

On the 'Wing...

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Redwing, Part 3

The weather here in the Northwest has been truly wonderful all Summer long. Warm days with no rain, clouds with flat bottoms (if there are any clouds at all), light winds from the north... And all of this has meant we've been doing a lot of flying and not much building. Still, some progress has been made on the two meter *Redwing*, and this month's column will keep *RCSD* readers up to date.

As this column is being written, the wings are complete with the exception of the 1/16" balsa sheeting. The servos are installed and the circuit board control horns have been fabricated and glued in place in the elevators and ailerons. We've included photos of the servo installations as well as a picture of a typical control horn with ball link.

Most of our construction time and effort have been devoted to building the fuselage and the fin and rudder complex.

The fuselage is being constructed in the same general manner as our *Blackbird XC*, with a central plywood keel and balsa

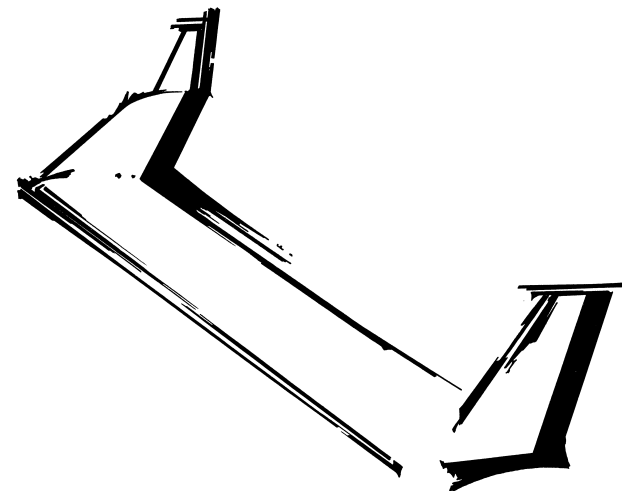
block sides which are contoured to a round aerodynamically clean shape. As discussed in a previous column, carving large balsa blocks to match preestablished cross-sections is not difficult is not at all as time consuming as many people imagine.

The central keel is constructed to match the vertical contour of the nose back to the high point of the airfoil at the root.

Hardwood dowels are strategically placed along the thickened perimeter of the keel, and matching holes are drilled in the balsa blocks. The balsa side blocks make the keel extremely rigid, and are easily removed for access to radio gear. Tape is used to hold the blocks against the keel during flight. This system has proven itself to be both strong and reliable.

This central keel ends aft of the main spar, and is held in place with a relatively large diameter dowel. See the included photo for details.

We've made a bit of a change to fin and rudder on this model in that we're using a

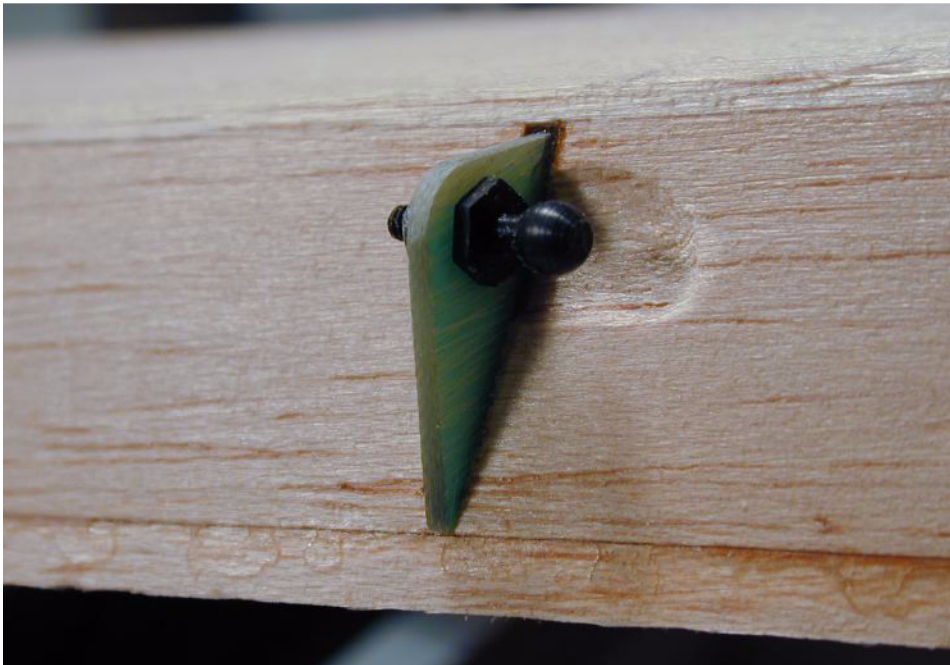
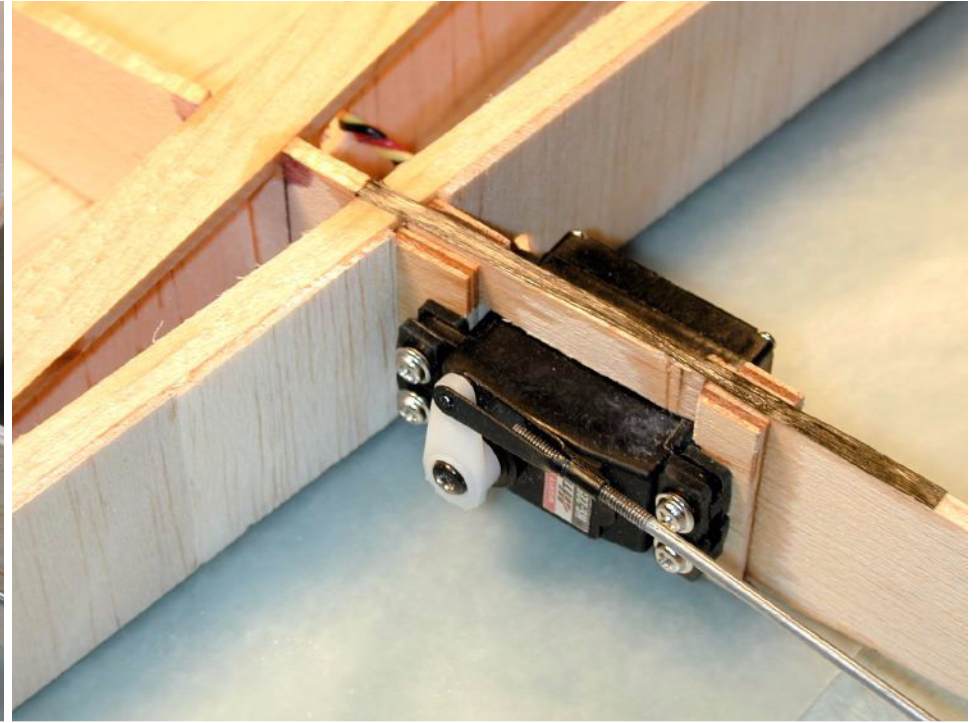


rather unique airfoil, the BTP8. This section has a conical leading edge which continues back past the high point where the surface is a straight line back to the trailing edge.

As on the *Blackbird XC*, the fin is fully sheeted with 1/16" balsa, and the rudder is an open bay structure using diagonal ribs and cap stripping. Hinging utilizes the lightweight Goldberg nylon hinges with removable pins. The fin is a fully enclosed D-tube, the rudder has a triangle stock leading edge and the trailing edge has a length of 1/64" plywood to make it a bit more robust.

We're hoping to finish construction by next issue and include beautiful full color photos of an imaginative color scheme.

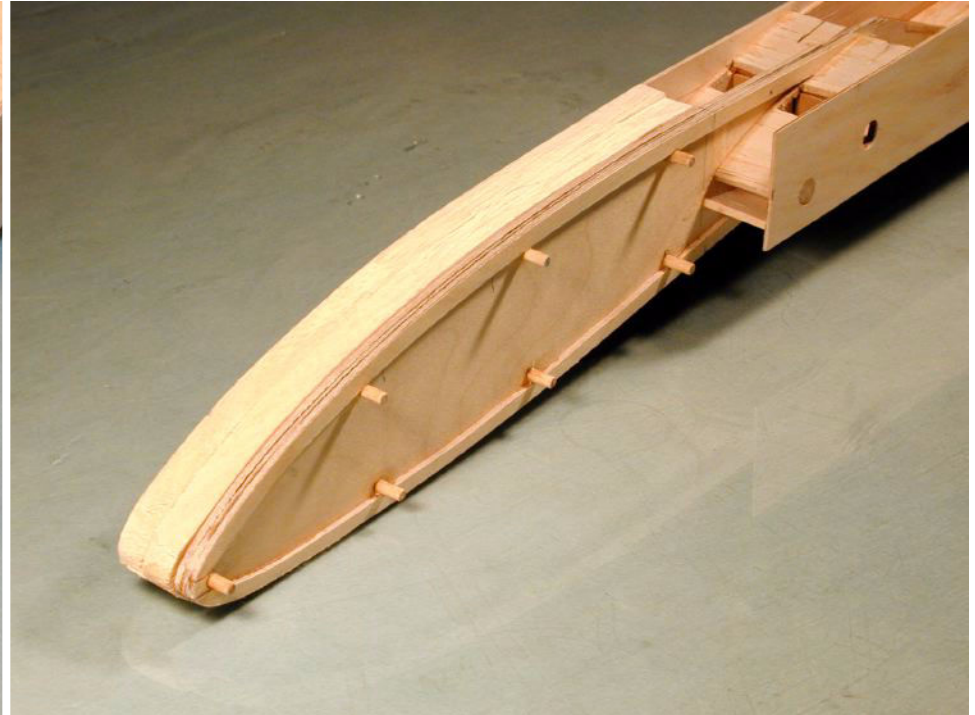
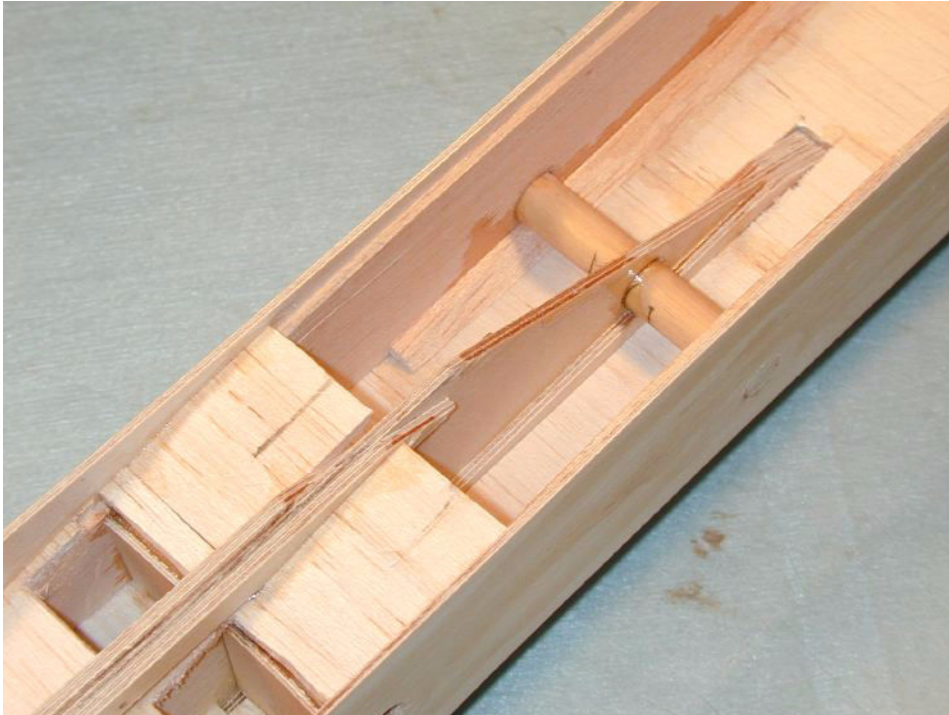
The pressure's on!



Upper left: The elevator servo (Hitec HS-425BB) is installed between the two spars. The pushrod slot is cut into the webbing of the lighter rear spar, so the reduction in overall spar system strength is relatively small. The leading edge sheeting will completely enclose this servo, so we're heavily relying on Hitec reliability. We can always remove the sheeting if the servo fails.

Upper right: The aileron servo (Hitec HS-225MG) is mounted behind the spars in the open bay portion of the wing.

Left: Typical elevator and aileron control horn. Constructed from circuit board, the horns are of the same contour as the adjacent wing rib and go into the control surface two full inches. They're held in place with 1/4" balsa triangle stock on both sides. The triangle stock spreads the loads across a large area of the lower skin.



Above: The rear of the keel, showing the dowel which connects the end with the fuselage sides. There's another dowel near the wing leading edge. The main spar carry-through is right behind the openings at the lower left of the photo.

Upper right: The fuselage is taking shape. The plywood keel is in place, and the right hand balsa nose block is tacked on in preparation for shaping. In this photo you can see the second connecting dowel near the wing root leading edge.

Left: Fin and rudder, almost ready for covering. All that's needed now is the rudder control horn and covering.

