Otsegan II

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flown both right and left under power.

The glide turn has been controlled by stab tilt, but a floating tab may be used.

A piece of 

\[ \frac{1}{4} \times \frac{1}{8} \times 1 \frac{1}{4} \times \frac{3}{4} \]

inched to the center panel just inboard of the dihedral break is suggested. We further suggest that the hinge tubing be gauzed to the wing trailing edge rather than to the tab. The wire can be extended along the tab sides and gauzed or sewed to that.

Major changes in Mark II have been a switch to a modified G5 section in the wing and a rearward movement of G5. Mark I balanced at 70% chord and carried 1° negative incidence in the stab. She had a nice "flip-out" transition than Mark II which still exhibits a slight dip at the end of power. Theoretically, however, the present 85% balance should result in optimum climb. Based on calculations of tail volume, the ragged edge of stability should be reached at about 90% chord, so one can work within the range of trim for the theorist to play with. The 3° angular difference seem adequate for stability. If you should run into trouble, move the G5 forward and retrim angles for glide.

At first glance, the fuselage might seem overly long, but in terms of percent of span, the tail moment works out to an even 57% which compares favorably with current design practice. Measured in terms of wing chords, however, TM comes out 5 where most ships come out under 4. However, when the high aspect ratio is taken into consideration, this moment seems very desirable and, in fact, coincides very nicely with current Wakefield practice. Again, like Wake practice, this moment allows a relatively small stab (under 30%) and fin with a consequent reduction in drag.

Don't let the small stab threw you. French designs have gone down to 17%, and in this country, Conover's "Lucky Lindy" has gone down to 24%. Large stabs are not necessary to control power. Then they sometimes do function in this capacity is not to be denied. We merely suggest that their indiscriminate use is neither necessary nor desirable. The small fin is also adequate, and a second look at the fuselage will tell you why. The constant depth extends to the tailpost to provide side area where it will do some good. As a side reason that arrows have feathers—and don't forget the underfin. It also provides a leg for VTO's.

The three-panel wing with long, flat center-section might seem a bit odd, also but it has proven out very well in practice. It seems that you don't need an awful lot of dihedral in a high aspect-ratio wing—try it, and see for yourself.

The truss layout first captured our imagination when we saw Paul D'Anofrio fly the "Folly" at New England meets about ten years ago. At the '57 Nats at Willow Grove, Jerry Ritz exhibited a real cutie of a ½A job that set the wheels to turning. When we got home, it wasn't long before Mark I was on the boards. The truss arrangement is such as to provide excellent power-on characteristics—but after the '58 Nats who needs a diagram?

Construction is best started with the pylon. The use of contact cement makes a laminated structure a simple matter and we earnestly recommend such. The plans show a quarter-inch thickness, but use whatever you have. You can take up the slack by varying the thickness of the spacers between the pylon and fuselage sides. Your problem here is to match the structure to the ¾" width of the fuselage truss. You're going to have to splice the fuselage sides for at least 4" along the pylon sides, so provide backing for the splice by locating a vertical spacer behind it. The pylon extends clear through the fuselage and the spacers form part of the fuselage bottom, so don't skimp on the stock. The bottom of the pylon and the front side form a right angle which governs both the incidence angle and the thrust line, so reasonable care should be exercised in trueing-up these surfaces. A large sanding block and a square-edged sanding guide are called for.

While the pylon is curing, cut two fuselage sides from medium-hard ¾" sheet. A metal yardstick is a good investment for this sort of building. The sides are 1½" in width. While you're at it, strip two lengths of ¾" width from the same stock. The internal truss-work is also ¾" x ¼" strip, but we used mushy stock here as the purpose is to obtain a lot of compression members with a minimum of weight. A lot of the rigidity resulting from this type of structure comes from the cement.

In assembling the fuselage structure, stand the pylon upright on a flat surface and cement one complete side in place. From the leading edge of the pylon to the tailpost should measure 40". Be sure that the 4" piece of fuselage side at the front meets the 38" fuselage side on center of the vertical pylon spacer. Pin securely in place after making sure that the entire bottom edge forms a right angle with the pylon front and allow the cement to dry. As soon as the cement is dry, lay the assembly flat on the bench, outside down, and shim up the pylon with scrap to keep the whole thing trued-up. With a ruler and ball-point, lay cut the truss work directly on the sheet side by measuring 2½" from the end of the pylon along the top edge of the sheet. All other stations occur at 2½" intervals.

On the bottom edge, measure 1″ for the first station and then 2½″ as you did for the top. Connect with diagonal lines as shown on the plan. The truss extends to within 8″ of the tailpost. The fuselage sides member extends to the leading edge of the stab platform; cut it to length and cement it in place.