



W. I. BARRETT'S GURU

**A 40 inch span
free flight sportster
for .75-1.5 cc
engines**

GURU is an attempt to produce a cheap, robust free-fighter, capable of taking a variety of small engines, and having a slow, stable flight pattern. With the recent increases in cost of modelling materials, a major aim was to make the most economical use of balsa, without sacrificing ruggedness.

Construction is simple, as is the trimming and flying of this delightful little sportster, and it would thus form an ideal introduction to this side of the hobby for the beginner or younger modeller. *Guru* is by no means a contest model, but is well suited to those tired old engines left lying in a drawer at home – why not blow the dust off one of them and put it to some good use?

The fuselage is a simple all sheet structure built around the engine bearer assembly. Cut the bearers to length and drill the engine mounting holes, if using a beam mounted engine. Cut out formers F1 and 2 (F1, 1A and 2 for radial mounted engines) and glue to the bearers using P.V.A. glue. Bend the 14 s.w.g. undercarriage to shape, then bind and cement to the bearers. Cut the fuselage sides from 3/32" hard sheet, slot for the U/C legs, then slide them over the legs, gluing them securely to the assembly. When dry bring the fuselage ends together and add the remaining formers (noting grain direction) checking the fuselage for correct alignment.

Glue the fin in position, followed by the wing and tail mounts, before adding the top and bottom sheeting. Note that the grain on the bottom sheeting runs across the fuselage.

The wing is built as four separate panels, which are then joined together with the appropriate dihedral angles. Build the port inner panel first by cutting the leading and trailing edges to length and pinning over the plan. Cut out the 1/8" sheet full depth spar and likewise pin in position. Glue ribs R1, 3, 4 and 12 in position, adding the 3/32" sheet gussets. It is advisable to cut the diagonal ribs slightly overlength at the rear end, then trim them on assembly. Repeat for the starboard inner panel. The tips too are built in a similar fashion, ribs R13-18 and R6-11 being added.

When all these assemblies are quite dry, pin the port inner panel over the plan, and add the port tip, raising it 2 1/2" to match the dihedral. Chamfer the L.E. & T.E.

Simple yet sturdy construction is illustrated in this view of the model before covering. Diagonal ribs help to prevent warps creeping in at the dopping stage. Note how the undercarriage protrudes through the fuselage sides.

to suit. Glue securely, then add brace B, followed by ribs R2 and 5. Repeat for the opposite panels. Next, with one half wing still pinned flat over the plan, add the opposite half, raising the wing at R12, 1" above the surface. Again chamfer leading and trailing edges to fit before glueing the two brace 'A's in position.

The tailplane is built in an identical fashion to the wing. Sand the whole model smooth, and cover it entirely with lightweight tissue – using coloured tissue for decoration, rather than paint, in order to save weight. Apply 2-3 coats of thinned dope, being careful to avoid warps, although this should not occur easily with the rigid structure. Add the wing and tail dowels before finally adding a coat of fuel proofer.

Before venturing to the flying field, check the balance point – which should be on, or just behind, the mainspar. With this in its correct position, some test glides may be attempted – providing the weather is kind and the wind not too brisk! Any sign of a stall should be removed by packing up the leading edge of the tailplane, while a steep glide can be cured by packing up the leading edge of the wing. When a long flat glide is obtained, try a short engine run at half throttle. A tendency to tighten or turn into a spiral should be corrected by the trim tab. Gradually work up to full power and a wide lazy climbing turn. The flight is not critical, and turns in either direction can be made.

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