

THE helioplane

By HENRY STRUCK



Here's the free flight scale version with an .039 engine built by Gordon Dorr of Deep River, Conn. That's Gordon, below, launching it.



Hank, the renowned Connecticut craftsman and former National Champ, comes up with remarkable Half-A F/F or U/C'er

■ The model was scaled from original three-view drawings obtained through the courtesy of Professor Otto Koppen of M. I. T., the designer of the Helioplane. The configuration of the full-scale ship satisfies so many of the requirements for a good flying model that it almost seems to have been designed for that purpose!

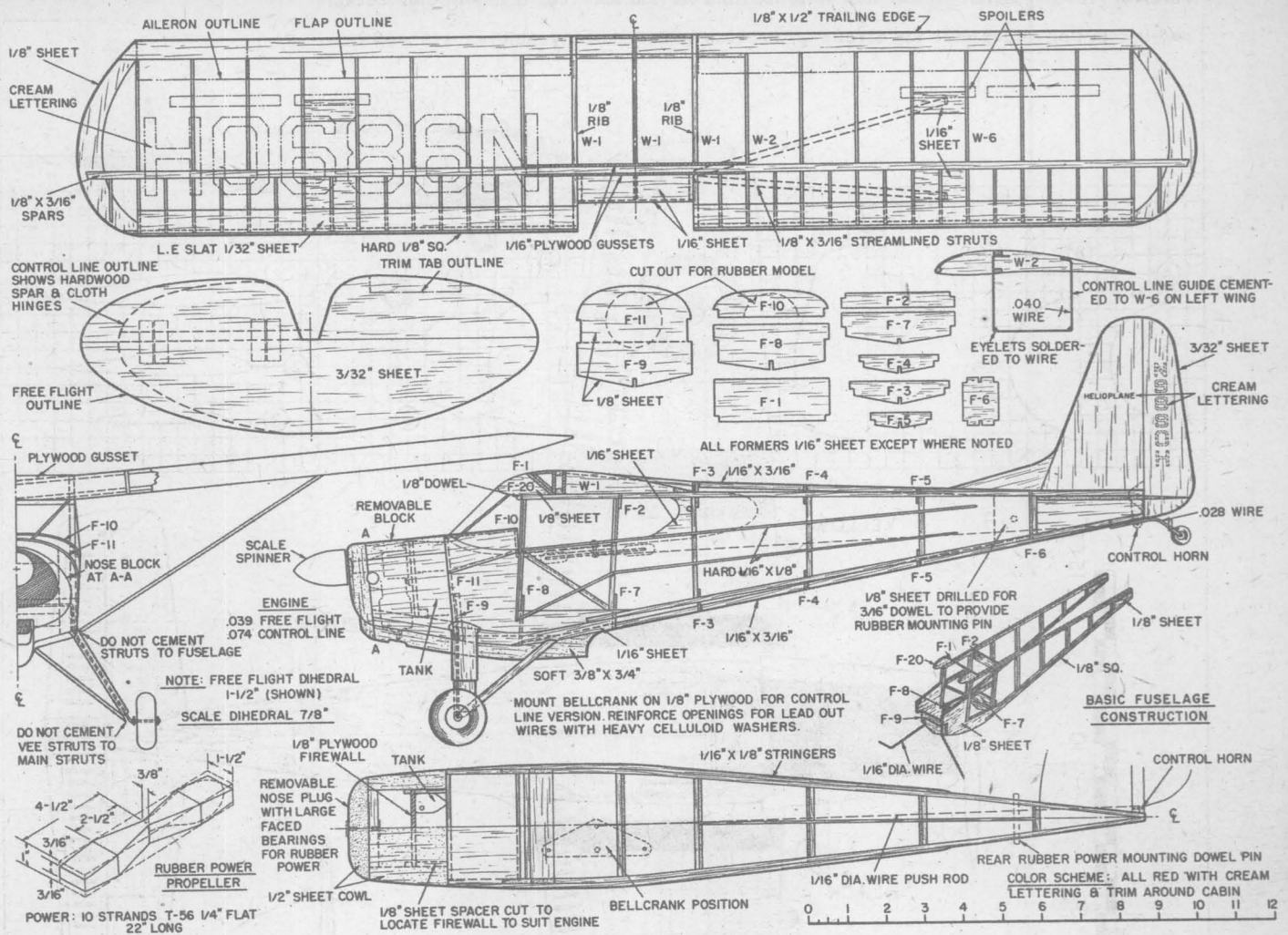
Powered by an .039 Cub the model has turned in many realistic flights even with scale dihedral. The giant 9 ft. propeller of the big ship, driven through a multiple Vee belt at about 1200 rpm, operates at optimum blade efficiency with the engine turning over at its normal speed. This is an ideal feature for rubber-powered flying scale enthusiasts.

Modifications have been indicated on the plans that permit the basic model to be built in three versions, free flight gas, rubber powered, and control line.

Construction is quite conventional and rugged. Assemble the fuselage sides one atop the other and join when dry with cut-out formers of 1/16" sheet. Note the construction at the cabin. The sloping former F-1 allows the wing to slide ahead in a crack-up, as well as faithfully reproducing the contours of the windshield. Use hard balsa for the longerons, spars, leading and trailing edges.

The center airfoil is flat bottomed to rest on the

Full-size working drawings for quick construction of the Heliplane are available from Air Trials Plan Service



fuselage top, while the other sections are undercambered. After assembling the wing panels on the plans, join the spars at the center section with 1/16" plywood gussets.

For a free flight gas powered model mount a 1/8" plywood firewall in the nose, blocking it in place with 1/8" sheet balsa at each side. Use an .020 to .039 cu. in. engine for best results. Fuel-proof thoroughly. Make the upper cowl block removable to permit access to the engine for maintenance.

For a rubber-powered version build up a removable nose plug and fit with bearings of large-face bushings. Cement 1/8" hard sheet balsa at the rear of the fuselage to receive a 3/16" dowel to hold the rubber motor. For maximum performance use a folding propeller and about 50% slack in the rubber and a tensioner device to avoid bunching of the knots, with resultant shifting of the C.G.

For a control line flyer install an .049 to .099 engine in the same manner as for free flight. Cement a 3/32" plywood plate in the cabin and bolt a small bellcrank to it. Cut the horizontal tail to the smaller outline shown and hinge the elevators with cloth strips. Cement a wire line guide to the #6 rib in the left wing.

Sand the model thoroughly before covering. Use red

gas tissue applied while wet. When dry brush on clear dope plasticized with a few drops of castor oil in each eight ounces to minimize warpage.

Note that the wing and landing gear Vee struts are not cemented to the fuselage or main landing gear struts in order to permit the parts freedom of movement. The wing is held to the fuselage by a couple of rubber bands hooked on the projecting dowels at the cabin.

Balance the model about 2" from the leading edge for free flight gas power. For rubber power the C.G. may be shifted to 2 1/2" from the leading edge. Test-glide over tall grass by hand launching to check the setting of the tail. Bend the elevators up slightly to correct diving, or down to correct stalling. Bend the rudder to obtain a slight turn to the left for gas power, or to the right for rubber power. As a control line model the C.G. should be about 1" from the leading edge. Fly the model on 25 to 35 ft. lines, using the longer lines in calm weather.

The original ship was colored all red with cream lettering and trim. Colored tissue with Trim-Film cut for lettering will produce the lightest job for free flight. A coat of clear fuel proofer should be applied to the entire ship if gas powered. Fuel-proof colored dopes may be used for the control line model.