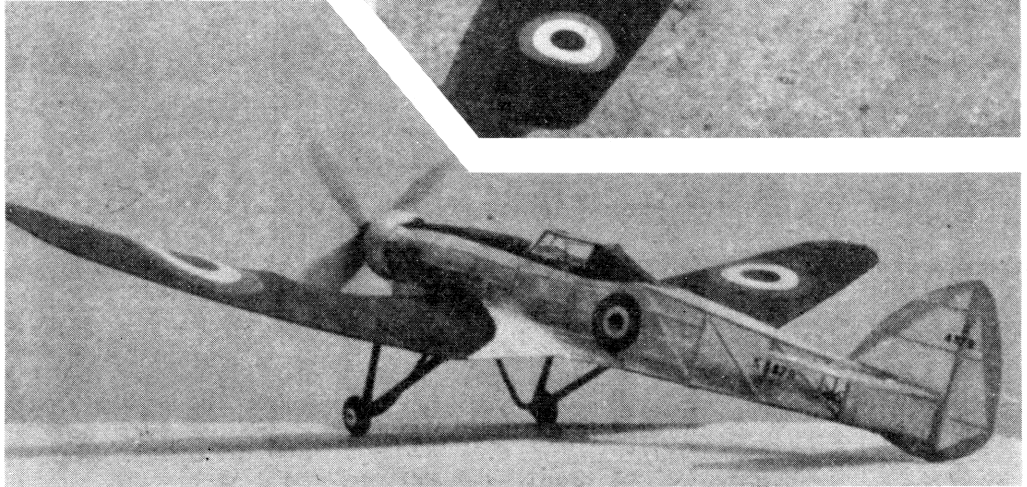
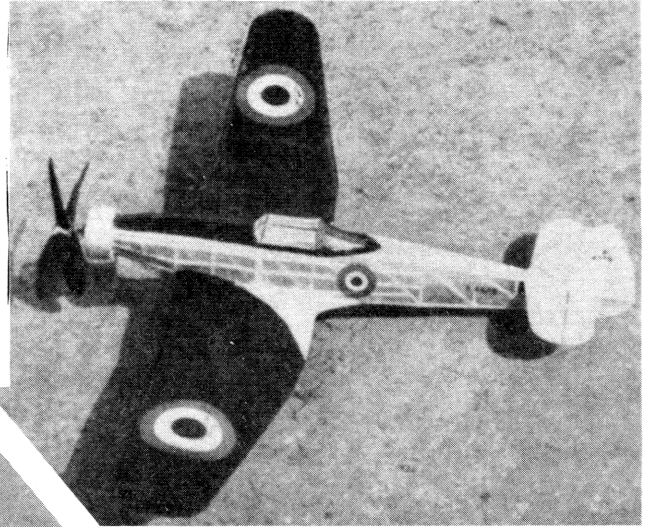


# THE BRISTOL 138A

By S. D. MARSH

*This 'plane established a world height record of 53,937 ft. at the end of June, 1937. Flight-Lieut. M. J. Adam piloted the special supercharged Pegasus-engined 'plane aloft for 1 hr. 35 min., when his altimeter registered 55,000 ft.; he then cut out his motor and began a long, fast glide, landing at Farnborough after being 2¼ hours in the air. The machine is said to be the largest single-seater in the world.*



THE AERO-MODELLER

JANUARY, 1938

## Building the Model.

Take lengths of  $\frac{1}{16}$  in. sq. balsa and construct two sides on the blacked-in portion. While these are drying, cut the top and bottom cross pieces and join the sides together.

Next make the block for the tail assembly and cement it to the fuselage.

Cut the bulkheads from  $\frac{1}{32}$  in. sheet and cement in place, then attach the stringers. Cut the  $\frac{1}{4}$  in. square leading edge and the  $\frac{1}{16}$  in. sheet spars for the centre section and cement in place; shape the leading edge after cement is dry. Cut the centre section ribs from  $\frac{1}{16}$  in. sheet and sand to shape with leading edge after cementing.

## The Engine and Cowl.

The motor cowl is made from hard  $\frac{1}{4}$  in. sheet or  $\frac{1}{8}$  in. sheet, sanded down with a light grade paper and covered with metal foil or several coats of aluminium paint smoothed in between each coat.

The nine balsa cylinders are made from scrap and bound with thread to imitate fins. A handy tool for making cylinders, plugs, etc., is the reversed portion of a penholder sharpened up on a smooth file or stone.

Cement the cylinders to the inside of the cowl, making sure that they are short enough to go round the nose plug; this is a piece of hard wood bushed with aluminium tube, and a cork plug cemented on the rear portion.

## Wings.

Commence by tracing the wing panel shown, so as to complete the drawing.

Cut out the ribs from  $\frac{1}{32}$  in. sheet, except the root ribs,

which are cut from  $\frac{1}{16}$  in. sheet. Then cut the tapered  $\frac{1}{16}$  in. sheet spars. Do not taper the leading edge until the ribs are cemented on, when it may be shaped to the rib contour.

## Undercart.

This is made from hard balsa and reed reinforced with wire; a very suitable wire may be obtained from any hardware store, called cheese-cutting wire. The wheels are hard balsa or pine, with two discs of aluminium recessed and cemented in the centre.

## Prop. and Flying.

Make the prop. from hard balsa. Carve and balance the two blades independently, and give them a deep under-camber. Cement the joint firmly. Power the model with three loops of  $\frac{1}{8}$  in. flat rubber.

If the model dives when testing, bend the elevator up slightly, but if she stalls, which is much more likely, don't use the elevators but take your penholder and make a hole in the oil-cooler block; then fill this hole with putty until you get an even glide.

## Colouring.

The empennage and fuselage are natural tissue, with a black stripe along the top and just behind the enclosed cabin. The wings are black, with a silver sweep at the root and all black underneath.

- 1 sheet  $\frac{1}{16}$  in.  $\times$  2 in.  $\times$  18 in. medium balsa.
- 1 sheet  $\frac{1}{32}$  in.  $\times$  2 in.  $\times$  18 in. medium balsa.
- 1 sheet  $\frac{1}{4}$  in.  $\times$  3 in.  $\times$  18 in. hard balsa, for cowl and laminated prop. blocks.

- Strip of cellophane.
- 1 sheet black tissue.
- 1 sheet ordinary tissue.
- 1 can silver paint.
- 1 can black paint.
- 1 bottle clear dope.
- Tube of cement.
- 1 tin aluminium cream.
- 1 strip  $\frac{1}{8}$  in. dia. reed.
- 2 yd.  $\frac{1}{8}$  in. flat rubber.