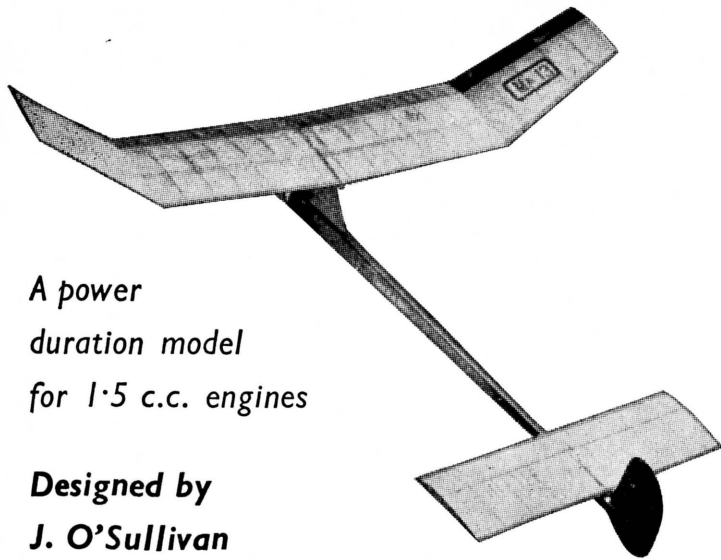


HI-TEE



A power
duration model
for 1.5 c.c. engines

Designed by
J. O'Sullivan

THIS design is the latest development of a long series of contest power models, which have proved most successful during the last four years. Following much experiment with refinements such as elliptical wing-tips, undercambered section, etc., it was found that, as is often the case, the simplest, and most straightforward approach was the most successful. This model (the thirteenth) has, therefore, a flat bottomed wing section and straight taper-tips, with an uncomplicated structure, which will present little difficulty to anyone who has previously built one or two flying models.

Construction

Fuselage. Cement engine bearers to ply doubler with Cascamite or similar, cut out starboard fuselage side and cement bearer unit, top and bottom in place. Fit $\frac{3}{8}$ in. pylon post and diagonals, which are built up as $\frac{1}{16} \times \frac{3}{8}$ in. and sanded flush with sides, before addition of port side. Remove from plan, add Pylon T.E., $3/32 \times \frac{3}{8}$ in. L.E. and P₁, P₂ and P₃, making sure correct incidence is given. Sheet cover the pylon sides with $1/20$ or $1/16$ in. sheet. Add fin, tail and wing mounts. Insert dural tube through rear fuselage for D/T line. For a lightweight, finish fuselage by dopping on tissue and finishing

with one coat of Banana oil to keep weight down. For F.A.I. use, the fuselage is nylon covered.

Wing. Assembly is straightforward and this type of spar construction is, in my opinion, unbeatable for its warp free characteristics. The L.E. T.E. and lower $\frac{1}{16} \times \frac{3}{8}$ in. spars are laid out on plan. Ribs are added followed by the $1/32$ in. webs (grain vertical). *Make sure ribs fit properly*, otherwise the wing will be weakened, rather than strengthened, by the web. Top spars are now fitted and riblets inserted. Riblets are every bit as good as leading edge sheeting for acrofoil section preservation and are much lighter. For F.A.I. use $\frac{1}{8} \times \frac{1}{4}$ in. spruce for top front spar and cover wing with heavy Modelspan, or lightweight silk or nylon. A $\frac{3}{8} \times 5/32$ in. T.E. and $\frac{1}{4} \times \frac{3}{8}$ in. L.E. are also recommended for F.A.I. For lightweight version cover wing with light Modelspan or Jap tissue, double covering from front spar forward to resist tears from landing in bushes, etc. Slight wash-out is used on tips and $\frac{1}{8}$ in. wash-in on starboard inner panel. I was never a fan of wing keels but after a couple of wing shifts on full power I soon changed my mind—so make sure the wing is a secure fit on fuselage!

Tail. Construction is similar to wing except that webs are fitted after the structure is removed from the plan. D/T hooks are secured to the tail with Araldite and covered with gauze. Tail for both F.A.I. and lightweight is light-weight tissue covered.

Fin. Fair fuselage rear to outline of rib aft of fin maximum thickness. No trim tab is used as I have found that in transporting models from place to place, it is liable to be knocked out of position. A strip of $\frac{3}{16} \times \frac{3}{4}$ in. cemented at the side of the underfin is much better.

Trimming. Pack up the elevator until the starboard tip of the tail is raised about $\frac{1}{2}$ in. Test glide until a reasonable glide, with a turn of about 50 ft. diameter, is attained. Set timer for 3-4 sec. engine run and launch with about $\frac{3}{4}$ power. Climb should be almost vertical right, with about $\frac{1}{2}$ turn in 4 sec. Continue with short engine run test flights until a consistent flight pattern has been attained and you have got the "feel" of the model. Any tendency to loop, provided it is not too bad, can be cured with right thrust and so far down thrust has not been necessary, in any of the models built to this plan. Pull out at the top of the climb has not so far given any trouble, even on F.A.I. models, as the use of a fairly tight glide circle seems to help the recovery.