

L. GABRIELS'

23 years old press toolmaker by trade started modelling 11 years ago, but due to study and service in R.A.F. had little time until '48 Press Sec. to Oldham and District M.A.C. uses own lathe for engine making first interest sailplanes, second power other hobby photography, used mainly with models.

DESIGNED to stand up to hard knocks and the windy weather of the North-Western Area, the original is now 18 months old and still flying. As a result of one of its two flyaways, the model spent 14 winter weeks on open moorland. The only damage suffered was a few tears in the tissue and a warped tailplane. Archangel can be built on a 30 in. drawing board.

The flight times average over 4 minutes, and consistency is the hallmark of the model's performance. It has been well placed regularly in Contests, always in the first half dozen.

Construction.

Start by cutting out the formers and write your name and address on F3, so that it can be seen inside the cabin.

Now mark out the two sides by piercing the outline on the plan on to 1/32nd in. sheet balsa using a pin. Cement the four side longerons in place on the sides and add vertical spacers.

Mark the former positions on the sides and cement the formers in place, setting them squarely. The cement having dried, join the rear ends and clamp. Check for alignment.

Cut cross-braces in pairs and fit between side longerons. Now add paper tubes and hooks, and then sand fuselage.

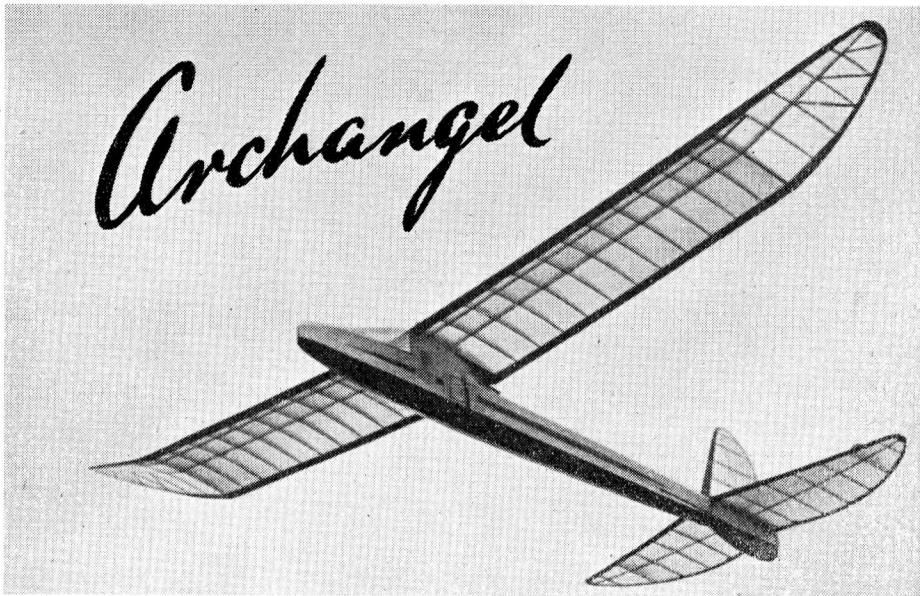
After sheet-covering, fix nose-block and cover fuselage with rag tissue. Two coats of clear dope finely sanded, the addition of the windscreen and colour dope complete the fuselage. The door of the dethermalizer 'chute compartment should be separated with a sharp blade and hinged with nylon.

Make up the mainspars, building in the outboard dihedral. Cut out four ply root ribs and face with 1/8th in. sheet balsa. Clamp these together, ribs No. 2 being 1/10th in. higher than ribs No. 1 and drill the dowel holes.

Cement paper tubes at right angles to ribs No. 1. Thread ribs No. 2 loosely onto the tubes and insert mainspars. Support these at the correct dihedral angle on a level surface, insert 1/4 in. dowels in the tubes and adjust distance between ribs to make dowels parallel with level surface. The whole set of ribs is now cemented in place. Now add trailing edge and wing-tips and, after sanding to ensure a flat seating for the leading edge, cement this member in place. Add appropriate sheeting, sand and cover. Balance wings before and after covering.

Construction of tailplane and fin is straightforward, the only point to be watched being the fixing of the auto-rudder. If the locking-pin should fail to pull out, the results will be disastrous, so ensure that the wire rings are a loose fit and lined up correctly.

Tailplane fixing, auto-rudder and locking-pin attachment are shown, left, and the dethermalizer 'chute stowed in its compartment with the door open, right.



For the same reason, the rudder spring must not be too strong.

The prototype was covered with Jap tissue, which was found to be the strongest available. Grain should, of course run from root to tip on wings and tailplane.

Two coats of thinned heavy waterproof dope were applied first, followed by two coats mixed with 5% of castor oil. Experiment may be necessary as to the best quantity of castor oil to add with a particular brand of dope. The proper percentage will prevent over-shrinking and consequently, warps, and make a completely waterproof job.

The dethermalizer has been used in all weathers, and there have been only two flyaways as a result. In both cases the cause was faulty fuses; the use of parachute nylon, with its crease-resisting qualities, makes the 'chute 100 per cent. foolproof.

The 'chute is 14 ins. square and has four shroud lines, attached one at each corner, these being 14 ins. long. In the centre of the 'chute, a 3 in. diam. hole is cut. All edges should be hemmed or doped to avoid fraying. The 'chute is attached to a hook on the fuselage under the tailplane and an elastic band draws it out of its compartment when the door is released.

Trimming.

First, check all surfaces for warps and if any are present, remove. It is bad policy to endeavour to cancel out warps with the rudder: in level flight the results may be fair, but on the line, towing difficulty may be experienced. When the C.G. has been adjusted to the position shown, limit all trimming to the tailplane.

