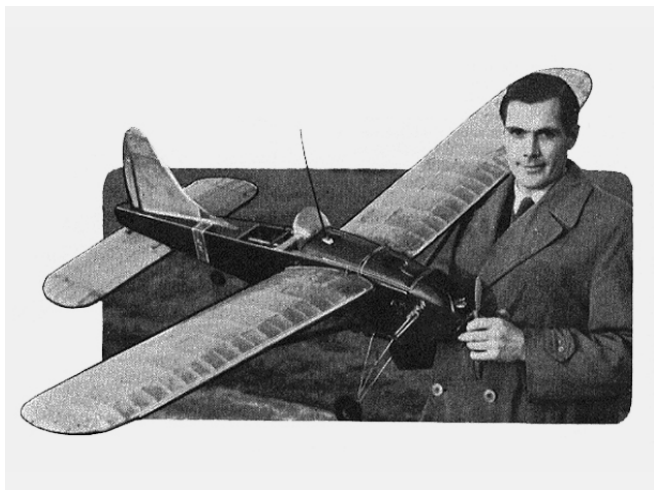


Beep Jeep



Designer Fearnley with the open cockpit version of Beep Jeep after it had made many successful flights.

A Flight Proven R/C Design by Eric Fearnley.

After three or four scale radio models, with results varying from very good to moderate, I decided to leave scale radio until the transistor sets were proved, and in the meantime build a semi-scale job to a rigid specification.

My minimum requirements were—simple construction, easy trimming, stable, vice less flight on neutral, with lively response on signal, rapid recovery after signal, ability to carry excess batteries for foolproof radio, light wing loading for good glide, but fast flying speed and ability to fly up wind with ease and not forgetting the most important—ease of repair after a crash. Add to this instant accessibility to the “works” and we have a tall order.

The strength of a radio job depends on the building as much as the design. A model of this size will eat up three large Britfix cement tubes if you are going to go over every joint twice, and make them “for keeps.” Just to show how tough the model is I record one of many incidents in it’s life.

At the end of a 3 min. power run, I decided to start to gain height for a good glide and approach to the landing run. The model had reached about 300 ft., climbing nicely when I noticed a flash in the evening sun at the tail end. The unbelievable had happened; of all the gremlins’ extra special tricks, I got a lulu—the

whole of the top rudder pin had come out, and the rudder was fluttering at the rear in the slipstream ! The pin which engages the loop at the hack I had just replaced by a glass headed pin, if it had been a normal type, the rudder would have blown off altogether. As it was, it just spun round.

I put away the transmitter, which seemed a little useless in the circumstances, and prayed for the motor to cut. Never has an Allen Mercury run so lustily! Just when I thought I was going to get away with it, the rudder spun for the last time, and jammed, against the tail. The model kept on its course for a few seconds, and then peeled off like a Flying Fort, that had bought it, going into a right spiral, with the engine full out.

It hit the ground, fortunately about a yard off the runway, almost vertically. When we arrived at the spot, expecting to find a write-off, we were amazed to find the model almost undamaged. The hole in the ground was 6 in. deep, the model had bounded backwards about 3 ft. and settled in the grass, with a sod of earth about a foot square stuck round the engine. The engine was found to be 10 deg. right thrust (I had the side mounted version on), the flying struts were torn out of one wing, and the dowels were broken. The radio worked perfectly after a h.t. wire was connected up. I could have flown the model again that night if my nerves had held out!

Construction: The basic fuselage is of hard 1/4 in. sq. There are no bends in the design, only the one spliced joint so no difficulty should be experienced. The sides are joined together with F2 and F3, and drawn together at rear, then the rest of the spacers are added. Use plenty of cement when fixing the hardwood undercarriage/wing strut mounting, also the 1/2 in. sq. strengthened at the wing trailing edge position. Strips of 3/8 x 1/4 in. are cemented to the longerons to strengthen the access hatch at the top of the fuselage.

When the radio gear is installed and functioning smoothly, the entire fuselage is covered with medium 1/16 in. sheet, with the exception of the front bottom half, which is covered with in. ply.

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Copy the wing incidence exactly and ensure that both wing dowels are true- there is a lot of wing area and it is important that no error exists here.

Cut out the wing ribs from 1/8 in. sheet and assemble the wings on the hard 1/4 in. sq. spars. The tips are made from 1/8 in. dowel steamed to shape and backed with balsa. Do not forget that the end ribs are of 3/16 in. ply drilled to take the 5/16 in. wing dowels.

The fin and tailplane are quite straightforward and no difficulties should arise here. Cement the fin in place dead straight.

Form the rear undercarriage legs from 10 and the front from 12 S.W.G. wire. Bind the brass tube to the front legs and the legs themselves together, with 20 g. tinned copper wire, then solder very thoroughly using a big iron with plenty of heat. The fixing strip is formed from 18 g. copper sheet; drill a series of holes in this then bind and solder the undercarriage tube in position. The strip should fit the bottom of the fuselage snugly and it shares the flying strut retaining bolts; it can thus be removed or replaced at will.

When making the tank (it is as well to get all the soldering jobs done at once) bear in mind that a powerful 3 1/2 will devour an ounce or two of fuel in a few minutes, so it is best to err on the large side.

The entire model is covered with heavy Modelspan, and doped with a mixture of 50 per cent. glider dope, and 50 per cent. Banana oil, as over-tightening will bring warps, or even buckle the tail or wing trailing edge, even with so strong a structure. At the same time the finish must be weatherproof.

Assembly and Flying: Assemble the model, and check wing incidence, tail ditto, and c.g., shifting the batteries until the latter is right. I use a B. 119 large type h.t., D.18 l.t., and three or four No. 8 batteries for the actuator.

The decision as to whether it is better to test with the radio in, and in theory at any rate have some control during the first flights, or whether it is better to shed all unnecessary weight for the first knock, I leave to you.

In case I have unnerved you, let me console you with the fact that Beep Jeep is a remarkable aircraft to trim. It seems to fly quite well with a number of different c.g. positions and tail angles, and it is quite happy with the minimum of side thrust, so do not get too worried about your test flight. I have stunted the model unmercifully, ending up with a power zoom straight up, to leave it hanging like a helicopter. Let the rudder neutralise and it will pull out losing only a few feet of height.

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