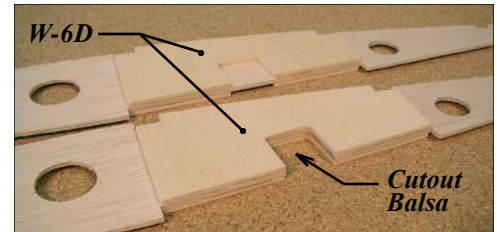


1 WING SUBASSEMBLIES

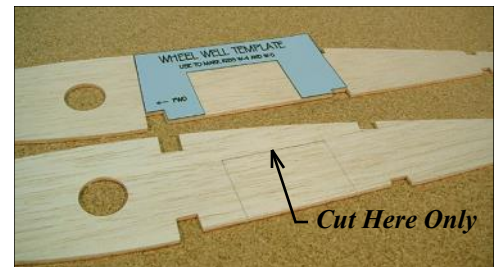
Once these time-consuming tasks are done, you'll be ready to fly through the assembly of the wing panels with minimal delay. Let's roll...

Optional - If you plan on building your R54 with open rib bays, skip to the next step. If you plan on sheeting your entire wing, you need to trim the W-13 wing ribs as shown on the plan. Later, capstrip material will be added to the recessed edges to provide extra gluing area where the center sheeting meets the wingtip sheeting.

Glue a W-6D doubler to each side of both W-6 wing ribs. When dry, cut away the exposed balsa as shown in the photo.



Cut out the Wheel Well Template (blue card stock) and use it to mark the W-4 and W-5 wing ribs. Go ahead and cut the ribs along the upper line, but only score the vertical lines for now. You will cut those later, after the ribs are firmly glued into the wing structure.



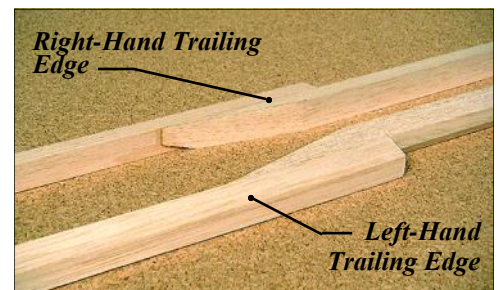
Using the short notches as guides, mark the position of the dihedral brace slots on the W-1, W-2, and W-3 wing ribs. Again, don't cut them yet - the lines will help guide the cuts later when it's time to join the wing panels.

You can tell the bottom main spars from the tops because the bottom spars are beveled slightly on the front edge. The purpose of the beveled edge is to provide a flat gluing surface for the shear webs. Locate the two bottom main spars and the two 12" spruce bottom spar doublers. Taper the outboard ends of the spar doublers as shown on the plans. Be careful here - you need to make a left and a right! Glue the doublers to the main spars, being sure to align the beveled edges.



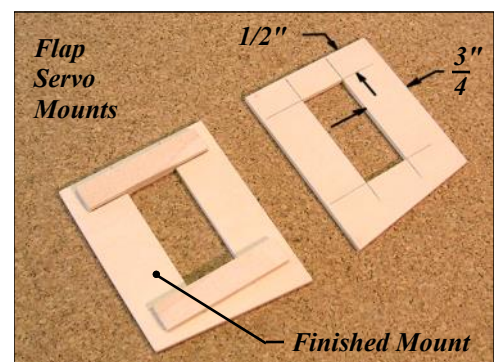
Repeat the previous step for the top main spars. The top spars are not beveled, so there is no need to worry about making a right or left.

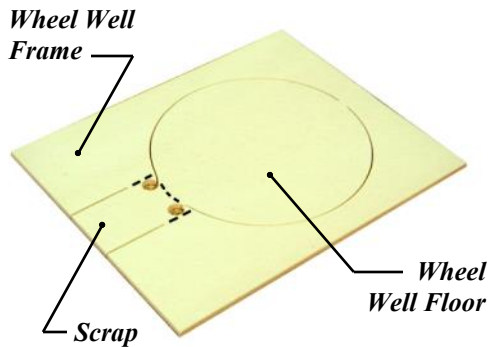
Mark the two remaining 36" spruce sticks 19-1/2" from the end, and cut them at the mark. The 19-1/2" sticks will be the bottom stub spars, and the leftover 16-1/2" sticks will be the top stub spars.



The wing trailing edge is made up of two machined balsa sticks that overlap near the center of the wing. Taper the end of the inboard TE stick as shown on the plans, then glue it to the outboard stick using the plans as a guide. Be sure to make a left and a right.

Make cutouts in the flap servo mounts and the aileron servo mounts to suit your servos. Use the dimensions shown in the photo to position the outboard, forward corner of the cutout. Cut 2"-long reinforcing strips from the 1/8" x 3/8" x 12" lite-ply strips in the kit, and add them to the front and rear edges of each cutout. Again, make lefts and rights.



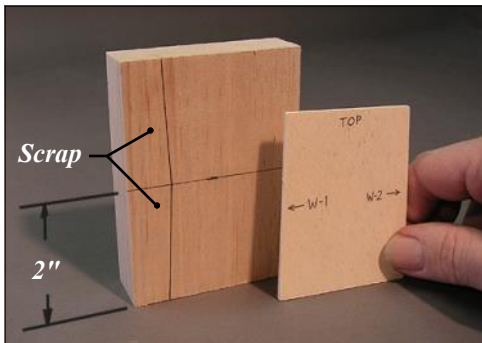
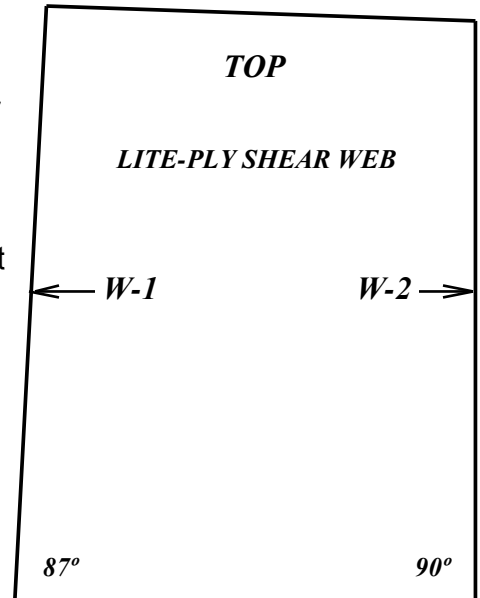


☐☐ Separate the lite-ply wheel well floors from the wheel well frames using a scroll saw or hobby knife to cut at the dotted lines shown in the photo at left.

☐☐ The lite-ply shear web at the wing root is also used as a dihedral gauge during wing construction. To avoid any confusion, mark the shear web as shown in the diagram.

☐☐ A 1" x 3" x 4" chunk of balsa is provided as material for the wing bolt support blocks.

Use the shear web from the previous step as a template to mark the proper shape of the support block as shown in the photo. Cut the block into two pieces, and discard the scrap.



☐☐ Glue the balsa dowel support blocks to the lite-ply dowel block doublers. Line up the aft edges of each part.

☐☐ Locate the six pieces of 3/32" x 3" x 36" balsa, then select the two lightest, softest pieces to use as shear web material. The remaining four pieces can be set aside to use as trailing edge sheets.

☐☐ Inspect the 18 sheets of 3/32" x 4" x 36" balsa supplied in your kit and select eight pieces to use for leading edge sheeting. Look for medium weight, long-grained sheets that bend uniformly. Assemble four sets of LE sheets. Trim the edges, then glue with yellow glue or thin CA.



Leading Edge Sheeting - Make 4 from
 3/32" x 4" x 36" Balsa - 2 Sheets, Edge Glued

☐☐ The remaining ten sheets are used for center sheeting. Assemble two big sheets as shown below, then cut them in half to make four center sheets. If you are going with open rib bays, cut the sheets first to a length of 23".

☐☐ Finally, make two sets of wingtip sheets from 3/32" x 4" x 7-1/2" balsa.

◀R54▶

