

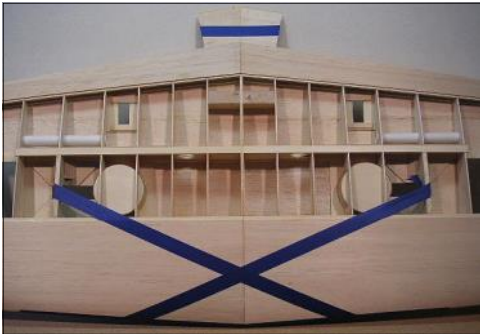
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JOINING THE WING PANELS

Clear your bench! You need some room to maneuver when you join these big wing panels. The center wing joint is obviously a critical part of the structure. Take your time and use plenty of epoxy.

❑ Cut away the slots for the dihedral braces in ribs W-1, W-2, and W-3. Make a rough cut with an X-Acto knife and smooth up the edges of the slots with a thin sanding stick.

❑ Trial fit the dihedral braces in each wing panel. You will need to sand the bottom edge of the front brace and both the top and bottom edges of the rear brace to match the angles of the spars. You want the braces to fit snugly, but not so tight you have to force them in. Dry assemble the wing and make sure everything aligns as it should.



❑ Ah, the moment of truth!

Join the wing panels using a big batch of slow-dry epoxy. I like to use 3-hr. epoxy, which normally gives a working time of 45 minutes or so. Coat the edges of the braces, the spars and shear webs in the wing, and the W-1 ribs. Before the glue dries, pin the LE and TE to maintain alignment. Stretch masking tape tightly from wheel well to wheel well to help pull the wing panels together. Wipe away any excess epoxy with a rag soaked with alcohol. Set the wing aside to dry thoroughly.



❑ Inspect the braces and your glue joints carefully. If necessary, mix up another batch of epoxy and re-glue any dry spots or gaps.

❑ Trim the top center sheets for each wing panel and glue them in place with yellow glue. I suggest doing one side at a time, using weights to hold the panel down on your flat building board until dry.

❑ Inlay the 3/32" plywood wing bolt plate in the bottom of the wing. Using the pinholes you made earlier as a guide, center the plate on the

wing bolt blocks and trim away the sheeting to fit the plywood. Score the center of the plate with a sharp knife and crack it gently until it matches the dihedral angle, then glue it in place.

❑ If you haven't done so already, now is a good time to give the entire wing a good sanding. You want to avoid sanding the sheeting as much as possible (to avoid the "starved dog" look). However, there are areas that will need attention like the joints between the center sheeting and the LE and TE sheeting.

❑ Fiberglass tape is provided in the kit to reinforce the center wing joint. I use a light mist of 3M 77 Spray Adhesive on the tape to hold it in place on the wing, followed by a coating of slow-dry epoxy. The epoxy should soak through the glass and bond with the wood. Scrape away excess epoxy and use an alcohol-soaked rag to wipe up any messes before the epoxy dries.

◀R54▶

About the Dihedral Angle

For the technical-minded amongst you, the R54 was designed with three degrees of dihedral measured on the bottom of the wing. The usual method of laying one panel flat and measuring the height of the opposite wingtip above the table is not really necessary with this model. To my way of thinking, the precision of the angle is not as important as making sure there is a gap-free center wing joint. It would be pretty difficult to be off more than a fraction of a degree with the two large dihedral braces setting the angle.