Dickie Bug

IF YOU'RE REALLY LOOKING FOR A DIFFERENT APPROACH TO AN RC AIRCRAFT, THIS IS FOR YOU.

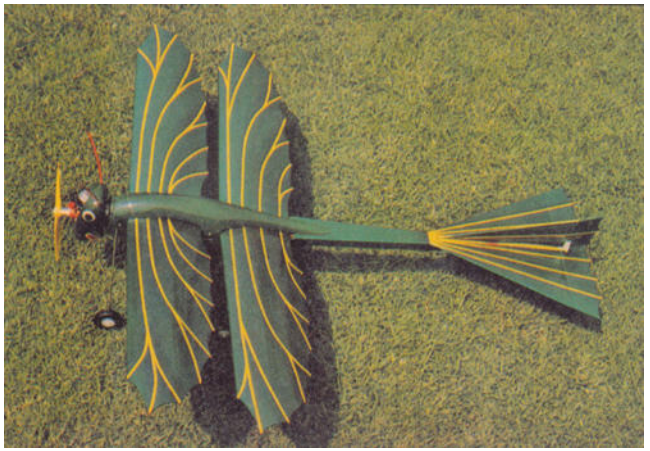
Editor's Note - This novelty design by Dick Tichenor appeared originally in the November 1976 issue of RC Modeler. When I came across this it brought back fond memories of Dick as I worked with him behind the scenes making and enlarging drawings, sketches and 3-Views for some of his model designs. Another nice guy who is no longer with us. But we'll try to make his designs live on. His article follows.

Here is a refreshing change of pace from the run-of-the-mill R/C models. Would you believe the design was sparked by inadvertently placing two Dirty Birdy canopies together so that they resembled the body of an insect? A bit of imagination did the rest.

The Dickie Bug's first flight was made with more than usual conjecture as to how this configuration would perform in flight. Luck was with us as it was very stable, while being extremely maneuverable. The tandem wing arrangement works as a slotted wing at high angles of attack which appreciably delays any stalling tendencies.

It certainly has been fun to fly, fascinates spectators, and inspires comments that make a most enjoyable flying session.

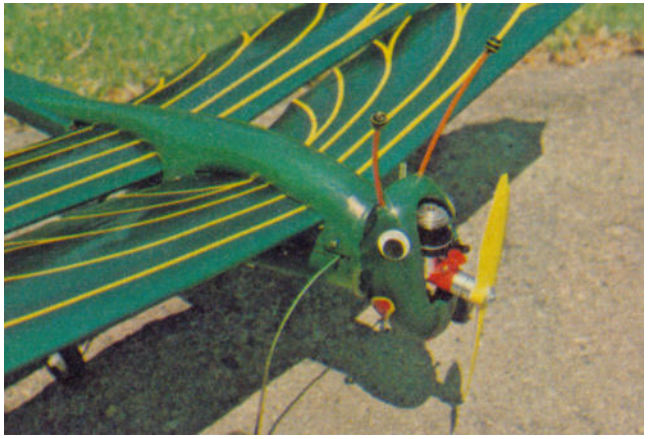
Thanks to cyanoacrylate adhesives and 5-minute epoxies, the bug was a snap to build. Except for sawing out the 1/4" plywood bulkhead, the entire aircraft was built on my office desk.



Keeping Don Dewey from finding out what I was doing was something of a challenge because he thinks I am supposed to be working all the time.

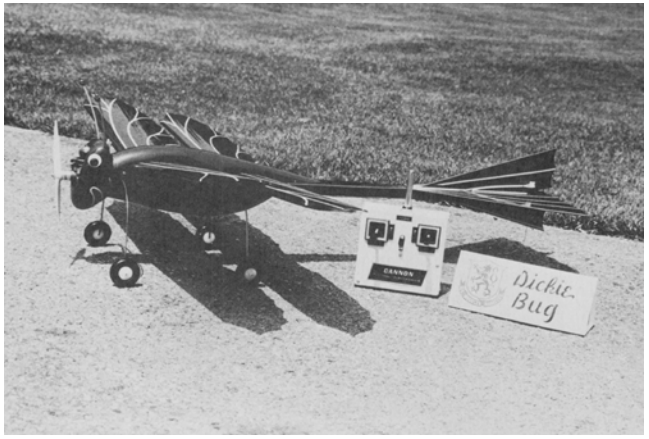
Start construction by sawing out the 1/4" plywood engine mount bulkhead and drill for the Tatone tank mount. Cut a 3/32" diameter x 36" length of music wire in half and form the landing gear struts. The front strut will be held in place by the nuts on the engine mount screws.

Cut slots in each of the 1/8" x 1/2" spruce longerons to accept the front landing gear. Epoxy the longerons to the bulkhead being careful to include the down and right thrust line offset.



Next, epoxy the 1/8" plywood servo mounts to the spruce longerons. When that has set-up, pull the aft ends together and epoxy.

Then glue the upper and lower sheeting to the tail boom. Add the 1/8" x 1/2" x 6-3/8" spruce wing mount with the upper edges slanting inward about 1/16" per side.



Now you can trim a canopy and epoxy in place to make the bottom of the fuselage. I used the Dirty Birdy canopy because we have them at RCM to supplement the Dirty Birdy construction article.

DICKIE BUG

Designed By: Dick Tichenor

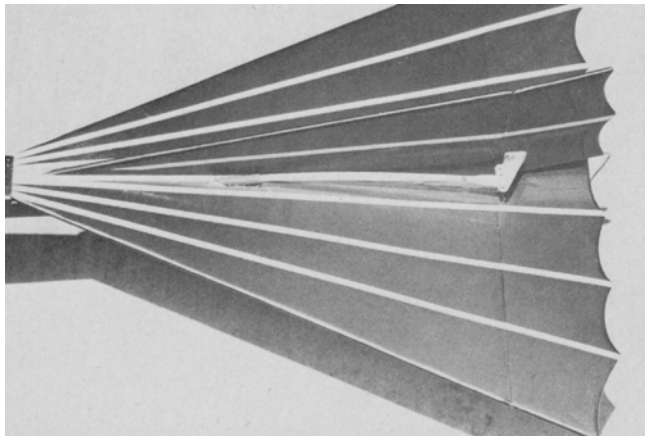
TYPE AIRCRAFT
Wierd Sport
WINGSPAN
32 Inches
WING CHORD
5 Inches
TOTAL WING AREA
300 Sq. In. (approx.)
WING LOCATION
Shoulder (tandem)
AIRFOIL
Similar to Clark Y
WING PLANFORM
Dragon Fly
DIHEDRAL, Each Tip
Front 1½'' — Rear 1''
O.A. FUSELAGE LENGTH
34¾ Inches
RADIO COMPARTMENT AREA
(L) 8½'' X (W) 2'' X (H) 2''
STABILIZER SPAN
11½ Inches
STABILIZER CHORD (incl. elev.)
11'' Wide Point
STABILIZER AREA
66 Square Inches
STAB AIRFOIL SECTION
Flat
STABILIZER LOCATION
Top of Fuselage
VERTICAL FIN HEIGHT
6'' High Point
VERTICAL FIN WIDTH (incl. rudder)
10½'' Wide Point
REC. ENGINE SIZE
.09-.10
FUEL TANK SIZE
1 Oz. Tank Mount
LANDING GEAR
4 Wheels
REC. NO. OF CHANNELS
2 — (3) With Throttle
CONTROL FUNCTIONS
Rudder, Elevator, (Throttle)

BASIC MATERIALS USED IN CONSTRUCTION

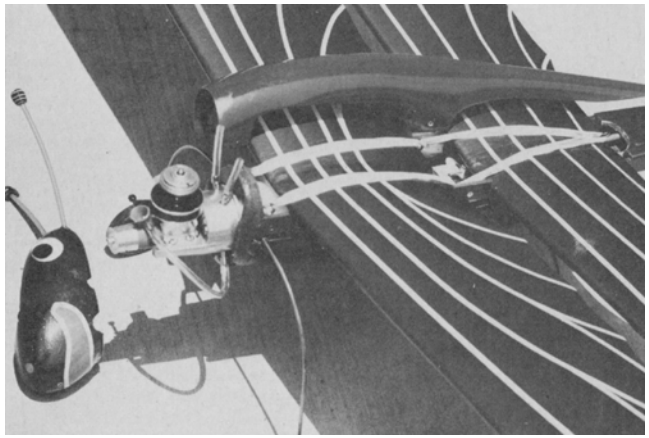
Fuselage	Balsa, Ply, Spruce
Wing	Balsa and Spruce
Empennage	Balsa
Weight Ready-To-Fly	26 Ounces
Wing Loading	12½ Oz./Sq. Ft.

You can use some other size or shape canopy if it suits your fancy, as the Dickie Bug is for fun anyway.

The tail surfaces are made of soft 1/8" sheet balsa. I have a habit of cutting out tabs and slots on parts for alignment purposes, it works well for me and is shown on the plans.



I like to use the covering film for hinges on small models. My method is also shown on the plans. I have found that it is much easier to cover the tail surfaces before assembling them.



Now for the wings. Glue together soft 1/16" sheet balsa to make 4 panels 5" x 16". Trim the 4 panels to the outline shape shown on the plans. Mark the spar location on each of the panels. Be sure to make 2 left and 2 right hand panels!

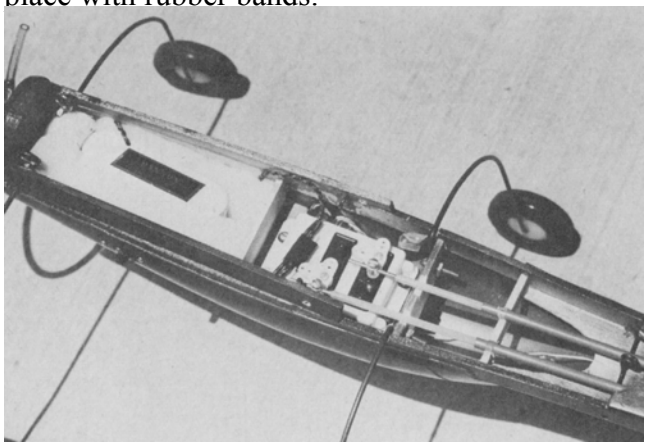
Cement the spars in place - - - I used Zap. Make all of the ribs the same size to be trimmed at the trailing edge later. Zap the ribs to the spars only at first. Now bend the sheet against the ribs and hold in place while the Zap goes off.

Stick the 3/16" square leading edges in their proper positions. Cut off the trailing edges of the overhanging ribs and trim the bottom edges of the ribs as shown on the plans.

Trim and sand the leading edges to shape. Bevel the root end of each panel for the dihedral angle. Epoxy the panels together using clothes-pins to clamp the 1/16" ply spar splice in position.

You will notice that the front wing has 1/2" more dihedral under each tip than the rear wing. The 1/8" center ribs are installed to complete the wing construction.

Install the wing mount hooks and rear landing gear so that the wings can be strapped in place with rubber bands.



Trimming the top canopy is the next chore. About the only advice that I can give here is to allow a little surplus, trim and try it. I made several attempts before getting it to fit.

Try to keep the tabs for the hold-down screws as near the size shown on the drawing as possible. They are most helpful for alignment each time you assemble the bug.

The head is a decorative personality item and serves no functional purpose. It is carved from a soft balsa block and hollowed out to clear the engine.

The antennae are lengths of Gold'N-Rod inner pushrod with wooden beads stuck on top. The eyes are 3/4" diameter plastic eyes from a craft store. Those floating pupils really dance when the engine is running. The mouth is trim film stuck in place after painting.

There is a 3/8" thick balsa spacer between the head and the front bulkhead that fits around the Tatone tank mount. The head is epoxied to the lower half of the spacer. The head and forward fuselage (canopies) were painted with Aero Gloss Stinson Green. A yellow belly effect was sprayed on the bottom.

The tail boom, tail surfaces and wings were covered with metallic green Solarfilm. D.J. 's trim tape was used for the striping.

The tail surfaces were epoxied in place after the painting and covering. Holes were then drilled and the flexible Gold'N-Rod pushrods were secured.

Our Dickie Bug had a Cannon Mini-Block radio installed. If you use separate receiver and servos, you might have to move the servo mounts and rear landing gear back a bit in order to have room for the receiver and battery pack.

We used a Cox Medallion .09 engine with the Cox muffler so we could fly at a nearby field without disturbing the residents. If you do not have a noise problem, a good .051 should have ample power for the bug.

I have described how the original model was built and it has flown extremely well. If you have different building techniques that you prefer, why not try them?

If you think of a different shaped head or body or wing or tail, go ahead and do it, the whole thought is to enjoy it.

My DICKIE BUG has been worth the effort just to see peoples reaction when they see it and believe me, they react. Be prepared to hear expressions like "Quick Henry, the Flit", "Where's the fly swatter?", etc, etc.