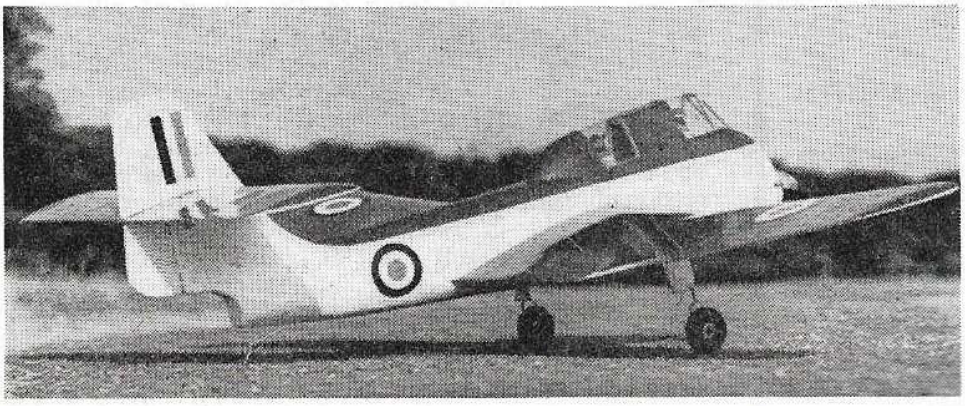
STAN COLE's rugged single channel scale model—45½ in. span for 1·5cc power

IN selecting a full-size "type" for flying scale, the Short *Seamew* is a "natural", in that it offers all that a scale model requires for stability, without "cooking" tail areas, undercarriage or dihedral in any way. Such is the layout of the full size aircraft, that it may be scaled down faithfully and still fulfil the scale — or sport — flier's requirements. It has a wide-track, "leggy" undercarriage, flat fuselage sides, mid-wing with tip dihedral, generous tailplane and fin areas, plus ample fuselage-cross-section for radio installation. The smooth, clean lines of the *Seamew* also lend themselves to rugged constructional design, making this model virtually prang-proof, and it will see even the average builder through a few seasons' scale flying.

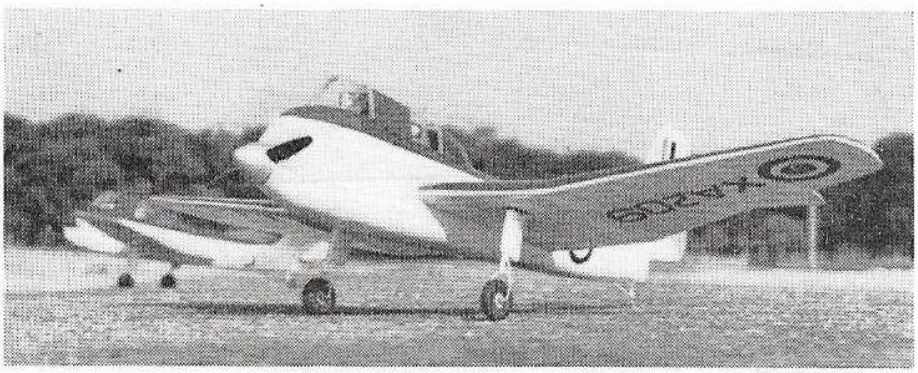


Construction

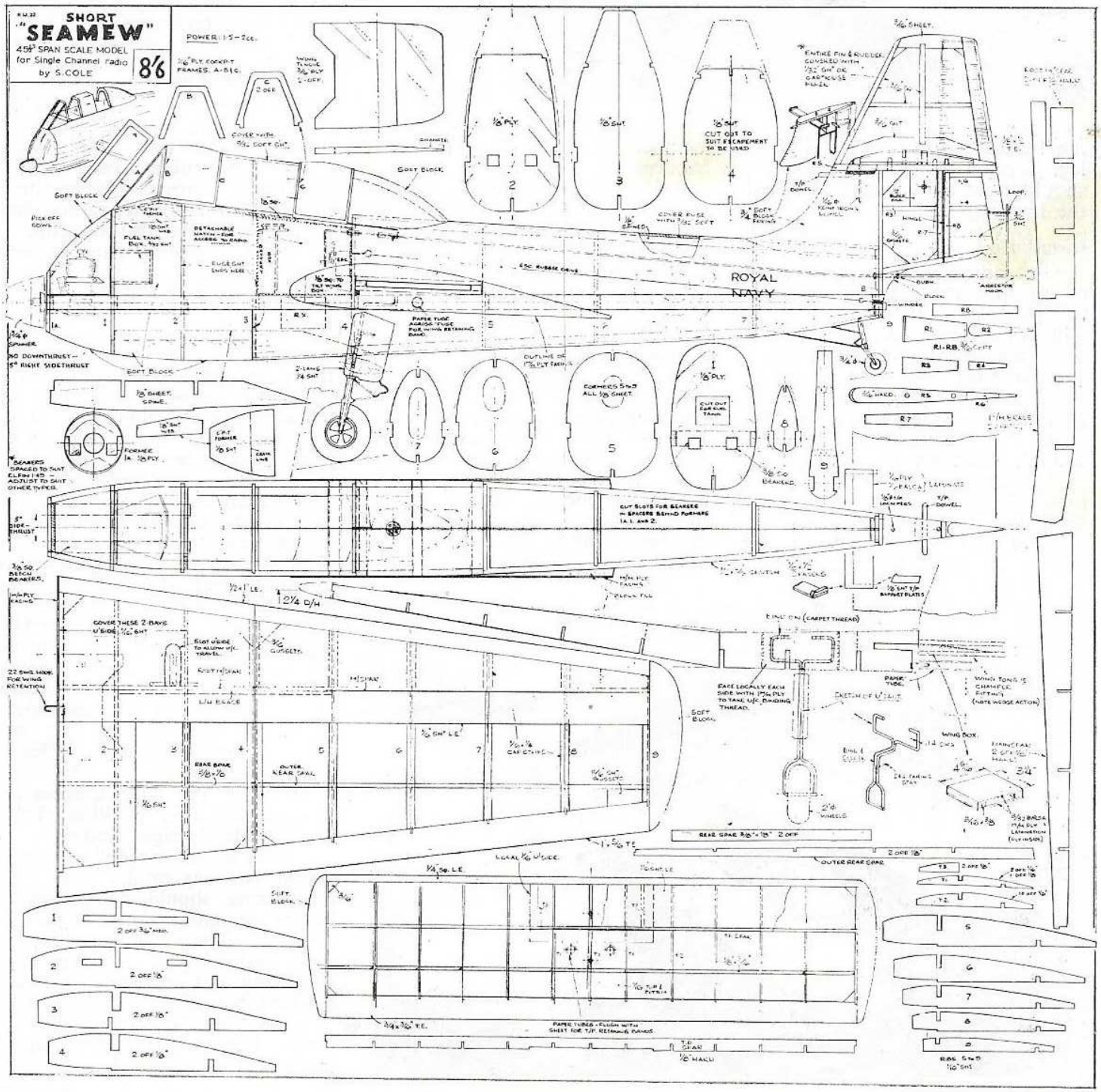
Fuselage: Start by building the ½ × $\frac{3}{16}$in. crutch flat on the plan, with ½ × ⅛in. spacers, followed by fuselage formers 1 to 8. Ensure that the rudder post (9) is square to the basic crutch, as this determines the trueness—or otherwise!—of the fin. Make up the wing box and cement it between formers 4 and 5, with ⅛in sq. member in front to "tilt" the box for the requisite wing incidence. Add ⅛in. sq. cockpit side members in the slots in formers 2, 3 and 4, followed by cockpit canopy former and web which go at the windshield position. Next add the beech engine bearers, using Durofix or similar slow-drying glue. Up to 5 deg. side-thrust may be needed, so allow for this when positioning the bearers—and, of course, they must be spaced to accommodate your particular engine, so it's as well to check before cutting those former holes—I hope you did!

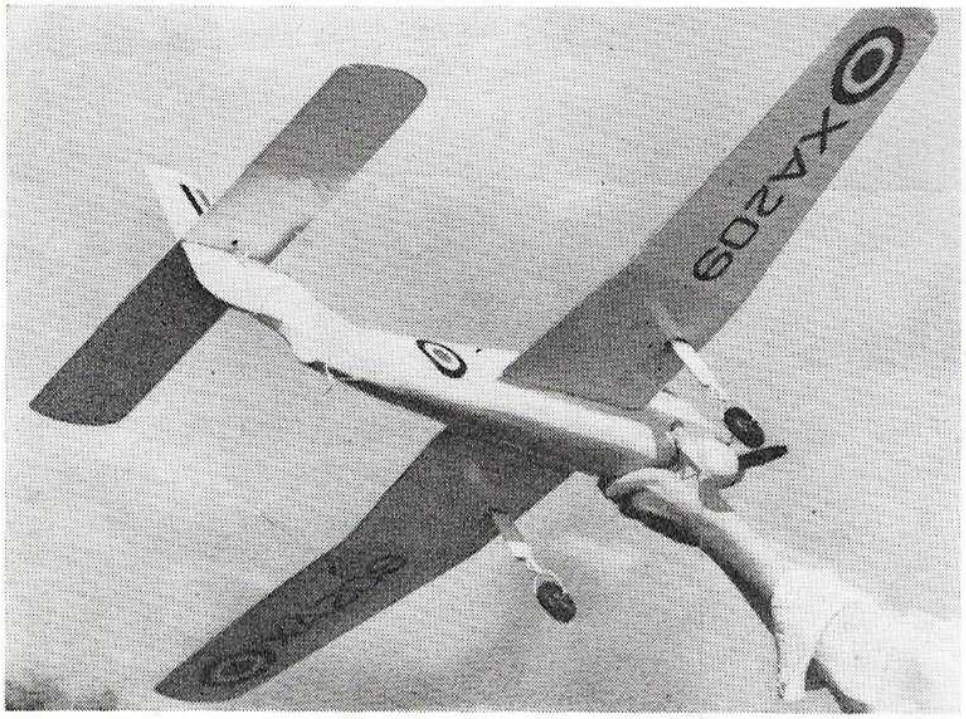
Now fit the fuel tank box to the back of former 1, followed by all the fuselage "spines" to

their slots in the formers, and then the soft block filling on the underside of formers 1a to 3. Sand the cowling to shape, *in situ*, from block, and hollow out to clear the engine. Cement tailplane platform R5 to former 9 (again making sure everything is square and true) together with the lower fin components, R1 to R3, and R7, which are followed by $\frac{3}{16}$in. gussets and $\frac{1}{2}$in. block "fill" which holds the tailplane dowel. Build up the hinged section of the rudder and install with thread "crossover" hinges, and add the wire loop for the torque-rod arm. Finally add the block fillet between R1 and R9, through which goes the bush for



FULL SIZE PLANS of this fine model are available, price 8s. 6d. from —— RADIO MODELLER PLANS DEPT. 64 WELLINGTON ROAD, HAMPTON HILL, MIDDLESEX.





the 16g torque rod. The tailwheel leg, formed as shown on plan, should now be bound to F8 and the lower spine.

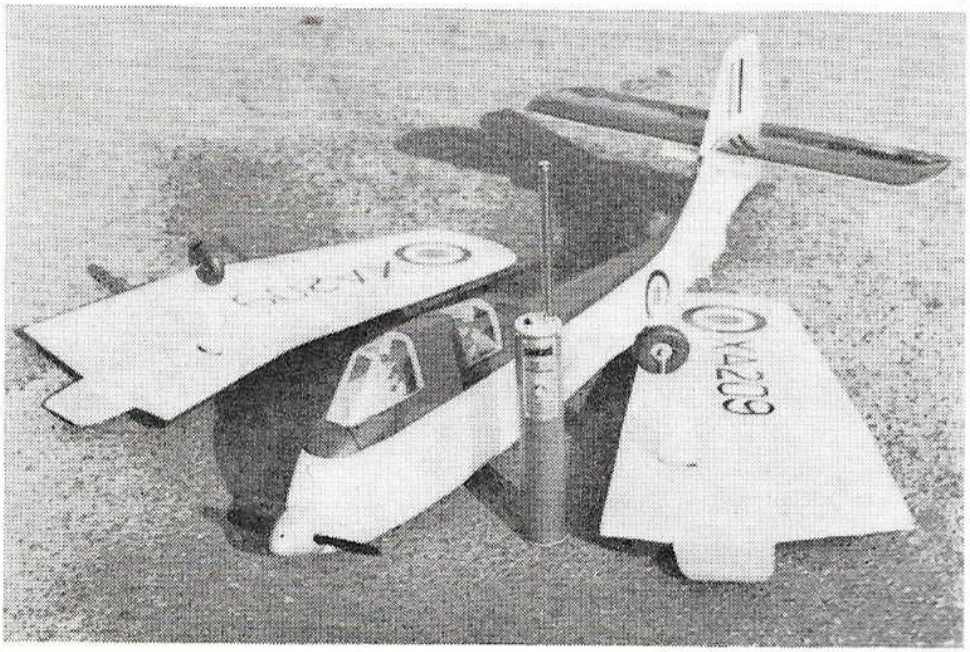
Installation

The radio installation, as used on the prototype, is indicated on the plan, but the control linkage will, of course, depend entirely upon the actuator used and can—and I'm sure will—be modified to suit individual requirements. The gear itself—battery box, escapement or servo, and receiver—should, however, be installed in the bay between formers 3 and 4 to obtain correct c.g. location. A detachable hatch is built on one side of the fuselage, from the crutch to the $\frac{1}{8}$in. sq. cockpit member, between these formers, for access to the gear.

It is best to install the escapement or servo at this stage, together with its torque- or push-rod, and also all wiring, switch, etc., before proceeding with the fuselage sheeting.

Completing fuselage

This is done with soft $\frac{3}{32}$in. sheet, and is best achieved with four pieces—two on top of the crutch between formers 4 and 8, and two below, between formers 3 and 8—followed by fuselage sides between formers 2 and 4. Next add cockpit frames, centre sheeting and soft block fairing to cockpit, as shown on the plan. Don't forget to give your model an "aircrew" before glazing the "office" as this will greatly enhance the appearance of the finished model.



Cockpit hoods may be moulded to the shape indicated on the plan, or one may use the straight "wrap-over" type as this is quite correct for the prototype machine (RN XA209). Next add a paper tube through the fuselage for the wing retaining bands, followed by the soft block rudder fairing and then the tailplane support. This support is laminated from $\frac{1}{16}$in. balsa and $\frac{1}{16}$in. ply, with $\frac{1}{8}$in. balsa endplates, and is let in to the top of the fin block before adding R5, the $\frac{3}{16}$in. top rib. The tailplane locating dowels may now be fitted into this, and the tailplane band-retaining dowels into the block at the positions shown.

Tailplane and fin

These are built straight on the plan, and are of quite conventional construction. They are retained by rubber bands which are taken through paper tubes *through* the tailplane, rather than going round the trailing edge in the usual manner, as can be seen from the plan.

Wings

These are best constructed by first building the panels flat on the plan, but leaving *uncemented* all the joints which will later be "tilted" for the dihedral. That is: where the main root wing panel joins the outer panel at leading edge, trailing edge, and at the main and rear spars. Then, with l.e., t.e. and all ribs cemented in position, the outer panel (ribs 4 to 9) may now be tilted up to $2\frac{1}{4}$in. dihedral at the tip, adding the dihedral brace to secure.

Next bind the undercarriage leg in position with strong thread, such as carpet thread, first facing the spar and dihedral brace with 1 mm. ply as shown. Mark position of the leg and drill a number of small holes to take the thread.

The $\frac{3}{16}$in. ply wing tongues are now cemented in position. These are "handed" (right and left) by a chamfer, to give a wedge action on assembly, and this chamfering should be performed before cementing the tongues in position. The $\frac{1}{16}$in. sheeting is now added, over leading edge, wing root and underside at undercarriage bay. This is followed by $\frac{1}{16}$in. x $\frac{1}{4}$in. capstrips on the lower leading edge and upper trailing edge of ribs. (No cap-

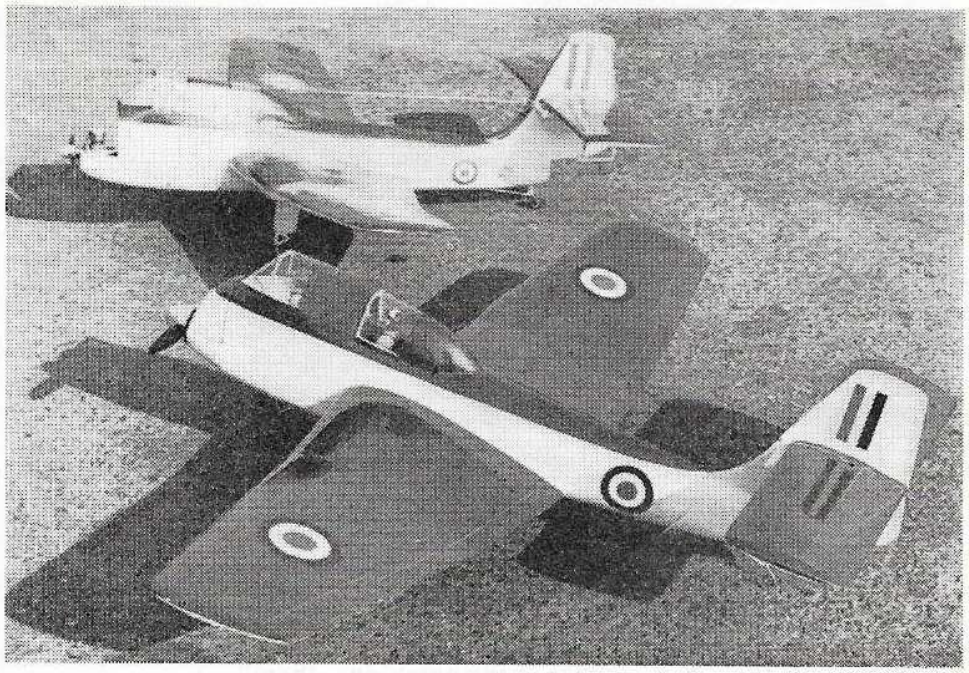
strips on bottom of ribs aft of main spar). Finally, add the 1 mm. ply facing to the root rib and the 22g. wire wing-retaining hook. Sand the wing all over, then add the block tips and undercarriage fairings to legs. The completed wings may now be assembled to the fuselage, together with the 1 mm. ply facings for the fuselage root fairings—carved from soft block, *in situ* with wings in position to ensure a neat fillet.

Covering and finishing

Both prototype models were covered with lightweight Modelspan tissue, doped onto the fuselage. Wings were "skinned" with heavyweight tissue, as was the tailplane. The fin and rudder are best covered in lightweight cartridge paper. The front engine bay should be given two coats of fuel-proofer. Colour finish may be either silver all over, or dark olive green on top surfaces with light duck egg green on all undersurfaces and fuselage sides—as shown in the photographs of our prototypes. Humbrol enamel was found ideal for this, as it is quite fuel-proof, for diesels. A coat of fuel-proofer is, of course, a "must" if using a glow motor.

Flying

Two prototypes of the *Seamew* were built and flight tested—one free-flight and one radio-controlled. The former was to ascertain general stability of the airframe. The radio version, constructed and flown by my friend John McKenzie, came out at an "all-up" flying weight of 30oz. A rather vintage Elfin 1.49 diesel with a 9in. x 4in. nylon prop provided ample power, giving a good climb and penetration. (A Davies-Charlton silencer takes the least room).



Photographs above and opposite give a good idea of the pleasing yet rugged lines of the "Seamew". Knock-off wing panels give good crash protection. Ariel "Contact" s/c gear was used in original.

The *Seamew* is not intended to be a fast model, and responds gracefully on a *total* rudder movement of about 30deg., but this, of course, may be adjusted to suit individual requirements, after initial trimming has been effected. The centre of gravity should be at $\frac{1}{3}$ of the root chord—the addition of slight packing at the rear of the tailplane (about $\frac{1}{16}$in.) will counter any tendency to loss of climb, should the model be slightly nose-heavy. The engine was offset at 5deg. right side-thrust, but no downthrust was found to be needed.

As a postscript, and testimonial to the handling properties of the "Seamew," it can now be related that the r/c prototype has been sold, complete, to some completely uninitiated beginners, who have since been enjoying many happy hours of trouble free fun-flying with this interesting and attractive model.