

6 FINISH CENTER WING PANEL

- ❑ Check for excess epoxy near the aluminum channels and sand it away so it won't interfere with sheeting.
- ❑ Sand the back edge of the panel on each side of the long ribs, just like in the figure in Section 5.
- ❑ Sand the bottom trailing edge spar, just like the previous step, in the two outermost rib bays between the W-1 ribs. This is where the laminated balsa filler blocks will go later - they need to make good contact with the spars.
- ❑ Once again, plan ahead for your hinge installation and add any reinforcing blocks if necessary.
- ❑ Pin or weight down the panel over the plans. Make certain 1) the main spar is straight, 2) the trailing edge is hanging off the edge of the table, and 3) the trailing edge isn't bowed up or down. Use shims if necessary to force the TE of the panel to be absolutely straight.
- ❑ Glue on the 1-3/8" strips to the back edge of the wing.
- ❑ When dry, trim the overhang (top only). Add shear webs (vertical grain) to the front face of the rear spars, 14 places.
- ❑ Add the two 1/4" x 1/2" x 5" spruce reinforcement sticks to the W-1 ribs as shown on the plans and in the photo.
- ❑ Add the 3/32" plywood wing bolt plate. The front edge of the plate should overlap 1/8" onto the top trailing edge spar. CAUTION! I had to sand nearly a full ply off to make the plate match the thickness of the balsa sheeting. Check yours before gluing and take steps to be sure it will be flush with the trailing edge sheeting to be installed next.
- ❑ Add the top TE sheeting (3/32" x 2-3/4"). You will have to notch the sheeting to fit around the wing bolt plate.
- ❑ Add the final 16 shear webs to the main spars, two in front of the main spar and 14 in the back.
- ❑ Sand the top edge of the sub LE to match the airfoil contour in preparation for the leading edge sheeting.
- ❑ Trim and fit the 1/2" balsa laminates to fit between the W-1 ribs at the leading edge, two places. It's important that these fit well and match the contour of the ribs so that they will bond securely to the wing sheeting. These blocks will take the brunt of the load from the wing dowels holding the wing to the fuselage. Glue the blocks firmly in place.
- ❑ Glue the top LE sheeting in place using the same technique as before. This is a big sheet of wood and it could be easy to get it misaligned from one end to the other. Tack glue it at a few spots along the leading edge to hold it in position. Once you are satisfied that it's positioned properly, go ahead and finish gluing it with CA along the leading edge. Smooth the sheeting down and glue it to the main spar starting at the center and work your way outboard.
- ❑ Glue on your top wing joint sheeting (two places), the top center sheeting (not the portion aft of the wing bolt plate), and the top capstrips (six places).
- ❑ Remove from the table, trim the trailing edge sheeting, and re-glue your new joints with medium CA.



Center Wing Panel, Right-Side Up - with the shear webs and spruce reinforcing sticks in place. Be careful working around those ribs hanging off the table - they're easy to bump into.

FINISH CENTER WING PANEL, Continued...

❑ Flip upside down, pin the top TE sheeting flat to your table, and support the LE with wood.

❑ Cut and fit two more chunks of balsa laminate to fit between the W-1 ribs at the trailing edge spar. The blocks should fit firmly against the spars and the wing bolt plate. Epoxy these blocks in place.

❑ Add the bottom TE sheeting (3/32" x 2-1/2").

❑ Add the bottom center TE sheeting (3/32" x 6"x 10-1/8") to W-1 ribs. Notice that the rear edge of this sheet actually extends well beyond the ends of the ribs. Use the plans as a guide for the proper placement.

❑ Remove the wing from the table, flip it over, pin it down right-side up, and remove the temporary stick from the top of the W-1 ribs.

❑ The rear edge of the bottom center TE sheeting must be beveled to match the slope of the top of the ribs. The best tool for this is to mask off most of your sanding block, leaving a small strip of sandpaper exposed to sand the balsa. Now you can add the top center TE sheeting (3/32" x 4-1/2" x 10-1/8").

❑ When dry, flip the wing over upside-down and pin it down, this time with the top spar against the table. Support the TE with a stick, then take a long careful look at the panel from all angles to be certain it is warp-free.

❑ Bevel the sub LE to match the rib contour, then glue the bottom LE sheeting in place.

❑ Add the bottom wing joint sheeting, the center sheeting, six capstrips, and allow to dry. Cut holes in the wing joint sheeting for access to the setscrews in the channels. Some builders may want to add guide tubes to help guide your balldriver to the setscrews.

❑ Unpin, trim the LE and TE sheeting. Add the LE cap.

❑ When dry, carve and sand the LE cap to the airfoil contour.

❑ Trim all sheeting and sticks at each end, flush with the ribs.

❑ Glue the flap servo mounts in place and sheet them with balsa as you did for the aileron servo mounts. You will also need to cut two holes in the bottom center sheeting for the servo leads to pass through.

❑ Now is a good time to trial fit the wing panels together. Go ahead, stand back and marvel at all that wing area! If you've been careful with your construction and sanding, you may have a nice, tight fit at the wing joints. If not, it's time to reach for the filler of your choice. I'll leave the final sanding of the wing panels up to you. You might want to build the ailerons and flaps first so you can take your time later and make everything fit as best you can. Eventually, you will have to spend some quality time with your sanding blocks in preparation for covering. Try to avoid sanding the big areas of sheeting any more than necessary.



Above: A laminated balsa block trimmed to fit at the LE.

Below: This is a view of the center wing panel, upside-down, with the top LE sheeting, shear webs, and the two wing dowel blocks in place.



Center Wing Panel, Top View - You can see the bottom center TE sheeting has been beveled to match the rib contour. When the top sheeting is glued on, the glue joint formed between the two sheets will help toughen the wing trailing edge.