



=BLUE JAY=

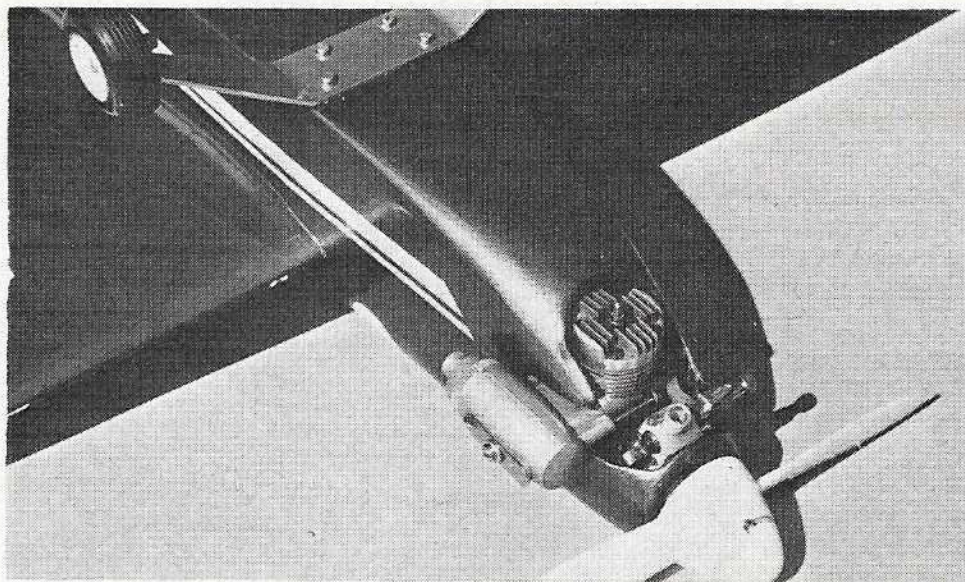
***Brian Peckham's zippy little
39" sportster for your .15 to
.20 motor, 4-function r/c***

THIS LITTLE MODEL was designed to be within the "Club-20" formula, though not necessarily an out-and-out racing machine, but a fun sports model with easy-to-fly characteristics. Although in one piece, it should fit in the boot of even a Mini—and the midwing configuration makes for easy hand launching if your flying ground happens to be of the rough and tufty variety.

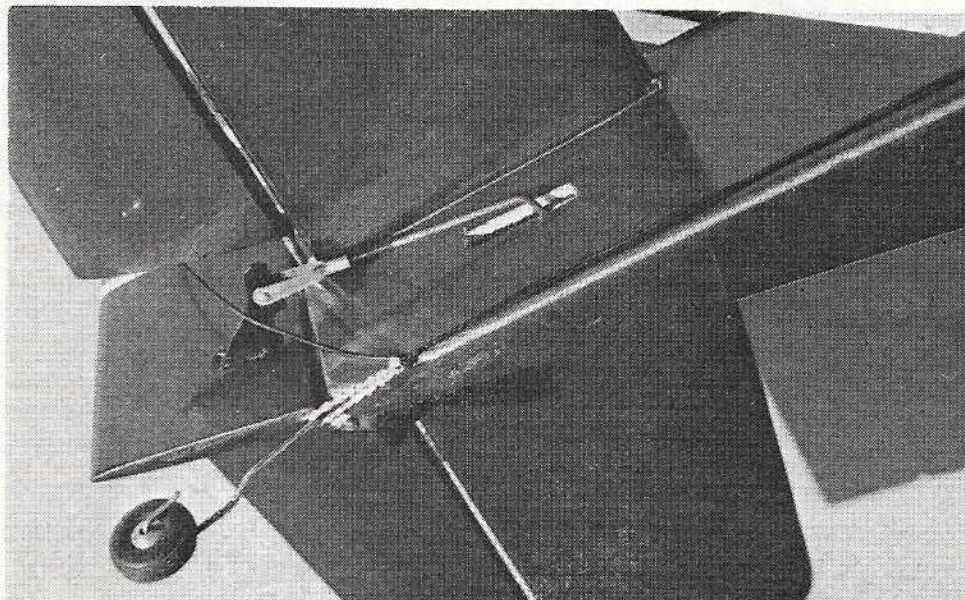
Building sequence

Structure design is very conventional, and should cause no chin-scratching for the average modeller—certainly for those competent enough to consider starting racing, anyway. These building notes, however, are a little unconventional in that they are not neatly divided up into "wing", "fuselage", "tail unit" etc. This is partly because, if you follow the sequence indicated, assembly will be that much quicker,

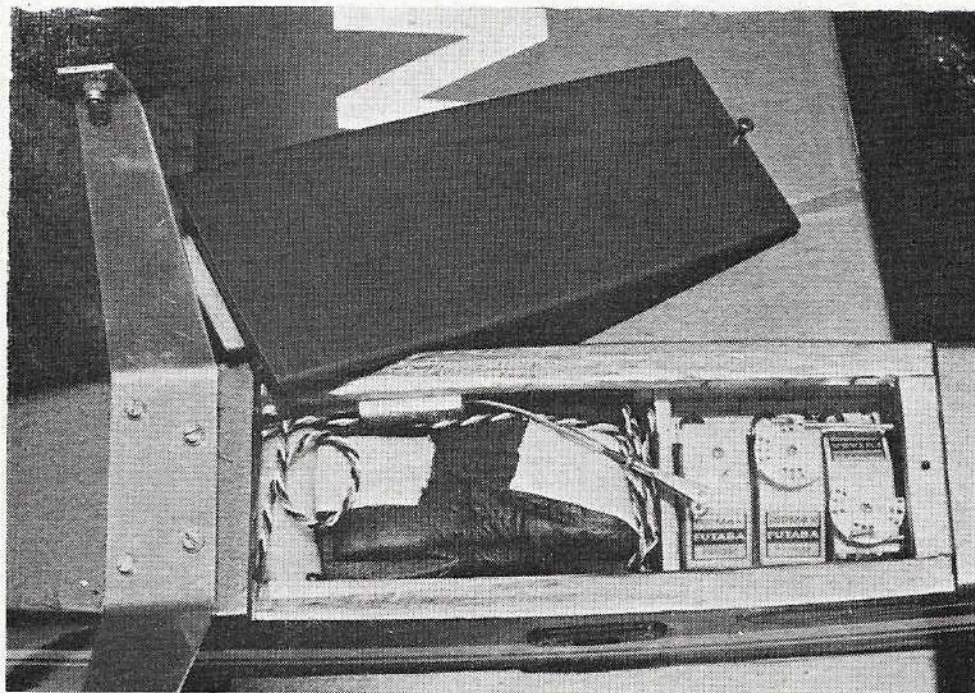




Model inverted to show snug fit of the Enya 198B—and the bolted-on undercarriage. Below: close-up of the tail end, showing how tailwheel strut is fitted to base of rudder. Rudder control linkage is also seen.



A large removable access hatch is a feature of this model brought about by its "all-in-one-piece" design. As seen here, this is located at the best possible place for getting at the radio equipment. Three servos fit comfortably "athwartships" in the prototype, with receiver and nicads up front.



and partly because of the model's being of the "one piece" type, so that it is necessary to dodge about a little, from wing to fuselage and back again, as you'll see.

Contact glue the doublers to the $\frac{3}{8}$ in. hard balsa fuselage sides and pin them flat on the bench, apart from the front which should have a 1 in. block under the nose to set up the correct curvature.

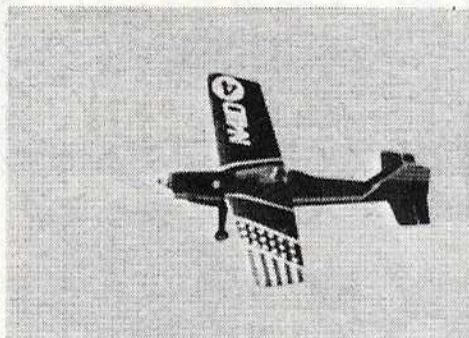
While these are setting, cut the rib templates from $\frac{1}{4}$ in. ply and make two sets of wing ribs. Build both wing panels at once by pinning down the spars and adding the ribs—not forgetting to tilt W1 for the dihedral. A template may be made for this, from the dihedral braces. Pack the ribs with $\frac{1}{4}$ in. sq. as shown on the plan, to align. Add the top spars, followed by the leading edge and $\frac{1}{16}$ in. sheeting on leading and trailing edges.

Now back to the fuselage; cut out the formers from ply and make up former F5 from $\frac{1}{2} \times \frac{3}{16}$ in. hard balsa strip. Cut the fin, rudder, tailplane and elevators from $\frac{1}{4}$ in. medium-soft sheet and sand them to section. Use the wing root template to cut the aperture in the fuselage sides to take the wing.

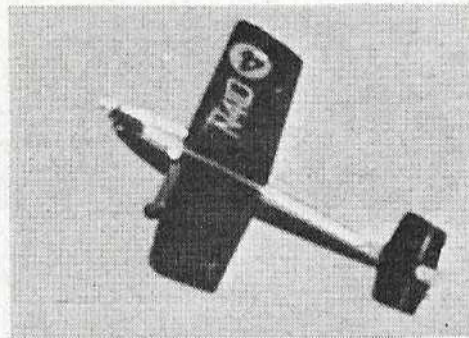
Now remove the wing panels from the building board, add the gussets, slot the ribs the nylon cable (a hole will be needed in W6), fit the cable, followed by the $\frac{1}{16}$ in. leading and trailing edge sheeting. Check that there are no warps, then join the two halves. When quite dry, add the ply and balsa braces, cutting away the centre of W1, and slotting W2 for the servo mounting plate. Now add the remaining top and bottom sheeting panels, and the soft block tips, and sand to a final finish. Cut out the ailerons, cutting from both sides, trim the bottom of the aileron back, as shown, and add the $\frac{1}{2}$ in. block and end riblets W5, finally fitting the $\frac{1}{16}$ in. aileron leading edge and false trailing edge to the wing.

Now assemble the fuselage sides over the wing and join with formers F1, F2, F3 and F5 respectively, bolting the motor mount to F2. Cut off the bolts flush or they may prevent the tank being fitted. Make up the tank box and fit the throttle cable tube. After fuel-proofing the tank box, the tank should be wedged in position with scrap balsa.

Now draw the tail ends of the fuselage sides together and add the $\frac{1}{4}$ in. sq. bottom corner reinforcing, plus former gussets etc., followed by $\frac{3}{8}$ in. triangular top reinforcing, soft block to nose area and front decking, $\frac{1}{8}$ in. sheet rear deck and $3/32$ in. bottom sheet. Fit the $\frac{1}{4}$ in. ply under-



These three in-flight pix of prototype *Blue Jay* show the model's racy, semi-scale lines off to perfection.



carriage mounting plate, reinforced with $\frac{3}{8}$ in. triangular strip.

Sand the fuselage to final shape, make up the canopy fairing from $\frac{3}{16}$ in. sheet, as shown, in position on the shaped fuselage deck, chamfering the fairing to fit. At this point, cut the slots for the tailplane and fin, and fit these in position. (The control surfaces should *not* be fitted until later).

Carve away the underside of the cowling to suit the particular motor and silencer fitted. (Mine was an Enya 19BB so two holes were needed through the cowling side to attach the silencer). When adequate clearances are achieved, fuel proof the inside of the cowling thoroughly.

Make up the access hatch from $\frac{1}{4}$ in. sq. strip framing laid inside the fuselage sides, slightly proud of the bottom, with spacers, and add the ply/balsa bottom. When dry, push into the fuselage and sand to match the fuselage contours, remove and add $\frac{1}{16}$ in. ply reinforcing and tongue. Fit the hardwood block across the fuselage and secure the hatch with a woodscrew.

The dural undercarriage used on the original *Blue Jay* is a commercial item, with wheels attached with h.t.s. bolts and lock nuts, and attached to the fuselage with 6BA bolts. The tailwheel, which is optional, is made up from 16g. piano wire, fitted with a $\frac{1}{2}$ in. diameter wheel, the wire being epoxied to the base of the rudder.

Finishing and installation

Finish is your favourite material, whatever that may be. Mine was film covered, with film trim—and a

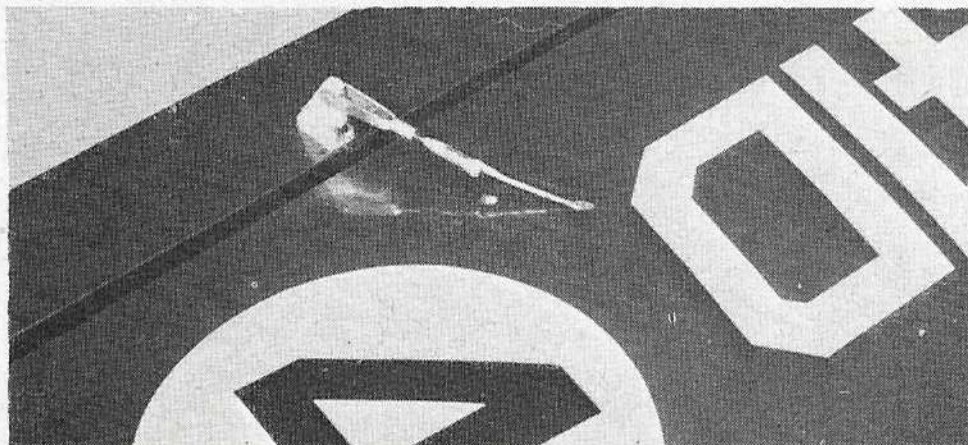
thin strip of film also serves to hold the canopy in place, a technique I have used successfully on several previous models.

Any modern 4-function equipment should fit, and the installation is predetermined by the space available; three servos in a row on hardwood or plywood rails, as shown, with the receiver forward and the nicads against former F3. For racing, only aileron and elevator servos should be fitted, with a 'mustard tin' tank.

Trimming and flying

The forward c.g. position shown on the plan is as flown, plus a little up-trim and some right aileron to counteract torque—though, if preferred, $1\frac{1}{2}$ deg. of right sidethrust could be used. The rearward c.g. position makes *Blue Jay* much livelier, and will probably require the addition of some ballast at the rear end, so the choice is yours.

Model inverted to show underside of wing with aileron horn and linkage.



The control surface throws— $\frac{1}{4}$ in. each way for ailerons and $\frac{5}{8}$ in. each way on rudder and elevator—with the forward c.g. will give the safest performance but, as with the c.g., adjust the throws to suit your inclinations.

Takeoffs can be made easily from short grass, holding on full up elevator to keep the tail down and, as the model builds up speed, easing gently off—unless you prefer VTO tactics. Control response, once airborne, is crisp and positive, and rolls are really fast. Try a shallow dive and put the stick over—and you'll see what I mean. For the racing enthusiast, pylon turns are really right, too.

Landings will present no problems, either motor-on or dead-stick, as there is no tendency to drop a wing when slowed up a little.

Why not try *Blue Jay*? It's a great fun aeroplane, and I'm sure you must have a spare .15 or .20 size engine lying around somewhere. The building cost won't mean an extension on your overdraft, either!