

Pioneer



**Rubber's out! Change Over to Gliders.
Duplicate This All-Pine Contest Winner.
By Cardwell Johnson.**

When the government froze balsa for the duration, we cast about for a substitute. White pine was selected because it's so readily available. A slightly different construction must be used in any hardwood design to overcome the weight handicap. Fairing blocks, double curves, and solid bulkheads should be avoided. The design of the Pioneer managed to avoid these pit-falls so well that the completed model was actually underweight. Its strength was even greater than the average balsa job. Build this towline glider and you'll stick to pine even after the duration.

Construct the crutch first. Use 1/8 in. square for longerons and forward cross members, and 1/16 x 1/8 in. cross members aft the wing mount. Set up the short member under the wing mount on blocks until the uprights can be cemented into place. While this is drying, cut out the nose pieces; cement the top one into place and add the uprights. Now construct the fin and cement it to the crutch. After the fin is set, add the top fuselage stringer and the remaining uprights. Remove the top half of the fuselage and complete the bottom in the same manner. Add the remaining stringers, stab mounts, celluloid windshield and the automatic rudder hook-up. Cover with gas-model paper and dope well.

Cut the wing ribs from a metal template; if a band or jig saw is available, put together with dope 1/32 in. sheet rectangles large enough to form the ribs and saw to the proper outline. Sand and split them apart. Build the wing flat and form a dihedral after the

cement has set. Add the wing-mount pad to match the fuselage. Cover with tissue.

Cut the template for the center ribs and form the outer ribs by cutting off the trailing edges to match the chord. Moisten the leading edge before assembly. Cover with tissue and fit to fuselage. Cement it into place at zero degrees incidence.

A heavier covering than tissue is recommended. Be certain that the automatic rudder control works freely. Adjust a soft wire horn on the tab to give straight flight during towing and about a hundred feet of left circle in the glide. For windy weather use the forward hook for towing.

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