

A 60 INCH SPAN FLYING SCALE MODEL

D.H.C. 2 "BEAVER"

BY A. F. W. MOORE

GLANCING through "FLIGHT" some months ago, I came across a photo of the D.H.C.2 "Beaver" and, being keen on scale Free Flight models, I decided that in the near future I would build such a model. But a photo was not sufficient, so I wrote to De Havillands asking if they could help in any way and in due course received a brochure which I found very helpful, enabling me to build a model that is an excellent flyer and not too difficult to construct.

This model has flown well from the very first, being stable and needing very little trimming, giving good sport without tears.

I decided to make the model 5 ft. span as this suited the 2 c.c. engine I had, which accounts for the 1 1/4 in. to 1 ft. scale adopted.

Construction.

Fuselage. As the fuselage is of the box type, the main framework can be built on the plan. Take the 3/8 in. square Balsa lengths and pin down, then add the 1/4 in. square uprights, also the cross pieces till you have one side finished. The other side can be built on top of this, but before adding the uprights obtain some scrap 1/4 in. balsa to lay on the uprights of the first side to keep the second lot of 1/4 in. square a 1/4 in. apart from the first side. When the glue has set, take the two sides apart and your uprights should be on the outside edge of the 3/8 in. square longerons.

Next take the plan view of the fuselage and pin the sides of the fuselage down so that they stand upright, and glue in the top and bottom members, making sure the fuselage is square.

Cut out former No. 3 and cabin roof. The cabin roof is 3/8 in. sheet balsa and owing to its width will need to be made up from two pieces, the join running through the centre. Also note that the rear edge of the roof is recessed to fit under the cross members of the fuselage to give a better joint.

Former No. 3 fits up into the roof as you will see from the plan, and as the former is the main support for U/C gives firm fixing.

Cover the fuselage from former 1 to the rear of cabin with 1/16 in. sheet balsa, selecting wood that will bend without splitting as there are some sharp bends here. The underside of the fuselage is only covered to former No. 3 to give access to U/C fixing bolts.

Now build up the windscreen struts. These are made of 1/16 in. ply or birch 3/16 in. wide, to a T section to withstand compression loads should model turn over on its back. When the celluloid windows have been glued into the frame, work glued strips of stiff paper round the edges for capping which, when silver doped, will look like sheet aluminium, giving a neat finish.

Cut out two dummy ribs from 1/16 in. ply and glue at the correct angle of incidence each side of the cabin top to take the 1/4 in. dia. dowels of the wings, bringing the 1/16 in. sheet



Age 39 years . . . a Railwayman . . . a widower with two children . . . took 2nd place in the Pilcher Cup, back in '34 . . . placed in Heavy Section of the Fairey Cup same year . . . has no other hobbies.

of fuselage flush with these ribs. The best way is to put these on first, and then cut the sheet to fit neatly round the windscreen.

The undercarriage wire is 12 in. gauge bent to shape as shown, and fixed to former No. 3 with four aluminium clips secured with 6 B.A. bolts.

Now give the fuselage a good sanding and shape the 3/8 in. radius on the longerons.

The tail wheel fixing is of 3/16 in. and 1/2 in. dowel built up with the wheel fork cut from 1/16 in. sheet aluminium. Make and glue on the two plywood strut plug plates on the bottom of cabin and drill to take the wing strut plugs.

Make up the fin and fix in its block, then drill and insert the piece of 3/16 in. dowel. Drill again at the side of block to take the 1/4 in. dowel of the fin fixing hooks; this dowel as seen in plan is drilled through the centre to take wire, the ends of which are bent to form hooks (Fig. 1).

Wing. The wing is built up on the plan, pinning down the trailing edge of 1/4 x 1/4 in. and the 5/16 in. and 3/32 in. spars. Then place ribs, after which the main spar can be added and leading edge. Add the 1/16 in. pieces with the strut fixing wire to the sixth rib on both panels, also wing dowels as shown, then sheet leading edge and inboard panels, glue on wing tips. Do not have the wing dowels too long or they will not allow the wings to knock off in the event of a bad landing.

Engine Cowl. The engine cowl is built up of 1/8 in. sheet and struts of 3/8 in. square to give strength, with a half circle of 1/2 in. sheet balsa to give the offset of the cowl as shown in Fig. 3. Drill along the bottom to allow waste oil to drain out. The dummy engine is made up of half circle pieces of balsa wound with thread; push rods are of 1/16 in. dowel and plug leads of wire.

Cover the model with rag tissue using a heavy grade; apply two coats of clear dope and three of silver. The top surface of cowling is red, also the flash on side of fuselage.

Finish off with one coat of fuel proof.

Flying. Make sure the C.G. is in the correct position and test glide over grass till a long flat glide is obtained. The glide is a little on the fast side. Trim to give a slight turn to starboard and make your first power flight. The model should turn to port under power and glide to starboard.

My engine does about 9,000 r.p.m. with a 9 x 5 Tru-flex, and I obtain the above results with 2° side and 2° downthrust.

