

Christmas
treat!

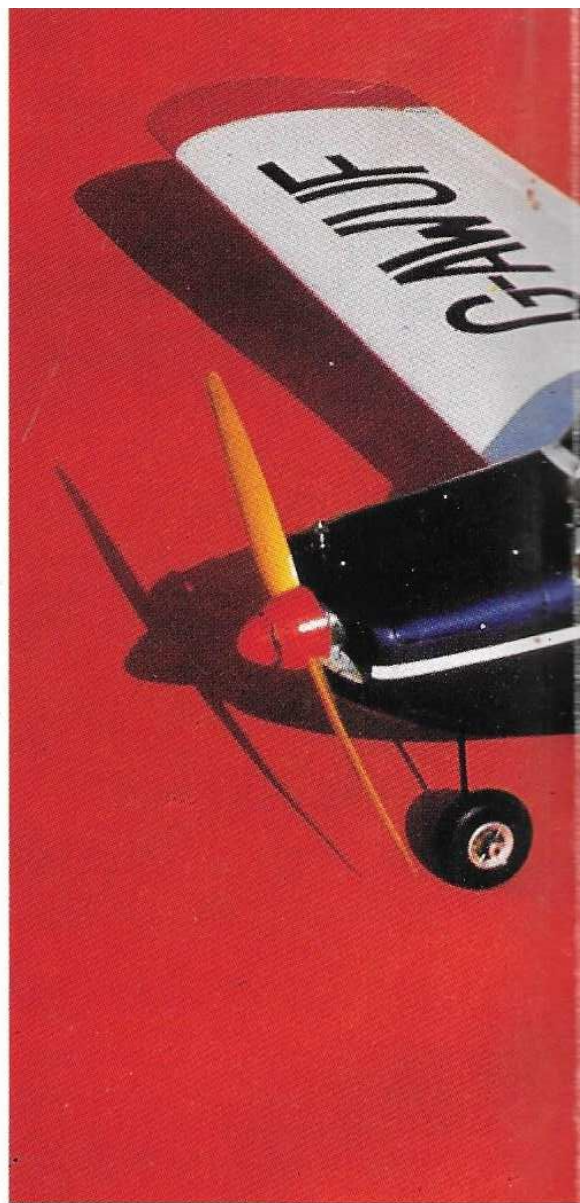
Mongrel



*a really attractive
and well-behaved
sportser*

60in. SPAN FOR .40 MOTORS

by **BRIAN PECKHAM**





MONGREL was conceived, if that's the right word, while recovering from a bout of something or other, when, leafing through aircraft books, I was rather impressed by the looks of the *Beagle Pup*. In fact, the design started life as a semi-scale version of that aircraft, but using a pair of wings I already had on hand in the workshop. The result, however, has a definite *Cherokee* front end, and *Beagle* rear end—so *Mongrel* it became.

The model has very forgiving characteristics and should make quite a nice advanced trainer, as a change from the usual high wing boxes. But, do note the word 'advanced.' As regards construction, this itself is not too advanced, and if you have built two or three models, you should not find building the *Mongrel* presents too many problems.

CONSTRUCTION

Wings

Make up the four wing panels from $\frac{1}{16}$ in. x 3 in. sheet balsa, leave to dry and make a pair of tip and root templates from $\frac{1}{16}$ in. ply. Sandwich the requisite 13 blanks of $\frac{3}{32}$ in. sheet between the templates and carve and sand the resulting 'block' to profile, to give ribs. Repeat this process for the opposite wing. Assemble the ribs over spars pinned over the plan, on the building board, packing the ribs under the trailing edge and angling the root ribs as shown. Next add the top spars, false leading edges and trailing edges, checking the panels for alignment. Cut slots in the ribs for the $\frac{1}{8}$ in. ply braces, shape the leading and trailing edges to the rib profile, add the top $\frac{1}{16}$ in. panels and also slot these for the ply braces.

Remove the structure from the board, shape leading and trailing edges and add the bottom panels of $\frac{1}{16}$ in. sheet, slotting for the ply braces. Now trim off the excess sheet and add the leading edge, finally shaping and sanding each panel. Fit the tip blocks and shape them to profile.

Cut out the sheeting on each panel to receive the servo box, then join the wing panels, propping them up for 2 in. dihedral under *each* tip, fitting the ply braces to the top and bottom of the centre section.

The undercarriage mounting block is made up from $\frac{1}{4}$ in. and $\frac{1}{8}$ in. ply, as shown. Mark its position on the underside of the wing, cut out and slot the three centre ribs to receive it, and assemble it in position with hardwood blocks, making the underside flush with the wing

surface. Line the servo box with $\frac{3}{32}$ in. sheet sides, and ply bottom.

Bend up the aileron horns from 12g. wire, with flattened brass tube horns, and brass tube bearings. Assemble these to the wing, with the centre-section trailing edge (shaped from $\frac{1}{8}$ in. sheet) grooved to accept the horns.

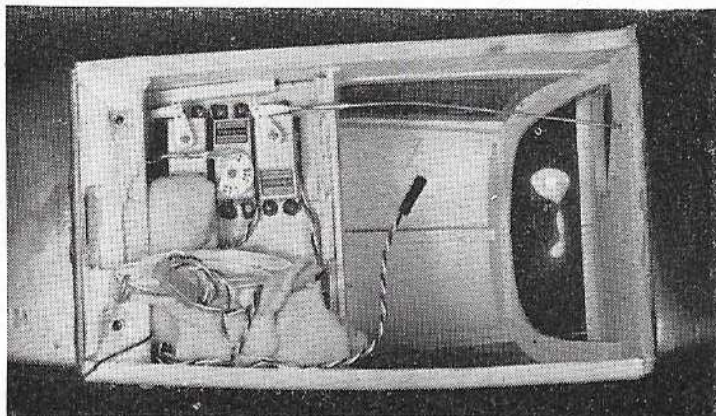
The ailerons are from $\frac{3}{8}$ in. trailing edge stock, or shaped from sheet. Dry assemble them to the wings to obtain final profiles. Add the four $\frac{1}{16}$ in. ply plates at the bolt position, drilling them to suit your favourite wing bolts.

Fuselage

Make up sub-assemblies of the fuselage sides with ply doublers, $\frac{1}{2}$ in. x $\frac{1}{8}$ in. longerons and $\frac{1}{4}$ in. sq. bottom longerons, tapered at the rear ends to $\frac{1}{8}$ in. Add the $\frac{1}{2}$ in. triangular reinforcement at F3 and F4 positions, and bolt the engine mount to $\frac{1}{4}$ in. ply former F3.

Assemble the sides to formers F2, F3 and F4 and, when dry, pull in the sides, adding F6 and F7. Finally joining the sides at the tail end. Fit the top longerons— $\frac{1}{2}$ x 1 in. tapered to $\frac{1}{2}$ in. sq., and the $\frac{3}{16}$ in. side panels. Fit F5 and F7a, and the $\frac{3}{16}$ in. sq. roof stringers. Next fit the throttle cable and make up the tank box, adding the remaining $\frac{1}{2}$ in. triangular fillets between formers F3 and F4, followed by the $\frac{3}{8}$ in. bottom sheet and $\frac{1}{8}$ in. decking. The latter may be planked—or steamed from sheet, in two pieces. After this, fit the $\frac{3}{32}$ in. sheet bottom. The cabin roof on the original was steamed from two pieces of $\frac{1}{8}$ in. sheet, but may be planked if preferred. Window frames are from $\frac{3}{32}$ in. ply, cut oversize and trimmed to fit in position, recessing the roof to suit, as shown.

Cut out and fit the nose block, F1, and the underside cowling blocks and top cowling blocks—the latter having ply facings. Hollow the blocks as necessary to suit the motor/silencer combination to be used. Mine had an Enya 45 and dumpy silencer, which is almost hidden, as will be seen in the photos.



Internal details in the prototype model.



In the air or on the ground, Brian Peckham's latest design comes well up to his usual high standard of attractive realism plus practicality, combined with very pleasing performance.

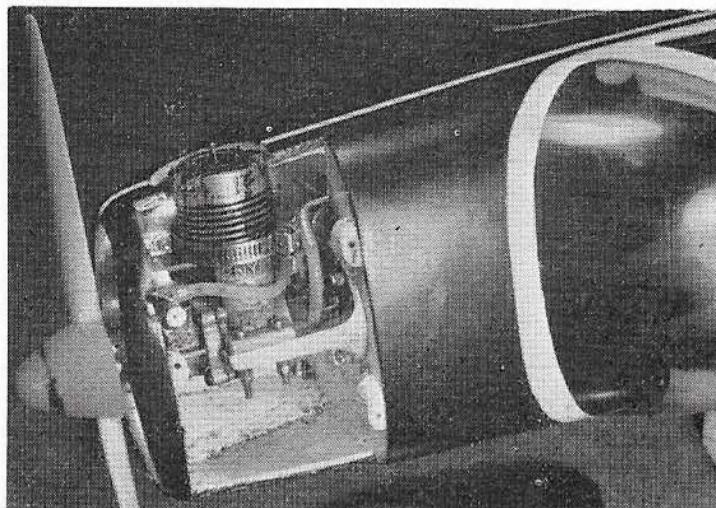


The fuselage may now be finally shaped, and former F5a fitted, for windscreen mounting. The windscreen on the original was cut from the front of a canopy belonging to the Graupner *Monsum*, and the side windows were cut from what was left over. (Spare canopies are available from Ripmax stockists—or you may find something else that is suitable, depending how helpful your local shop is).

Fit the $\frac{1}{4}$ in. ply plate for the wing bolt blind nuts on $\frac{1}{4}$ in. sheet gussets, and drill the wing for $\frac{1}{4}$ in. diameter dowel, epoxying this into position. Pack the wing seating area with $\frac{1}{16}$ in.

sheet balsa, to compensate for wing-seating tape, and add the $\frac{3}{8}$ in. soft balsa fairings to the underside of the wing, slotting for the undercarriage and trimming to clear the boltheads, and shape it to fair into the fuselage profile.

Bend up the undercarriage legs from 8g. wire and fit the $\frac{1}{4}$ in. sheet fairings. Drill the wing blocks to suit, and make two aluminium plates, which are then assembled to the wing with woodscrews, as shown on the plan. For the noseleg, a commercial item may be used, or the leg may be bent up from 8g. wire to the dimensions shown. This





is assembled to former F3 by means of nylon saddle-clamps and wood-screws.

Tail unit

The tailplane and elevators are from medium grade $\frac{1}{4}$ in. sheet balsa, with $\frac{1}{2}$ x $\frac{1}{4}$ in. hard tips. The elevators are joined with a 12g. connector, and the unit is assembled to the fuselage, a goodly contact area for the adhesive being provided by the $\frac{1}{4}$ in. sheet balsa in-fill between the top longerons. Ensure correct alignment before the glue is allowed to set.

The fin, rudder and underfin are made from $\frac{1}{4}$ in. sheet balsa, in a similar fashion. The tailplane should be slotted for the lugs on the fin and underfin, and the units glued into place, checking again for squareness. (In addition to the lugs, the fin is fitted with an $\frac{1}{8}$ in. dowel).

Finishing and installation

Always a very personal choice, the finish of a model. As always, mine is film covered and trimmed, the registration letters being cut from Fablon.

The radio installation in my original model features an $\frac{1}{8}$ in. ply

servo mounting plate, full width of the fuselage, between F6 and F7. The servos are located on one side and the receiver on the other, with the nicads mounted to former F4 with a leather strap. But final installation will, of course, depend on achieving the correct c.g. position, as you may have to bring weight forward or aft, according to how you have built the airframe, weightwise.

Flying

Mongrel should present no problems as regards trimming provided all the flying surfaces are true and square.

Takeoff needs a fairly long run, but this will depend, to some extent, on the power unit used. My ageing Enya 45 provides adequate power, so a modern .40 should be enough and to spare. In fact, mine flies around very nicely on about $\frac{2}{3}$ throttle, once it's up there.

Once in the air, with the control-throws as indicated, you should have a responsive but gentle aircraft, in no way highly aerobatic but a good, controllable sports model capable of most of the basic man-

oeuvres. The elevator and rudder are very effective, so loops can be nice and large—or small. Rolls are more sedate—more akin to full-size than model-type manoeuvres. Inverted flight needs some downtrim, but otherwise *Mongrel* grooves nicely on its back. Outside loops, I have found, are best executed from the inverted position, as are spins—probably due to the forward c.g. position and, thus, a certain reluctance to stall.

With engine throttled back, or 'deadstick,' response is still positive, but requires more stick movement, and the approach can be really stretched out, without any tendency to stall, for those nice main-gear, nose-up landings, light as thistle-down.

Make the *Mongrel* your next project and enjoy some carefree and realistic flying. It looks like an aeroplane, flies like an aeroplane . . . and you won't need a dog licence! !

Note the doggy-type registration—make no bones about it, this is an attractive pet!

