



# THE GLOSTER "GLADIATOR"

By "Cy" FINEGOLD

**T**HE Gloster "Gladiator" is a direct descendant of the "Gauntlet," which was one of the finest biplanes in the Royal Air Force. The "Gladiator" has a top speed of 265 miles per hour, cruises at 228 m.p.h. at 14,500 feet. The service ceiling of this machine is 35,000 feet, and it can ascend to 10,000 feet in 4 minutes with full military load, oxygen tanks, wireless and night flying equipment. The Bristol Mercury engine is used and gives 685 h.p. The machine weighs two tons. It is interesting to note that when the Air Ministry held a competition for day and night fighters, the Gloster "Gladiator" won its spurs against a large field of machines, and that it employs many innovations never before tried on biplanes. The single bay wings can stand terrific loads in a dive. The monostrut landing gear makes for a cleaner design, and yet can stand a great deal of abuse. The Air Ministry saw to that. The undercarriage uses Dowty internally sprung wheels. Armament consists of two Vickers machine guns on either side of the fuselage, and Lewis guns on the lower planes. Blisters over the wing guns keep with the streamlining of the "Gladiator."

This model is the last word in simplicity, and the construction is straightforward. The drawings and pictures are self-explanatory, so instruction will be kept to a minimum. The cost for materials will be within shouting distance of 1s. 6d., and materials can be purchased through your local model supply or mail order

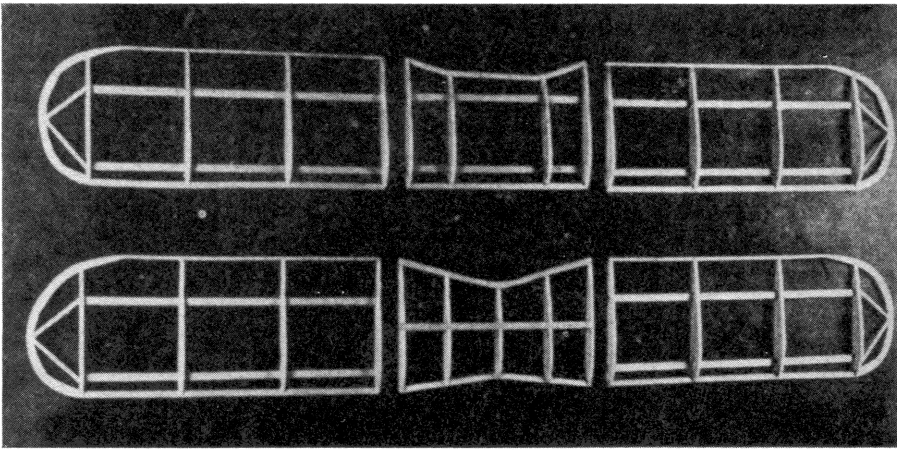
house. The only tools needed are a razor blade, pliers and sandpaper. As a flier the model leaves very little to be desired. Its smooth, easy flight, snappy take-offs, three-point landings, and stable flights, will repay you a hundredfold for every minute spent in its construction. And so to build. . . .

## Construction of Fuselage.

The fuselage is of conventional construction. Cut the plan out and pin it to a flat board. Place a sheet of wax-paper over it to prevent the parts from sticking to it. The drawings are full size, so the fuselage frame, as with the rest of the model, is built directly over the plan. This assures you of getting a square and accurate frame. Start by making the fuselage sides over the side view. Lay longerons of  $\frac{1}{16}$  in. square medium hard balsa over the positions shown. Cement the vertical and diagonal members in place. Use pins to hold the various parts to their correct place. Build the other side directly over the first side. When they are both complete remove them, cement S-10 together, and glue the cross-braces in.

Trace the formers on to  $\frac{1}{16}$  in. sheet balsa. Cut them out and cement at their respective positions. Do not cut any notches in them until you are ready to glue the stringers into place. A typical cross-section is shown on the plan (S-2). Note that in this section Former F-6 is cut from  $\frac{1}{8}$  in. sheet. Stringers of  $\frac{1}{16}$  in. sq. balsa

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Here are shown the four wings and the two centre sections. All four wings are the same size, but note differences in the other two parts.

strips are cemented to the formers and run fore and aft. Cover with 1-64 in. sheet balsa (vener) between s-6 and s-1, to simulate a metal covering. Before this has been completed, glue the lower wing's centre section into place. The cockpit formers are of reed or bamboo, and the cabin is covered with cellophane.

#### Construction of Wings.

The wings are made in six sections, as shown in Fig. 2. Four panels and two centre-sections. Make a cardboard template of R-1 and cut twenty ribs out of  $\frac{1}{16}$  in. sheet. Lay  $\frac{1}{8}$  in. sq. spars over the plan and cement the ribs over them. Then glue the leading edge of  $\frac{1}{8}$  in.  $\times$   $\frac{1}{16}$  in. and trailing edge of  $\frac{1}{16}$  in. sq. into place. Make wing tips of  $\frac{1}{16}$  in. sheet. As the plan only shows the right wing panel, reverse the drawing and proceed to make two left panels. The centre-section drawings are self-evident. When assembling the model, build  $\frac{1}{2}$  in. dihedral into each wing. Use heavy thread for bracing.

#### Construction of Tail Surfaces.

Fig. 3 shows the tail surfaces. Build these over the plans, too, and you will encounter no trouble. Straight sections are  $\frac{1}{8}$  in.  $\times$   $\frac{1}{16}$  in. strip, and the curved ones are cut from  $\frac{1}{16}$  in. sheet.

#### Construction of Cowl and Undercarriage.

The cowl may be either built up as in the plan or solid. Nine tappet covers are cut and sanded to shape, and glued equi-distant around the cowl. A removable nose plug should be used. Two exhaust stacks cut from a sheet of  $\frac{3}{16}$  in. and cemented as shown. The single strut landing gear cut from  $\frac{1}{4}$  in. sheet, tapered, sanded and put in place with plenty of cement. No. 12 piano wire is used for the axle and runs in one con-

tinuous piece up under the l.g. strut, under F-6 and down to the other wheel.

#### Covering, Doping and Colour Scheme of Model.

When the model is ready to be covered, sand all the parts lightly, to remove all bumps and fuzz. Cover all framework with tissue, using banana oil or dope as the adhesive. The original model was painted all aluminium, so should you wish to do the same with yours cover it with white tissue. Paint the model with aluminium dope (aluminium powder mixed with dope). If you are building the model solely for the purpose

of flying, cover with coloured tissue. To stretch the paper spray the covering lightly with water and allow to dry. All details, such as control surface outlines, striping and fuselage machine-guns are drawn on with India ink.

#### Flying.

For flying, a flying propeller, made as shown in the plan, is used. Bend a rear hook and propeller hook from 12 piano wire. Insert 6 strands (3 loops) of  $\frac{1}{8}$  in. flat rubber. When this is done the model is ready for its maiden voyage. The day for test flying should be very calm, and select a place where there are tall weeds or something to break the fall of the model. Glide it from a short height of the ground.

If the model dives place some weight, in the form of lead or clay, in the rear of the fuselage. Should the model have a tendency to stall, that is, if it noses up abruptly and slides down on its tail, place some weight in the cowl. Adjust to a happy medium where the model has a flat glide.

