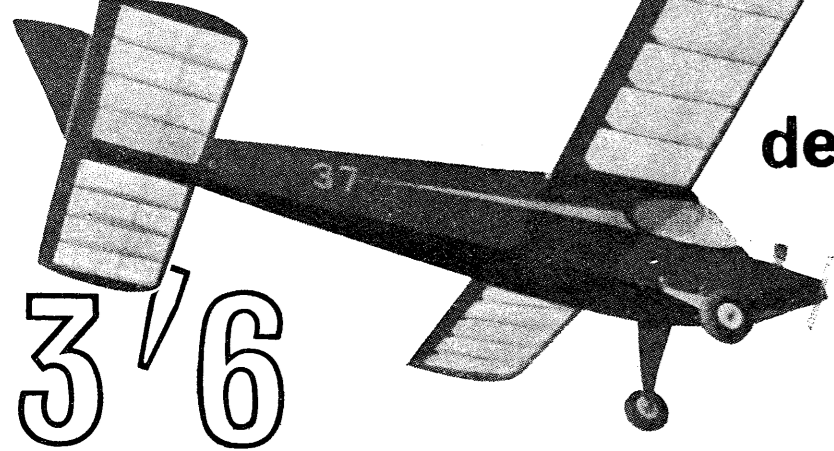


SMOKE TRAIL



36

designed by
C.A. FOSS
for SKIS
RADIO CONTROL
or FREE-FLIGHT

INITIALLY FULLY TESTED as a free flight model with wheel and snow ski undercarriage, *Smoke Trail* also makes an ideal single channel radio model with but slight modification. Chain dotted line detail on the plan gives the conversion information for simple radio installation. Naturally it's one for the lightweight outfits. For winter flying over snow, the skis are drawn full size, also being useful on smooth wet grass or for hard launched flight over a smooth flying ground.

With a handy 32 in. wingspan, transportation is no problem. *Smoke Trail* can be flown from any small field and thanks to the lightweight structure the original model was 9 oz., complete with an A.S. 55 engine. Thus *Smoke Trail* will bounce off most minor crashes and some of the major ones, too! Designed initially as an all-weather flier it has a good climb and a long flat glide. The original is still airworthy after almost two years of constant flying!

During the winter of 1962, skis were fitted and the model flown from snow covered downs. The take-off and landing were most realistic. For summer flying use the normal undercarriage.

Construction
Study the plans carefully and decide which version you want to build. Note that the building instructions refer only to the free flight version.
Commence construction by pinning the plan to a flat building board and cover it with a sheet of transparent waxed paper. The port (left side) wing leading, trailing edge and the 3/8 in. sheet tip should then be pinned down and cemented together over the plan position after cutting the leading and trailing edge notches with a sharp razor blade. Slide all W.1 ribs into place and cement firm. The 1/8 in. lower centre section sheeting should be cut to size and cemented to the leading and trailing edge, between outer lines of ribs W.2. Cut the innermost W.2 rib away at the leading edge and behind the spar notch to clear the 1/8 in. plywood dihedral braces. Cement the 3/8 in. x 3/8 in. spruce spar in place and then B1 and B2 dihedral braces, cranking the spar to bend down on the 3/8 in. sheet tip. The top 1/8 in. centre section sheeting should now be added. Remove port wing from plan, sand leading and trailing edges to section. Now build the starboard (right side) wing over the dotted areas of the plan after packing the already built port wing up 48 in. for the dihedral angle.

The fuselage formers should now be cut out, depending on which version you are building. F1, F2 and F3 are fretted from plywood and the rest from balsa except F3 which is made as follows. Cut the 3/8 in. x 3/8 in. spruce uprights and the two plywood formers F2 and F3. Cement the uprights to F2 and when dry, cement F3 in between the two uprights as shown in fuselage side view. Then add the 3/8 in. sheet top. Cut the engine bearers to length and cement to formers F1, F2 and F3. The spacing of the bearers should be varied if a different engine is used. Carefully cut fuselage sides from 1/8 in. x 4 in. sheet, pin together and trim to identical shape. Cement the 1/16 in. plywood undercarriage strengtheners on the inner faces and then cement the fuselage sides to the bearer assembly. Fill the gap between the bearers and fuselage sides with 3/8 in. sheet from F1 to F1A. (Cabin former F1A can be painted as an instrument panel if required.) Now add formers F4, F5 and F6, making sure they are true about the fuselage centre line. Sheet the fuselage bottom with 1/16 in. cross grain, chamfer a piece of 3/8 in. sheet and sandwich the 20 s.w.g. piano wire tail-skid in the rear of the fuselage. The interior of the cockpit should now be painted and the 1/8 in. cross grain top sheeting added, cracking at the wing section to match the dihedral angle. (This area has to be left open for radio access if wanted.) Cement the 1 mm. plywood undercarriage platform on the bottom then all dowel rods, and 3/8 in. cabin top front.

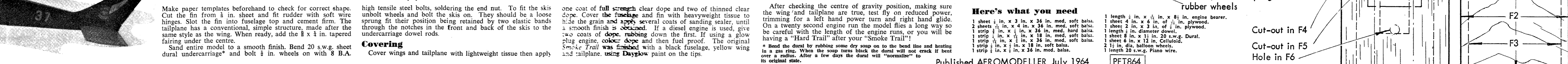
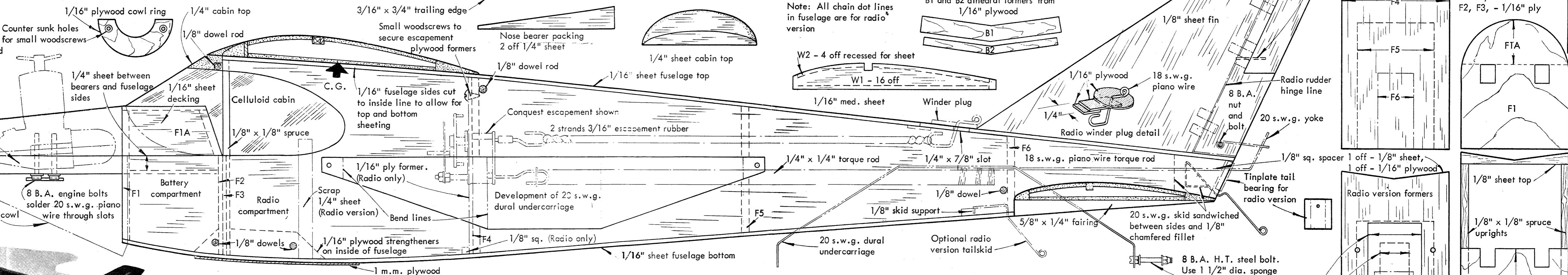
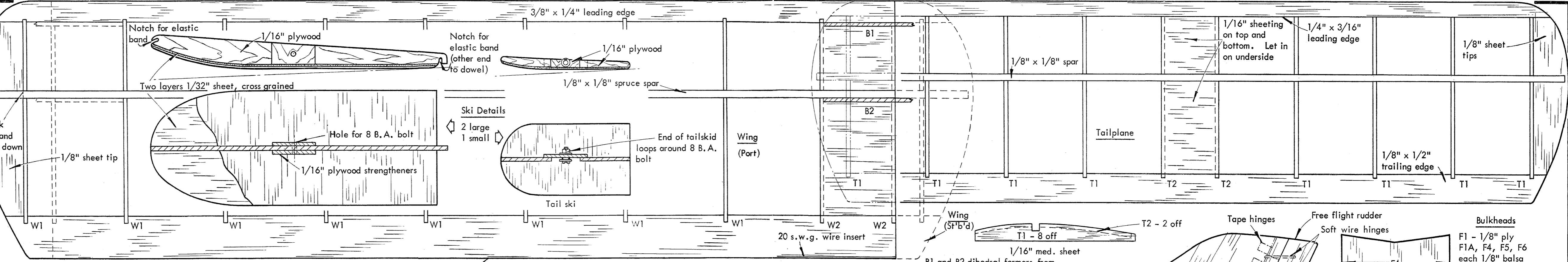
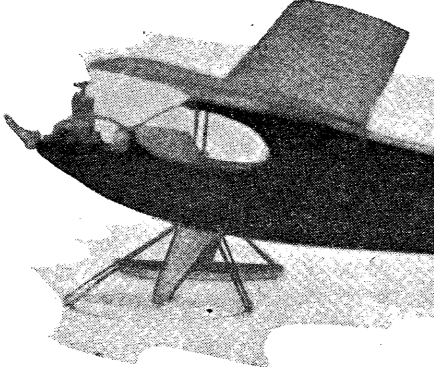
Drill engine bearer holes and solder 20 s.w.g. piano wire through the bolt heads to lock them. Screw and cement the 1/8 in. plywood cowl ring and then bend the celluloid cabin should also be cut and fitted.

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Watford, Herts., England

1/4" x 5/16" hardwood bearers and 1/4" sheet nose bearer packing

1 1/4" spinner optional

Small woodscrews securing cowl ring to bearers



Make paper templates beforehand to check for correct shape. Cut the fin from 3/8 in. sheet and fit rudder with soft wire hinges. Slot the fin into fuselage top and cement firm. The tailplane has a conventional, simple structure, made after the same style as the wing. When ready, add the 3/8 in. tapered fairing under the centre.

Sand entire model to a smooth finish. Bend 20 s.w.g. sheet dural undercarriage* and bolt 3/8 in. wheels on with 8 B.A.

Covering
Cover wings and tailplane with lightweight tissue then apply

high tensile steel bolts, soldering the end nut. To fit the skis unbolt wheels and bolt the skis on. They should be a loose sprung fit their position being retained by two elastic bands through the notches in the front and back of the skis to the undercarriage dowel rods.

Covering
Cover wings and tailplane with lightweight tissue then apply

one coat of full strength clear dope and two of thinned clear dope. Cover the fuselage and fin with heavyweight tissue to hide the grain and apply several coats of sanding sealer, until a smooth finish is obtained. If a diesel engine is used, give two coats of dope, rubbing down the first. If using a glow plug engine, colour dope and then fuel proof. The original *Smoke Trail* was finished with a black fuselage, yellow wing and tailplane, using Dayglo paint on the tips.

After checking the centre of gravity position, making sure the wing and tailplane are true, test fly on reduced power, trimming for a left hand power turn and right hand glide. On a twenty second engine run the model flies a long way so be careful with the length of the engine runs, or you will be having a "Hard Trail" after your "Smoke Trail"!

* Bend the dural by rubbing some dry soap on to the bend line and heating in a gas ring. When the soap turns black the dural will not crack if bent over a radius. After a few days the dural will "normalize" to its original state.

- Here's what you need**
- 1 sheet 1/8 in. x 3 in. x 36 in. med. soft balsa.
 - 2 sheets 1/8 in. x 4 in. x 36 in. med. soft balsa.
 - 1 strip 1/8 in. x 1/2 in. x 36 in. med. hard balsa.
 - 1 sheet 8 in. x 1 1/2 in. x 20 s.w.g. Dural.
 - 1 strip 1/8 in. x 1/2 in. x 36 in. med. soft balsa.
 - 1 strip 1/8 in. x 1/2 in. x 18 in. soft balsa.
 - 1 strip 1/8 in. x 1/2 in. x 36 in. med. balsa.
 - 1 length 1/8 in. x 1/2 in. x 8 in. engine bearer.
 - 1 sheet 2 in. x 3 in. of 1/8 in. plywood.
 - 1 length 1/2 in. diameter dowel.
 - 1 sheet 6 in. x 12 in. Celluloid.
 - 2 1/2 in. dia. balloon wheels.
 - 1 length 20 s.w.g. Piano wire.