



**T. KING provides a simple boxcar for club field sport flying that will appeal to all modellers**

## **IMP** **FOUR-FOOT GLIDER FOR RADIO CONTROL FLYING**

THE *IMP* was created with small field flying in mind, as the designer's club (The Impington Village College M.A.C.) has only a small playing-field surrounded by large trees—typical of many clubs throughout the country. Most evening's flying end up with a tree climbing adventure—alright for the youngsters, but it gets harder as you get older!

With the arrival of cheaper single channel radio it meant the average club member could afford to control his model to some extent, and a glider offers the perfect entry into R/C flying.

'*IMP*' No. 1 was built in the summer of 1967. What a delight it was to be able to turn away from trees, which before had greedily swallowed up one's model! Using a Hi-Start launch to take the model up to about 250 ft., a flight of one to two minutes seems quite a long time in a small field. Being enthused with the performance, '*IMP*' No. 2 was built for Ray Malmstrom (founder member of the club) as an introduction to R/C.

The first flight was made one evening in the summer of 1968 with Ray at the control. The model was stretched back on the Hi-Start. At a signal from Ray the model was released. It rapidly gained height, with a few minor rudder corrections. After a clean release at the top, Ray proceeded to do a few circuits of the field. Apart from over-correcting once or twice, he had made his first R/C flight without mishap. Had it been a powered aircraft, those one or two over-corrections might have spelt disaster.

Although flights of only one or two minutes in a small field have been mentioned, in more open space with a higher launch flights of five minutes and over have been enjoyed.

The old maestro Ray Malmstrom holds on to the *Imp* prototype ready for a hi-start launch with the single channel transmitter switch on and ready for use. As text reveals, Ray has now graduated into the realms of Radio Control using the *Imp* as the ideal trainer.

Start by building the fuselage sides. These consist of 3/16 in. sheet combined with built-up 3/16 in. x 3/16 in. balsa. When dry, join at rear. Now add ply formers F2 and F3, also 1/2 in. x 3/16 in. balsa spacers top and bottom. Next fit nose-block and former F1. Now add ply former F4 complete with 3/16 in. x 3/16 in. spacers top and bottom. At this stage place 1/4 in. x 1/4 in. balsa torque rod in position. Bend 18 s.w.g. wire at rear end, push through hole in F4 and bind and glue into rear of torque rod. Now add the rest of 3/16 in. x 3/16 in. spacers, and other balsa and ply pieces shown on plan at rear of fuselage. Next add 1/8 in. ply skid complete with 16 s.w.g. wire tow-hook. 1mm. ply must now be glued to top and bottom of fuselage, at the same time forming hatch for the battery compartment.

Pin the 1/8 in. sheet wing main spar down with 1/32 in. sheet packing underneath. Next, pin down 1/16 in. sheet trailing edge lower section. Now add 1/16 in. sheet ribs, and 3/16 in. x 3/16 in. leading edge. Next add 1/16 in. top sheeting and 1/32 in. capping strips. When dry remove from board, prop



up centre section and complete outer panels in the same way. When dry turn over and complete 1/32 in. sheet and capping strips. Lastly, add  $\frac{3}{8}$  in. sheet gussets and  $\frac{1}{4}$  in. sheet tips.

Pin down the tailplane trailing edge, leading edge and 3/16 in. x  $\frac{1}{8}$  in. centre spar. Glue 1/16 in. ribs in position, add top  $\frac{1}{8}$  in. x  $\frac{1}{8}$  in. spars. Lastly, add 3/16 in. sheet tips,  $\frac{3}{8}$  in. sheet gussets and 1/32 in. top sheet.

The fin is quite straightforward and is glued to the fuselage entering 1/16 in. sheet fuselage top where shown on plan.

A Cotswold Rx and Elmic Conquest actuator, with a 225 3.6v. Deac is used in the original.

After sanding the airframe, give one coat of sanding sealer. Sand lightly once more. Cover fuselage, wing and fin with heavyweight tissue. Use lightweight tissue on the tailplane. Give the whole aircraft three coats of 50/50 clear dope. On the original the fuselage forward of the tow-hook position is painted with Polyurethane, giving a durable finish to parts most prone to damage.

Check there are no warps. If any, take out with steam. Balance to model where shown on plan. A straight, flat glide should be aimed for. If the model stalls add packing under leading edge of tailplane, if a dive occurs add packing under trailing edge of tailplane.

## Launching

For a Hi-Start launch, you need about 30 yards of  $\frac{1}{4}$  in. flat elastic attached to a stake firmly driven into

Simple lines, straight structure (although total weight is only 12 ozs.) makes Imp a perfect project which could be built in a week of evenings quite inexpensively and capable of taking a wide range of single channel equipment.

the ground. Add to this about 100 yards of 13 lb. B.S. Monofilament fishing line, to which is tied a cloth pennant and tow-hook ring. Hook on to the model and walk back 30 yards or so until a good pull is felt. When the model is released, it will rise rapidly at first, but on reaching the top of the tow it will flatten out and fly off the line at the correct speed. On a breezy day it may kite for a while before flying off the line, in which case keep model into wind until it is released. If you try to turn the model while on the line in an effort to release it, you could end up with a broken wing, especially in windy conditions. One note of warning when using the Hi-Start—make sure the radio is working 100 per cent, as you are committed once you have released model, and an uncorrected vere to left or right will spell disaster!

The Hi-Start described is for small field flying, a doubled power (two strands of elastic) version will give a good high release when flying on an aerodrome or similar open space.

Now get to the board and make a start!

