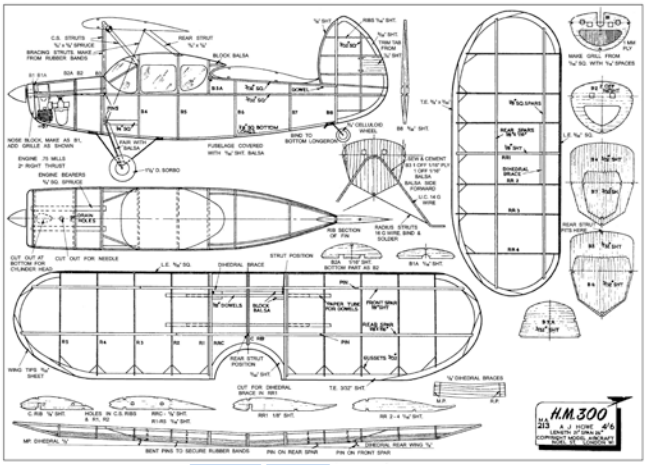
H.M 300



A Novel Free Flight Flying Scale Model for the Mills .75 c.c. diesel by A.J. Howe.

All wood used is medium balsa except where stated; the fuselage is covered with 1/32 in. sheet. First step is to cut out all bulkheads, and note that B2A is the same as B2 with the exception of the top, which is cut to fit over the bearers and to receive the top longeron. B3 is in two pieces, one of ply and one of balsa, cemented together with the balsa side foremost. But before joining the two faces, the undercarriage wire should be stitched to the plywood.

Having prepared the bulkheads, now mount the nose block of soft balsa on Bi with the piece cut out to take the crankshaft. This piece is then cemented on B1A. Drill engine bearers to suit the unit used, and glue B1, B2, and B3 in position on the bearers using Croid or Durofix in preference to balsa cement. Cut two pieces of 1/32 sheet balsa 13 1/4 X 1 5/8 in. and glue one piece of 3/32 in. sq. X 17 in. along one edge of each of the two sheets, thus forming the main longerons and fuselage sides. Now mark bulkhead positions on longerons and glue B4 and B5 in place. When dry, this assembly can be mated with B1, B2, and B3, the front edge of the sides are cemented to B3. When dry pull in longerons to tail and mount B6 and B7, and also stern post, B8.

Next cement in the 1/8 in. sq. keel longeron and also the 1/4 in. sq. undercarriage braces, and then position B5A and B5B onto the main assembly. The two balsa blocks at the tops of B4 and B5A and B are also added at this stage. Build up fin aft of the stern post, and cement and bind tailwheel and main undercarriage assembly to keel. The soldering of the undercarriage bracing can be completed, leaving off the wheels.

Now cement the wing struts, noting that the rear strut, the base of which joins the center of B5, is a single unit. The rear wing mounting longerons, from B5A to B8, should also be added, covering with 1/32 in. sheet. Once these are in position the foremost section of the fin can be completed.

The top and cabin sides are covered with 1 /32 in. sheet, and as this is rather tricky, the sheeting will need steaming and water-soaking. It is easier to cut out the windows when the sheeting is in position, and so avoid splitting at critical corners. Also sheet in front of windscreen between B2 and B3 down to main longerons. Fit windscreen diagonal braces and then position windscreen and window's, but note that the windscreen is not cemented to the braces.

Cover the bottom of the fuselage with 1/32 in. sheet and fair undercarriage legs with balsa. Cut out the balsa nose block to the outline shown shaded on the plan, to take 1/16 sq. balsa strips cemented vertically approximately 1/16 in. apart, to form the cooling grille. The detachable cowling is made by cementing three strips of 3/32 sq. balsa to B1A and B2A, and covering with 1/32 sheet. Cut a small hole in top of cowling for needle extension and a small hole in the bottom for the compression lever. Fit the dowels to retain the rear wing; solder on the wheels. Finally rub down the complete fuselage with fine sandpaper.

H.M 300

Study of the plan will show that the wing construction is quite straightforward, but be certain that the center section fits squarely on the struts. Dowels and paper tubes are used for the detachable wing panels and rubber-bands in place of struts extend from the panels to the fuselage. The positions of the latter are shown by the bent-pin positions in the wing and the hook-up points on the fuselage sides.

Points to Note: The following points may prove helpful during the building and perhaps will obviate any snags liable to crop up through an oversight. Drill the engine bearers with a 7/64 drill and use 8 B.A. nuts and bolts—this way you can get plenty of side thrust.

A piece of 22 s.w.g. wire bent at right angles and soldered to the undercarriage leg will help to prevent the fairing moving.

The bottom covering is left for the last operation, thus making it easier to fit the windows. The wing tips will need curving to wing section and this can be done with a hot iron, and make sure you have good joints between the tip sections.

Cover the whole model with lightweight tissue and give three coats of thin clear dope.

For flying, I use an 8 X 4 in. prop on a Mills .75 engine, mounted with 2 deg. right thrust. The model should balance just aft of the struts. After obtaining a flat glide, trim for a slight right turn. First flight should be on half power until satisfactory results are obtained. It is possible that an increase in power will give a sharper turn, so increase side thrust—but never to the extent that you get a right-hand power turn, as it is fatal.

The take-off is very fast, and despite a short run, most realistic.

The H.M.300 makes an intriguing little model, and although hardly in the super scale class, will give many hours of flying for fun. One last word—don't forget the fuel proofing.

Model Aircraft Magazine June 1955