



TADPOLE

A TINY TAILLESS . . . By ERIC CLUTTON

JUST a year ago I built a tiny TD-01 powered M.e. 163 rocket fighter. This proved so successful—I flew it six times and lost it on each occasion, that I knew it would be a natural for R/C!

The M.e. had a profile fuselage, so a purely functional sheet box was built, a swept wing of greater area added and "Tadpole" was born. The extra weight of radio gear prompted me to use a TD-02, originally with the integral tank and later with a separate metal tank.

I had been lucky enough to obtain one of the new Futaba F4-LR receivers and the fuselage was designed around this and Citizenship compound escapement. The combination is highly successful but there are several alternative receivers and escapements available.

Wing

"Tadpole's" wing section is virtually a flat plate so we can get away with not having any washout on the wing. The drill is to cut each half wing panel to shape and then taper each one in thickness from root to tip as shown on the plan. I find that a razor-blade plane followed up with a flat file does the trick in a few minutes. The next job is to carve each wing-half to section and the same two tools can be used. A touch of sandpaper and a quick rub of the file across the root end grain to produce the dihedral angle and the wing is nearly finished! Mark out the elevons and cut across the grain. The hinge line is formed by a V-cut on the top surface—fill this with cement and bend the elevons up as shown on the drawing. A couple of pins will hold them at the correct angle while the glue is setting. It is important that both elevons are bent up the same amount. Pre-cement the wing roots before gluing the wing halves together and reinforcing with a strip of nylon fabric. Cover the whole wing with lightweight tissue doped on to prevent splitting, and the hardest part is done.

Fuselage

The fuselage needs little description, being a simple sheet box. The weight of the radio gear is important on a small model and a receiver working on 3 volts is to be preferred. If you can get away with using U-16 batteries so much the better (I used normal size pencils originally, but as the model gained weight during its life I switched to U-16s).

No switch was used on the original and the Rx was simply plugged in when required. This simplifies the wiring, is light, and is something less to go wrong! Install the radio gear, strap on the engine and check for balance. Slide the wing

about on its supporting rails until the whole contraction balances at the point shown on the plan. The holes can then be made for the wing retaining dowels—both these and the engine mount dowel being left loose and not glued in position. This makes for easy replacement on the field. Cement the celluloid or ply reinforcements to the wing where the retaining bands may cut into it, paint the whole issue with something fuel-proof and you are in business!

Flying

"Tadpole" has a fast glide and will need a hefty chuck to get it airborne, but once in the air the penetration is fantastic for such a small model. The low drag, low lift wing is responsible for this.

I used an interesting set up on the original model. It was trimmed for a left-hand natural turn and adjusted until it lost height in this turn, eventually hitting the ground if left to its own devices. An occasional blip of right rudder was more than sufficient to straighten it up and left rudder was seldom used. This made life blissful with a compound escapement! The model could be headed into wind by an occasional blip and these blips were sometimes continued until "Tadpole" disappeared from sight. After a slight interval it would reappear from upwind in a descending spiral, and this could be allowed to continue until the model was only inches from the ground—a quick blip of right rudder at the last moment and "Tadpole" climbed away again. Great fun!!!

A sequence escapement will work well in this model, in fact more fancy flying can be indulged in with one of these. "Tadpole" will handle an .049 but the wing rails have to be extended forward to achieve correct balance.

This is a small model so paint it in vivid colours—I find a pair of ex W.D. binoculars very useful at times!

Equipment

Now for a word on suitable equipment. I flew the original "Tadpole" with the Futaba Rx and I tried a Tinytone for one session (unfortunately my version was lacking in range). Otation and C & S receivers will fit.

I cannot speak too highly of the Futaba gear—I also used the tiny F3-TR transmitter which has adequate range for "Tadpole" and larger models. This Tx operates off eight pencils which seem to last for ever.

Finally a word of warning—"Tadpole" is fast and highly responsive and a dab of rudder kicks the model in the appropriate direction—so watch it!