

The very reason for this model's existence is that I was looking for a suitable aircraft to build to a small scale for use as a test bed for the Reno X-1 electric motor I received to review. I remembered building a 'peanut' scale model of the Found Centennial 100, and its excellent handling qualities, so, seeing no problems in increasing the size by a factor of 2.5, this version was very quickly drawn up.

The original was built in Canada and the prototype first flew on 7 April 1967. It was designed as a six seat utility transport aircraft, powered by a 290hp Lycoming 10-540-a1D engine. It spanned 39ft and was unusual at that time as it

Andy Powell offers this 32 inch electric cutie for Reno power

This model is built in basically the same manner as most basic trainers, but is aimed at the modeller whose previous experiences in building have been mainly confined to the a.r.t.f. type of kit such as the Union Mustang. However, I hasten to add that, while being relatively easy to fly, it does 'move' and some flying experience is a prerequisite.

The first stage in fuselage construction is to cut out two fuselage sides, then add the longerons, wing seat and nose doublers, and the equipment bay floor supports, ensuring that you have, in fact, constructed a right and left side! The next job is to add the formers F1, 2, 2a and 3, ensuring that they are fitted at right-angles to a fuselage side. The equipment bay floor is also fitted at this stage as it also helps out in the jiggling of formers F2 & 3. Once set, the second fuselage is added and the assembly left to dry overnight.

Once set, the fuselage is pinned over the plan-view and the tail ends drawn together evenly so as not to end up with the all-too-often-seen 'banana' shape.

CENTENNIAL

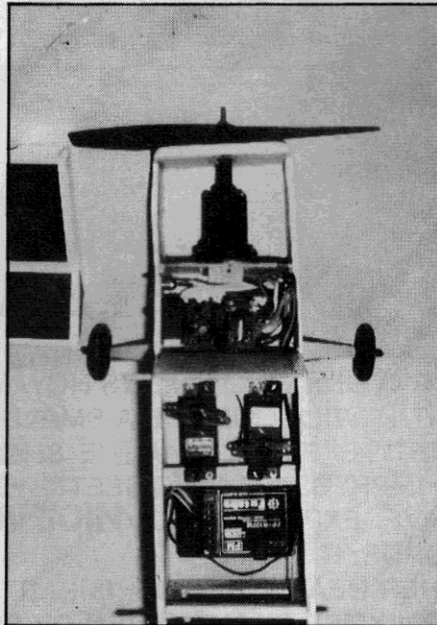
featured a fully cantilevered wing (no struts). I am surprised that this aircraft has been largely ignored, as I see it as an ideal layout for a simple scale model; the only other version I recall is a 1/2A type designed by Dave Boddington...

Before tackling the construction of this model, I feel a word about the power plant is called for, the Reno being a newcomer to the scene in this country. The motor is basically a Mabuchi 280 which has been reworked on the same lines as the higher-powered buggy motors. A lower-powered version is also available, known in this case as the RC280. In both instances the motor is fitted to a plastic gearbox giving a 2.66:1 ratio, designed to swing a 180mm plastic propeller. These power units are sold by Ripmax as spares for the Union range of a.r.t.f. models, and tests have shown both to be very reliable, and surprisingly powerful little motors.

As supplied, they are matched to Nicad packs of either 4.8, or 6v, both having a capacity of 450mAh. To aid your supplier, I have added a list of part numbers for the required items. Please note that I have included the matched Battery Elimination Circuit; some controversy is going on at present about the reliability of this unit, but all I can say is that I have personally had no trouble at all with mine.

- Z-UAC02 3 channel autocut (a two channel unit is also available)
 - Z-UGS48R 48t channel reduction gear and shaft
 - Z-UMU02 RC280 motor unit (the lower-powered of the two)
 - Z-UMU03 Reno X-1 Motor unit (the souped-up version)
 - Z-UOC03 Connector for Futaba
 - Z-URP180 180mm Propeller
- Two 3mm nuts are also required for prop retention

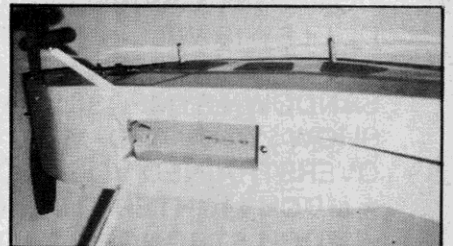
With removeable windscreen, Centennial offers maximum accessibility to R/C installation and underslung flight power pack.



The equipment bay is then finished off by adding the sides, checking at this stage that the chosen nicad pack actually fits in the bay. After binding the undercarriage to former F2, the lower 1/16 sheet can be added, ensuring that the grain runs *across* the fuselage. The assembly can then be laid aside until the tail unit is completed.

Tail unit

The complete tail unit is constructed using a technique I first saw in a previous **RM** free plan; they are both cut out in duplicate, then sandwiched together, adding a double-side tape hinge between the layers. The result is a very neat, close, and, most importantly, sealed hinge. Once complete, the tail unit is fitted to the fuselage, checking



Your Full-Size ELECTRIC PLAN



Centennial is a fast and responsive flyer; don't attempt it single-handed as your first R/C model...

Covering

The original model used Solfarilm, as I had sufficient 'scrap' pieces to cover this small model, but any lightweight material could be used (Micafilm would, I suppose, be the ultimate). Whichever you use, be sure not to put too much shrinkage on the wings, as being so light a construction, it is very easy to distort the trailing edge, producing a 'scalloped' effect. The windows are cut out of Fablon, as are the panel lines and the door outlines, the beauty of electric power being that there are no fuel/oil slurries to get under the edges. You should, by now, have a finished model, so take some pictures of it (to send to RM for me to see) and, weather permitting, get out to the flying field...

Flying

I was going to call this section "What am I doing out here in an enormous field with a model that looks happier in the living room?" but, seriously, as the first flight will show you, this model does tend to move. There is no way that a model of this size can be made to fly at a scale speed, but once the slightly twitchy nature of its response is got used to, it can really be fun. A quirk it shares with small scale models of the Piper Cub, is its ground handling, or rather lack of it!

Any attempt at R.O.G. merely results in a series of wild ground loops, which, although guaranteed to bring about howls from those gathered to see the 'maiden' of the midget, does not get you in the air. I regard the wheels on this model as purely landing gear, hand launches being a necessity in this case.

Even if you don't build this model, I hope it gives you a 'spur' to try your own designs using this little power plant, and if you aim for an all-up-weight of around 11lb, you should be in for a treat. I would be happy to hear from you via my column and, who knows, your design could be the next electric model to join the A.S.P. plans range...



100

that it is square to the wing seat by laying a rule across the seat and sighting that the tailplane lies parallel to it, though it is always best to double-check using a set square. At this point, it is wise to fit the control runs using your preferred type. No particular method is shown on the plan to cater for each builder's personal preference, but the original used 1/8in square spruce push-rods with a support at the mid position. Now the main bulk of the fuselage is complete, all that remains is to fit the cross-grained top sheet, then build the top hatch, including the windscreen. Then, after giving the whole thing a gentle sanding, attention can be turned to the wings.

Wings

The first stage in the construction of the wings is to 'kit' the parts. The ribs can be cut using the 'sandwich' method, or by cutting around a ply 'master'. Either way, the outer ribs can be originally cut to the same size as the inner set, and then cut down to size by slewing the master. Once you have a 'kitted' wing in front of you, the method of construction is very easy. First, the lower spar is pinned down, along with the 1/32in hard lower trailing edge, and the 1/8in by 1/4in leading edge and upper trailing edges.

The ribs can then be fitted between them and, once set, the upper spar and leading edge sheet can be fitted. The outer sections can then be constructed in the same way, ensuring the abutting ribs W2 and 3, are angled to the template shown, to set up the dihedral of the tips equally. The tips are then butt joined to the centre section, and the wings gently sanded. The 1/32 sheet tends to dent easily so take care. Although the original did not have it, I also feel that a slight amount of washout would benefit the flying characteristics.

Installation

The capacious fuselage is easily sufficient to house any normal-sized gear (the prototype did) but, obviously, every weight saving is important in a model of this size, so micro gear is preferable. The two servos are fitted side by side at the front of the equipment bay and, in my model, I fitted the Rx at the rear, which

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brought the c.g. out at the position marked on the plan without resorting to any extra weights. The B.E.C. is fitted in the bay between F2 and 3, and the motor is retained by 3mm bolts. The control movements are kept small, just 1/4in up and down on the elevator, and 3/8in each way on the rudder. If fitted, keep your rate switches in mind, especially on the first fright (sorry, flight!)