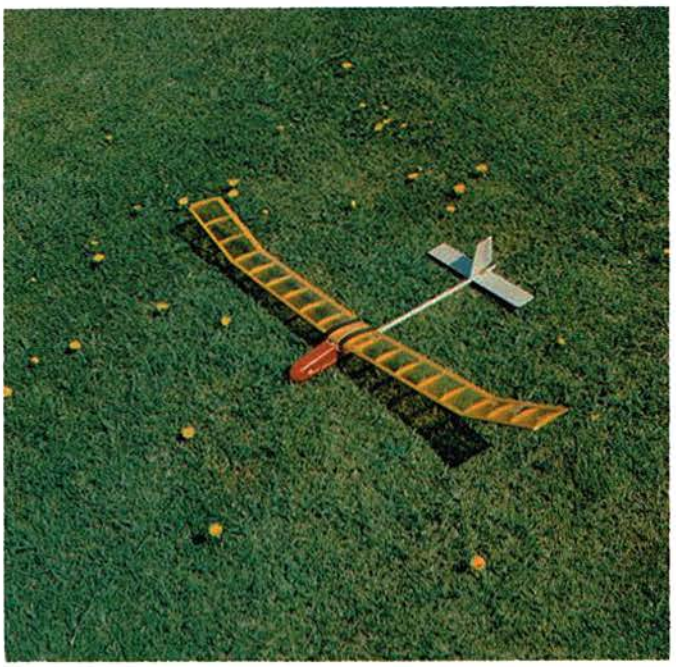

FOR RELAXED, LOW-COST SPORT FLYING, OR THE RC JUNIOR IN THE FAMILY, TRY THE

TADPOLE

JACK HEADLEY

● On a recent visit to Sepulveda Basin I watched with a great deal of awe while the 1973 Championship Pylon Races were being run off. How anyone could cooly control one of these racers, flying at speeds that appeared in the region of Mach One and, in addition, avoiding the other three or four planes in the circuit was beyond me. I just don't have that many thumbs!

Exciting as this form of R/C flying is, it's somehow not for me. A typical pylon race could be started and finished before I've managed to get the transmitter the right way up. My own preference, as you may have gathered, is for something a little slower, which is a roundabout way of bringing us to the Tadpole. Slower you can hardly get, in fact in a good breeze it even flies backwards, but it's perfect for a casual afternoon's flying.

The model is designed around the Ace Baby Twin Radio and, in fact, Tadpole I had a fuselage just big enough to wrap around the radio. This proved to be just too small in practice, so a new fuselage was designed, and this version, Tadpole II is the model we present here.

My own favorite system for building simple models such as the Tadpole is to first cut out all the sheet items, then assemble them with suitable pieces of strip wood, in just the same way you would build a kit, in fact. If you decide to do the same then you'll find most of the sheet items on the "bits and pieces" page. The remaining items, namely the fin, rudder and tailplane, are shown on the other sheets.

We haven't written too much about the detailed construction, mainly because there isn't much to write about on such a simple model. The following brief notes, however, do describe the order in which the pieces are cemented together.

FUSELAGE AND TAIL

Assuming that you've now cut out all the pieces, assembly can begin. We start with the tail boom. For compactness this item was shortened on the plans, and the actual length of the hardwood piece is 22", so the first task is to cut a piece of spruce 3/16" x 3/8" x 22", long. An alternate scheme is to use an arrow shaft for the tail boom. If you try this, omit Step 2 below, and run the torque wire inside the fiberglass shaft. Our thanks to Mr. D. Dewey of Sierra Madre, California, for suggesting this. From now on the construction should go pretty fast, it's just a matter of cementing pieces together, the following sequence is suggested.

(1) Tailplane to tailboom.

(2) 1/4" x 1/8" balsa strip on top of tailboom.

(3) Tailboom to fuselage bottom.

(4) Frames to fuselage bottom.

(5) 3/8" square tailpost to tailboom.

(6) Fuselage sides to frames and fuselage bottom.

(7) 1/8" x 1/4" reinforcing strips into fuselage nose.

(8) Items 3, 4, and 5, to fuselage sides.

(9) Nose block into place.

(10) Fin to side of 1/8" x 1/4" strip.

(11) Sew rudder to fin.

Sand all over, then make the 1/4" sheet hatch cover, and that's about all for now, except to note that Item 16, the wing support, should not be installed until after the actuator is in place, and checked out.

WINGS

The wings are made from four separate panels, which are then joined together with plywood braces. Begin by making the right inner panel, which is the one shown on the plans. Pin down the leading and trailing edge pieces, then cement into place all the ribs except the ones marked 11A. The left inner panel is also made on this plan, in a similar way, and is actually identical to the right panel at this stage. The outer panels come next, and the plan shows the right tip as a shaded portion of the inner panel. Pin down 9" lengths of leading and trailing edge stock, then glue the three outer ribs

into place. Make the other tip in a similar manner, but remember to put the tip rib on the opposite end this time. This all may sound a little complicated but, in practice, the wing pieces get built pretty quickly.

Now to join up all these panels. Cement the inner and outer pieces first, using the 1/16" ply braces 14 and 15. When dry, join these two wing halves together with items 12 and 13. Add the missing ribs 11A, sand the leading edge to the true airfoil contour, then cement the center section sheeting into place. A little more sanding to remove all those rough edges, and the wing is ready to cover.

RADIO INSTALLATION

The model, as we've said before, is designed around the Ace Baby Twin so the following notes apply to this particular set. You may not be able to fit any other set, as there isn't much space in the fuselage.

Put the battery in the nose compartment, and the receiver in the middle one. Pass the wires through the small holes provided in the frames.

The actuator fits under the wing, and is bolted to the hardwood tail boom. You'll have to replace the bolt in the actuator with a longer one for this purpose. That's about all for the radio equipment — now to hook up the actuator and the rudder.

Bend the loop on the forward end of the torque wire, then install this together with the forward bearing into the fuselage. Epoxy the bearing into place. Now slip the rear bearing onto the wire, then bend up the wire to form the torque arm. Epoxy the rear bearing into place. The .032" wire loop on the rudder is next, and this is attached with a very small bolt to the rudder. This loop shouldn't be too tight a fit on the torque arm for easy operation. Don't forget the plastic insulation on the torque wire! A few little tweakings might be necessary here and there before the system operates freely, so make these now. Don't wait until you get to the flying site! A last word about the antenna wire, which can simply be left dangling loosely overboard.

FINISHING

We tried a couple of different schemes for finishing off the model, the first version being covered all over (except the tail surfaces and the boom) with Solarfilm. On our second model we covered the wing with tissue, which was then doped, and this turned out to be just as good as the film and also a little lighter. So, take your pick of either of these, or try tissue all over, but remember not to add too much weight, whatever scheme you choose.

EPILOGUE

I almost wrote epitaph, and you'll see why in a few moments. Out slope soaring recently on a particularly gusty day the Tadpole's wings decided that they'd had enough of struggling upwind, and parted company from the fuselage (I must stop using these war surplus rubber bands). As the wings disappeared rapidly downwind

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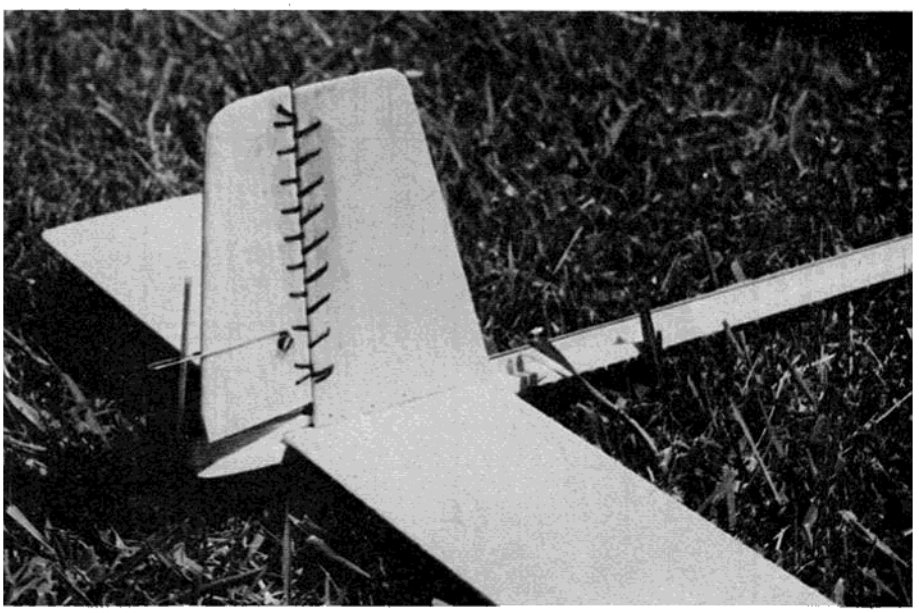
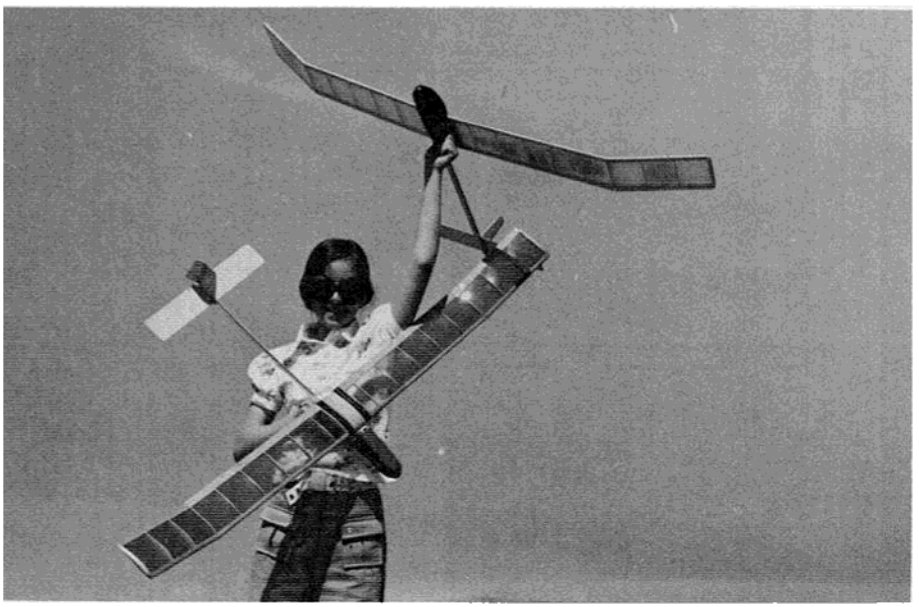
Just about as quick and simple as you can get.



All sheet tail surfaces glued to "T" boom.



Are two Tadpoles a "Tadpile?"

TADPOLE

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the fuselage made like an arrow and returned to earth somewhat more rapidly. Luckily a bush had decided to grow at the chosen landing site, and this broke most of the fall. The wings eventually came back to earth after breaking the world's record for consecutive loops. Neither piece had any real damage, just scratches, so this must say something for the structure, or my luck.

Anyhow, the moral is to check those rubber bands, and also don't fly in too much wind, it's just not worth it. □