Schoolmaster

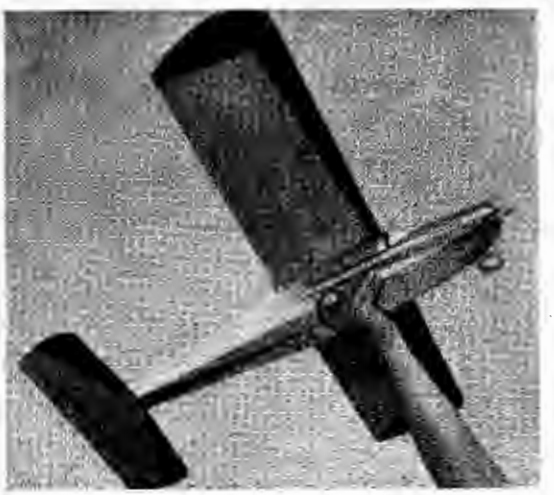
Designed by Ken Willard

FOR MORE YEARS than we care to remember, Ken Willard has been continual leader among designers of radio control models to suit Compound escapements.

Well-known for his small designs, notably *Roaring 20*, *Rascal* and *Schoolboy*, which have been kitted by Top Flite Models Inc. in the U.S.A., Ken was also the designer of the *Gasser*, a fast 40 in. shoulder wing design for 1.5 to 2.5 c.c. engines, which is in A.P.S. as drawing RC/744, price 6/6d.

Just as he has always managed to anticipate the demands of single channel sport flyers over the years, Ken produced *Schoolmaster* for Top Flite Models just over a year ago, and it was an immediate resounding success. We are very pleased to have been able to negotiate permission to include such a fine design in our Plans Service with the full co-operation of the designer and Top Flite Models.

Schoolmaster is 39 in. span and designed for .8 c.c. glow plug engines. Certainly it can accept larger capacity engines, but the charm of the design is that it will perform at reasonable speed, is very docile to control for the absolute novice and above all, is extremely robust with its all sheet construction. A word of warning here: Be careful to select lightweight soft sheet for the wing construction in order not to build up the weight too much. Normal flying weight, with equipment, should be in the region of 19 oz. In our experience, it is advisable to cover the sheeted wing with tissue to bond the surface. This is a tip we would advise to all who make the model from the kit.



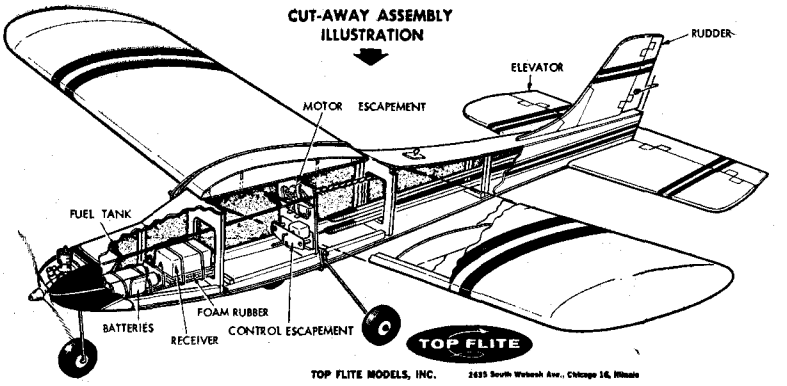
Incidentally, **Top Flite Models** are now distributed by Messrs. **Ripmax,** and *Schoolmaster* retails at 65/-. The kit is really first class production, with all parts die-cut, metal and nylon fittings supplied shaped, with top grade wood for the airframe, and a fine booklet on how to fly radio control models especially written by Ken Willard.

Although we have presented the model with amendments to suit British equipment, notably the new Elmic Compact escapement, we should also point out that the kit plan includes information on how to fit four or six channel multi control using small servos, or alternatively, proportional rudder. The versatility of *Schoolmaster* will make it a standard recommendation for many years to come, and we look forward to seeing a lot of them on the local fields in the coming season.

Commence construction by cutting fuselage sides from $\frac{1}{16}$ x 4 in. wide med. hard sheet and cementing $\frac{3}{16}$ in. sq. uprights and $\frac{1}{4}$ x $\frac{3}{8}$ in. bearers in position. Note that the starboard front $\frac{3}{16}$ in. sq. upright is staggered back to allow for the offset on F.1. Cement $\frac{3}{16}$ in. sheet braces between F1, F2 and F3 also $\frac{3}{16}$ in. sheet cheeks. Cement the fuselage sides together with F2 and F3 in place. Put plywood escapement former in position but do not cement in. Drill $\frac{3}{32}$ in dia. holes in F1 for 'J' bolts to hold nose wheel leg. Cement former F1 and $\frac{3}{16}$ in. sq. cross struts into place using rubber bands around nose and tail end of fuselage to hold steady. Bind

Followers of the Willard design pattern will see the lines of his much earlier "Breathless" in this one. Slimmer for latest equipment, lighter yet stronger, and still very docile with .8 c.c. power, "Schoolmaster" is likely to become a standard trainer/sportster in future. With higher power and compound escapement with elevator action it can also become quite an aerobatic maestro too!

A 39 in. radio control sportster for .8-1.5 c.c. produced with the co-operation of Top Flite Models, Inc.



wires to torque rods and slide into fuselage. Mount and wire escapements, then secure former in place. Add top and bottom $\frac{1}{16}$ in. fuselage sheeting and $\frac{3}{16}$ in. dia. dowel rods. Leave the $\frac{1}{16}$ in. top sheeting behind F1 to fit tank and nose gear later. Make up winding hook for top escapement from 18 s.w.g. wire and $\frac{1}{16}$ in. sheet.

Cement fin together from $\frac{3}{32}$ in. sheet, noting the grain directions. Cut tailplane tips from $\frac{1}{8}$ in. sheet and pin to a flat surface with $\frac{1}{8}$ in. sq. leading and trailing edge. Cement $\frac{1}{8}$ x $\frac{1}{16}$ in. ribs in. When dry, cover with $\frac{1}{32}$ in. sheet on top surface, remove from board and sheet under surface. Cement cloth hinges to fin and tailplane and then add rudder and elevator. Cement fin to fuselage, and pin, do not cement, the tailplane to fuselage. Bolt both rudder and elevator yokes into place, bend torque rod ends to shape, put $\frac{3}{16}$ in. rubber loop on to rear winding hook, and thread rubber through fuselage to escapement. Mount the receiver on $\frac{1}{16}$ in. plywood tray and secure to fuselage by sliding it through wing opening and screwing down to hardwood cross strut. Place fuselage to one side and commence wing construction.

Cement three sheets of $\frac{1}{16}$ in. x 3 in. sheet edge to edge on a flat table to form the underside wing sheeting. When dry, add leading edge, tapered insert trailing edge, and wing ribs. Take care to get the right dihedral angle on the two centre $\frac{1}{8}$ in. sheet wing ribs. Join wing halves together with the $\frac{1}{8}$ in. sheet dihedral keepers and cover top surface with $\frac{1}{16}$ in. sheet, again by cementing the three sheets together first and then forming over the wing with rubber bands to hold it in place. A slower setting P.V.A. glue is best for this sort of covering. When dry, smear cement over join line, add block tips and cement some tape over the wing joint. Set wing aside and screw $\frac{1}{16}$ in. plywood motor mount on to bearers in fuselage and fit 16 s.w.g. throttle push rod.

Hold wing on fuselage with rubber bands and check the tailplane/fin alignment by looking down the fuselage from the nose end. When you are satisfied that all is square, cement the tailplane *permanently* to the fuselage. Sand the whole model to a smooth finish and add wheels, tank, and engine. Apply one coat of sanding sealer, rub down and then cover with lightweight tissue. Finish with three more coats of clear dope, and the colours of your choice.

FULL SIZE COPIES OF THIS 1/6TH SCALE REPRODUCTION ARE AVAILABLE THROUGH A.P.S. AS PLAN RC875, PRICE 7/- INCLUDING POST