

# 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 choosey. 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.

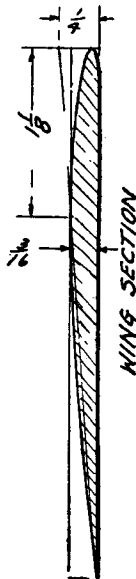
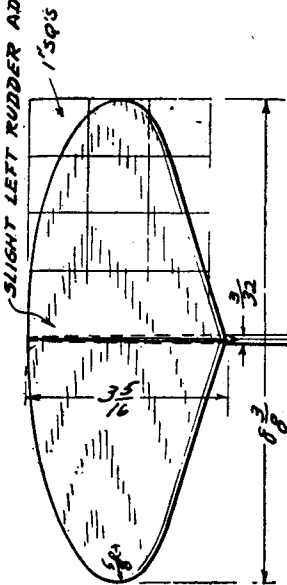
## WING

THE wing is made from 3/16//x3" 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

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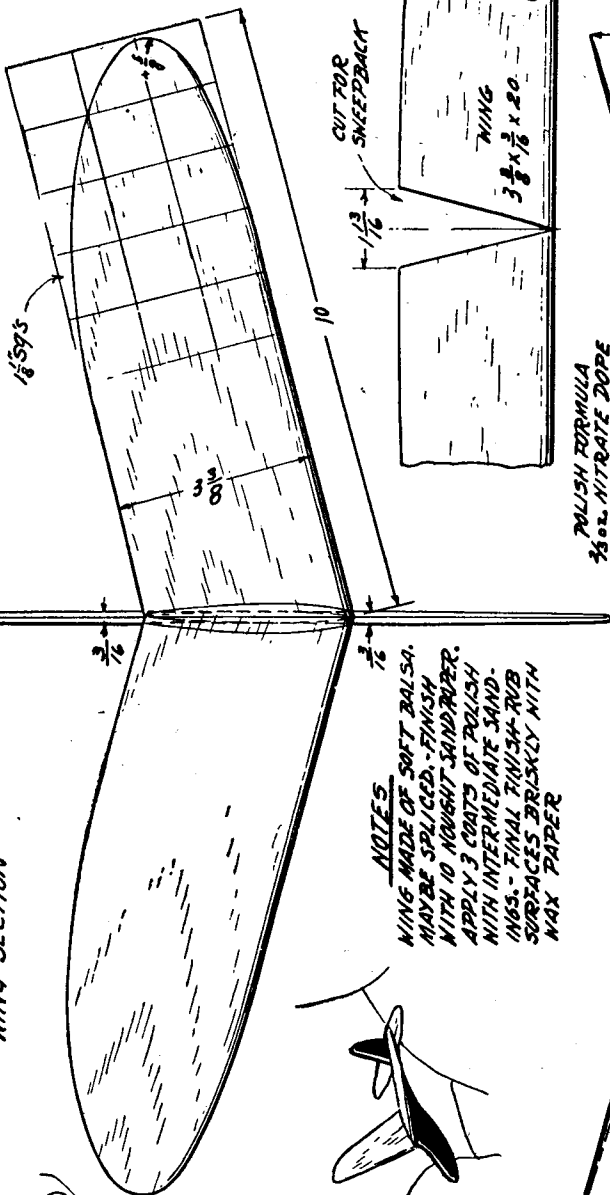
**NOTES**  
 TAIL SURFACES MADE OF LIGHT 1/8" SHEET BALSA. IF THE REQUIRED WIDTH IS UNOBTAINABLE, SPLICE TWO 2" SHEETS OR AD 1/4" TO A 3" SHEET. RUDDER & STABILIZER ARE STREAM-LINED. SAND & FINISH SIMILAR TO WING.

SLIGHT LEFT RUDDER ADJUSTMENT



WING SECTION

TAIL SURFACES



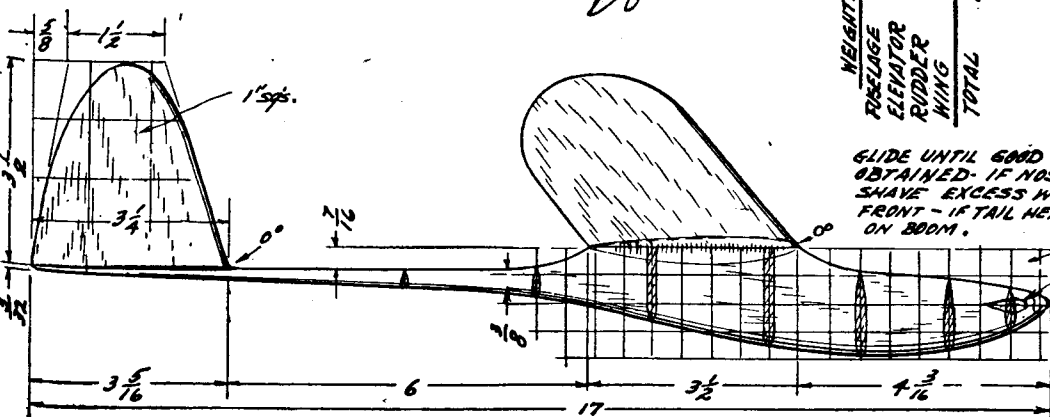
**NOTES**

WING MADE OF SOFT BALSA. MAYBE SPLICED. FINISH WITH 10 MOUNT SAND PAPER. APPLY 3 COATS OF POLISH WITH INTERMEDIATE SANDING. FINAL FINISH RUB SURFACES BRISKLY WITH WAX PAPER

WEIGHTS	
FUSELAGE	.537 oz.
ELEVATOR	.059
RUDDER	.022
WING	.325
<b>TOTAL</b>	<b>.938 oz.</b>

POLISH FORMULA  
 25 oz. NITRATE DOPE  
 150. THINNER  
 1 DROP OF SWEET OIL

RELIEFING IS DONE WITH BALSA PASTE - BALSA DUST MIXED WITH SOLUTION OF 50% CEMENT & 50% DOPE; - APPLY WITH FINGERS SAND WHEN DRY, & COVER WITH 3 COATS OF CEMENT.



FUSELAGE - 2 x 3/16" x 17" PINE  
 NOTICE THE TEAR DROP CROSS-SECTIONS

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

1/2" sa.'s  
 SHALLOW CUT FOR FINE CLAY ADJUSTMENTS

**OUTDOOR GLIDER**

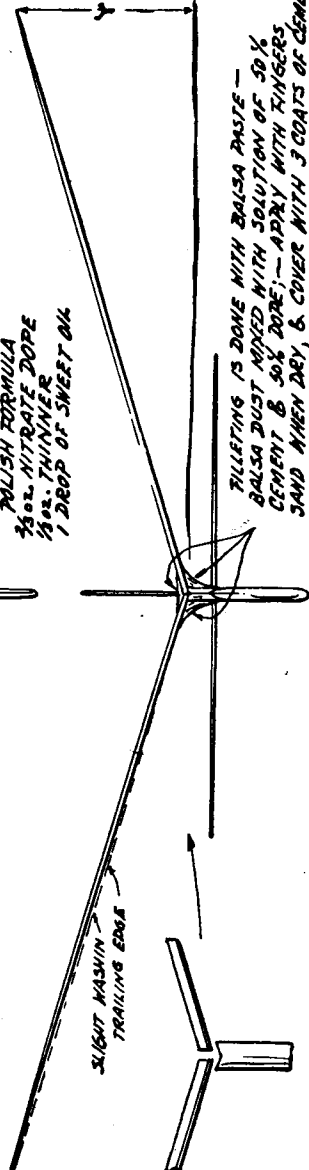
TIME 39m. 30 sec. +

DESIGNED BY  
**JOE HERVAT**

MINNAPHA WIS.

*Joe Hervat*

SLIGHT WASHIN TRAILING EDGE



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.