

Ansaldo S.V.A.4



Ansaldo S.V.A.4 is a Control Line Scale Model Designed by Cesar Milani.

Following the feature on Capt. Milani's scale models which appeared in the March 1960 edition of MODEL AIRCRAFT, we received many requests for working drawings. At that time no such drawings were available, but we are now able to present plans for the latest of the Milani Masterpieces the Ansaldo S.V.A. 4. This model won a silver medal at the 1961 Model Engineer Exhibition and its excellent flying performance has been widely demonstrated.

This is the second model of the Ansaldo that Capt. Milani has built as, since completing the first one, much prototype data has come to light, revealing errors in the original model. The Ansaldo featured here, is the result of much careful research and is really authentic. It is not an easy model to build, although simpler than most of the designer's other eye catchers! But for those who are looking for a certain scale contest winner, or a really worth while model on which to lavish their modelling skill, the Ansaldo is the answer. A unique feature of this model is the method of assembling the main components—they are all bolted together in the true prototype fashion and may be removed and replaced as required.

We would emphasise that constructionally, it is a subject for the advanced builder only and quite unsuitable for a novice, although the accurately completed model is a real dream to fly and quite without vices.



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Fuselage: This is undoubtedly the trickiest bit of the airplane, since there is no continuously flat surface from which to work ! The section changes from rectangular at the nose, to triangular at the tail and both top and bottom longerons are curved. There are several possible methods by which the basic frame can be built, but the one we suggest is that shown on the drawings.

Formers A to G are drawn out on 1/8 in. ply, carefully marking the datum and center lines—this is very important. The engine you are to use will determine the spacing of the engine bearers and, obviously, this measurement will not necessarily be the same as that shown on the plan. The original employed an Anderson Spitfire spark ignition engine, of about 11 c.c., the power output of which is approximately equal to a good glow .35 and one of the variable speed R/C .35 or .45 engines currently popular, would be an ideal choice.

Fuselage construction is commenced by laying the drawing over a flat board and covering it with waxed paper. The two lower spruce longerons are carefully steamed to shape, over the spout of a boiling kettle, working very slowly and being careful not to break the wood fibers in the process.

Now, over the plan view, securely fix the accurately made 1/2 in. thick fuselage jig blocks (see side view). Draw vertical lines on the blocks to indicate the exact fuselage center line and former widths, and pin the pre shaped lower longerons in place. When satisfied that these are accurately positioned, glue formers A to D in place, being careful to keep them perfectly upright. A piece of 1/4 in. sq. balsa temporarily cemented behind the lower edge of the formers will enable them to be pinned in position.

Glue the 1/4 in. sq. sternpost in place and hold it securely upright, with props of wood pinned down to the board. Now steam the upper spruce longerons to shape—do not attempt to bend them without steaming—glue in position and fix to the sternpost. The remaining fuselage formers, from K to O are now glued in place between the four longerons, being careful to see that they are upright and “ square ” across the fuselage (note that former F slopes slightly backwards).

At this stage, there may be a tendency for the fuselage to distort and temporary supports from the board may be necessary to correct this. Former A1 is next glued in place, followed by the engine bearers and diagonal braces. The elevator may now be built and cemented to the rear fuselage, squaring it up carefully.

Leaving the fuselage assembly still fixed to the board, install the bellcrank system and control cables, complete with their very necessary tension— adjusting turnbuckles. These cables pass through brass tubes fastened to former 1. Ensure that there is no binding and that the control system works smoothly.

With the fuselage still fixed to the building board, temporarily fit the inwards sloping cabane struts. These are slotted over the formers the lengths being shown on the former pattern. The top ends of these struts are joined together by means of tinplate plates, exactly over the center line.

To simplify this assembly and provide a positive jig for rigging the top wing, the following procedure is suggested.

Spot cement a piece of 1/4 in. sq. balsa exactly upright on the center line of formers B and D. These pieces should extend above the tops of the formers by about 2 1/2 in. Now cement outside the fuselage, to each side of formers B and D, four upright pieces of 1/4 in sq. balsa, cutting them to correspond with the exact height of the underside of the wingspars, at these points The measurements should be taken from the fuselage side view. There will now be six uprights in position. Two further pieces of 1/4 in sq. balsa should be cemented (fore and aft outside the outer uprights exactly flush with their upper ends. This now forms a temporary trestle and the wings, when resting on it, will automatically assume their correct height and incidence. The center uprights will give the exact point at which the cabane struts are joined. The fuselage may now be removed from the building board, and the 1/2 in. sq. jig blocks cut away.

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Wing Construction: This is comparatively straightforward and orthodox, but before assembly, bolt the tinplate wing root attachment plates to the wingspars. Pack the spars up to the correct height and then cement the ribs in place. The wing tips are steamed to shape from either dowel or bamboo. After removal from the plan, the tinplate wing strut attachments are bolted in place two on each side of the spars.

The uncovered wings are temporarily assembled to the fuselage, with all struts, etc., and the strut plates are then soldered together at their correct angle.

General Constructional Notes: Since the fuselage is chiefly constructed of hardwoods, balsa cement is not really a satisfactory adhesive. We recommend Aerolite 306 or a similar glue.

Rigging wires and control cables are all tensioned with small turnbuckles, which are obtainable from model shops dealing with marine accessories. About two dozen will be required.

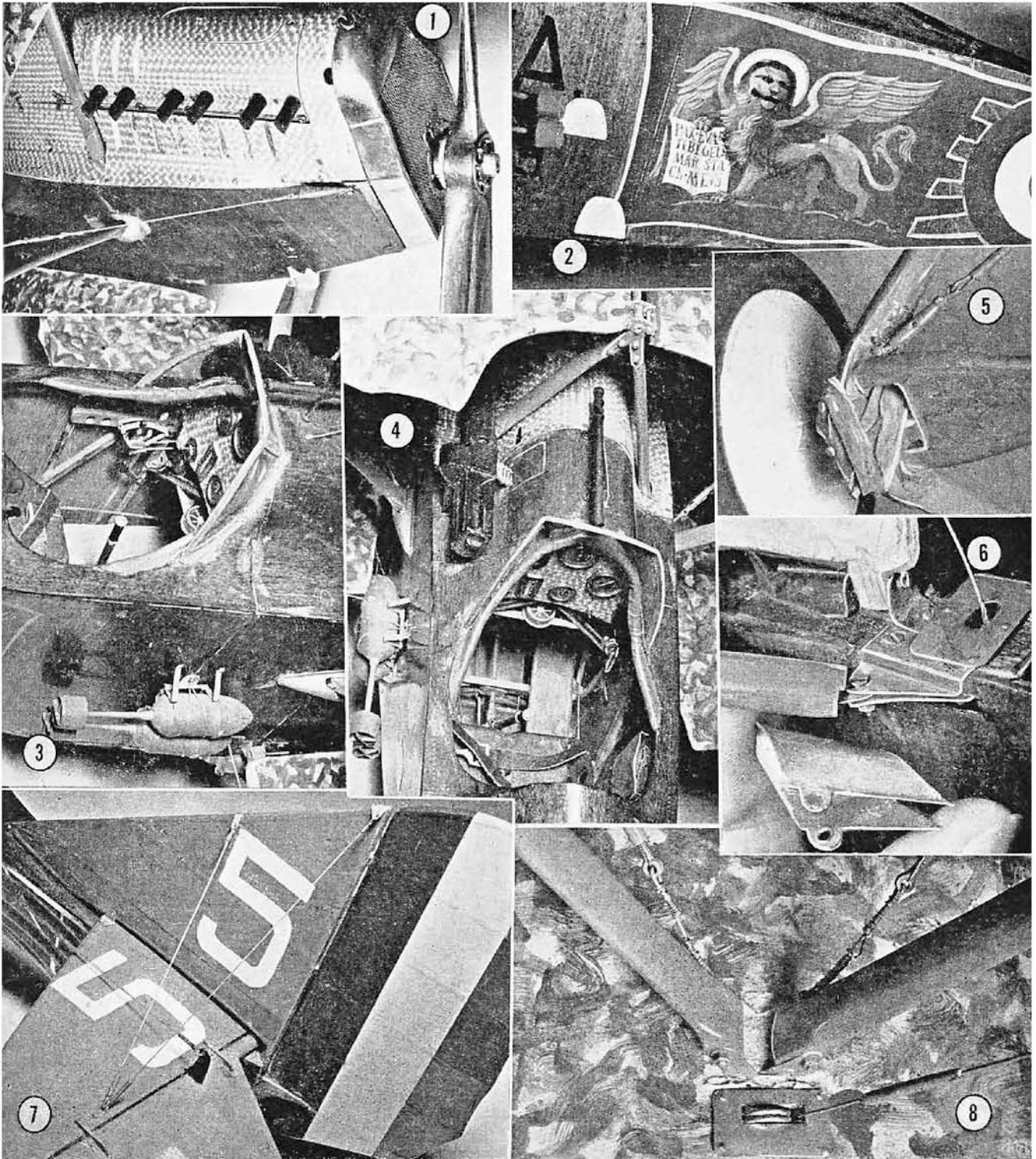
All the components (wing, tail, undercarriage struts, etc.) are assembled exactly as in full size practice—by bolting together, the numerous attachment plates being fixed to the wooden frame with two or 12 BA. steel bolts. A tapping size hole is drilled in the timber and the bolt is forcibly screwed through, cutting its own thread as it goes. Araldite may be used to strengthen the fixing and in many places it is possible to use a nut on the bolt, to further secure the attachment.

Metal cowlings are hand beaten from aluminium and bolted in place. The radiator is built up from brass, but should you prefer, of course, the dual curved radiator top may be carved from wood. Nylon covering is used throughout.

The extent of the exterior and interior detailing, will be entirely up to the individual builder and much information can be gleaned from our prototype drawings and over painting.

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At the time of going to press the Ansaldo drawings, shown in the small scale reproduction opposite, were incomplete. The final plans will include additional perspective constructional and detail sketches.

FULL SIZE WORKING DRAWINGS ARE OBTAINABLE FROM YOUR LOCAL DEALER, OR BY POST FROM THE "MODEL AIRCRAFT" PLANS DEPARTMENT, 19-20, NOEL STREET, LONDON, W.1, PRICE 8s. 6d. (TWO SHEETS) POST FREE

1. The aluminium cowlings, exhausts and brass radiator are clearly shown in this view. The "machine turned finish" is achieved by using a tiny wire brush in a power drill. Note the numerous louvres.

2. A close-up of the striking insignia which appears on both sides of the fuselage. The colours are shown on the cover.

3 and 4. The cockpit area. Many useful details are shown here, including upper wing fixing brackets, the anti-personnel bombs, and the moulded plastic cabane strut fairings.

5. The rubber band shock absorbers on the undercarriage and the undercarriage

bracing lower fixing.

6. An underside detail showing the lower wing rear spar fixing and the rear undercarriage leg anchorage plates. This attachment is covered by the aluminium fairing, shown alongside, with the 12 B.A. clamping nut and bolt removed.

7. The rigging brackets and elevator hinges are clearly shown in this photo, as also are the elevator horn and double lay-strate operating cables.

8. The lower rear interplane strut fixings and the dummy aileron cable and pulley. Note the turnbuckles on the rigging.