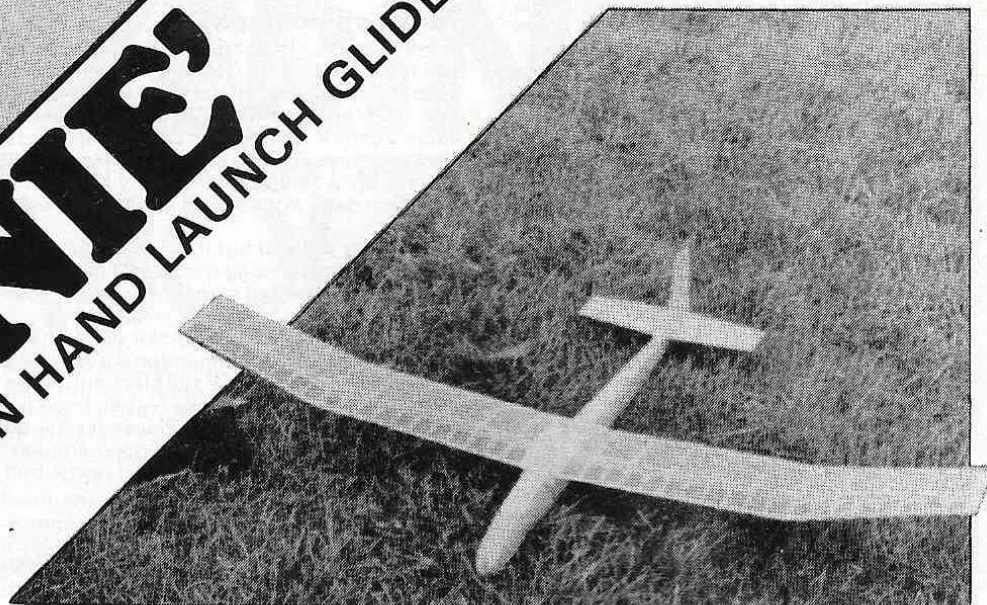


FULL-SIZE PLANS PULL-OUT

'MINNIE'

48in. WINGSPAN HAND LAUNCH GLIDER



Designed for two function R/C by Mike Proctor

THE INSPIRATION for this sample design, and the whole idea of hand-launch R/C gliders in general came during the 1983 F3B Glider World Champs held at York. Seeing one of the U.S. team make a 40 minute flight with an F3B model from a hand-launch, then watching the fun the Americans had flying limbo under a line a mere $\frac{1}{2}$ in. higher than the chuck gliders fin made me think that here was a fun aspect of R/C gliding that needed further exploration. My own simple 'Minnie' design was conceived as something that did not require anything special or exotic in the way of R/C equipment, a standard 27MHz Futaba two-function outfit is used with Futaba 30M servos and a 225mAh Ni-Cad. A weight of around 9oz. should be possible, this results in a wing loading of a little less than 5oz./sq.ft. One example built by a junior member of my club bends the scales at 15oz. but has flown very well as a slope soarer in up to 20m.p.h. winds. My own model will slope soar small buildings or very small ridges, totally impractical with larger models.

I do hand-launch the model, but prefer to use a very short bungee made from 30ft. of Terylene control-line thread (Keil Kaft) and 15ft. of $\frac{1}{4}$ in. flat rubber. This combination gives a simulation of a mighty heave from a good thrower but without effort or strain. My best flight so far has been 5min. 30secs., and that was on a windy day.

Construction

Take care with wood selections. If you are confident of your ability to select good wood

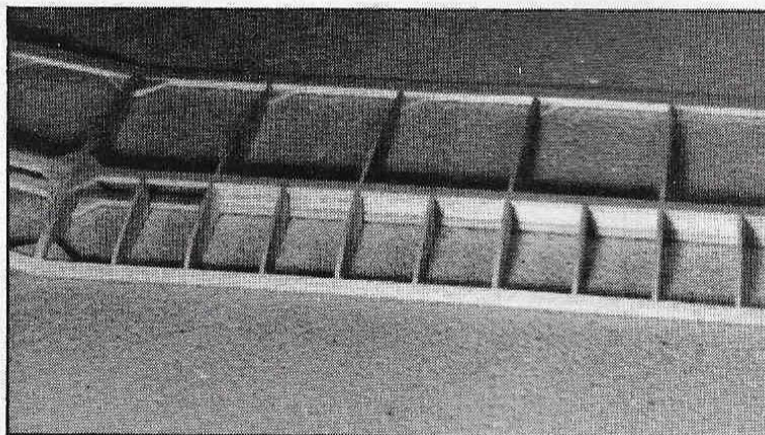
and make an accurate job of construction, spruce is probably unnecessary for the wing spars. Weight is critical to good performance so do make sure that glue is also kept to a minimum.

Before commencing, check on the size of your R/C equipment. The fuselage should be no wider than needed for the widest component. Cut out a full set of wing ribs then start by pinning down the centre panel main spar, leading and trailing edges. Fit the ribs and riblets W1, W2 and W2a, fill in between the root ribs W1 with the underside sheeting and fit the $\frac{1}{8}$ in. ply (or two laminations of $\frac{1}{16}$ in. ply) dihedral brace. Fit the webbing and add the top spar. Sheet the centre section top

surface and add the trailing edge reinforcing gussets. Build the second centre panel onto the first, propping up the completed panel $1\frac{1}{2}$ ins. Build the tips and sand the roots to the correct angle before butt joining these onto centre panels.

Cut out two basic fuselage sides from $\frac{3}{32}$ in. balsa and add the $\frac{3}{16}$ in. sq. balsa longerons. Make up three formers F1, 2 and 3 to suit your R/C equipment width. Assemble the sides onto formers then pull in the fuselage rear and glue. Sheet top and bottom of fuselage with $\frac{1}{16}$ in. balsa except where noted as ply. Cut out tailplane and fin parts and glue these into place. Either use block

Right: simple structure uses spruce spars and webbing. No leading edge sheet but riblets instead.



'MINNIE'

Simple two function hand launch glider Design by MIKE PROCTOR

balsa or laminate a nose block.

Bend up the tow hook and slide through from the inside reinforcing it with a small piece of bandage.

R/C Equipment

Rudder and elevator push-rods can be from $\frac{1}{8}$ in. diameter hardwood dowel with very small gauge wire ends — 20s.w.g. is fine, which can be fixed on using heat-shrink tube or bound with thread. Clevises and associated fittings, solder, etc. can add up to quite a lot of weight so 'Z' bends are best for

fixings at either end. Servos fit into the under-wing bay, one higher than the other so that adequate clearance is made for push-rods. As a further weight-saving measure, dispense with both receiver case and switch, plug the Ni-Cad directly into receiver to switch on. If you have been careful with wood selection, etc., then very little weight will be needed to balance the model.

Flying

Build up to full blown javelin style launches steadily otherwise we will be reading of a

rash of 'H.L.G. launchers Shoulder' demanding treatment at the local out-patients department. If you just cannot throw, then try the mini bungee idea, it really works. Most flights are likely to be in the order of 30 secs. but when you do find lift, the thrill is tremendous. Bear in mind that these are small models so don't throw caution to the winds if lift is found. Lightly loaded models go up fast and being small can very quickly get out of visual range. Far better to settle for a 3-minute flight than 5 minutes out of sight, out of range and out of pocket!