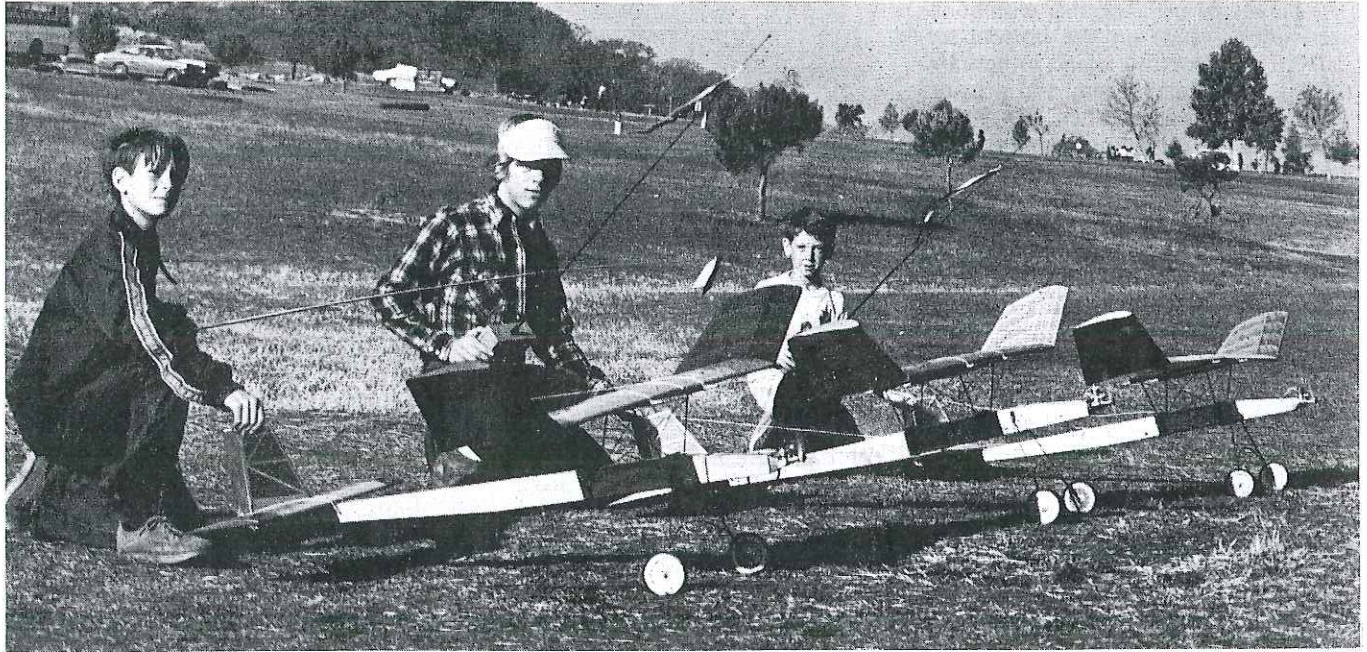


# THE DRAGONFLY

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By TEX NEWMAN . . . Want to get your young son or reluctant wife at the controls without developing an ulcer? Here's a try-it-you'll-like-it R/C model for "doubting Thomases" and raw beginners. *Anyone* can fly it!



● It seems we had just finished one of those fine dinners Mary Ann Lee cooks up, and continued to stuff ourselves with apple pie and ice cream, when Bob picked up a little stick fuselage rubber model and gave it a toss. It obediently floated across the family room and landed on the shelf where it lives between flying sessions.

"What we need is an R/C that flies like that!"

I can't remember who said it first, but at any rate, a couple of weeks later we were out test flying our new "Dragonflies." Since then there have been a dozen built and flown with a wide variety of engines and radios. The original pair were powered with .047 diesel engines and flown single channel. They have been powered with .074 OK Cubs and McCoy .098.

When the decision was made to go to OS Max 10s, a whole new thing happened! They really didn't fly any faster, but just climbed like an elevator . . . in second gear. Consequently, we could make low, level, slow speed (5 mph) passes and climb back up out of sight. The eventual addition of elevators added funny loops to the list of aerobatics which already included wing-overs, hammer-head turns, and spins.

Dragonflies have flown with Ace pulse system, rudder-only quite successfully. Mine, one of the original two, is still flying with a seven channel Kraft

system . . . operating just rudder and throttle. The left stick on my transmitter is for rent!

As a beginner airplane, the Dragonfly just can't be beat. The novice can learn which way is left . . . both coming and going. Also, where he is over the ground as well as how to use just a little pressure on the stick, all in a short time. This approach to R/C flying provides the beginner with a large amount of success in a short period of time with minimum repairs. One of our novices, Brian McCleave, had fewer than ten flights on his Dragonfly when he soloed . . . full flight . . . take off through landing.

Up until a year ago there was a large open field just two houses up the street from my house. The neighborhood kids would all turn out for a flying session. We'd take off and circle the field to gain altitude, then walk back to the front yard and lay in the grass while each one took a turn to fly for a while.

On one such summer evening, I was sitting in a chair on my drive way, flying, when a police cruiser passed ominously down the street. The driver looked first at me, then out his window at the sky, then back at me again. He turned around at the corner and came back and parked in the driveway.

"What are you doing?"

"Flying an airplane." I said.

"That's what I thought. Where is

it?"

"Up there, over head . . . ah . . . would you like to fly it?"

"Oh no, I'd probably crash it!"

"Not this one! It's real easy, my wife even flies it. Come on."

And so he did, for five minutes or more, asking lots of questions. Finally he said, "I hate to do it, but I've got to get back to work. Have a nice evening."

"Phew!"

Enough of this, I could tell stories all night, but you'll enjoy flying your own Dragonfly and having your own fun more than reading. So let's get to work.

First of all, call up your old flying buddy and build a pair. They are ten times more fun in pairs. Besides, a 12 x 48 inch sheet of 1/16 plywood makes four fuselage sides and all the other little plywood pieces needed for two.

## FUSELAGE

Cut out two fuselage sides. Glue on the 1/8 square longerons, making one left and one right side. Add bulkheads A, B and C and pin in place over the top view. Note where the 1/16 plywood sheeting goes on the bottom to reinforce the wing and landing gear mounts. Draw the nose together with the firewall and add nose plywood sheeting. Bulkheads D and E are put in after the filler block at the tail. Install the tail skid between pieces of 1/16 plywood and cross-sheet the remainder of the

fuselage bottom with 1/16 balsa. The top may be sheeted after the push rods have been installed.

#### FLYING SURFACES

The wing and stab are very conventional in construction. The wing is built in two sections and joined with two 6 inch pieces of 3/32 music wire. These slide into 1/8 inch O.D. brass tubes sandwiched between the main spars. The panels are held together with hooks and rubber bands on the bottom surface. This allows the plane to be transported in a Volkswagen, and provides flexing on landings when the wheels first hit something other than the ground. The one thing to remember is the 1/4 inch shim under each wing tip trailing edge during construction. This provides tip wash-out and helps make stalls enjoyable. Wing rib No. 3 has 1/16 balsa sheeting on top to support the wing hold down bands.

Build the rudder from 1/4 inch square balsa and cover it before mounting in the slot provided in the top of the stabilizer.

When building the stab, pin the leading edge, bottom spars and two pieces of 1/4 inch square trailing edge down over the plan. Next, glue in the 1/16 bottom sheeting. Add the 1/4 inch square trailing edge joiner, followed by all four No. 1 ribs, all glued on top of the sheeting. When the top sheeting is put on, it will sand down to a smooth airfoil.

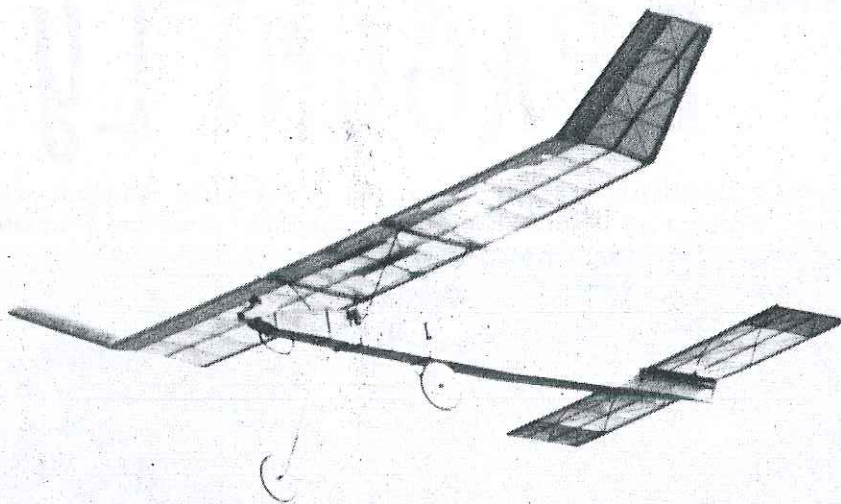
#### WHEELS

The wheels may look tricky, but they are really very easy. The vacuum cleaner belts can be found at most hardware stores, or any small appliance dealer. Tell them you are going to put them on a six foot model airplane and watch their faces. Be sure to get the size shown on the plan.

Cut all the pieces from the material specified. The hub is a one inch long piece of 3/8 inch dowel drilled for a 1/8 axle. Slide the disc No. 1 onto the dowel, adjust it until it runs straight when spun on the axle, and Hot Stuff it in place. Bevel the edges of plywood rings No. 2 so they form a "V" for the tire to fit in. Glue the rings on one at a time to be sure they are properly centered on the disc. Sand the balsa parts No. 3 to a cone shape and glue over the dowels to complete the hubs. The tires are contact-cemented on after the wheels are painted.

#### WING MOUNTS

Bend up the wing mounts over the plan. Note the front mount wire is taller to provide wing incidence. Lay Saran Wrap over the fuselage and epoxy the wing mount saddles together and onto the mount wires. Hold these assemblies in place with rubber bands un-



Dragonfly on a "glide-by" shows off its rock-stable design. A perfect raw beginner's model . . . if they'd only believe it! Funny thing is, the "Aces" love to fly it too! You better build one.

der the fuselage in the location shown. Next, bend two triangles from .045 music wire. Make them 12 inches on each side. Place the middle section of one triangle around the upper end of the front mount wire and bind it in place with fine copper wire. Bend the rear ends around the lower sides of the rear mount wire. Cut off any excess. Do the same with the other triangle, starting at the top of the rear mount wire. Bind the brace wires on each side where they cross. Check the alignment carefully and solder all the joints. The 1/4 inch dowels are bound to the wire mounts with fishing line or string, and epoxied.

#### ASSEMBLY

The brass motor mount shown is pretty, however, a ready-made mount is more durable. Bolt the engine on and hook up the servos. Spend a little extra time here to be sure every thing moves the right direction and works freely.

Our Dragonflies are covered with transparent Monokote for good visibility. The fuselages and wheels are finished with two coats of K & B resin.

Glide test your Dragonfly. Give it a good shove. It should float a hundred feet, land on its wheels and slowly settle on the tail skid. If it stalls or dives, adjust by sliding the wing mount backwards or forwards on the fuselage.

#### FLYING

The Dragonfly will take off from a smooth runway with an .049. Bob makes the most beautiful takeoffs with his, but he never touches the stick until the plane is twenty feet in the air . . . while I am on the controls immediately, and somehow still manage to hit things before getting off.

The Dragonfly is great for thermal or slope soaring, crop dusting, parachute dropping, but mostly for having fun. We are sure it will make you a happy MODEL BUILDER!

