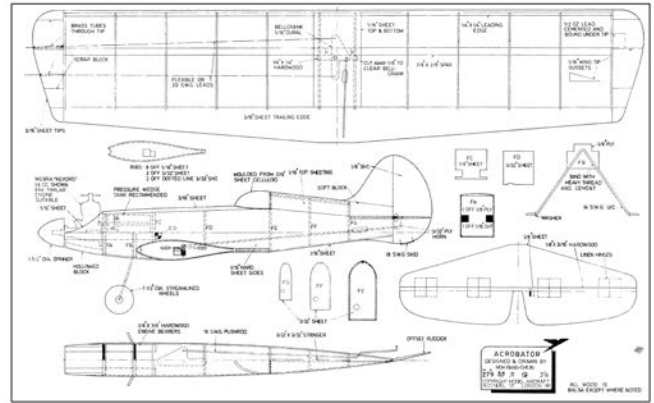
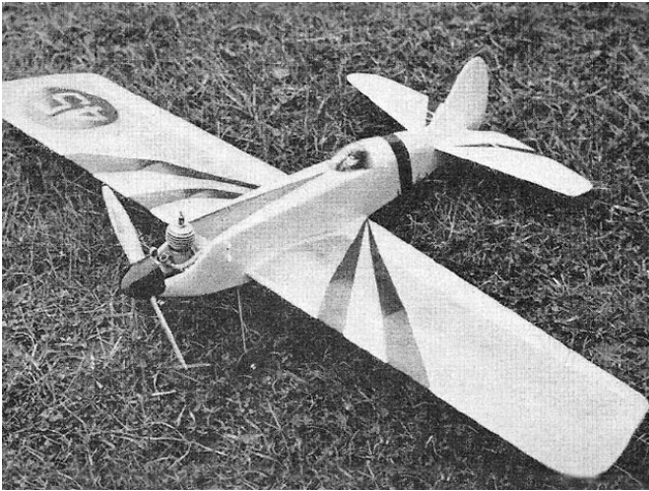


Acrobator



A sports stunt control liner for 1.5 c.c. engines by Hoh Fang-Chiun.

It is not claimed that Acrobator will perform as well as the larger stunt models that have been discussed in connection with the new schedule recently, but it has certain advantages they do not possess. It is small, cheap both to build and fly and can be flown in small spaces, so these qualities allied to its good looks make it just the job for the "sporting" brigade.

Start construction with the mainplane. Select a hard, straight and warp-free $\frac{3}{8}$ in. sq. strip for the mainspar, and cut the ribs from $\frac{1}{16}$ in. and $\frac{3}{32}$ in. medium sheet balsa as indicated on the plan, noting that the two root ribs are $\frac{1}{16}$ in. undersize on both edges. Before assembling the ribs on the main spar, securely cement the hardwood bellcrank mount at the center of the spar. Don't forget to cut away approximately $\frac{1}{8}$ in. on the top of the spar at the bellcrank mount in order to ensure a free movement.

As the wing has a symmetrical airfoil, it has to be built "off the plan." Slide and cement the ribs onto the mainspar and check that they line up correctly, then cement the $\frac{3}{16}$ in. sheet trailing edge and $\frac{1}{4}$ in. sq. leading edge in place, finally, add the in. sheet tips. In order to facilitate the tip covering, and at the same time make it smoother, soft scrap balsa is cemented at the leading and trailing edges. Do not forget the $\frac{1}{2}$ oz. weight in the starboard wing tip.

Before sheet covering the center part of the wing, bolt the bellcrank assembly and solder all the necessary wires, etc., in place. The wing can now be covered

either with silk or tissue, but be sure that the grain of the covering material runs spanwise to minimize "sag."

Start the fuselage by cutting out all the formers and the two sides, using hard sheet for the latter. Solder up the fuel tank from thin brass making sure that the engine feed tube is long enough to suit your engine. Bend the U/C from good quality steel wire and bind it securely to the $\frac{1}{8}$ in. ply former FB with heavy thread and plenty of cement. Cut the engine bearers from hardwood stock and the parts are now ready for assembly.

First cement FA and FB to the bearers. Next, cement the tank just behind FA and insert scrap balsa under the tank to prevent it vibrating loose, then complete the nose assembly by cementing former FC in place. The nose assembly can now be joined to the fuselage sides and after it is completely dry, FD and FE are added in place. Next join the sides at the rear, but do NOT cement FF and FG in yet. Place FF and FG just behind FE with the push-rod holes in alignment, and hold these together with pins. Join the wing to the fuselage by inserting the push-rod through the holes in the formers and the slot on the starboard fuselage side, and then cement the wing firmly in place. Now FF and FG can be cemented in.

Cover the fuselage bottom and top rear with $\frac{1}{16}$ in. sheet, and the top front with soft $\frac{3}{16}$ in. balsa, when dry sanding the latter to the appropriate section.

Complete the engine mount and nose in the usual manner.

A soft balsa block forms the rear fuselage top, but be sure when cementing it in place to leave an $\frac{1}{8}$ in.

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gap for the tailplane. The tailplane and fin which are from 1/8 in. medium sheet can now be cemented in place, but check that there is enough movement (about 40 deg. up and down is sufficient).

Complete the model by fitting the canopy; a commercial one (somewhat modified) can be used, but if that is not available, a home-made one can be moulded from 0.016 in. sheet celluloid. A good idea is to install a class A team- race pilot for added realism. If you think it is troublesome to mould your own canopy, you can fit instead a hollowed soft balsa block and paint this silver when finished.

Every modeller has his own favourite finishing methods, but here is how the original model was finished: first I brushed on to the bare balsa surfaces one coat of thin clear dope, followed by two coats of wood filler, these being sanded with fine paper between each coat. All the wood surfaces were then covered with lightweight tissue and received two coats of thick clear dope before wet sanding with No. 300 wet- and-dry paper. A further thin coat of clear dope was then applied before colouring. The wing was covered with American Rayspan (similar to heavy Modelspan) and had four coats of thick clear dope with the addition of a small quantity of castor oil in order to make the covering flexible. In order to save weight no colour dope was used. The complete model without fuel should turn out to be around 12-oz.

Before attempting any flight, check that the model balances correctly; the prototype did not need any adjustment to bring the G.G. to the correct position. Use 0.010 in. dia. steel or light laystrate wire for best results, coupled with a 7 X 6 in. or 7 X 5 in. wooden airscrew for a 1.5 c.c. diesel. The length of the lines will depend on weather conditions and may vary from 30 ft. in windy weather to 45 ft. in a calm.

The model is very manoeuvrable and goes through most patterns with ease. The inside loop can be performed with almost any engine speed. However, never try any complicated figure unless the engine is running at peak revs.

Model Aircraft Magazine May 1958