Outstanding outdoor hand-launched glider

Hedgehopper

Six years of contest wins, six years of continual experimenting and refinement, culminate here. Instructions provide a full course in design, building, flying.

BY WARREN KURTH

The Hedgehopper gets its name from its ability to take advantage of every little “bump” or bit of lift it finds, even under poor conditions or at altitudes as low as 25 ft. It has many times been known to find some weak, early morning lift and go dancing across the field for a “max” without ever getting up to tree-top level. This performance can be attributed to its light weight and clean design — no dethermalizer to drag around, no lumpy clay nose weight to triple the fuselage profile drag, and a low-drag, straight V-dihedral wing.

The basic configuration and V-dihedral which characterize Hedgehopper were introduced to me by Don Kintzele at the 1957 Nationals. Don argued that straight dihedral gliders flew every bit as good as the ones with polyhedral, and were much quicker and easier to build. I was skeptical at first, but the pleasant thought of only one dihedral joint to make instead of the usual three, finally induced me to try Don’s design. Eureka! Instant success! At the first contest with them in St. Louis in 1958, the gliders won a second place for me and a first place for my partner, Chuck Cappis, who was having his initial go at hand launched gliders.

Six years of experimenting, chiefly with airfoils and tail areas, has evolved the Hedgehopper presented here. I feel it represents the optimum combination of performance, simplicity, and quick construction in a glider.

As stated before, the Hedgehopper’s forte is its ability to ride the weakest of thermals, where most other gliders would “fall through.” Typical examples of this were easy wins at St. Louis during a foggy overcast day and at Cedar Rapids, Iowa in a cold, steady rain. But don’t get the wrong idea—the glider has an impressive list of wins in good weather, too. Its best official time was posted last year in winning the IMAC’s annual contest at Bong Air Force Base where it bettered 11 minutes.

Construction Notes. Trace templates for the flying surfaces and paste to a piece of 1/32” thick card-board. Or get a “Xerox” copy made of the plan without even having to remove the page from the magazine. After cutting the cardboard to match the template outline, give the edges a couple of coats of glue to harden and preserve them, and then give the entire pattern several coats of dope. You will then have a handy tool to speed up your glider production for years to come.

Proper wood selection for a hand launched glider cannot be over-emphasized; I use Sig balsa wood for the entire model. Sig’s “contest” balsa for the fin, stab, and wing T.E.; “AAA” balsa for the wing L.E.; and “RC” stock for the fuselage and finger rest will pretty much fall within the wood densities called for on the drawing.

The wings should be built first so that the dihedral joint can be glued and allowed to dry at least a full day before the wings are glued to the fuselage. Join the L.E. and T.E. with a glue which dries hard. Don’t use the rubbery polyvinyl types on this joint or you will have trouble in shaping and sanding a smooth airfoil.

Carve and finish sanding the wing in one piece before the dihedral joint is cut. Notice that the airfoil back of the high point is flat. The 25% high point falls just 1/32” in back of the glue joint at the root chord so this makes a good guide for carving the inboard half of the wing. The high point line will naturally curve backwards away from the glue line as you work out towards the tips. Keep the tips as light as possible by tapering the wing thickness as shown. However, be careful to keep the minimum thickness at the tips and trailing edge between .015” and .020”. To go any thinner will produce weak surfaces which can flutter and make the adjusting of your glider very difficult.

When carving and sanding the leading edge, leave a 1/32” “flat” on the front for glueing (Cont. on pg. 80)