GLENN'S "TF"

No exotic materials needed to build this 12 foot span, T-tail R/C soarer. Semi-symmetrical wing section and 0-0 trim offer interesting variety.

• When we first spotted this glider at the 1972 LSF Tournament, we thought it was a Todi. Closer Inspection, however, showed it be a much larger model, though of similar design. What really attracted us, in addition to the smooth and majestic lines, was the fact that the model is constructed entirely of conventional balsa, hardwood, and ply materials available at most hobby shops ... albeit in large quantities!

Also of interest is the semi-symmetrical airfoil and 0-0 incidence setting of the wing and stab. Aerodynamicists can have fun with this, but the ship will penetrate like a bull in high gear or float

Design by GLEN CUNNINGHAM Orig. drawgs, by T. DEVENING Text by BILL NORTHROP

around as lazily as a highly under cambered Nordic. In spite of its size, the “T" only weighs 4 pounds, 11 ounces . . . and those ounces are all lead in the nose! Go light on that tail structure!

Incidentally, we’re sure Glenn won’t mind us telling this, but he probably holds a record for the longest *tethered* R/C glider flight . . . around 3-1/2 minutes! During a takeoff launch at the LSF Tournament, the “T” bounced a couple of times and pounded the hook together, locking the tow-ring in place. This wasn’t realized of course, until Glenn tried to get off tire line and found he was trapped! After circling for a couple of minutes and making some experimental tugs, he brought the “T" in for a down wind landing, headed directly for the winch and in line with the turn around pulley. The last foot of altitude ate up the slack after which the “T" unwound the line from the drum until coming to a halt. The hook has since been replaced with 3/32 music wire ... for obvious reasons.

Glenn suggests one modification if you’re going to be flying the “T” in any area with restricted landing space. Add spoilers!

The combination of clean lines and zero angular difference adds up to a fast, flat approach with no floating and bumping around, in spite of the light weight. Spoilers are almost mandatory for anything less than a football field. “Dumping” isn’t very pretty, and is sure tough on the airframe!

FUSELAGE CONSTRUCTION:

Sides and top are dead soft 1/4 inch sheet, while the bottom is 1/4 inch medium. Cut all four to shape, making sure to vary the splice positions so they don’t all occur at the same location. After making the root rib on one side, align the two sides and transfer the rib location to the second side by jabbing pin holes along the outline.

Glue 1 inch triangle sections and stiffeners to fuselage sides, and then assemble to the bottom. Add bulkheads and dihedralled wing joiners. After installing your favorite pushrod system, glue the top in place. One piece goes from tail to leading edge station, and the rest is in smaller pieces. Finish up the basic structure by adding the nose block, 3/8 inch wing roots, and the fin structure. Now you’re ready to attack the whole thing with a big sharp knife and a sanding block. (We like to use a Sig razor plane for final shaping after the big chunks have been hacked away).

During finishing (original “T” is done in good old dope and tissue . . . open structure and all!). . a layer of Silastic reinforcing is applied to the bottom of the fuselage from the nose to the trailing edge of the wing. Also, to assure a clean joint, Epoxi-Lite (Sig) fillets were added to the wing roots while the wings were in, place. (Saran was put over root end of wings, pulled back, and taped, to prevent fastening wing to fuselage during the operation!)

STABILIZER:

For reasons mentioned earlier, the stab should be kept as light as possible, consequently construction may seem unusual to some modelers. Begin by gluing a 1/16 square strip along the inside centerline of both the leading and trailing edge pieces of 3/16 square.

Next, pin the main spar and the leading and trailing edges to your building board, over the plan. All three should be shimmed up so centerlines are in the same plane. Now trim and install all the top 1/16 X 1/4 ribs, bowing them over the main spar, and glueing them here and at the leading and trailing edges. When dry, turn the stab over, set back on the shims, and repeat the strip rib operation. Voila! A lightweight stab! Don’t forget to add the 1/16 X 3/8 anti rib-crushing spars. You will note that the fin is built in the same manner, except that the sparand rudder post: are tapered.

Details of the flying stab hinging system are self-explanatory. The main thing here is to avoid slop. The plywood elevator “horn” is firmly glued to the center stab rib, which of course, must be filled in to give firm support. The wire pushrod end is merely bent over in an “L” shape and will not slip out once the brass hinge yoke is fastened to the top of the fin during normal assembly procedure.

WINGS:

As the rib section is traight from the bottom rear spar to the trailing edge, the wing panels may be built on a flat . . . FLAT . . . surface. Take a look at the Quasoar II article in Dec, ’73 MB for some ideas on rigging spoilers, because now is the time to install them. Also, we’d suggest capping the root rib with 1/32 plywood before covering. It’ll save wear and tear in this area.

The T’s wings were carefully designed to provide an extremely light, yet rigid structure. Every chunk of wood is important, particularly the webbing between top and bottom spars. Don’t leave any of it out.

Before covering the wings, it will be very beneficial to the glider’s performance if you check its balance about the longitudinal centerline. Read our resident R/C Soaring editor’s article this month and you’ll know what to do. In fact, when your “T” is completed, it wouldn’t be a bad idea to go through Le’s complete pre-flight check. It’ll assure a successful first test hop. Drop Le a note at P.O. Box 187, Sunnyvale, California 94088 and tell him how well his system works. It’s nice to cheer up an old man!