
"DÉJÀ VU"

FOR SUNDAY OR SERIOUS FLIERS . . .

DÉJÀ

THIS MODEL is not of particularly new concept in design or construction—hence the name—but it is my idea of what an aerobatic model should look like. The bonus, for me, was that, when completed, its performance turned out to be just my idea of what this type of model's performance should be, too!

It is loosely based on designs by the West German flier Neckar and our own Dennis Hammant, the model I am flying at the time of writing (well, not literally!) being the third in the series, the two previous machines having had foam wings. Mk. III has a completely built-up structure, mainly for strength. (I will never be convinced that a foam wing is anything like as strong, especially if retracts are being used).

The models have all weighed around the 7½-8 lb. mark, which isn't really heavy by today's standards, but a good powerful engine is necessary. I use an HP.61 with a Kavan pressure injection carburettor. The Mk. I and Mk. II models used a standard HP. 61, and this was really adequate, but with the Kavan carb—wow!

My retract units are the Carl Goldberg type, and to power them I use the MK servo, which really needs no praise from me, but I would—and do—recommend it to others. But you want to know about the model. . . .

The wing—the heart of any model—is big and has a relatively thick symmetrical section. This means it is easier to maintain an even flying speed throughout the manoeurves. The sweep-back makes it easier to fly crosswind. The tail is also of a thick symmetrical type, and this combination gives the model the ability to be landed nose-up with the greatest of ease. *Déjà vu* won't tip stall at low speeds but, with all that rudder, spins are no problem. The fuselage doesn't look particularly deep—until you measure it. It's more than enough for the rolling manoeuvres, anyway. The engine-wing-fuselage alignment is 0-0-0 but with 2° right-thrust on the engine.

What more can I say? This all sounds so good I shall be building some more myself—so why not give it a try?

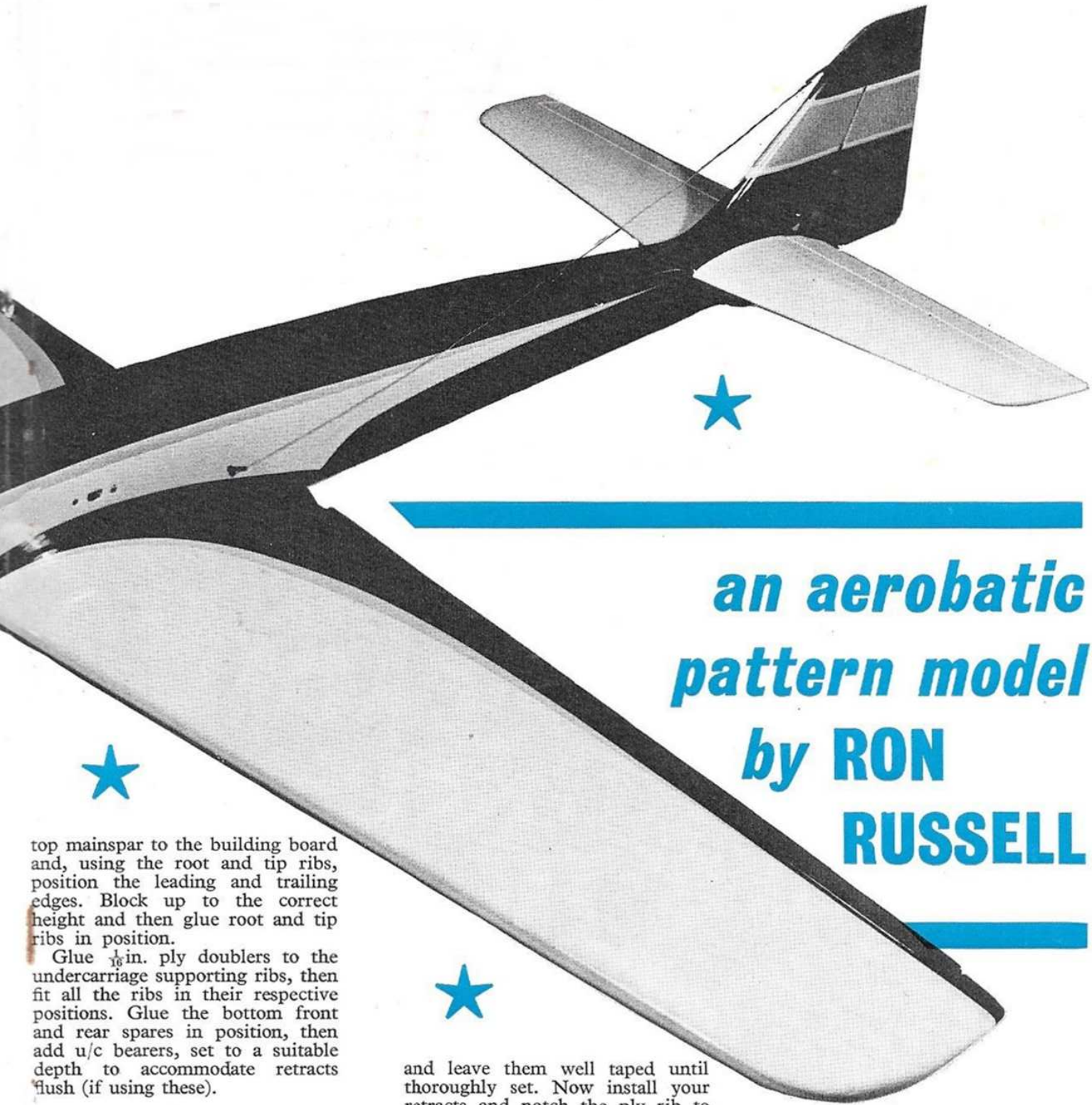
CONSTRUCTION

These notes are just a general guide, so if you have your own particular way of doing things, then it is up to you. Use a foam wing and tail unit if you must—but why not prove you can still build good strong wings the built-up way? It's worth it in the long run, I assure you. I will, however, go into some detail on the fitting of retract units, as this can be rather tricky.

Wings

First make all the ribs by the usual "sandwich" method. (*If you're not sure what this is, then you should see the new RM Planbook—Eds.*) The slight alteration in rib spacing, from R10 outwards need not be compensated for.

Balance out the timber for leading and trailing edges and spars, making sure that the timber for each wing panel weighs, in toto, the same. Then make the top front spars up into one full-length unit. Mark the rib positions on all pieces and mark centre lines on the leading and trailing edges. Also mark corresponding centre lines on all the ribs. This will ease the task of rib alignment considerably. Pin the



an aerobatic pattern model

by RON RUSSELL

top mainspar to the building board and, using the root and tip ribs, position the leading and trailing edges. Block up to the correct height and then glue root and tip ribs in position.

Glue $\frac{1}{16}$in. ply doublers to the undercarriage supporting ribs, then fit all the ribs in their respective positions. Glue the bottom front and rear spares in position, then add u/c bearers, set to a suitable depth to accommodate retracts flush (if using these).

Wheel wells

The wheel wells are constructed from $\frac{1}{16}$in. sheet, $2\frac{1}{8}$in. wide, wound round two Woollies' plastic pin containers ($2\frac{5}{8}$in. dia.). Glue them and leave them well taped until thoroughly set. Now install your retracts and notch the ply rib to allow the undercarriage to retract. Then, from the back of the retracted unit, mark where the wheel well will touch rib R5. Cut the rib vertically in these positions and install the well, using PVA white glue, which should give ample time for checking and, if necessary, repositioning.

Now add the small balsa block

VU III

between the well and the u/c supporting rib, and remove the retract unit. When set, gently sand the well until it is flush with the ribs, then make all the necessary holes for the retract pushrods in ribs R1 to R6. Next sheet the underside of the wing, leaving a space for the retract gear. When it is dry, cut and sand the hole for the wheel, and then install your retracts. Check that the wheel retracts, and everything is free when the pushrod is operated by hand.

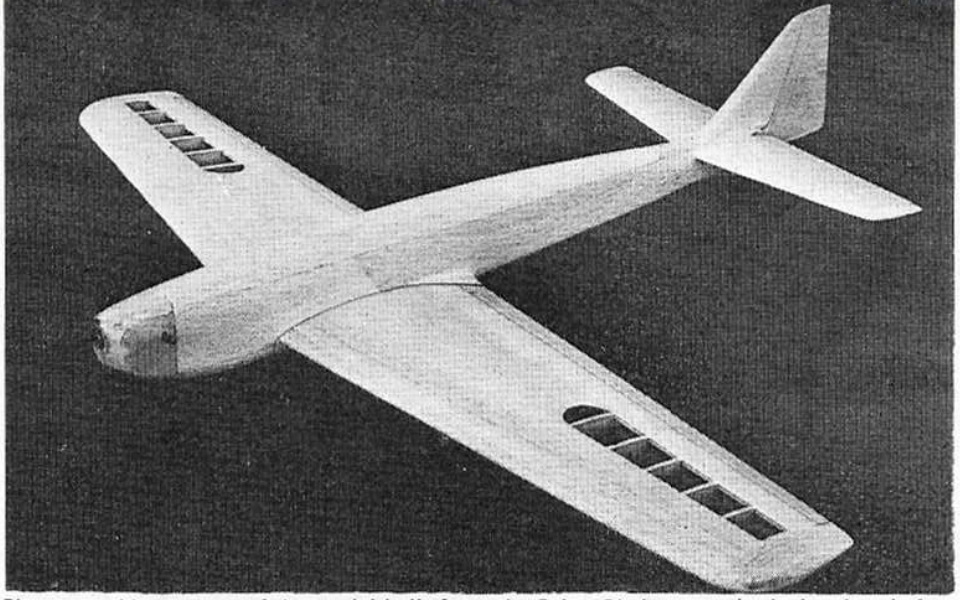
Completing wing

Remove the wing from the building board and add the top rear spars, sand the top sides of the wheel wells and sheet the upper surfaces of the wing. Add all the capstrips, and both wing tip blocks. Now tack the ½in. sheet trailing edge and ailerons in position and, when dry, enjoy yourself planing and sanding.

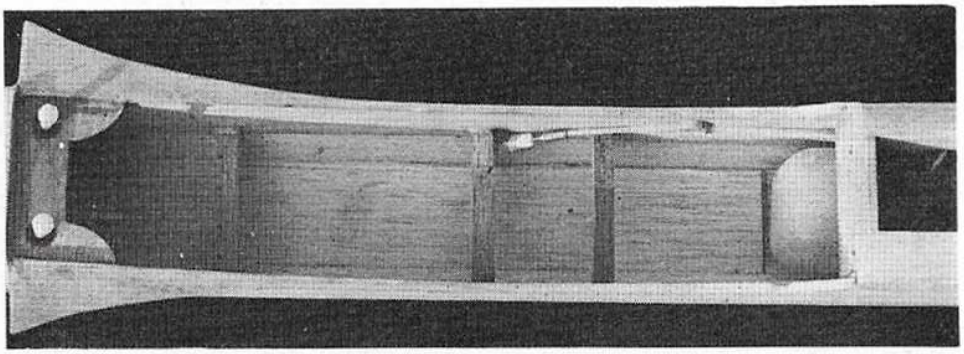
When this job is done, add the 1/32in. ply trailing edge support, and cut out the servo hatches. Keep your retract servo cover as this covers the access hatch on the completed model. Now add a 2in. wide strip of fibreglass bandage around the wing centre line, for reinforcement. Cut out the strip ailerons and sand them to section. Fit the horns and the wing dowels. Make a hole in the wing leading edge to take the front wheel's retract pushrod.

Tail unit

This could not be simpler. First make the ribs by the sandwich method, and then construct a framework consisting of leading and trailing edges and tips, blocked up about ½in. over the plan. Fit all the ribs and then cover the top surface with $\frac{1}{16}$in. sheet. When this is dry, turn the structure over and sheet the underside. Now, for sanding, tack glue the ½in. sheet elevator in position. When all is satisfactory and sanded smooth, it can be removed and its front edge angled. The rudder, which is quite thick, is built up from ½in. sheet and sanded to section. The fin is dealt with under fuselage construction.



Photos on this page are of the model built for us by Brian Gitsham, to check the plans before printing. *Below:* plenty of room for the gear plus retracts.

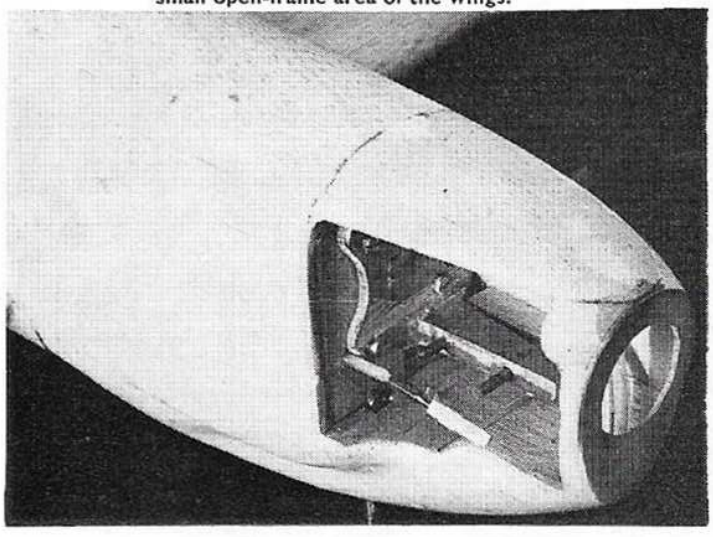


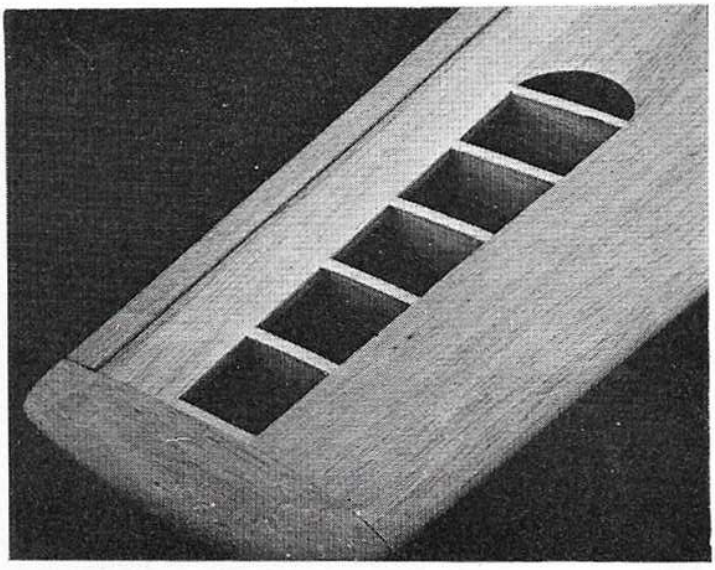
Fuselage

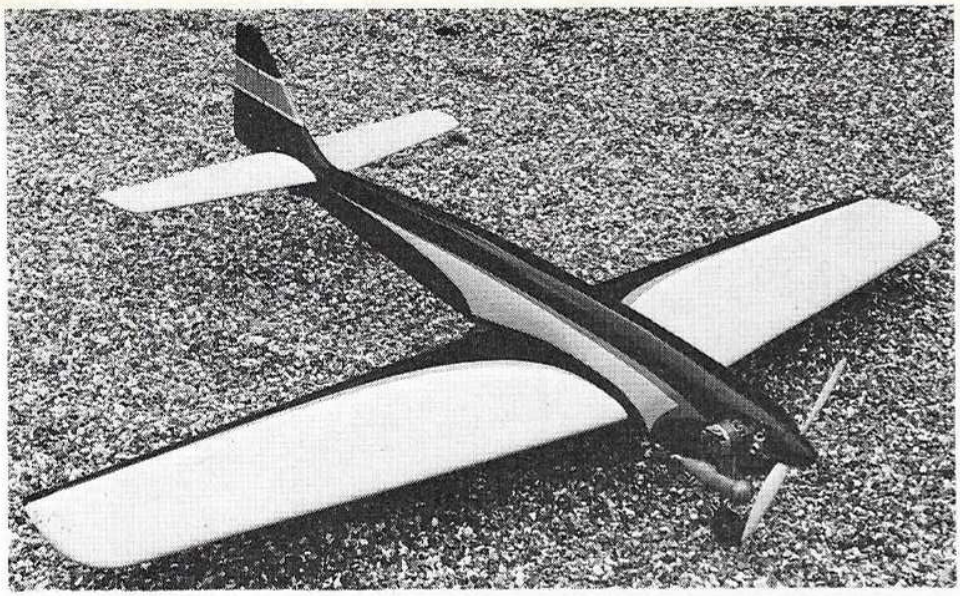
Commence by making the four formers and marking their centre lines, then make up two fuselage sides complete with 1/32in. ply doublers, and triangular fillets. The fuselage is built inverted on the building board, so mark a centreline on the board, positioning formers F2 and F4 on the board and epoxying the sides to them. Ensure that former F2 is square, and vertical, before the epoxy sets. When dry, fit the nosewheel retract unit. Epoxy formers F3 and F3a in position and, when set, taper the triangular fillets at the tail end and pull the fuselage sides together in the usual way but leaving a $\frac{3}{16}$in. gap at the extreme rear. Check the fuselage alignment and add the $\frac{3}{16}$in. bottom sheet. Cut the 1in. sheet to clear the retracting nosewheel (always assuming you are using retracts, of course) and then epoxy it in position—the sheet, not the wheel. Any inaccuracies here may be rectified during the final sanding.

Now remove the fuselage from the board and glue the top block in place. The fin is made up from a $\frac{3}{16}$in. thick frame with ½in. sheet on either side. This enables one to get a beautifully streamlined fin/fuselage join, and means that any

Detail close-ups here show the 'sidewinder' engine mounting and the small open-frame area of the wings.

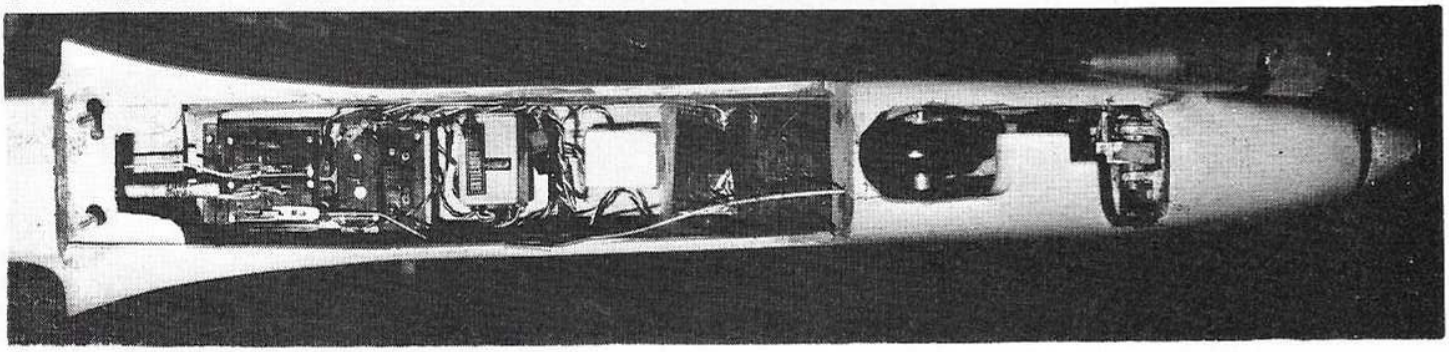


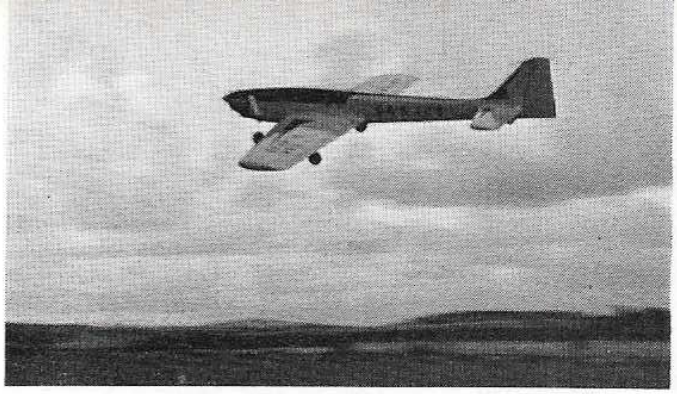


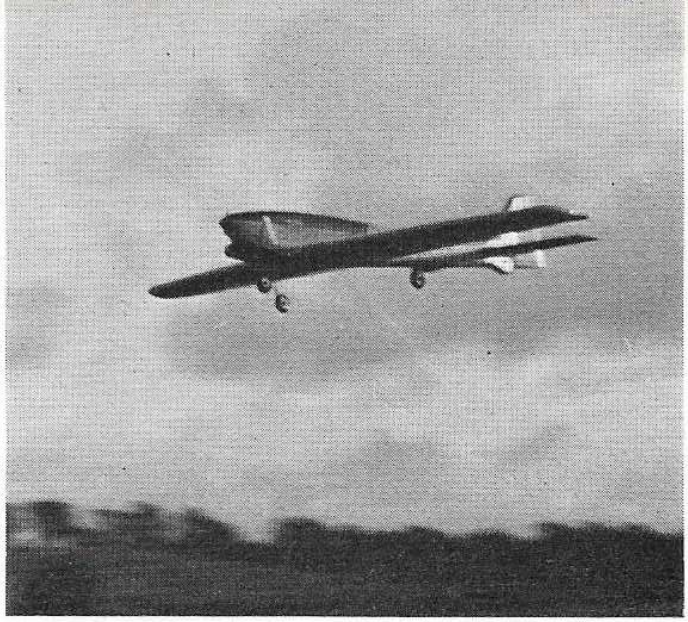


fin misalignments may be sanded out unnoticed. Now add the fin and fill-in pieces, and glue the underfin in position.

Back to the front end now; sand the front former and the top and bottom blocks quite square, and fit a Micro-Mold mount, modified as shown. This gives a good clear route for the fuel tubes from the tank. Next temporarily bolt the engine in position and build up the nose with sheet and block. Glue former F1 in position and leave the nose to set. Now remove the motor and enjoy yourself planing and







These flying shots are of *Deja vu Mk.II*, as is the picture below, of designer with his creation. Mks. I and II had foam wings — Mk.III built-up.

sanding the fuselage until it looks the way it should.

When satisfied, the tailplane may be fitted, checking that it is square to the fin and fuselage before epoxying in place. Next glue the wing bolt support plate in position, and drill the wing dowel holes in former F3. Fit the wing in the fuselage and sand the fuselages sides until the wing seats squarely. Drill the wing holding bolt holes. Remove the wings, glue the ply fairings in place, then bolt the wings in place to seat the fairings correctly. Now add the $\frac{1}{2}$in. sheet to the fairings and, when they are dry, sand the whole fuselage with fine garnet paper ready for finishing.

Finishing

At this stage fill any small crevices or dents with Polyfilla, let dry and give the whole model a final light sanding. After this, everyone has his own pet method, but I'll give you mine anyway. First a thin coat of dope, to seal the wood, then two or three coats of sanding sealer, sanding between coats with wet and dry paper. The wings are then coated with heavyweight tissue, the fuselage, tail end and ailerons with lightweight tissue, doped on. Lightly sand with 400 grade wet and dry paper, used wet.

Another couple of coats of very thin dope and you are almost ready to add some colour. Before doing this, however, fit the ailerons, elevator and rudder—and check that they operate freely.

For the base colour I use a couple of coats of Nitro Synthetic car paint sprayed on. Again wet and dry paper should be used between coats. When a good base colour is obtained, add the trim of your choice; I use Humbrol enamel for this as I find that, even when brushed on, an excellent finish may be obtained in one coat. Add your transfers next and then give it a coat of Tufkote fuel-proofer. All that now remains is fitting the tank, engine, wheels and radio. As outfits vary slightly, I have not been specific—the positions shown on the plan are suggestions only.

Trimming and flying

The amount of movement on the control surfaces are as follows: rudder 2in. each way; elevator $\frac{1}{2}$in. up and down; ailerons $\frac{3}{8}$in. up and down. These are, again, not hard and fast, as the final amounts are better judged after some flying, to suit your own particular needs.

The main wheels may look a long way behind the c.g. but take-offs are not adversely affected, and the landings are really good, without any bounce.

I don't propose to tell you how to fly aerobatics—that's for better than me—but I will say that *Déjá vu* does them all. The quality of the manoeuvres depends on the amount of time and practice you can put in. Right then . . . everything is fitted, the controls operate in the right direction and your model balances as shown. Make sure that it balances laterally as well! Take it down to your field, tank up, fire up, check the controls—and fly!