



SOMETHING



MOST of my models have been powered by 35's or 40's, and my fellow fliers kept telling me "What you need is a .61 powered model—you'll never fly anything else."

They are right, and I'm hooked.

So, having acquired a .61, the next step was to design an aeroplane to fit. I started with the wing and, having established the plan form and section, tailplane and control surfaces areas, I grabbed a pile of scrap paper and worked up freehand sketches approximately to scale. Then some 1/8 scale sketches until the shape coincided with the mental image of what I wanted. Now some 1/4 scale sketches, bearing in mind the construction, from here to the drawing board proper, scaling up the sketches and adjusting for final shape and bulk in order to achieve the projected c.g. position.

a Christmas treat! build this attractive 65" aerobatic sportster

— by BRIAN PECKHAM —

The sketches were made over a period of several weeks, and different approaches tried, all being re-examined after a time and all eliminated—except one—presented to you here as *Something Special*. But now to the nitty gritty...

CONSTRUCTION

Fuselage

Commence with the fuselage sides, from 3/16in. hard sheet; they can be cut from one piece of 48 x 4in. If this size of sheet balsa is not available to you, then a splice will have to be made, as shown on the plan. Cut the 1/16in. ply doublers and steam them to the approximate shape, fitting them to the fuselage sides with contact adhesive. Follow with formers F1, F2 and F3, from

Select your favourite engine mount and bolt it to F2, aligning it with F1. Steam and wrap the top decking between F2 and F4a from two pieces of 4in. wide 1/8in. sheet. Now fit the tank bearers, followed by the throttle outer cable and the 1/8in. and 1/2in. bottom sheet. Cut away the starboard side between formers F1 and F2, checking that F1 is still aligned, and add the top 1/2in. soft sheet between F1 and F2. The rear top decking is next steamed to shape and fitted. Sand the top flush and fit the 1/4in. sheet spine, made from two pieces of 2in. sheet.

Make the fin and rudder from 3/8in. sheet and temporarily fit a scrap piece of 3/8in. sheet in the tailplane slot. Fit the fin in position together with its 3/16in. and 1/2in.

fairings. The rudder is hinged with nylon hinges or Mylar strip, according to your own preferences.

Shape the 1/8in. sheet cockpit side panels 3/8 x 1/8in. edging and fit 1/8in. cross-grain hard sheet cockpit floor. Now set to work with a razor plane and garnet paper and get down to the final profiles.

Make the two 3/16in. formers for the cowl cheeks and scrap 3/16in. at the F3 position. Cement in position and add 3/16in. sq. stringers, followed by 1/4in. soft sheet top, bottom and sides. Assemble the cheek cowls from 1/2in. sheet—top, bottom and sides, and 1 x 1 1/2in. front. Finally, carve to shape and cut the air intake openings. Part the starboard cowl on the centre line and forward of F2 and shown. Add the

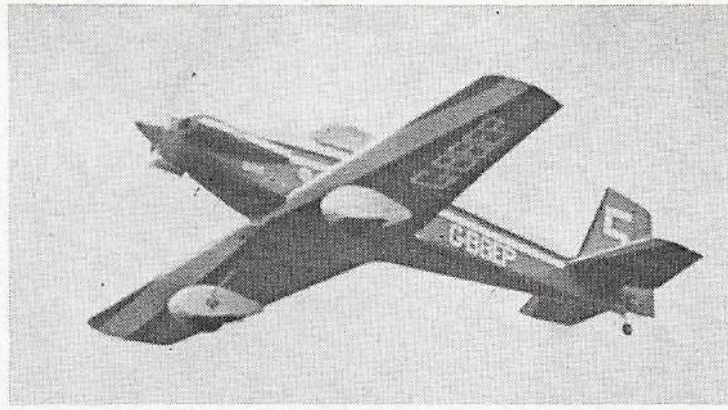
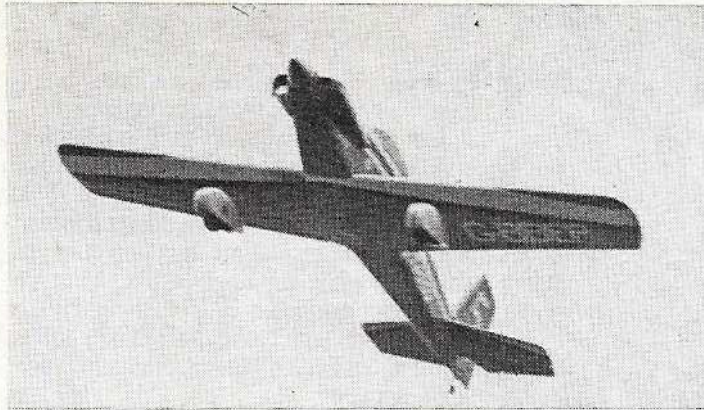
G SPECIAL

1/4in. ply, and drill for throttle cable. Drill F2 also, for engine mount and the neck of the fuel tank. Make up F5 from 1/2in. balsa.

Assemble the sides and formers together using epoxy adhesive and making sure that all is square and true. Cut former F4 from 1/4in. sheet and F4a to F9 from 3/16in. medium sheet. Formers F5a and F6 can be made in two halves from 3in. wide sheet. Add the 1/2 x 1/8in. doublers and assemble them to the basic fuselage.

Line up the top of former F4a with F2 and 3, and the tops of F5a to F9. Align the 3/16in. sq. stringers, cut slots and fix them in position. Now add stringers between F2 and F4a, fix 1/2in. triangular fillets along the bottom of the rear fuselage sides and 1/8in. hard cross-grain bottom. Finally 1/8in. tailwheel bracket mounting plate.





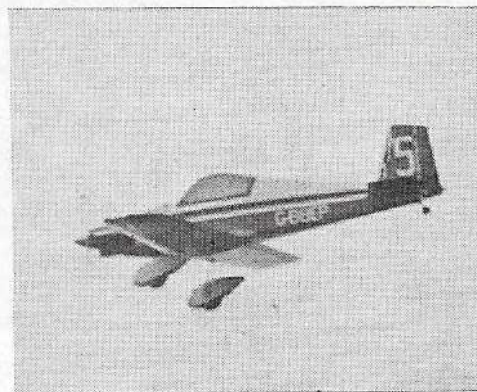
$\frac{1}{8}$ in. ply former to the rear of the cowl, fit engine in position and carve cowl for clearance around the cylinder head, silencer, and needle valve. Also cut the opening for plug access. Hinge the cowl as shown and again check that it will open and close with everything in position. (It will probably be necessary to remove the silencer to fit the cowl attachment screw.)

The tailplane and elevator are from $\frac{3}{8}$ in. soft sheet. Fit the tailplane in position and add a piece of scrap $\frac{3}{8}$ in. to fill the slot. Make up the elevator joiner from 12g. wire, bearing in a short length of brass tube, epoxied to the tailplane, and epoxy the joiner itself to the elevator halves. Use either moulded hinges or Mylar strip.

These ground-to-air shots show some typical flight attitudes of this racer-like sportster.

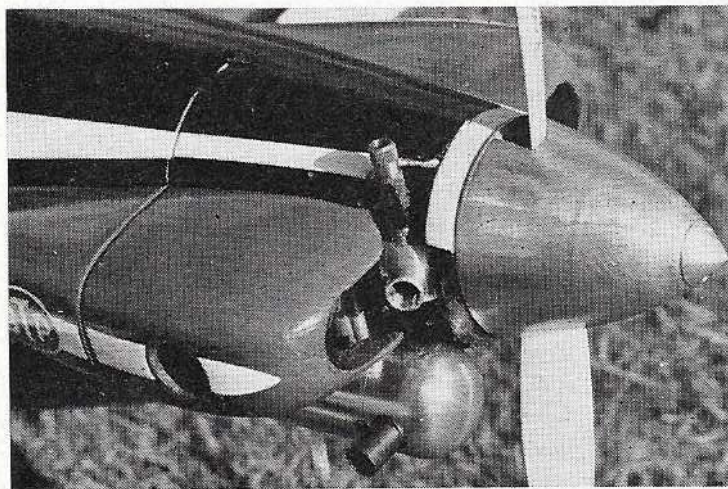
Wings

Start by making templates of the root and tip ribs from $\frac{1}{16}$ in. ply. Now sandwich two $\frac{1}{8}$ in. and 14 $\frac{3}{32}$ in. balsa blanks between the templates and carve them to shape. Cut out W2 to W5 for the undercarriage bearers. Now pin the lower spar to the board, over the plan, and add ribs, angling W1 for dihedral and packing up the rear of the ribs with $\frac{1}{4} \times \frac{1}{4}$ in. to align. Make sure not to build in any warps! Now add the top spar, followed by the false leading edge, false trailing edge and the $\frac{3}{16}$ in. doublers to W2-W5. Plane or sand to the rib contours and add the

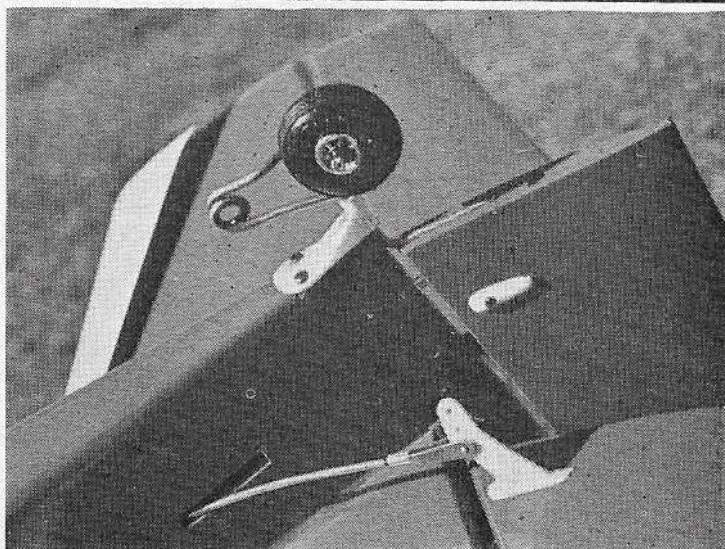
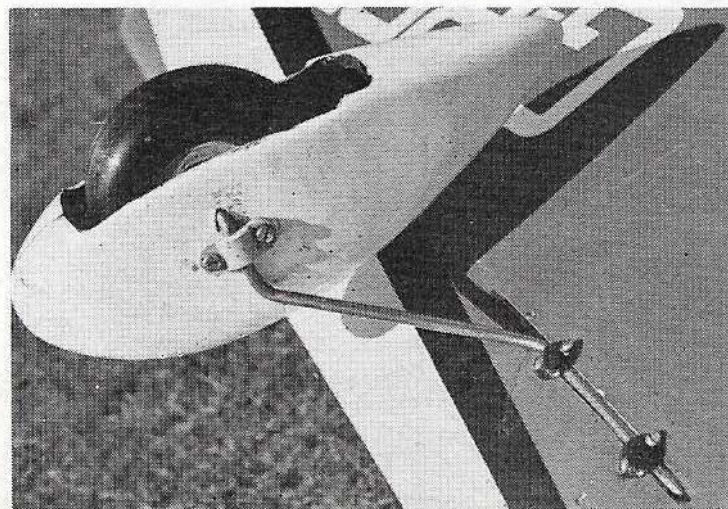
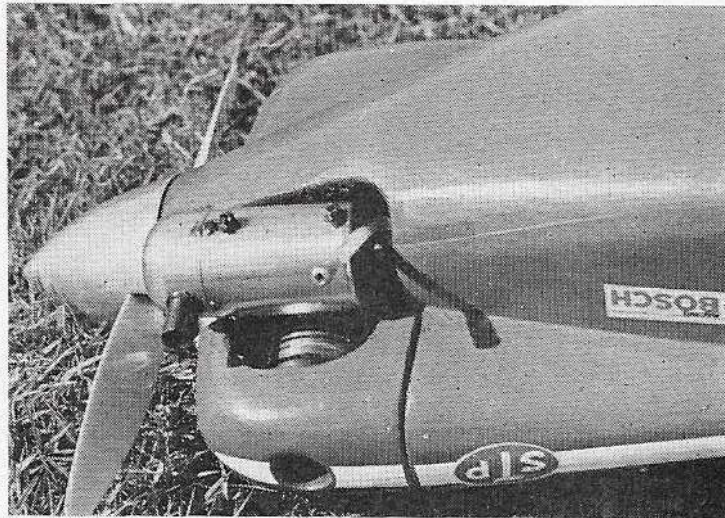


leading edge top sheeting, followed by $\frac{1}{16}$ in. webs and capstrips on ribs and trailing edge.

Remove the structure from the board and fit the gussets, $\frac{1}{2}$ in. leading edge reinforcement between W1 and W2, u/c bearers and $\frac{1}{8}$ in.



Detail close-ups will help to give an idea of how the designer tackled various aspects, producing a clean, attractive machine





ply bolt plate. Shape the leading and trailing edges as before, and add the lower leading edge sheet, followed by the lower centre section sheeting and capping strips to ribs and trailing edge. Now fit the lengths of $\frac{3}{16}$ in. sq. between ribs W1 and W2, spaced for the servo to be used, add the leading edge and sand to section. Repeat the process for the port wing by reversing the plan and rubbing it with cooking oil to render it transparent.

Join the two wing halves with epoxy and add $\frac{1}{8}$ in. ply brace and

top centre section sheeting. Make up the tip blocks from $\frac{1}{2} \times \frac{1}{4}$ in. sheet, fix in position and shape. Add the $\frac{1}{16}$ in. ply reinforcements at the tip trailing edges. Lay a 3 in. glassfibre tape over the centre join and add resin in the usual manner.

Make up the aileron horns from 12g. wire, bearing in brass tubes epoxied to the trailing edge. The ailerons are from two pieces of $1\frac{1}{4} \times 1\frac{1}{4}$ in. T.E. stock and tapered to match the false trailing edge. Cut to length and attach the centre section

trailing edge, slotted over horn bearing, and trim for horn movement.

Offer the wings up to the fuselage and trim the cut-out to final shape. Mark and drill holes for the $\frac{1}{4}$ in. dowel wing locator and attachment bolts, and fit. Cut $1\frac{1}{32}$ in. ply to shape of fairing and, with wing in position, add the soft fairing block and carve and sand it to shape. (Don't forget to allow clearance for seating tape).

The undercarriage is bent up from 6g. wire as shown, and the spats—made as shown—have a ply plate on the inside for attachment to the leg by means of a saddle clamp. They also have a ply plate for the axle bearing, which prevents them twisting.

Finish

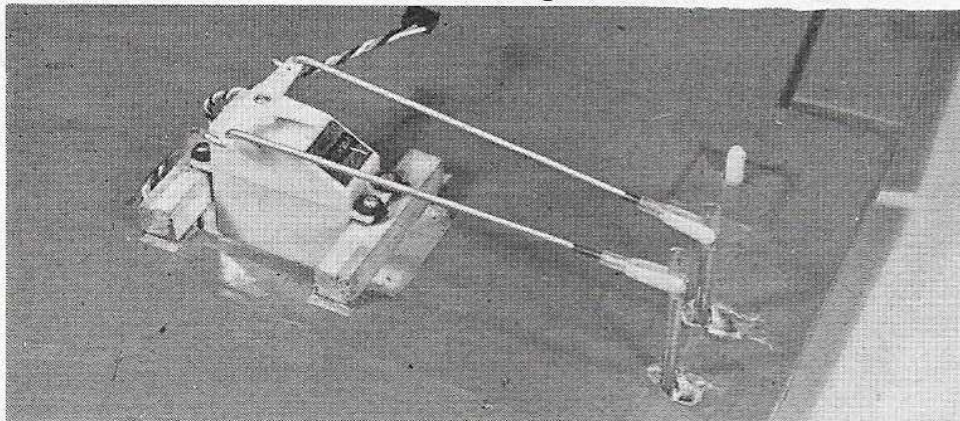
The final finish is a matter of personal preference—mine was film covered, after a final sanding and smoothing. The canopy used on the original is from a Svenson *Fly Boy* (I believe they are available separately), and was attached with strips of film after painting the cockpit area matt black.

Flying

First check that all trims are neutral and you have the amounts of control throw given on the plan. Take-offs are straightforward with a .61 anyway, and *Something Special* is no exception, with no vices whatever, so open up the throttle, apply some up-elevator to keep the tail down and away you go . . . Heading into wind, ease off and gain some height. With the throws quoted, the c.g. where shown and an all-up weight of 6-6½ lb. you have very docile machine on your hands. Try some manoeuvres with this initial trim; you can increase them later to suit your own flying style.

Landings tend to need a long approach, because *Something Special* will just float on and on. So, for that final approach, allow about 100yd. for every 10ft. of height. Otherwise, instead of landing on the strip she'll be in the next field. Control response is there all the way, however with absolutely no tendency to drop a wing. Make *Something Special* top of your winter building programme, and enjoy a real fun aeroplane!

Finally, how did that name originate? Well, R.M. asked me what I called the model and, when I said "I don't," they said that—looking the way it does, somewhat racerish—that it ought to end in "Special"—yes, the name ought to be *something* "Special" . . . *Something Special* Yes—that was it—it clicked!



Above: aileron servo mounted on simple bearers, push-rods going direct to horns. Below: lots of room! Designer uses clip for Ni-cad and straps the foam-wrapped receiver in place. (Can evidently afford the lost movement on that throttle cable)!

