

HORNET

The 'Hornet' is a sports/aerobatic model that has developed over the years in versions from the Cox TD 049 to the O.S.120 FS. This is the comfortable middle-size with a 1968 vintage O.S.40 (with Irvine carburettor) that provides considerably more power than is really necessary. A .25 FSR or .40 four-stroke would be quite adequate.

The intention is to provide a reasonably good-looking and easily built model that does not cost too much to make and is capable of "Sunday afternoon" aerobatics. Balsa being fairly expensive, I have used blue foam for the wing, as it is easy to cut and sand - a hot wire is not needed. Brown paper covering makes it both rigid and reasonably "ding proof". An alternative built-up wing structure is shown on the plan for those who have unlimited time and money!

The fuselage sides are cut from the cheap plywood used by builders to make interior doors. This is just over 1/8in thick, fairly light and costs me about £2 for a sheet big enough to make 20 'Hornets'. A builder's merchant should be able to supply this and the blue foam. The result is strong and, at 5.2lbs, is not unduly heavy.

Construction

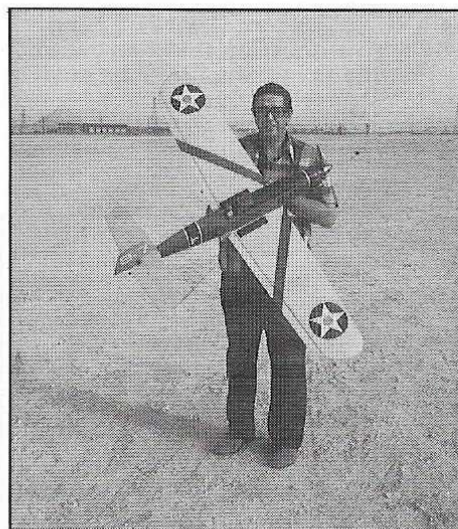
Let's start with the wing. Cut two panels to outline shape from 1.1/2in blue foam sheet and straighten the leading and trailing edges with a Surform file. Reduce the thickness towards the top using a serrated edge kitchen knife to slice the foam. Stick the 1/2in balsa leading and trailing edges onto the foam blocks with PVA glue, pinning and holding with masking tape while they dry overnight. Since the foam block can be accurately marked out, a warp-free wing is guaranteed. Trim the root sections to fit each other, allowing for 1 1/2in dihedral under each tip. Cut slots for the ply dihedral braces with a fretsaw. Join the panels using PVA glue and leave overnight (epoxy can be used,

Mike Hawkins'

"military" style

sportster for .25 to .40

engines



Dr. Mike numbers his models individually - Hornet is his 87th! Plans show foam and built-up wing options.

but is not necessary).

The wing panels can then be shaped to aerofoil section using the kitchen knife, Surform file and coarse sandpaper on a sanding block. Channels for the undercarriage mounting blocks can be cut with a sharp knife and a chisel. Add the servo mount and aileron horns, held in place by the rear fairing blocks. Add front wing fixing dowels and the ply reinforcement for the rear fixing bolts. Any cracks and blemishes can be filled with Polyfilla and sanded smooth, preparatory to covering with brown paper, using 50/50 PVA thinned with water as an adhesive.

The fuselage sides are cut from builder's ply. Sometimes this has a thick middle layer with thin veneers on the outside... If so, cut the sides with the grain of the middle layer running fore and aft and the outer layers vertical. Assemble the sides with F3, F4, F7, and a balsa wedge at the tail. Panel pins can be used to reinforce the joints to the formers.

Install the engine mount, fuel proofing underneath it, and the remaining formers. I have shown 1/8in balsa planking for the fuselage decking but, if you regard this as too laborious, you can use blue foam block, sticking pieces together with Copydex as required. This can then be covered with brown paper before covering. The tank and battery



are removable through the cut-out in F3, but the inside of the tank compartment should be fuelproofed and suitably packed with blocks of foam (NOT blue foam, as the fuel will eat it) before closing in the planking. Wing fairings are cut from soft 1/4in sheet, as is the tail.

Note that, by reason of the hinge position, the tailwheel moves less than the rudder. The engine should be mounted on its bearers and F1 and F2 taped to the back of the spinner with 1/8 scrap packing for clearance. The cowls top and bottom can then be cut down from 1/2in sheet and used to join F2 to F3. Fill in the gaps, carve down and sand. Give a coat of dope inside the fuselage sides and position the servos inside, with double-sided mounting tape.

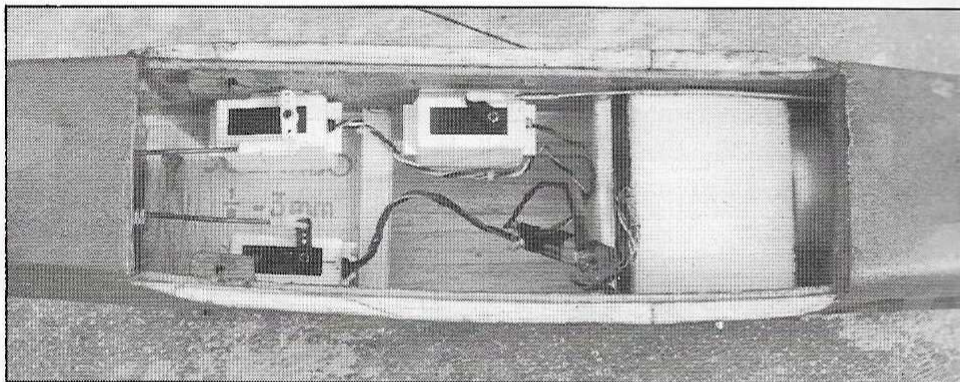
Finishing

I find that it is a great help to have a bright colour scheme that leaves no doubt as to which way the model is flying. A taildragger like this fits into the 1930s period and the U S Navy Scheme is hard to beat for visibility. It also allows the wings to be covered with silver and yellow Sollarfilm, straight onto the brown paper, and the fuselage with Solartex or dope and tissue before painting. Markings and letters are cut from Solarfilm and/or Fablon as appropriate - this is both quick and neat.

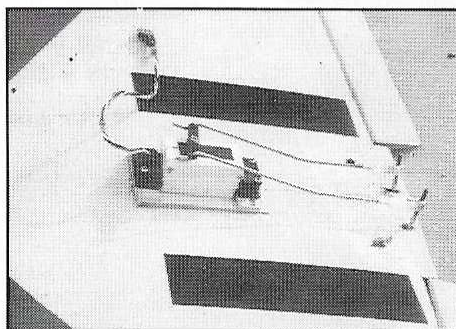
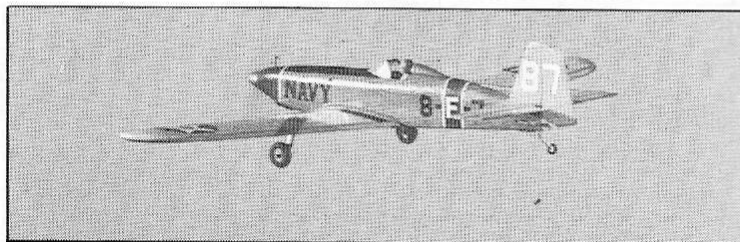
Flying

This model spun in once as a result of radio interference (on 72 MHz) since then I have been using a Century Systems failsafe. It is difficult to set this type of model to a gentle glide, but you do get low throttle and sufficient time to sort it out before it reaches the ground!

Before flying, check the c. of g. at about 3.1/2in from the leading edge and



*R/C installation is entirely conventional and fuselage construction robust, making **Hornet** a good intermediate model for those past the basic trainer stage.*



*Full-size prints of the **Hornet** plan, shown here much reduced, are available as plan RM325, price £4.55 including postage and packing, from Radio Modeller Plans Service, 9 Hall Road, Maylands Wood Estate, Hemel Hempstead, Herts HP2 7BH.*

ensure all flying controls are at neutral. For first take off I recommend about half power, a long run and a gentle climb-out. Only minor trim adjustments should be needed, after which you can open up to full power, and hang onto your hat!

I get the impression that this type of wing is pretty efficient since 'Hornet' will go round remarkably sharp corners without apparently losing speed. My favourite manoeuvres are an enormous loop with a 360° negative flick roll at the top, or a slow roll that goes from one side of the field to the other (when I get it right).

Have fun!

