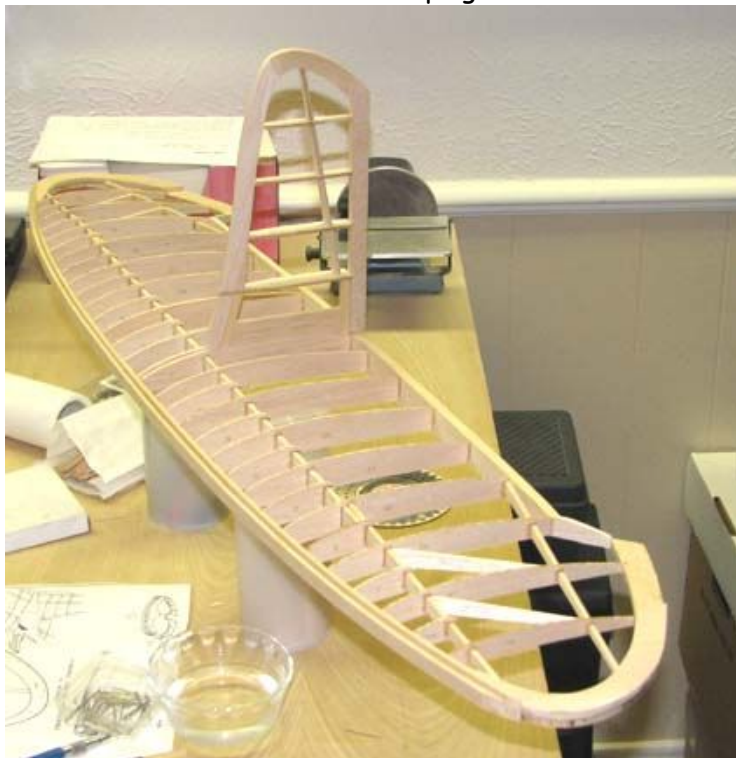
The Sailplane's vertical tail has a 7-7/8" root chord measured from rear face of the stab's main spar back to the trailing edge. Using input from Nick Bruschi and Steve Rozelle as a guide, I established the rudder's root chord at 3.0". Then I laid out the rudder's hinge line and drew in the trailing edge of the fin. A piece of 3/16" X 1/2" medium hard balsa was used for the fin's trailing edge and the width fin's leading edge was also increased to 1/2" as shown below. Notice the two pieces of 3/16" X 1/4" spruce strips used to reinforce the root of the fin that will be in the stab's center slot. The large flat 3/16" piece at the bottom of the fin is also part of the structural "plug" that will slide into the stab's center slot.



I maintained the fin's rib and internal spar structure as shown below. These are fitted in place, but not yet glued in. You will notice on the plan below that there is a lower portion of forward fin which integrates into the fuselage structure that I have not addressed yet. I will have to work this out later as this is part of a rather large fairing as the fuselage fairs back into the stab/fin forward structure (*see the schematic in the upper left corner below*).



This picture shows a trial fit of the fin's lower structural plug inserted into the stab's center slot.



This shows a picture from the other side. There is going to be a complex interface where the fin's root rest on top of the stab's curved planked center section.



From now until Christmas, I am going to be kind of overtaken by events. Sue and I have over 60 Christmas items that has to be boxed, wrapped, and put under the tree for Christmas. We have several Christmas parties to attend and then out of town guests will be arriving the first of next week. I will still get a little building in, but all in all, most of my time will be spent doing holiday things.....Tandy