



### B.A. SWALLOW FOR .5 c.c. MOTOR

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**T**HE ancestry of the Swallow II can be traced back to the German Klemm L.25, several of which were imported into this country during 1930-31. In 1933 the type was manufactured over here by the British Klemm Aeroplane Co., Ltd., of Feltham, the fore runners of the British Aircraft Manufacturing Co., Ltd. The final version produced in 1935 proved extremely popular in civil aviation and, by September, 1939, over 150 machines had been registered in this country alone. A number were privately owned, but the majority belonged to various schools and clubs.

**Building Instructions.** Lay plan side view over 1/32-in. sheet and trace through the complete flat side view including slots for C/S L.E. and spars. Repeat for other side of the fuselage. Cut out F.12 and glue into position on side sheets then install all uprights. Prop up sides over plan view and install cross pieces, remove from plan, cut out and cement in all formers with the exception of F.1. Cut to length, drill for engine bolts and install engine bearers. Cut out C.S.2 and C.S.6 and cement into position. Slots in F.12 for C.S.6 will have to be enlarged a little; this can be remedied after C.S.6 is in position. Install 1/16-in. sq. stringers on top decking, then cover with 1/32-in. sheet. Make up C.S.3 and C.S.4. Pierce for U/C thread binding and cement into fuselage. Form U/C and bind into position. Install C/S L.E. Cut out C.S.1 and cement in position. Make up wing boxes and install into position. Cover bottom of fuselage with 1/32-in. sheet. Form tailskid wire, bind to piece of very hard balsa or hardwood and cement into fuselage. Solder small piece of tin 3/16-in. by 3/8-in. to bottom of skid. Cut out and cement on top of top longerons at rear the 1/16-in. sheet tailplane rests. The paper tube to take fin dowel is not glued in until fin is made. Cut out F.1 and noseblock. Check that F.1 fits onto longerons and bearers. Remove and cement to back of noseblock. Temporarily bolt engine into position and hollow out noseblock to fit. Side cowling pieces are next cut and cemented into position. Top and bottom cowlings are

then each made in one piece. Cover C/S top and bottom with 1/32-in. sheet grain spanwise.

**Wings.** Cut out bottom T.E. and lay into position together with bottom spars, install ribs and tip, then top spars and L.E. Taper L.E. a little at tip before cementing into position. Cut out top T.E. and chamfer inside edge, and cement to ribs and bottom T.E. Cover top between L.E. and front spars with 1/32-in. sheet. When dry remove from plan and cover bottom between L.E. and front spar with 1/32-in. sheet. Repeat procedure for starboard wing. Cut out and install wing tongues making certain that root ribs line up with C/S ribs. Cover first bay top and bottom with 1/32-in. sheet.

**Tailplane.** Lay spar L.E. and T.E. into position. Raise L.E. and T.E. with 1/16-in. packing. Cut out ribs and tips and cement into position. Cut top and bottom L.E. sheet pieces. Cement on top piece and thin celluloid strip. When dry remove from plan and cement on bottom piece and cover centre bay top and bottom with 1/32-in. sheet.

**Fin and Rudder.** Construct as for tailplane except that ribs are sanded to a streamline shape after assembly. Connect rudder to fin with control-line type hinges. Roll paper tube around fin dowel and cement tube into fuselage with fin in position. Make up and bind pendulum to rudder.

**Trimming.** All test flying should be carried out over long grass on a perfectly calm day. Assemble the model and check that C.G. is in position shown on plan. Test glide model until it glides flatly with a slight right turn. Obtain the right turn by adjustments to the fin in holes in tailplane. The original model did not need any alteration to tailplane incidence.

Adjust motor to half power and hand launch slightly across wind (if any) to the right. Model should power glide in trying to turn left. Start motor again and increase power. This time model should climb very gently and the pendulum rudder takes over when model tries to turn left. This should result in a straight climb and a very gentle right glide turn. Adjust fin another notch to the left and allow motor to run at 3/4 power. When launched, model should climb gently to the right and increase its right turn slightly in the glide. The model does not need any extra power for flying and if full power is used this will require extra left fin adjustment with subsequent loss of glide owing to increased right turn.

