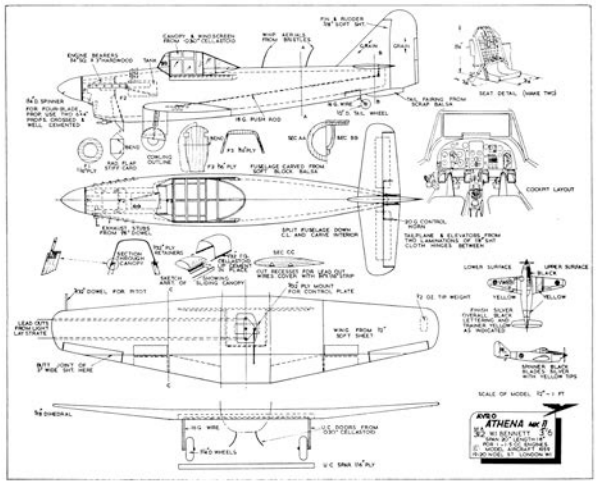
Avro Athena



A scale control liner for 1 - 1.5 c.c. engines and featuring " hollow-log ” construction by W. I. Barrett.

Designed to the same specification as the Balliol, the Avro Athena was a single engined low wing monoplane for use as a two-scat advanced trainer. Two versions were built, the first of which, the Mk. i, was fitted with either an Armstrong Siddeley Mamba or a Rolls-Royce Dart turbo-prop-engine. The Mk. 2 followed being fitted with a de-rated Rolls-Royce Merlin 35 (1,280 h.p.) giving a top speed of 258 knots. The Mk. 2, with its deep radiator, provides an ideal subject for a scale C/L model, enabling the engine to be completely buried.

On examining the contours of the fuselage, it was decided that the model should have a hollow log body. Friends who saw the fuselage just after carving expressed surprise at what they called “ all that trouble,” but the carving took less than an hour, and was much simpler than drawing out formers and then planking.

Fuselage: The first job is to acquire a piece of reasonably soft balsa, 16 in. long by 3 in. square. This is sawn down the vertical center-line and then the two halves lightly cemented together again. After tracing on the side elevation this is cut out, the same procedure being followed for the plan view. Now cut out templates to the sections shown on the plan, and it is then a straightforward job to carve the block to the correct outline section.

The fuselage is now split down the previously cemented joint, and hollowed out until there is an overall wall thickness of approximately 1/4 in. There will, of course, be openings at the cockpit, tailplane and radiator positions.

Alter drilling the engine bearers to suit the engine being used, cement these to the engine bulkhead, and bolt the engine to this assembly. The unit may now be cemented into one of the fuselage halves, after which may be added the fuel tank and fuel tubing. Mark and drill a hole for the fuel needle and fit the tailwheel, the halves can then be finally cemented together.

The plywood nose former can now be added, then saw out the wing slot as indicated on the plan, saving the lower portion for fitting after the wing has been cemented in place.

Wing: Cut this to planform from 1/2 in. medium sheet balsa—one piece 36 in. long by 3 in. wide is sufficient if the trailing edge is butt-jointed in position.

Cane roughly to airfoil section, finishing off with a file and sandpaper. Having done this, saw off the outboard panels, cementing them back at the correct dihedral.

The bellcrank assembly, lead-out wires, tip weight and undercarriage unit may be added, after cutting away suitable portions of the wing as indicated on the plan. Thread the push-rod through the fuselage, and cement the wings into position.

The tailplane and elevator is a simple two-lamination structure. When complete, the push rod is inserted

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through the elevator horn, and the retaining washer soldered on. Cement the tailplane to its seat on the fuselage, checking that the elevator moves freely by pulling the lead-out wires. If satisfactory', replace the fuselage fairings under the wing and add the fin and rudder unit and the ventral tail fairing.

Cockpit Canopy: This is formed from 0.030 in. cellastoid, which is easy to work with. The sliding portion can be moulded over a simple former, while the rear portion is heated and bent to shape. Take care to avoid overheating the material, otherwise striations will occur. (I know, I had to polish them out!) The windscreen is built up around the 1/16 in. ply former. Cabin structure is represented by doping in place strips of paper. Details of the sliding canopy are shown on the plan. If desired, the cockpit detail may now be added.

The model is completed by adding the undercarriage doors, and cementing the exhaust stubs into the troughs in the cowling. Cover the entire model with tissue, and dope until a good finish is obtained. Colour dope as indicated.

Flying: Before flying, check that the model balances on the front lead-out wire. If possible, fly off a smooth surface. The original model weighed 10 1/2 oz., and at this weight flew very well, with straightforward take-off and landing characteristics.

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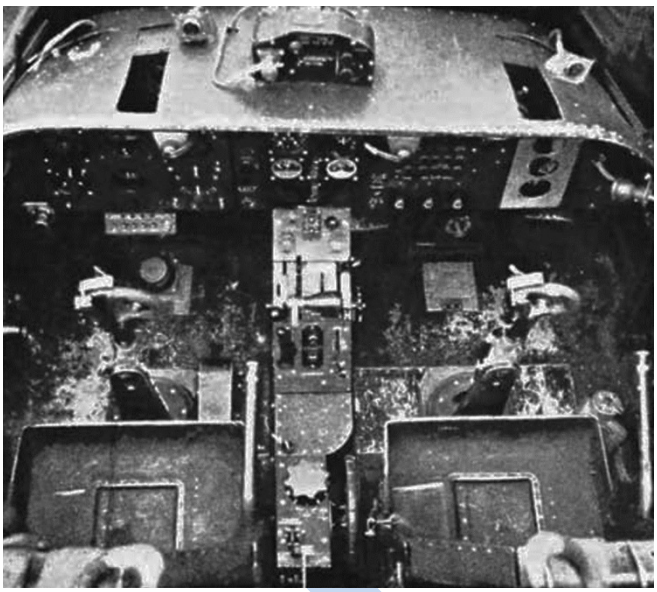

The Athena's cockpit easy to reproduce in the model.

Real thing or model ? Careful choice of background as in this picture shows just how a model should be photographed.