Hervat’s 39-Minute Glider

Put on your wheel brakes right here, if you’re looking for a real winner—for this record-breaking solid glider is all of that and more! When Joe Hervat tossed this one into the air out on the West Coast it zipped off a flight of 39-minutes-plus before it disappeared from view. Joe hasn’t seen it since, so you’d better not let go of yours until you’re sure it knows the way back.

Gather ’round, all you model builders who like to do your flying in the great open spaces. We have a solid glider for you this month. Not just another glider, but one that has stayed aloft and in sight for 39 min. and 30 sec.

Joe Hervat, the builder and designer, launched his original model just before a contest held last summer out on the West Coast. He hasn’t seen it since! Of course, we aren’t going to say that the ship is still up, but we won’t say that it isn’t, either, because the timer lost sight of it while it was playing tag with the clouds at about 1600 feet.

That ship was certainly choosy. After having been up for 22 min. it came down to within 100 ft. of the ground, but seeing a plowed field below, started up again. It disappeared over a mountain, probably looking for greener pastures on which to settle.

Now that we have aroused your interest (or haven’t we?) we’ll give you a building outline so that you can get to work.

WING

The wing is made from 3/16\x3/4" light balsa. If you can’t get 3" wide stock simply build up the required width with two narrower pieces. Cut this sheet balsa to a length of 20" and, using the drawing (see next page) as a pattern, shape the tips with a razor blade. Draw a center line chordwise on this blank and taper each half of the wing as shown, with rough sandpaper wrapped around a sanding block. The airfoil section may be sanded into the wing or may be planed in. As the section approaches its final form, use finer grades of sandpaper on the wing until you get down to about the "ten nought" grade. Now
NOTES:

1. Outboard wing halves made of lightweight materials such as balsa or foam core for minimum weight.
2. Fuselage made of sturdy materials such as balsa or plywood.
3. Tail surfaces are similar to wings.
4. Slight left rudder adjustment recommended.

WING SECTION

- Wings made of soft balsa or foam core.
- Apply thinners to adjust span if needed.
- Apply final gluing with balsa wood filler.

OUTDOOR GLIDER

- Flight time: 30 sec.
- Designed by Joe Hervey.
- Wisconsin.

GLIDE UNTIL GOOD GLIDE IS
OBTAINED. IF NOSE HEAVY,
SHAVE EXCESS WEIGHT ON
FRONT. IF TAIL HEAVY, SHAVE
ON BUM.

SHALLOW CUT FOR FIN CLAY
ADJUSTMENTS

FUSELAGE - 2 x 3/4 x 17 PINE
NOTICE THE TEARDROP CROSS-SECTIONS
give the wood a coat of the following mixture: 2/3 dope and 1/3 thinner to which has been added a drop of sweet oil for every oz. of the polish made. Sand the wing smooth after the polish has dried, and then finish it off by rubbing briskly with heavy wax paper. Finally cut a "V" out of the wing at the center, as indicated, so that the sweepback and dihedral angles may be formed.

**FUSELAGE AND TAIL**

OUR fuselage is cut from pine stock 3/16" x 2" x 17" to the shape shown. Note that the cross section of the fuselage is of an inverted streamline shape. You can rough this cross section out with a knife and finish the shaping with medium rough sandpaper. When you have 'smoothed the fuselage down with various grades of sandpaper, put the final polish on (after doping) as was done before on the wing. Cut a shallow "V" slot along the top of the fuselage (at the position indicated by the wing setting), in which to cement the wing when it has been assembled. Also make a small concave cut at the rear of the stick in which to set the stabilizer. This fuselage, being heavy, allows you to toss the glider to great heights which, in model parlance, means for long flights.

Cut the rudder and elevator to the shape shown from 1/16" light balsa sheet. Sand each to a streamlined cross section, first using medium rough sand-paper and ending up with very fine paper. Dope the surfaces as before, sand with fine paper, and finish with wax paper.

**ASSEMBLY**

THE assembly of the various parts of the glider is a simple operation but a most important one. The different parts must be aligned accurately and set at the proper angles if your model is to be successful.

Glue the two halves of the wing together and place blocks under each tip to obtain the proper dihedral angles. Before gluing, however, sand off the polish for about half an inch on each side of the edges to be joined. This is done so that the cement will get a firmer grip on the wood.

While the wing is drying, glue the stabilizer centrally in place in the hollow at the rear of the fuselage. Be sure that the stabilizer is perpendicular to the fuselage otherwise you will have lots of trouble trying to fly the model. When this has dried, cement the rudder in place at right angles to the stabilizer. Note
that the rudder is turned slightly so that the ship will circle to the left when in flight.

If the wing has dried by this time, cement it into the groove previously cut in the fuselage. Use a thin coat of glue at first and hold the wing in position with pins. Be sure that each half of the wing makes equal angles with the fuselage. When the first coating of cement has dried, apply the filleting paste as indicated. Besides stream-lining the wing into the fuselage, this paste strengthens the root of the wing and also the wing joint. This finishes up the building of the ship and now you are ready to adjust the model for flight.

**ADJUSTING AND FLYING**

**BEFORE** test-gliding the model, twist the left wing (looking from the front) and breathe on it at the same time so that it holds a few degrees of wash-in. Now, when the ship is launched it should fly in a flat glide, slightly banked, to the left. If the model stalls, sand or shave the rear of the fuselage; if the model dives, sand or shave the front of the fuselage. Of course, if the tendency to dive or stall is slight it may be corrected by changing the amount of wash-in in the wing or the amount of turn on the rudder. For fine adjustments, modeling clay may also be inserted or taken out of a small depression in the front of the fuselage. (See drawings).

To fly the model, bank it slightly to the right and launch it upward at about a 45-50 degree angle. It should climb steeply and should pull out smoothly at the top of its climb. Once in flight the model should circle to the left in about 50 foot circles. This path of flight gives the ship a chance to seek out thermals (favoring air currents) and stick close to them once it hits them.

Make this model and try it out the first chance you get. You'll find that it more than fulfills your expectations.