

BURSAR

A SIMPLE TO BUILD GLIDER THAT HAS A PERFORMANCE GOOD ENOUGH TO REQUIRE AUTO-RUDDER AND A DE-THERMALISER

FLYING HIGH with Ian Barrett

THE PREVIOUS ARTICLES in this series have described the selection of a design and the preparation of a materials list to enable the modeller to construct a model aircraft directly from a plan, without recourse to the purchase of a kit of parts.

As an example of a model suitable to anyone progressing from kit building, we have designed a 'no frills' glider with simple lines, but with a performance good enough to require such devices as an automatic rudder and a de-thermaliser. An effort has been made to give as much information as possible on the plan itself, so that the model can be built by anyone with some previous

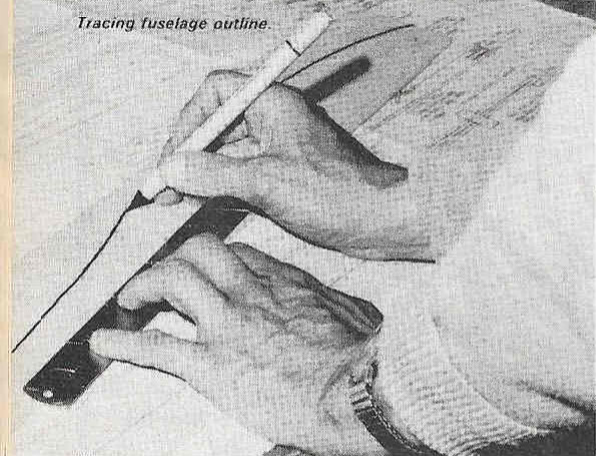
wire, although this is rather too weak for the tow hook itself.

Your building board should ideally be long enough to support the full length of the fuselage, i.e. about 950 mm (38 in.), but a shorter one is acceptable providing it will take one wing panel, 600 mm long (24 in.). The fuselage can always be built 'in the air', that is, assembled without having to pin it to the plan. Notice that the design is based on standard balsa-wood lengths of 915 mm (36 in.), so that, for instance, single strips are used for wing spars and leading and trailing edges. Similarly, the sheet sides of the fuselage can be cut from single sheets.

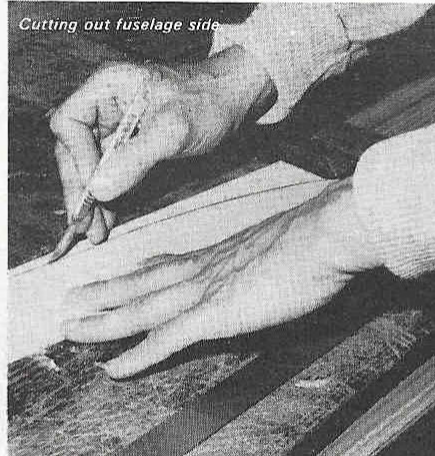
of which are less damaging to the plan than others. If you have a large enough piece of tracing paper, the outline can be traced onto it using a medium hardness pencil. Remove the tracing paper and turn it over, then position it on the sheet balsa. Note that one edge of the balsa can become the long straight bottom edge of the fuselage. Draw over the outline again with pencil, and a faint imprint of pencil lead will be transferred to the wood. The first side can now be cut out, and used as a template for the other sidepiece. An alternative method of transferring the outline to the wood is to use carbon paper under the plan and over the wood; you may experience difficulty in aligning the bottom of the fuselage outline with the edge of the wood because you are working blind. A third method is to prick through the plan with a pin, so putting a series of small holes into the wood, which can be joined up when cutting out. Both these latter methods can spoil the plan somewhat, particularly the last, as a large hole can appear in your plan if the perforations are too close together!

Similarly mark out the base strip for the fuselage, together with formers. Ensure that the grain direction in the smaller items is in the direction shown. The formers can then be glued to the base piece, being supported so that they set square to each other. When dry, the two side pieces can be attached, gluing the tail ends together and clamping with a clothes peg.

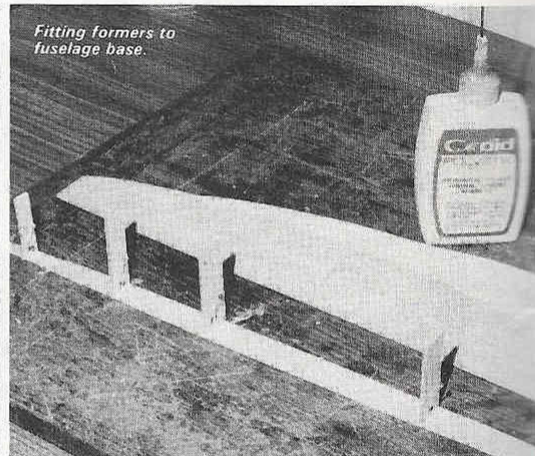
Tracing fuselage outline.



Cutting out fuselage side.



Fitting formers to fuselage base.



experience of kits, without having to refer to these notes. A materials list has been prepared, but before rushing out to buy the lot, take a look in your scrap box to see whether you already have some of the material available. For example, the wire required for the tow hook and auto-rudder parts is minimal, but would require the purchase of a 915 mm (36 in.) length. You might even get away with using paper clip

Direction of the wood grain is indicated too; the fin is cut with the grain vertical, and can be cut from standard sheet.

Construction

Ready to start? Let us begin with the fuselage. The first task is to transfer the outline of the fuselage sides to two pieces of sheet balsa of the correct thickness. There are several ways of doing this, some

Upper decking pieces can be cut slightly oversize, and then trimmed down after they have been glued in position. The noseblock should be either made up from laminations of sheet balsa, or cut from hard balsa block. It will have to withstand the occasional collision with obstructions.

This completes the basic fuselage structure, and a little sanding will quickly remove the sharp corners. Wire components can now be added, and should be secured with a quick setting epoxy. Fit the tailplane support platforms, and ensure that they are square with the fuselage.

Fin and rudder

Cut out the fin and rudder, sanding the



