RCMW-FSP

NOVEMBER 2014

IN THIS ISSUE

For the Model Builder and Flyer - November 2014 Issue

Cloud 9
RC Micro World

Full Size Plans

Now that Flying Models, in the opinion of many the last good model magazine, has closed up shop it looks like we will have to take their place.

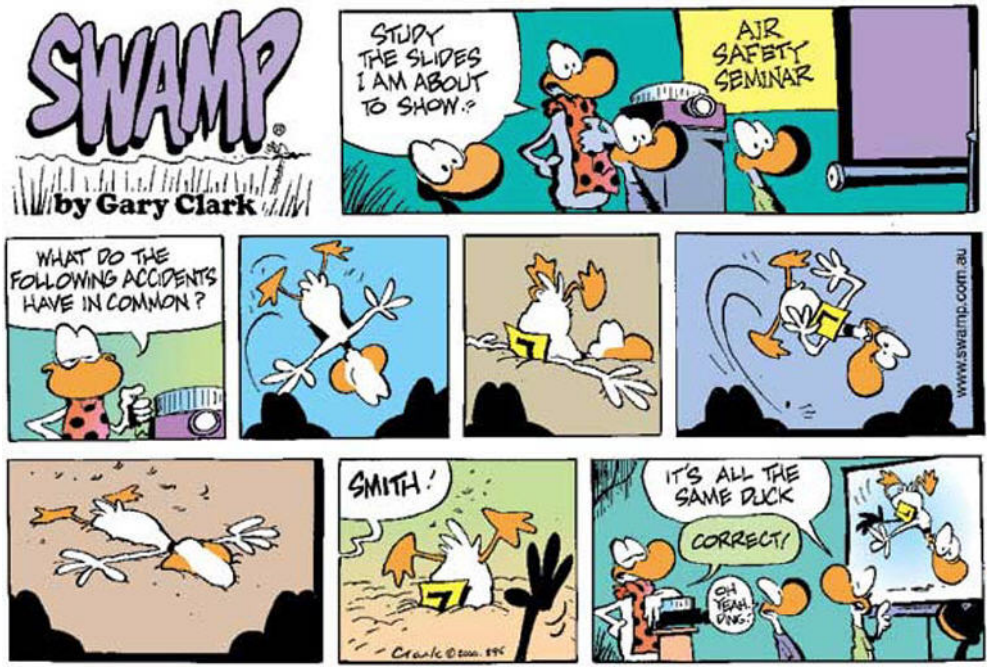
It seems as though the other model airplane magazines available specialize in seeing how many advertisements they can cram into each issue, making them primarily expensive catalogs. I remember the days when catalogs were free. Much of the non-advertising content of current magazines consists of articles about models that are intended to set a new Guinness record for the biggest and most expensive, or the fastest and most dangerous model in the world.

Personally, I like to occasionally see some of those kinds of models and admire them as accomplishments, but have no desire or intention to build and fly things like that. I guess that makes me kind of old fashioned or maybe just some sort of an old 'fuddy-duddy'

I get a lot of satisfaction out of watching a glider or or a rubber or gas powered free flight model doing lazy circles in the sky. Though I freely admit to being not all that good at RC flying, it is nice to drive a model around the sky and bring it back in one piece, at least some of the time.

With those things in mind, here are the plans for the future of RCMW-FSP. As a continuation of John Worth's original RCMW (RC Micro World) online magazine that specialized in small RC models, we will continue to have construction articles and news about those models.

Don't forget to write to the FAA to let them know how their proposed rules will affect your model flying.



But there are many modelers like myself who, while they appreciate those very small and micro-miniature models as achievements, would not have the interest or dedication to build such models. Not unlike my own lack of interest in building a half scale Piper Cub or one third scale P51 Mustang.

At a recent meeting with Dave Mathewson, executive director of the AMA, he told me that they now had nearly 170,000 members, up significantly from those of the past few years. Of those AMA members if there were 5% or 10% who were interested in the kind of model magazine that Air Trails, Model Airplane News, and Flying Models used to be it would be feasible to furnish a magazine targeted to those interests.

That's our goal! We want to be the successor to AT, FM and MAN (and others) who provide model airplane content for builders and flyers.

So our problem, and that of you as subscribers, is to help us reach that 5% or 10% of the AMA members that were saddened to see Flying Models go away. You can help us by telling your model building friends about us and having them contact us for a free sample copy of the current issue.

If you send us the names and e-mail addresses of 10 or more model builders who are not currently subscribers, we will add a year to your own subscription. How's that for a good deal! --

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Or, here's another special offer. If you look on the last couple of pages of each issue we show collections of back issues of model magazines that we have digitized and sell. In exchange for the names and e-mail addresses of every 25 modelers who are currently not subscribers we'll give you a $50 credit to be applied to the purchase of any of our digital collections.

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We will also be looking for more designers and authors of construction and how-to-do-it articles for publication in our online magazine. So if you are interested in achieving fame and fortune, or at least modest payment for your articles published in RCMW-FSP, then contact me by clicking on this link ---

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The future of model building and flying depends on young people who get interested in Aviation. If you are working with a group of young folks at a school, Boy Scouts or Girl Scouts or other organization, we will be glad to provide a free subscription for the group to share.

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Hobby shops are becoming few and far between. It's hard to find supplies for building models. We will be adding sources for model building kits, materials and supplies. The advantage of an online magazine like ours is that we can have links that you can follow if you wish, not ads that take up space that could be better used for plans, projects and news. If you are a supplier of model building kits and supplies, contact us by clicking the link below to become one of our sources.

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We want to publish what you would like to see. If you have favorite old kit or model that you would like to have us print, send us an email by clicking on the link below. We have thousands of plans and hundreds of kits in our archives just waiting to be cleaned up and reprinted in upcoming issues. So don't be shy, let us know what you want to see on these pages.

Click Here to Tell Us What You Want to See

All of the plans in each issue are full size PDF files that can be printed at a local copy shop for a couple of bucks. That's why our name is RCMW-FSP (RC Micro World & Full Size Plans) But some of our readers don't have a nearby place to have plans printed. We will have a list of sources so that you can pick one near you or have a plan printed and mailed.

Click Here to Get a List of Plans Printing Sources

Keep 'em Flying,
Roland Friestad, Editor

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IN THIS ISSUE - November 2014

THERMIX-13 PF
by Bob Aberle

Editor's Note - The Dick Sarpolus plan for his original THERMIX-13 can be ordered from the AMA by going to -
www.modelaviation.com/thermix13
Price is $12 plus $6 postage
The full size THERMIX-13 PF plan in this issue can be printed at your local copy shop for about $3.

BACKGROUND

I can be inspired in many ways when it comes to selecting a new design project, which will eventually lead to a published construction article. In this particular case a recently published design, provided that inspiration.

In the August 2014 issue of MODEL AVIATION (the AMA's magazine), noted designer/author, and member of the AMA Hall of Fame, Dick Sarpolus, published a large electric powered sailplane, which he called the "THERMIX-13" (starting on page 37). This is a photo of Dick holding his new design.

I'm sure one look at this photo and you will recognize the Frank Zaic THERMIC-100 influence. Specifically the wing tip panels have more of a chord, than the center panels., Many of the original Zaic designs had this characteristic wing tip configuration.

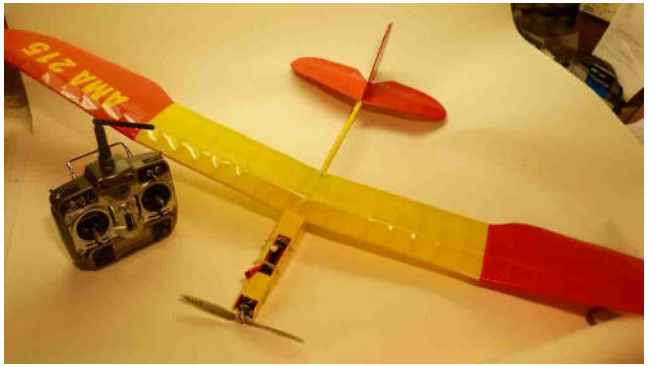
You will also realize when looking at this photo that Dick built a very large sailplane. The wing span is 102 inches and the wing area around 900 square inches. Total weight of this plane, with an electric motor and Li-Poly battery pack, was 64 ounces.

Just to make this design a little different, Dick chose a pod and boom fuselage. So the final design was derived from the old THERMIC-100. Since Dick chose a slightly different approach, he named his plane THERMIX-13. That's an "X" on the end instead of a "C". The "13" was the year Dick completed his new design (2013).

I really wanted to build Dick's plane, but it is way too large for a person like me who is more usually associated with micro or small size aircraft. We have been running park flyer models in RC MICRO WORLD several times a year. These planes have run upwards of 15 ounces and wing areas up to 300 square inches.

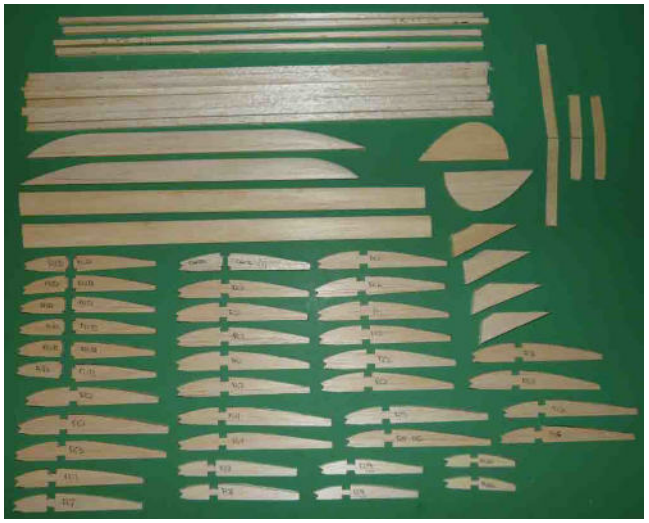
With the help of my friend, Chris Moes, up in Canada, a reduced size set of Dick's plans was run for my purpose. This Park Flyer version has a span of 54 inches, a wing area of 275 square inches and, if you can believe, ended up with a final weight of only 9.7 ounces. Here is a photo of me holding my THERMIX-13 PF (PF for Park Flyer). Now you know how really small it is!

Throughout my building of the THERMIX-13PF I corresponded with Dick Sarpolus. We exchanged many e-mails. The one thought that was on our minds is to try to get modelers to build once again. It seems everyone is buying ARF and RTF models. Many haven't cut balsa wood in years. This is so prevalent today that construction articles are now hard to find. But with that thought in mind, Dick and I have given you two building possibilities. One is big and the other small. Here are two more photos of my THERMIX-13PF before we get into the construction.

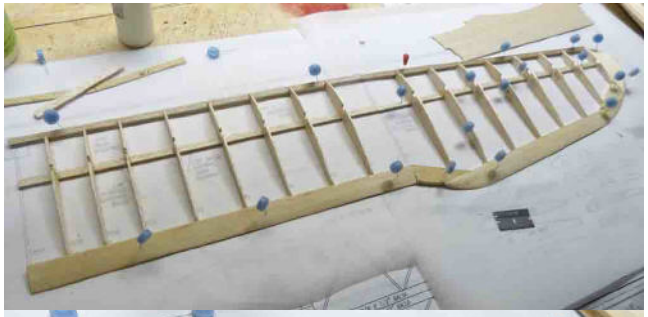


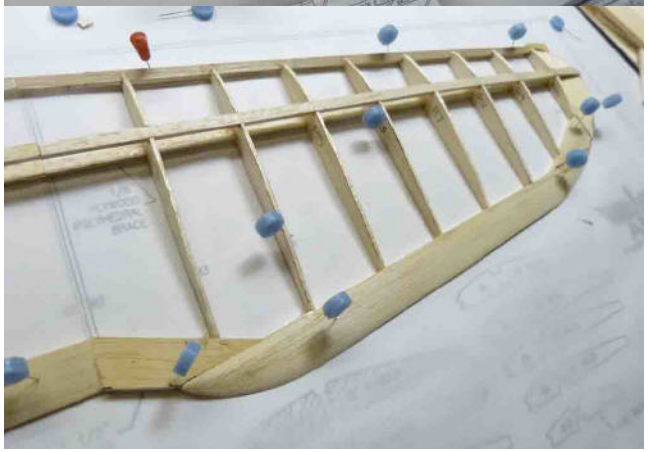
CONTRUCTION NOTES

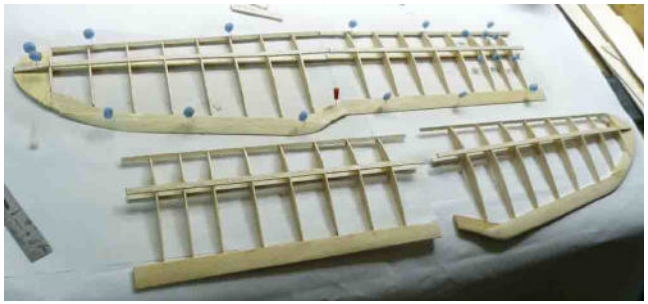
I started construction with the wing. As you can see, there are many parts. Building this plane was essentially easy. But the number of parts might scare some modelers away. I'm hoping that one of the RC kit manufacturers, with laser cutting capability, might produce a full kit or even a short kit consisting of the ribs and formers. This is what the wing parts looked like before assembly.



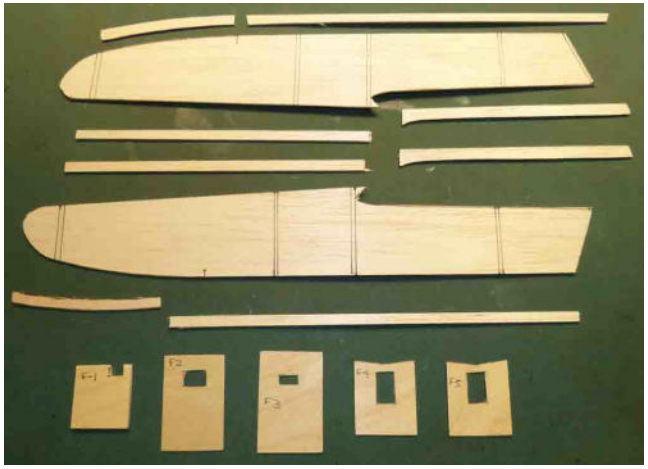
I stripped all the necessary balsa from sheet stock. The leading edge and the main spars were medium to hard balsa. Conventional trailing edge stock was used on the center wing panels. The tip panels used 3/16 inch medium balsa for the trailing edge and 1/8 balsa for the tips. No balsa webbing was employed between the two spars. The wing panels were joined with 1/32 ply braces. You will note that this design has very little dihedral and polyhedral. That's the way the Thermic designs were, and it works well in flight.

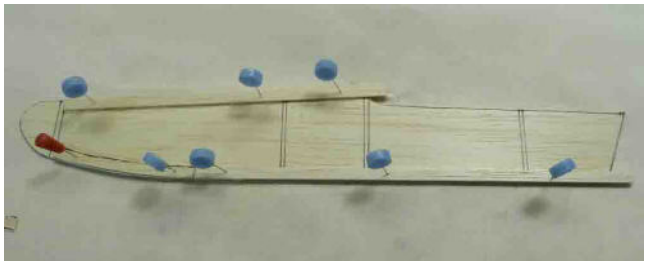




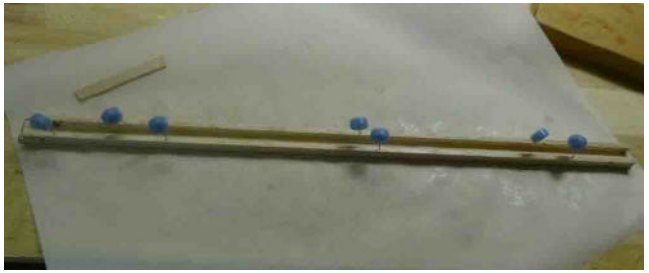


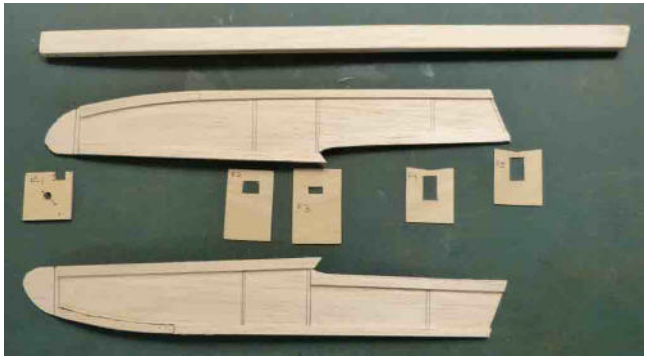
Next I worked on the fuselage, which is a pod and boom type structure. The pod sides are 1/16 inch balsa sheet. Balsa doublers made from 1/16 X 1/4 balsa strengthens the pod fuselage sides. All the formers were made from 1/32 plywood. The firewall was 1/8 ply. Make sure that clearance holes are made as necessary for the passage of cables.





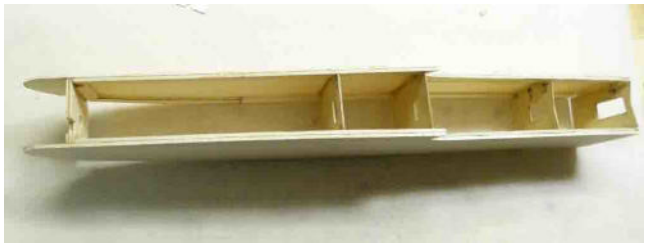
Although Dick Sarpolus used plywood on his boom, I decided that balsa was good enough. The boom sides are made from 1/16 X 5/8 inch hard balsa. The top and bottom was 1/8 X 3/8 inch hard balsa. This was easy to do and ended up plenty strong.





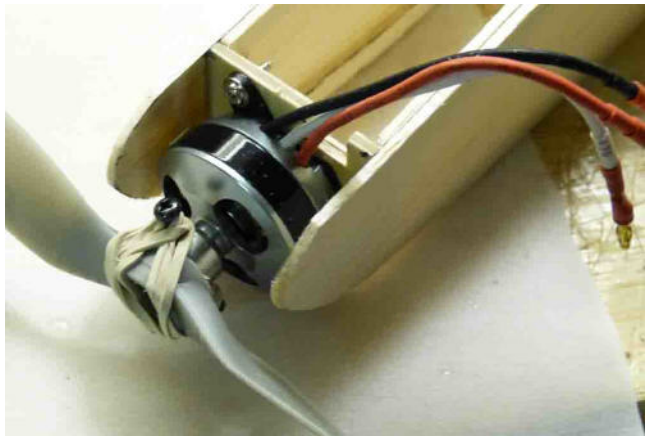
These are the pod and boom parts ready for final assembly.

In the next photo I am holding the boom so that you can see the cross section of the shape.



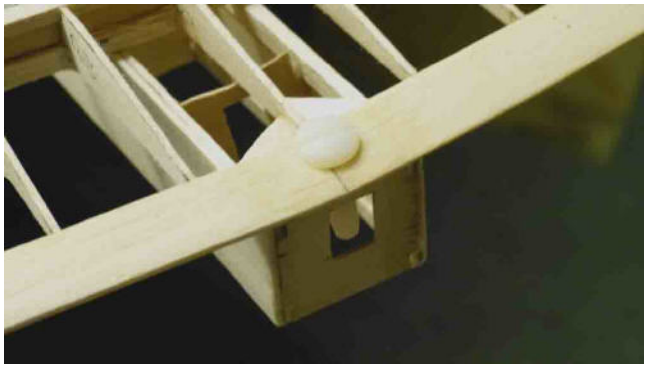
The formers and sides of the pod are being added.

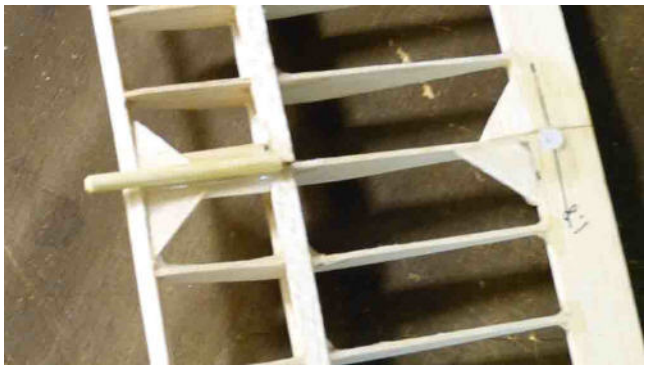
The next few photos are a little out of sequence, but it shows how the removable wing is set up. There is a 3/16 inch hardwood dowel at the leading edge, that is cemented to the lower part of the wing. That dowel penetrates into a hole cut in the ply former at the leading edge of the wing. At the trailing edge a single 1/4-20 nylon bolt holds the wing tightly in place.

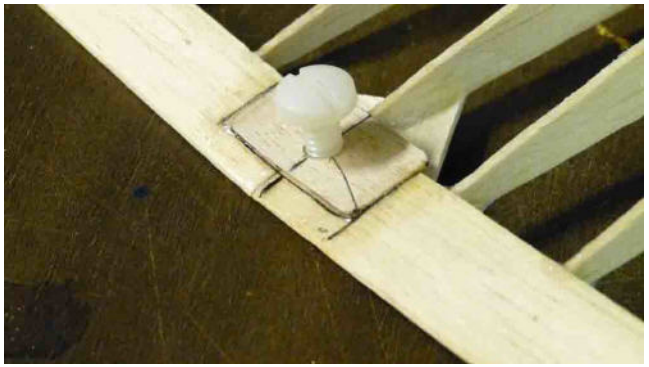


Here the E-Fite PARK-300 brushless out-runner motor is bolted to the firewall, F-1. A prop saver was used.

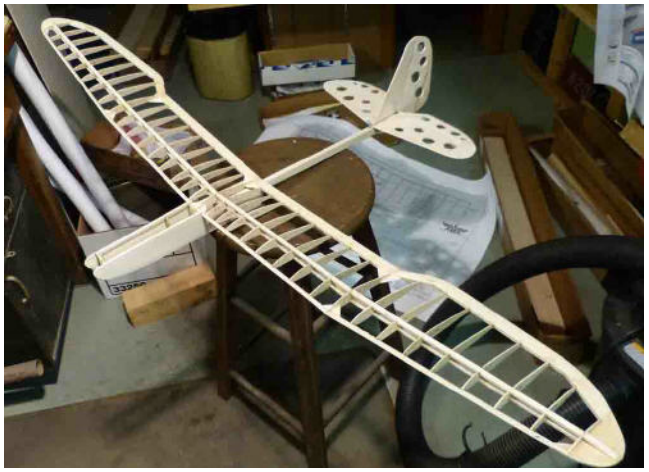
Now back to a sequence of four photos that clearly show the dowel and bolt wing hold down scheme.

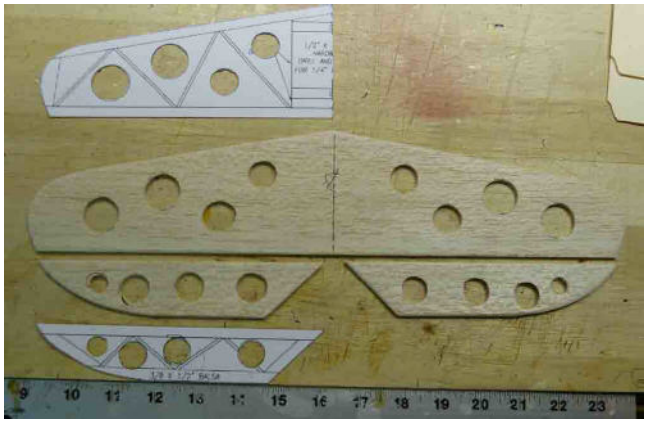


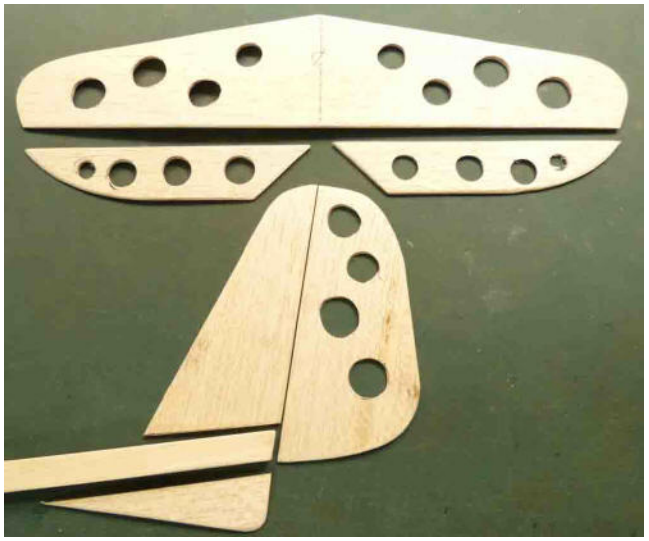




Next is a photo of the basic structure awaiting covering. I kind of pin everything together to determine how the final CG location will work out.



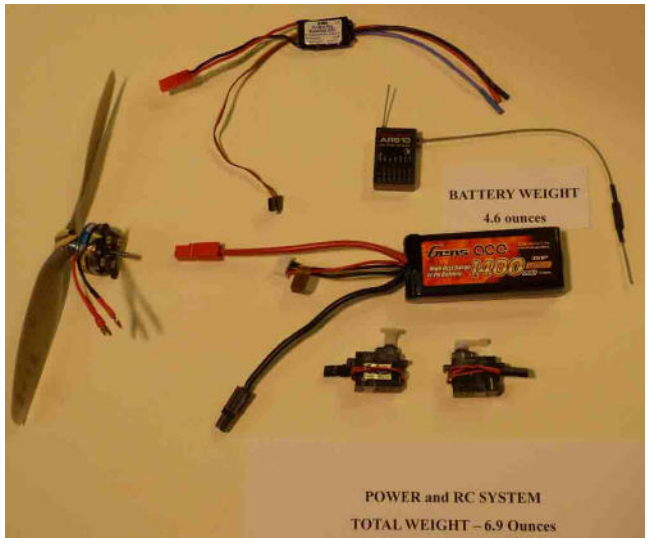




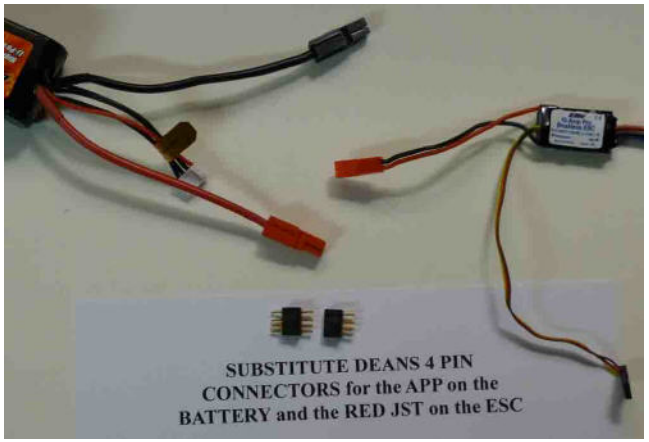
All the tail pieces were cut from 1/8 inch medium balsa sheet. This was plenty strong and did not require any stiffeners. You will notice that I cut lightening holes in some of the surfaces. My initial intent was to save weight,but in the end my plane turned out light in weight and tended to be nose heavy. So you may not want to bother with these lightening holes.

POWER AND CONTROL SYSTEMS

Now for a few words on the power and RC system. As originally planned and as shown in the next photo, the total power and RC system weight was 6.9 ounces. Included in that weight was a 4.6 ounce 3 cell 1400 Li-Poly battery. That battery would have made this plane hopelessly nose heavy.



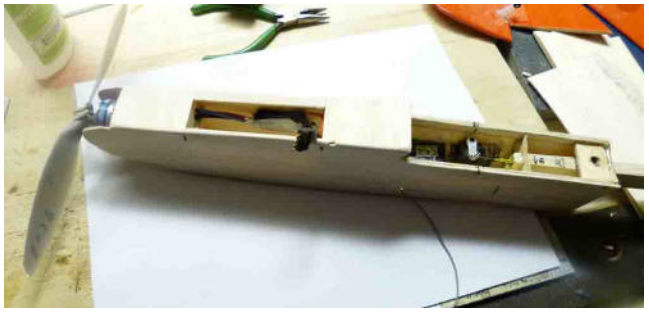
So I substituted a 3 cell 750 battery weighing 2.4 ounces or 2.2 ounces less. That brought my total plane power and RC system weight down to only 4.7 ounces. That worked well, but, of course, I now had only half the battery capacity. More on this thought later.



Another item that must be addressed is that JST red connectors can not handle 8 amps of motor current. So to cope with this problem I substituted Deans four pin connectors on my battery and my ESC. Two pins are tied together so that the original four pins now connects to two wires. The result is a heavier duty connector. Actually if I had my way, I would have a heavier gauge wire exiting from the ESC.

The pod fuselage doesn't give you much room for your two servos. Even though my E-Flite S-60 servos are small, I could not locate them side by side. You could, of course, just make the fuselage a little wider. But note how I laid the elevator servo on its side, attached to the bottom of the pod. The rudder servo was attached to one of the pod's sides. I used double sided tape and some Permatex clear silicone adhesive to hold these servos in place.

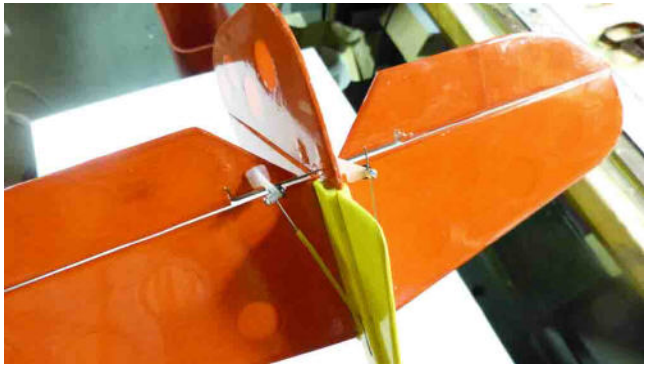
The control rods consisted of Stevens AeroModels .073 inch ID teflon tubing with .032 inch diameter wire running inside. Both tubes run inside the boom and exit out at the rear just before the stab.



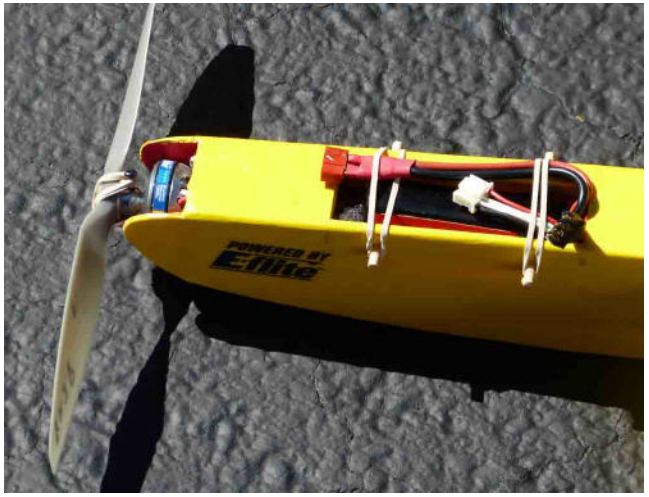
Here you can see the opening on top for the battery pack. My club rules state that batteries must be removed from the aircraft for charging purposes. For that reason I make battery access real easy.

To complete the package the receiver mounts in front of the wing leading edge affixed to the pod side with mounting tape and silicone adhesive. Then the ESC mounts to a pod side, next to the battery, the motor being up front.

The tail pieces are first covered, then attached to the boom at the rear for the fuselage. Note how the covering is removed on the underside of the stab so that the cement can make better contact.

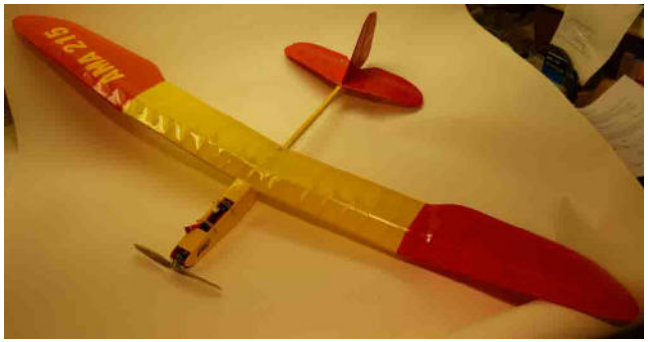


DuBro micro control horns and EZ connectors attach the control rod wires to the two control surfaces. Make sure you use that lower tail skid. It protects the control horns, which project a little lower than the bottom of the boom. Also the little extra vertical fin area can't hurt.



Several pieces of 1/8 dowel and two small rubber bands holds the Li-Poly battery in place, yet allows for easy removal.

The longer receiver antenna was brought outside the pod and attached with double sided tape. I wanted to get that larger of the two receiver antennas away from the servo, to help get maximum radio range.



The completed THERMIX-13 PF ready for first flight (upper and lower view).

FINAL CG and CONTROL THROWS

The final CG location as shown on the plans is 1-5/8 inches back from the wing leading edge. That's just about on the main wing spar location.

As already mentioned, the 3 cell 1400 battery at 4.6 ounces would have made the plane terribly nose heavy. There are several ways to correct this situation. I chose to go to a lower capacity 3 cell battery rated at 750 mAh. That brought my total weight down by 2.2 ounces.

It reduced the total plane weight, allowed the model to balance, but now had only half the original capacity. I found that I could still get up to 6 minutes motor run time at full throttle. With the high power loading and light plane weight, I need only about one minute motor run time to get this little model up to 500-600 feet altitude.

So on one charge I might get 6 flights before having to recharge. Another alternative might be to go to a 2 cell pack. You would still have a lot of power, but could increase the capacity to say 1000 mAh, with less total weight.

Of course, you could stay with the 3 cell 1400 pack and either increase the tail length or decrease the nose length. You would then have lots of capacity and higher speeds, but the price to pay is higher wing loading. There is a lot to think about!

The control throws worked out to 1/2 inch either side of neutral for the elevator and 1 inch either side for the rudder.

ALTERNATE IDEAS

I didn't add any under fuselage skid up in the front. If you fly off a concrete or blacktop strip, you might consider some kind of skid or even a single wheel. Otherwise you are going to really scratch up the lower front end.

Another suggestion is to go to a folding prop which allows for less drag when flying with the power turned off. My motor didn't lend itself well to a collet type mount, so I stayed with the prop saver. But if you use a motor with a protruding shaft forward, you might try a 7 or 8 inch folding prop assembly with about a 4 to 5 inch pitch. Both BP Hobbies and Radical RC sell folding props and spinners like this.

FLYING

Flying the THERMIC-13 PF was nothing short of sensational. It flies as well as it looks. It is so easy to fly, that it could prove an excellent first time RC aircraft for training purposes.

There is no tendency to stall, even at very slow speeds. Because of that fact it is an easy plane to land. It has so much power that it can sustain flight as low as 1/4 throttle. Tom Hunt and I each made a flight, swapping transmitter and camera.

The first shot shows Tom at the controls for the first launch. The remainder of the photos were taken by both of us. The sky was so blue, without any clouds. This tended to make the flight shots almost unreal. I know you are going to love this plane. Maybe you could get Brian Malin at BMJR to make up a full kit.

SUMMARY

I want to thank Dick Sarpolus for all of his help, and for publishing his larger version of the THERMIX-13 in Model Aviation. If you haven't built a plane from scratch in some time, this is the way to get "back into" our hobby.

Bob Aberle
baberle@optonline.net

SPECIFICATIONS

Model - THERMIX-13 PF

Designed recently by noted modeler/author, Dick Sarpolus, his full size version of this model appeared in the August 2014 issue of Model Aviation.

For this presentation, Bob Aberle, reduced Dick's 900 square inch design, down to just 275 square inches. That places this smaller version in the park flyer category.

Wingspan: 54 inches
Wing Area: 275 square inches
Length: 30 inches
Weight: 9.7 ounces
Wing Loading 5.1 oz/sq.ft.

RC GEAR USED

Horizon/Spektrum DX-7 transmitter 2.4 GHz spread spectrum, Spektrum AR610 receiver and two E-Flite S60 super micro servos operating the rudder and elevator

POWER SYSTEM USED

Horizon E-Flite PARK-300 brushless outrunner motor, APC 8 X 3.8E prop, E-Flite 10 amp brushless ESC and a 3 cell Rev Lectrix (FMA Direct) 750 mAh Li-Poly battery (2.4 ounces)

POWER SYSTEM PARAMETERS

Prop: APC 8 X 3.8E
Motor current: 8.0 amps
Voltage: 10.4 volts (under load)
Power Input: 86 watts
Battery Loading: 10C
Power Loading: 141 watts/pound
Flight Time: 6 minutes but with some motor throttling expect 8 to 10 minutes.

SOURCE REFERENCES

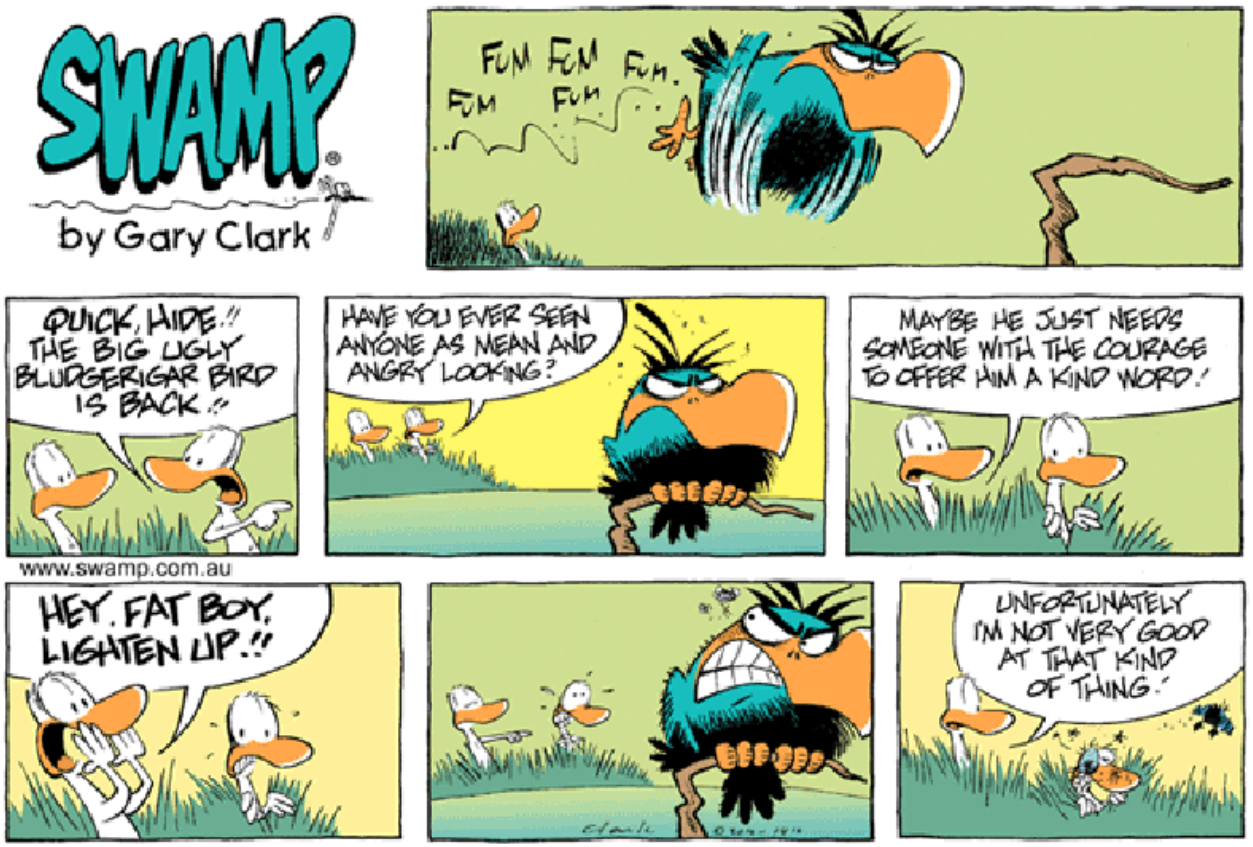
BP Hobbies - CA cement, CA accelerator, 5 minute epoxy cement, APC prop and Solite iron-on covering material
www.bphobbies.com

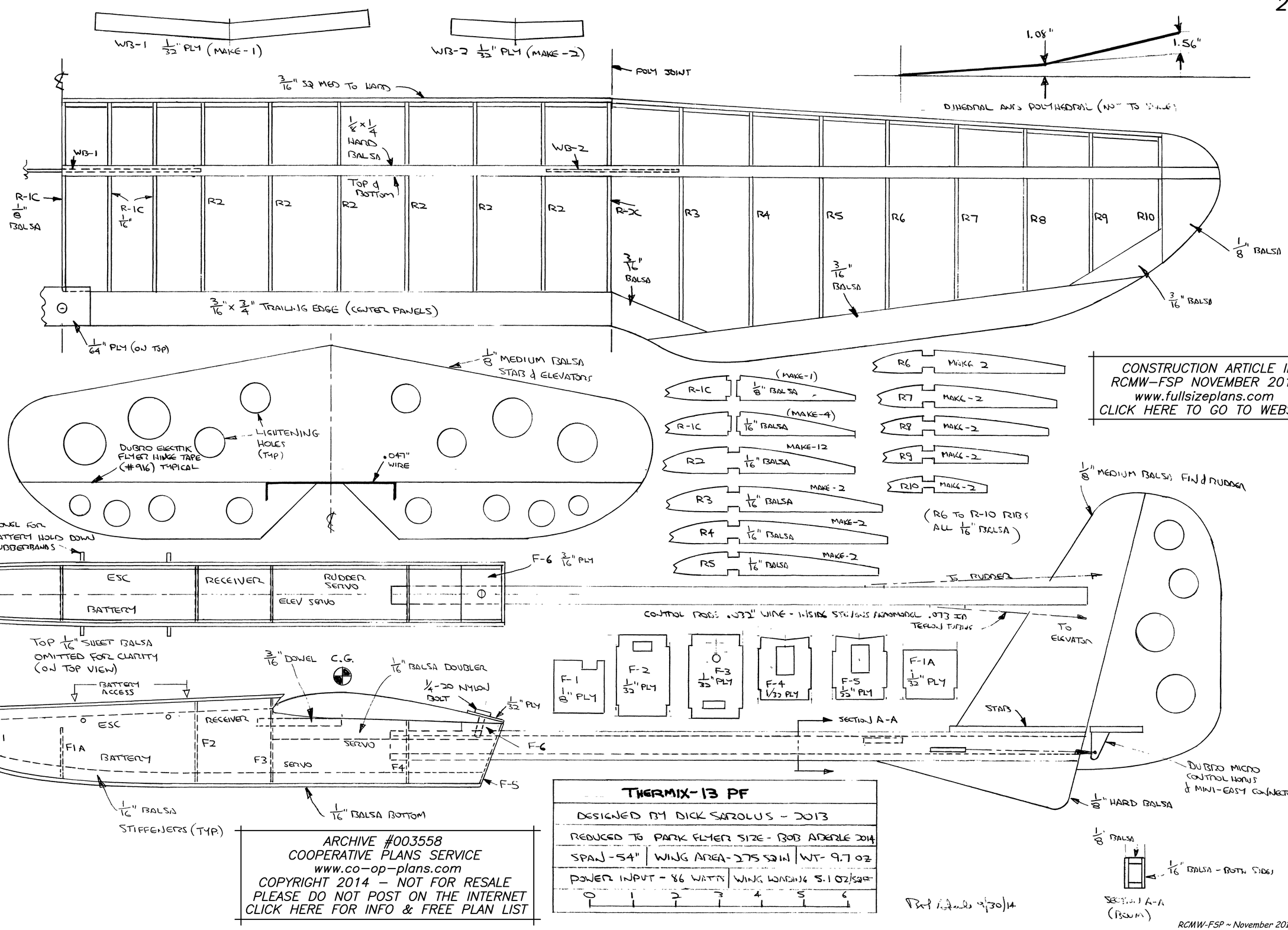
Callie Graphics - AMA license number decals
admin@callie-graphics.com

DuBro - Micro control horns, Mini EZ connectors, 1/4-20 nylon bolt and electric flyer hinge tape
www.dubro.com

Horizon Hobby - Spektrum DX7 transmitter, AR610 receiver, two E-Flite S60 super micro servos and an E-Flite 10 amp brushless ESC
www.horizonhobby.com

Stevens Aero Models - .073 inch OD Yellow Teflon tubing for the elevator and rudder control rods
www.stevensaero.com





CONSTRUCTION ARTICLE IN RCMW–FSP NOVEMBER 2014
www.fullsizeplans.com
CLICK HERE TO GO TO WEBSITE

THERMIX-13 PF

DESIGNED BY DICK SAROLUS - 2013
REDUCED TO PARK FLYER SIZE - BOB ADERLE 2014
SPAN - 54" | WING AREA - 375 SQ IN | WT - 9.7 OZ
POWER INPUT - 86 WATTS | WING LOADING 5.1 OZ/SQFT

0 1 2 3 4 5 6

Plan updated 9/30/14

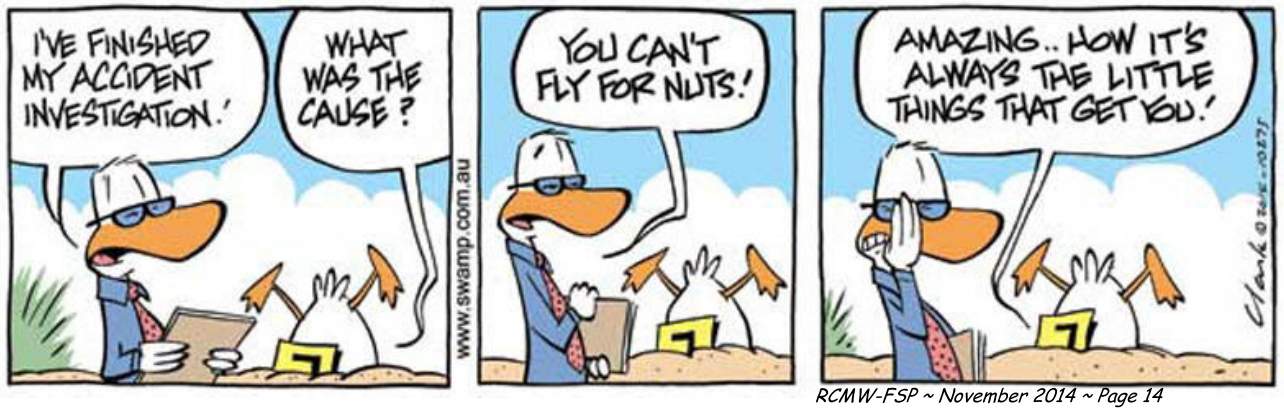
LINKS AND ITEMS OF INTEREST

This is a secluded highway in Canada where forest fires have been out of control during the summer. They're not taking any chances.

To see a video ***CLICK HERE***

The flying car, like the household robot that mows the lawn, washes the dishes and cleans the house has been an attractive dream for nearly 100 years. Glenn Curtiss attempted it in the early 1900's and many other since then. Here is one of the current attempts by a Slovakian company that calls it the Aerobile.

To see a video ***CLICK HERE***



Dickie Bug

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

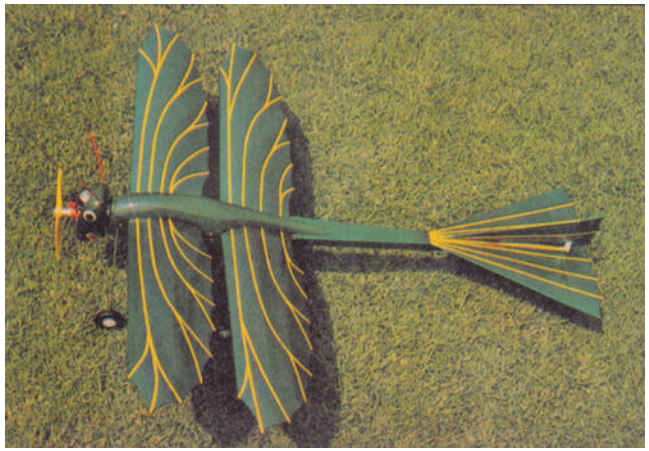
Editor's Note - This novelty design by Dick Tichenor appeared originally in the November 1976 issue of RC Modeler. When I came across this it brought back fond memories of Dick as I worked with him behind the scenes making and enlarging drawings, sketches and 3-Views for some of his model designs. Another 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.

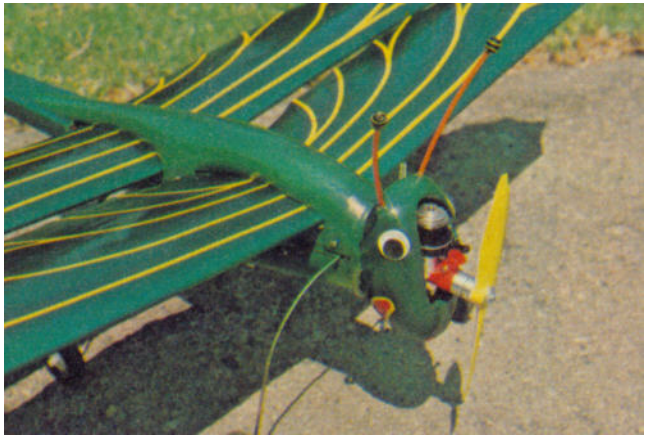
Thanks to cyanoacrylate adhesives and 5-minute epoxies, the bug was a snap to build. Except for sawing out the 1/4" plywood bulkhead, the entire aircraft was built on my office desk.



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.

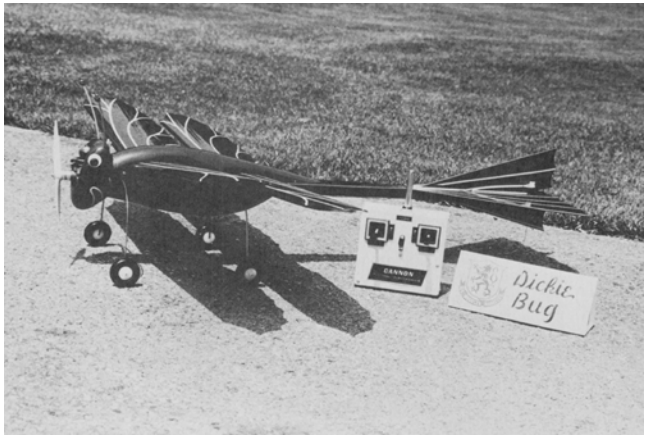
Start construction by sawing out the 1/4" plywood engine mount bulkhead and drill for the Tatone tank mount. Cut a 3/32" diameter x 36" length of music wire in half and form the landing gear struts. The front strut will be held in place by the nuts on the engine mount screws.

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

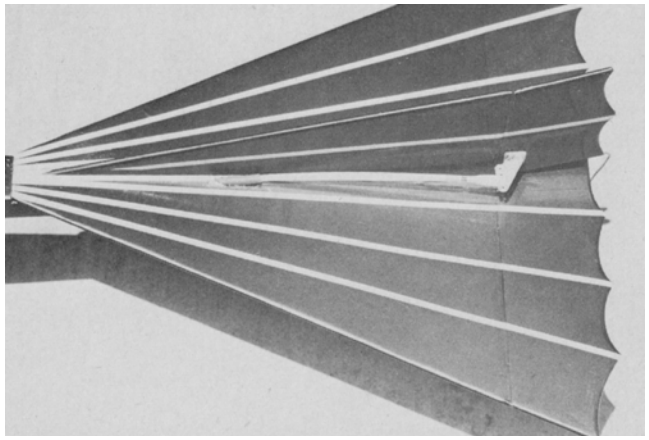
TYPE AIRCRAFT
Wierd Sport
WINGSPAN
32 Inches
WING CHORD
5 Inches
TOTAL WING AREA
300 Sq. In. (approx.)
WING LOCATION
Shoulder (tandem)
AIRFOIL
Similar to Clark Y
WING PLANFORM
Dragon Fly
DIHEDRAL, Each Tip
Front 1½'' — Rear 1''
O.A. FUSELAGE LENGTH
34¾ Inches
RADIO COMPARTMENT AREA
(L) 8½'' X (W) 2'' 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

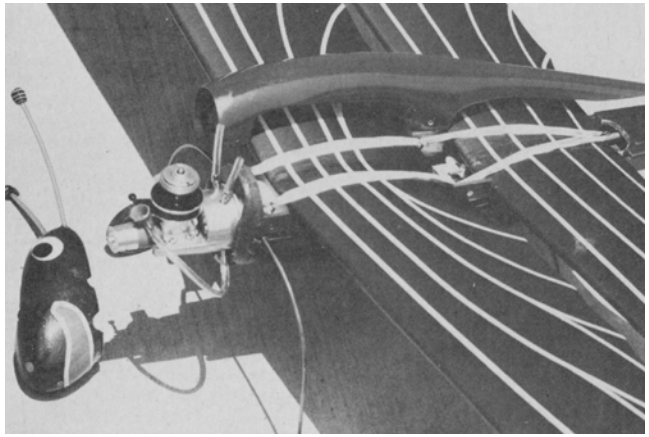
Fuselage	Balsa, Ply, Spruce
Wing	Balsa and Spruce
Empennage	Balsa
Weight Ready-To-Fly	26 Ounces
Wing Loading	12½ Oz./Sq. Ft.

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!

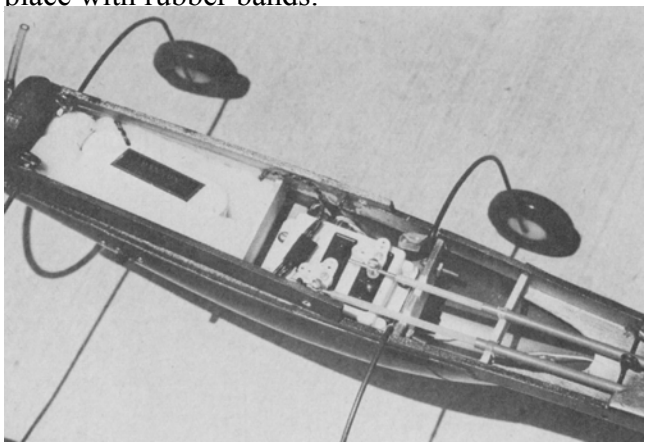
Cement the spars in place - - - I used Zap. Make all of the ribs the same size to be trimmed at the trailing edge later. Zap the ribs to the spars only at first. Now bend the sheet against the ribs and hold in place while the Zap goes off.

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.

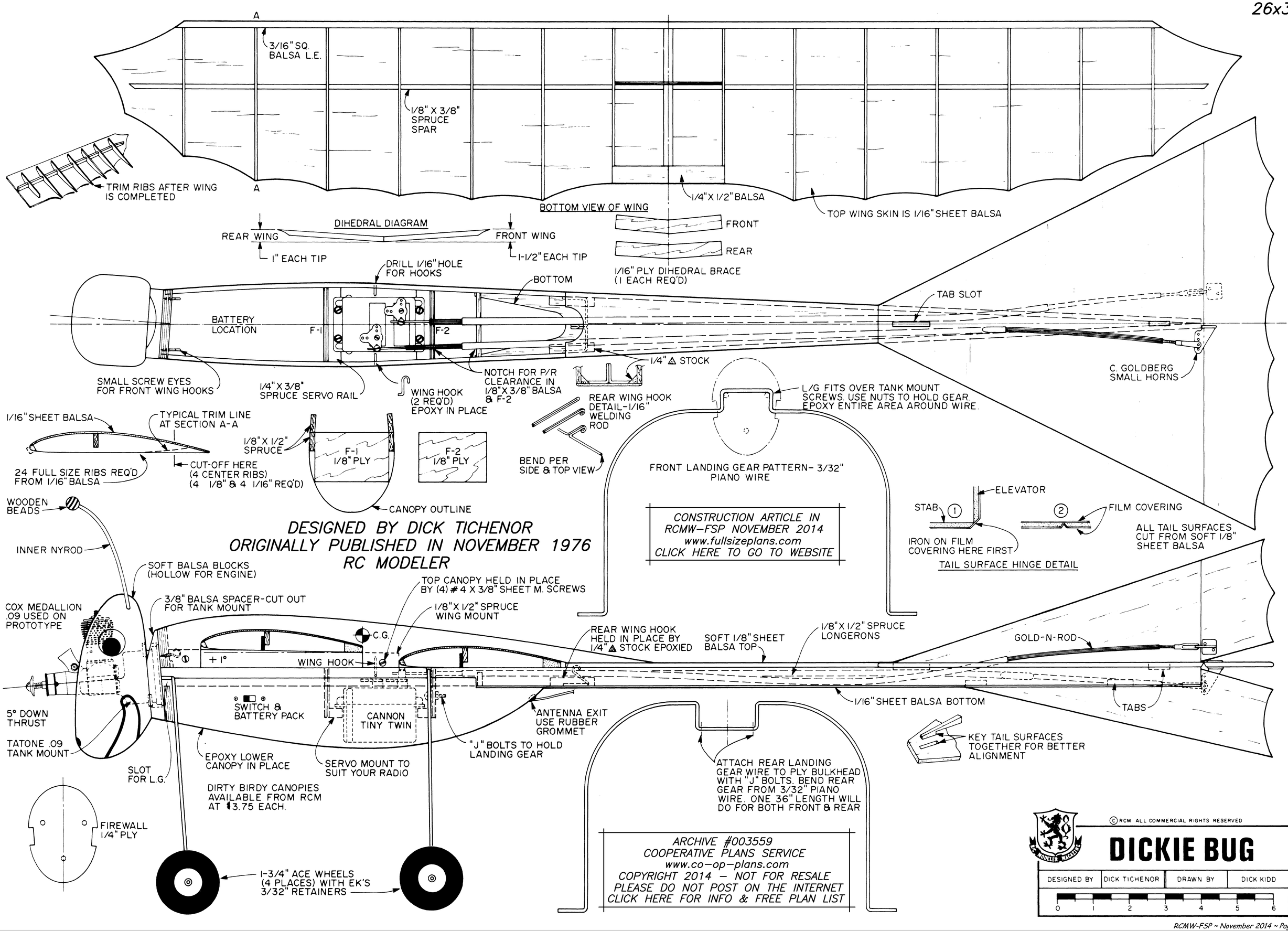
Our Dickie Bug had a Cannon Mini-Block radio installed. If you use separate receiver and servos, you might have to move the servo mounts and rear landing gear back a bit in order to have room for the receiver and battery pack.

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.



DESIGNED BY DICK TICHENOR
ORIGINALLY PUBLISHED IN NOVEMBER 1976
RC MODELER

CONSTRUCTION ARTICLE IN
RCMW–FSP NOVEMBER 2014
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DICKIE BUG

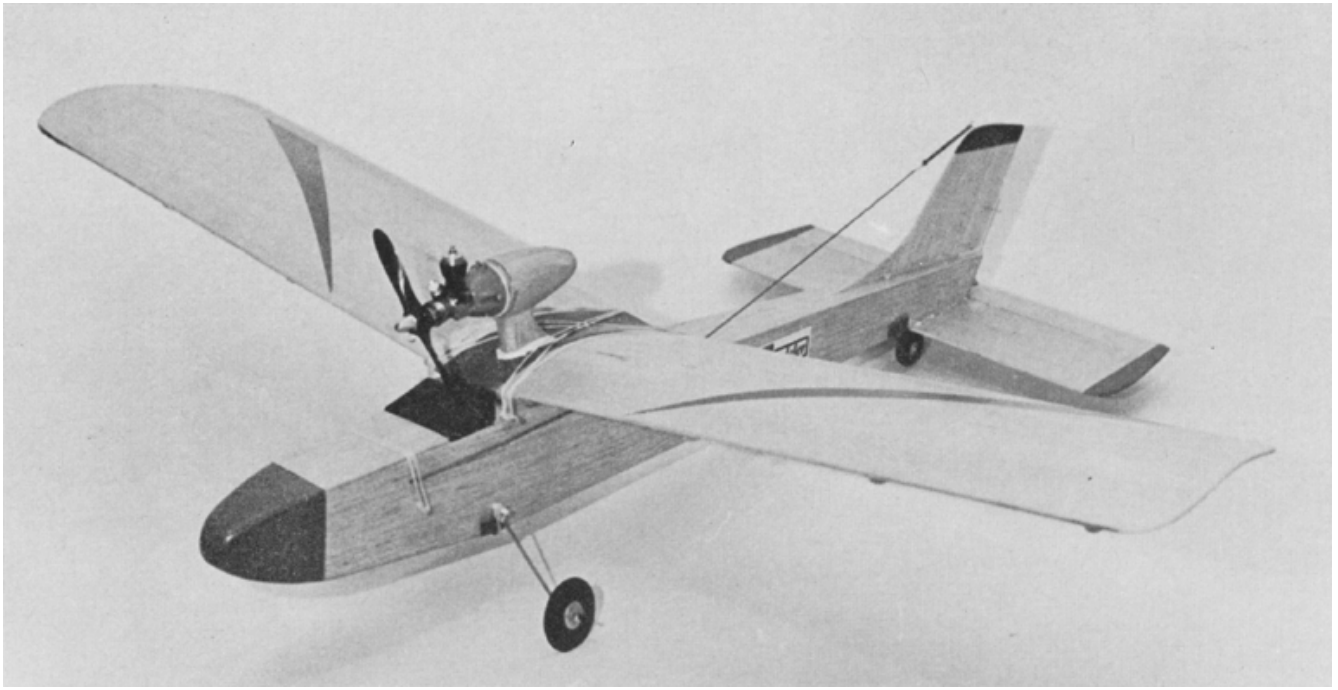
DESIGNED BY	DICK TICHENOR	DRAWN BY	DICK KIDD

0 1 2 3 4 5 6

GOOD NEIGHBOR

by Ken Willard

Here's a little rudder only RC model by Ken Willard of 'Sunday Flier' fame. Designed to reduce the chances of damage when flying in your front yard. Read the whole story below that originally appeared in the November 1965 issue of RC Modeler.



RECENTLY one of my neighbors asked if I would entertain a few of his guests with one of my radio controlled models. I had been flying a Schoolboy in my front yard on quiet evenings for some time, and the neighbors seemed to enjoy it, so this was not an unreasonable or unexpected request.

I fired up the .010, launched the model down the street, let it climb out over the houses, then did a few loops and rolls with it. The guests were properly entertained, and everything was going fine.

But just as the flight was about to end — when I positioned the model to land it on the street — some inconsiderate guy on the citizenship band decided to call somebody.

Naturally, since I have a superregen receiver, the Schoolboy responded by going ape. So, instead of landing in the street, the Schoolboy veered off, hit the neighbor's window a glancing blow and fell into the shrubbery. No damage was done; we wiped the window clean, and I was thankful it wasn't broken.

That started me thinking — if the model had impacted straight on instead of at an angle, I'd have a window to pay for — and perhaps the neighbors wouldn't care to have any more demonstrations!

Let's figure out a solution, a simple little job that wouldn't do any damage except under the most extreme circumstances. In other words, a "Good Neighbor." One that can be flown not only from a school yard but from an average residential street.

As it turned out, the design evolved as a cross between the "Schoolboy" and the "Virus" with one added feature, a shock absorber on the nose. It also turned out to be a very fine sport flier. Why don't you build one?

FUSELAGE

This is a standard box type construction, with mostly straight lines for easy construction. The only unusual feature is that a sponge rubber — or styrofoam chunk is used in place of a nose block.

Glue a piece of the sponge, or styrofoam to the nose bulkhead, then trim it to shape with scissors or sanding block. Or, if you're not interested in the shock absorbing feature, use a balsa block. It's a matter of choice.

WING

The wing is actually just a small version of the "virus" wing — a single sheet, curved over the ribs. Use the construction technique as described for the Virus. I've repeated it here in case you don't have the January 1964 issue of RCM.

Before beginning, obtain a sheet of 6" wide, 3/32" sheet, 33" long. If your hobby dealer doesn't stock 6" sheet, get two 3" sheets, selecting two pieces that are similar in weight and grade and which butt together snugly along one edge. Be sure to select your material with care, rejecting those sheets that have a curvature to their edges.

Step 1. Lay a piece of wax paper on your work table, then butt the two sheets together, and tape them with masking tape.

Step 2. Next, pick up the sheets, and using the tape as a hinge, open up the butt joint.

Step 3. Lay a "bead of glue" along the edge.

Step 4. Now lay the sheets down flat on the table, with the tape hinges down. The butt joint will close tight, and excess glue will squeeze out. Wipe it off, then tape the top together, so both sides are now firmly held together in the flat position, and let dry.

Step 5. When dry, cut into two 16-1/2" wing panels, shape tips and proceed.

Step 6. Cut out the ribs from medium 1/8" stock. Note rib length is 1/8" greater than the airfoil curve of the sheet. This makes the ends project out at the leading edge and trailing edge.

Step 7. Pin the ribs of each panel in place on your flat table. Insert the pins at the leading edge so the leading edge of the sheet will fit tight against the pins when the sheet is placed in position.

Step 8. Lay a bead of glue along the ribs, using reasonably slow drying glue. Any of the regular brands will do — just don't use the "extra fast" type designed primarily for on-the-spot field repairs.

Step 9. Pin the leading edge of the sheet in place with a second pin, at all the ribs, then gently press the sheet down to fit the rib curve. Pin the trailing edge down. Let dry.

Step 10. When dry, pick up the wing panel assembly and trim off the ribs at the leading edge and trailing edge.

Step 11. Then make a wedge shaped piece of wood to join the panels together at the center. The angle of the wedge, 14 degrees, determines the dihedral, which is 7 degrees for each panel.

Step 12. Glue this center piece to the center rib of one panel. When dry, trim the top to fit the airfoil curve.

Step 13. Block up the tips to 2-1/2" and glue the other panel to the center piece.

Step 14. To strengthen the center, cover the joint from leading edge to trailing edge on top with a 1" strip of either strong nylon cloth, or preferably, "Celastic," a hobby material available in most hobby shops.

Step 15. For additional strength, cover the bottom of the center section from the center to the first ribs with 1/32" sheet.

Step 16. Wing is now finished, except for sanding and doping, and is ready for the engine pylon.

PYLON

Cut the engine pylon from 1/2" hard balsa, glue two 3/8" cheeks on either side, shape, add the 1/16" plywood firewall, then glue the whole assembly to the center of the wing. Reinforce with strips of celastic at the butt joint.

TAIL SURFACES

Stab, fin, rudder and elevators are all made from 1/16" sheet, with cloth hinges. The fin is reinforced at the base with 1/8" sq. supports, trimmed at an angle of 45 degrees for better appearance.

LANDING GEAR

The strap-on landing gear is still the simplest and best for this size model. Note the celastic reinforcement on the fuselage where the landing gear fits.

ADJUSTING AND FLYING

The Good Neighbor is very easy to adjust, but be prepared for a little surprise. That .010 may look small, sitting up there on that pylon, but the full "thrust disk" of the 3" prop is effective, and the model has plenty of power and speed. In fact, by dropping the elevator slightly, the model flies very firmly even in a relatively strong wind.

Flight trim can be achieved just by hand gliding, since the model is small and light. If you position the C.G. as shown on the plans, longitudinal trim is done by adjusting the aligning spring wire on the elevator.

Because of the relatively long moment arm the elevator is pretty sensitive, so make adjustments of the trailing edge 1/32" at a time.

Start with the elevator right in line with the stab. This is fine for all normal flying. Droop the elevator 1/16" and you'll find the model penetrates the wind right along with the big jobs.

For the "power hounds" the pylon is designed to take an .020 — but be ready for a real zippy flight, particularly if you use the Cox "hi-thrust" prop.

Before you try flying the Good Neighbor in a confined area, take a tip from me and practice at a large field. Set up some stakes, or markers, and practice until you can consistently fly within the markers.

Even so, when-you decide to try a flight in a small area, you'll find the boundaries seem to be reached faster than you expected, and you may run into one of the obstacles. But the model is rugged, and the only damage will be to your ego. And you can repair that. So try it.

The cartoons are from the same issue.

Editor's Note - I'll bet a half-size version with electric power and micro RC would make a good indoor flier too. Send us your photos.

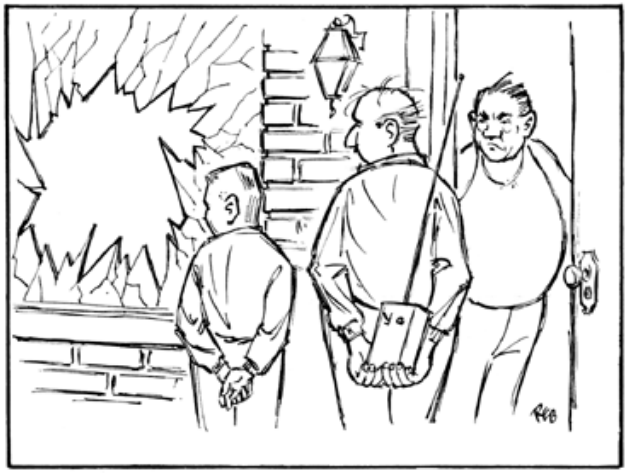
"Dad, you better start giving it some up elevator!"

"Oh, shut up!"

"Okay, little boy, stand ba — !"

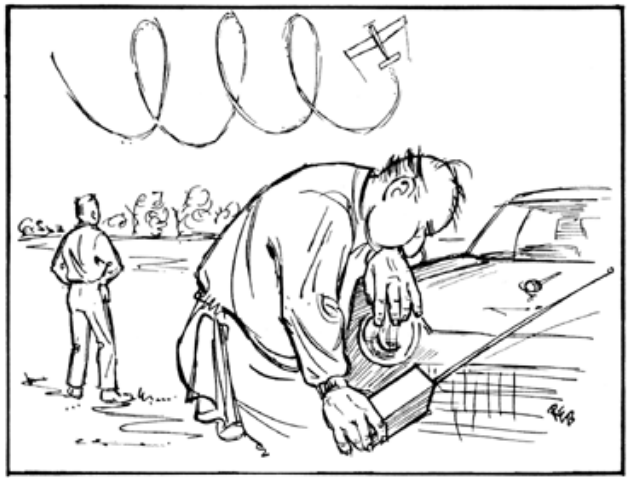
THE LAST WORD

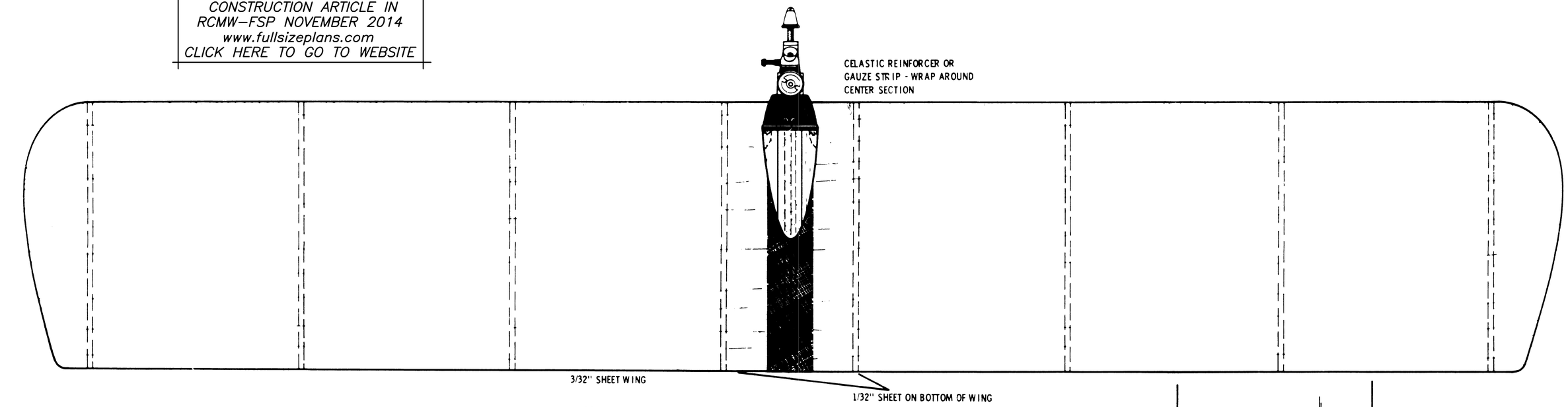
Bob Bochy looks at R/C . . . and if this cartoon sequence isn't familiar to you, you're probably an HO railroader at heart . . .

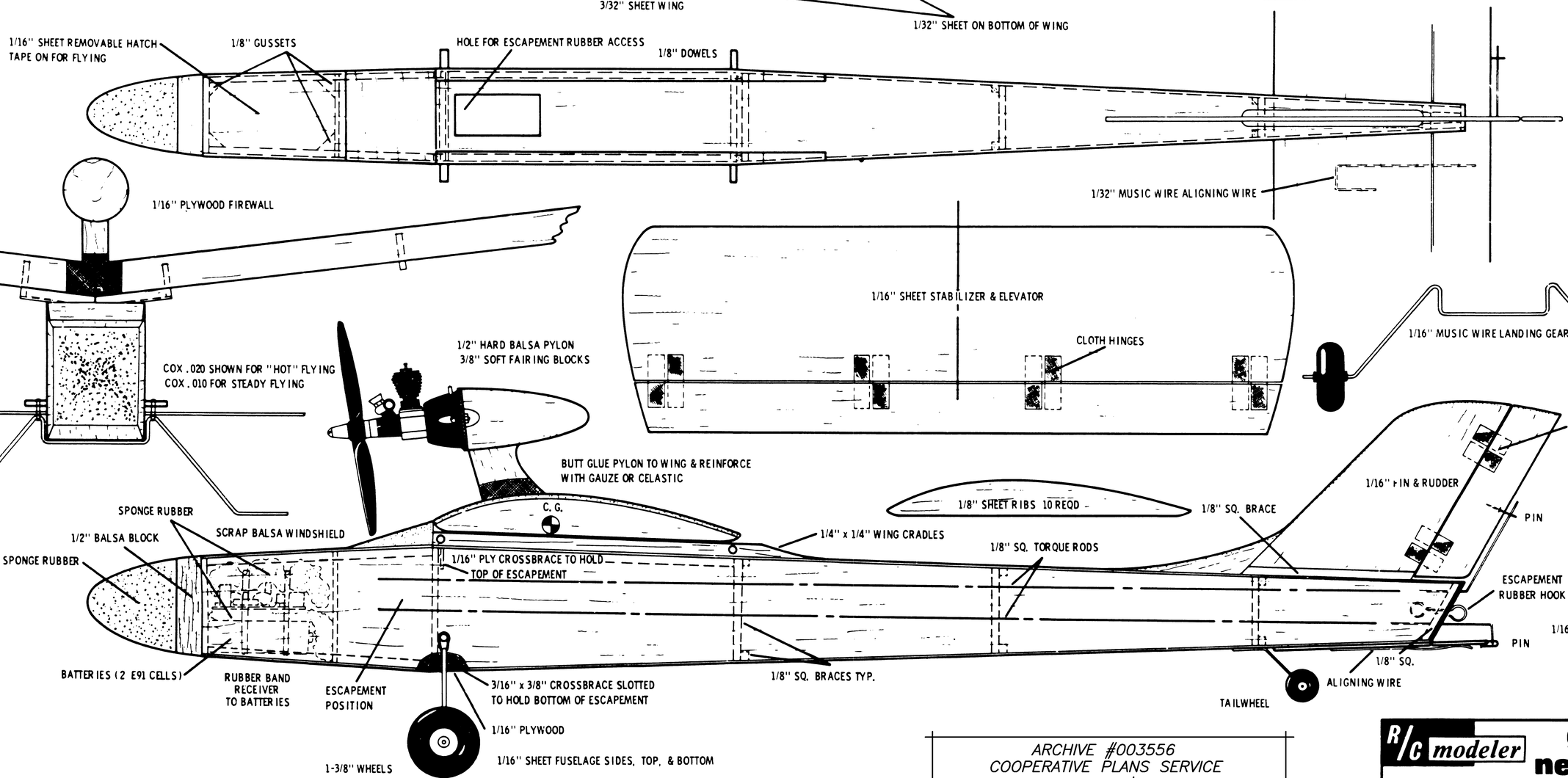


"Pardon me sir, but have you seen a —"

"Gee, Dad! You're really doing good!"







R/C modeler

good neighbor

DESIGNED BY	KEN WILLARD	DRAWN BY	BARRY HALSTED

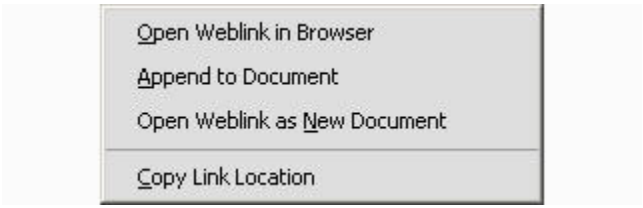
ORIGINALLY PUBLISHED IN THE NOVEMBER 1965 ISSUE OF RC MODELER

LINKS TO SUPPLIERS

This page will have links to various sources for materials including balsa, glue, kits, motors, batteries, etc that you may need for your projects.

Just click on the link and you will be taken directly to the supplier or to a page with more detailed information. The page will have links that will take you to the supplier website or set up and email message that you can send to the supplier.

Most browsers will work with these links but if you get an error message (probably with Windows XP) you can connect directly by right clicking on the link. You should then see the message shown below --



If you click on "Copy Link Location" and then paste the data into your browser or email software, you should be taken to the location desired.

Using this approach, we can effectively include advertising and other news items but just make it available if YOU want to see it. It won't add to the size of the online magazine so that it will not become too large for easy downloading.

The sources in each of the red boxes on the right side of this page are the same as those Bob Aberle used in his construction article in this issue.

We've included them as a test of this scheme to see how well it works, and we welcome feedback. The goal is to be able to include references to sources and even advertising but to keep it separated from the regular issues so that it doesn't become intrusive and take away from the main articles.

BP Hobbies - CA cement, CA accelerator, 5 minute epoxy cement, APC prop and Solite iron-on covering material

CLICK HERE

Callie Graphics - AMA license number decals

CLICK HERE

DuBro - Micro control horns, Mini EZ connectors, 1/4-20 nylon bolt and electric flyer hinge tape

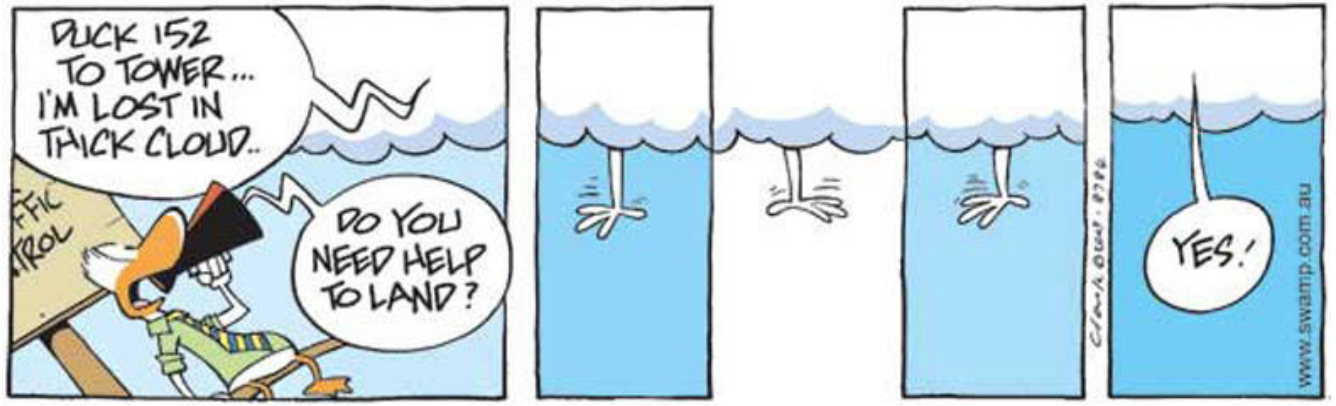
CLICK HERE

Horizon Hobby - Spektrum DX7 transmitter, AR610 receiver, two E-Flite S60 super micro servos and an E-Flite 10 amp brushless ESC

CLICK HERE

Stevens Aero Models - .073 inch OD Yellow Teflon tubing for the elevator and rudder control rods

CLICK HERE



NOTE
"PERFECT" NO 5 MODIFICATION
USE 1/8" EXTERIOR DIAM COPPER TUBING

WING PLATFORM

WING SECTION VELA 9-6 5-W

3°+

C.G.

1/8"

1/8" X 3/4" HARD BALSA

1/8" X 1/2" SPRUCE OR PLY

1/8" FILLER

1/8" X 3/4" HARD BALSA

A

B

NOTE.
MOTOR MOUNTS OF DURAL 1/4" X 1/4" OR ANY HARDWOOD FASTENED WITH 4 WOODSCREWS AFTER GLUING USE 440 BLIND NUTS ON WOOD TAP 4-40 IF DURAL IS USED

3/16" PLYWOOD INLAY

1/8" PLY LANDING GEAR RETAINER

1/8" BALSA

1/8" BALSA

1/8" X 3/16" UPRIGHTS

1/8" SQ LONGERONS HARD BALSA

1/16" FUSELAGE TOP

3/32" FUSELAGE SIDES, MEDIUM HARD

1/16" FUSELAGE BOTTOM

BASSWOOD OR HARD BALSA

TIMER

TANK

1/4" PLY FIREWALL

3/32" LANDING GEAR

1/8" LANDING GEAR HOLDER

TIMER MOUNT

SECTION A - A

WHOLE FRONT IS FILLED SOLID WITH SHEET BALSA EXCEPT FOR TIMER & TANK SPACE

SECTION B - B

TRIN CORNERS OF FUSELAGE AFTER TOTAL ASSEMBLY

TYPICAL FUSELAGE SECTION NOT TO SCALE

NOTE.
LEFT SIDE OF MOUNT AND LANDING GEAR OMITTED FOR CLARITY

PYLON

1/4" PLY

FUSELAGE

MOTOR MOUNT BOTTOM FAIRING TRIM AND GLUE IN PLACE

3/16" PLY INLAY

WOODSCREWS

MOTOR MOUNTS

1/8" LANDING GEAR HOLDER

TAPERED AS SHOWN

WING PLATFORM 1/8" PLY 2 LAMINATIONS OF 1/16"

WING PLATFORM

FRONT VIEW

RUDDER 3/32" HARD BALSA

NOTE GRAIN

3/32" PLY STAB HOLDOWN

STAB SECTION VELA 7-5 -7-5-5

SOFT WIRE HINGES

TRIM TAB

STAB KEY & RUBBER HOLDOWN 3/32" PLY

SNUFFER TUBE 1/4 DIA ALUM TUBING

STAB KEY & RUBBER HOLDOWN PATTERN

SUBRUDDER 1/16" PLY

PLANK EACH SIDE WITH 1/16" BALSA AFTER GLUING ON FUSELAGE

SECTION C C

TYPICAL FUSELAGE SECTION NOT TO SCALE

NOTE:
ENTIRE BUILDING CONSTRUCTION IS MADE USING EPOXY RESIN GLUE. NO FINAL PERFORMANCE WILL BE SATISFACTORY IF OTHER TYPES OF ADHESIVES ARE USED

aztec eagle

1/2 A CONTEST DESIGN

DESIGN & DWG BY AL VELA
INK WORK BY DOTTY

FIREWALL

POSITION OF TANK

NOTE AREAS MARKED WITH "F" MEANS FILL IN

HARDWOOD FILLERS

COUNTER SINK WOODSCREWS

3/16" HARD BALSA FOR MOUNTING TIMER

1/4" X 1/4" SPRUCE STAB STOP TRIM AS SHOWN

STAB MOUNT 1/16" PLY

1/16" BALSA FILLER

1/16" PLY

LONGERNS 1/8" SQ HARD BALSA

FIREWALL 1/4" PLYWOOD

FORMERS 3/32" BALSA

FUSELAGE SIDE - MAKE ONE RIGHT & ONE LEFT

1/16" DOUBLERS

GAUZE

TWO LAMINATIONS OF 1/8" X 1/4" BALSA

GAUZE

4 LAMINATIONS 1/16" X 1/4" FLEXIBLE BALSA STRIP

INLAY SPAR AT TIP

1/8" CENTER RIBS

1/8" X 1/8" SPARS TOP & BOTTOM

DIAGONAL RIBS NOT CUT TO SHAPE SAND OFF LATER

ALL RIBS 1/16" SHEET BALSA

INLAY CENTER PANELS WITH 3/32" MEDIUM HARD BALSA.

CENTER RIBS 3/32" BALSA.

1/16" GUSSETS

1/16" GUSSETS

TIPS 1/4" HARD BALSA SAND TO SHAPE

1/16" PLY RUBBER BANDS PROTECTOR GLUED ON TOP AFTER COVERING

1/8" X 1/2" HARD BALSA TRAILING EDGE

GAUZE

1/8" SHEET HARD BALSA TIPS

MAIN WING RIB

TOP CAMBER STAB TEMPLATE

BOTTOM OF STAB

WING TIP TOP CAMBER TEMPLATE

BOTTOM OF WING

1 11/16"

1"

4 LAMINATIONS 1/16" X 1/4" FLEXIBLE BALSA STRIP

WING DIHEDRAL NOT TO SCALE

MAIN STAB RIB

NOTCHES IN DIAGONAL RIBS ARE CUT WITH FILE AFTER ASSEMBLY

WING TIP USE THIS SIDE

CENTER PANELS USE THIS SIDE

DIHEDRAL GAUGES FOR SETTING ANGLES AT JOINT RIBS.

SIG PLAN #3

LEFT WING TIP

INLAY 1/8" X 1/4" SPRUCE SAND TO SHAPE

3/32" BALSA SHEET INLAY NOTE GRAIN

SANDWICH RUDDER WITH TWO CENTER RIBS.

ALL RIBS 1/16" SHEET

1/8" X 3/32" BALSA SPAR TOP & BOTTOM. (HARD)

1/16" SHEET GUSSETS

TIPS 1/4" HARD BALSA SAND TO SHAPE

FREE - NON-COMMERCIAL ADS
FOR RCMW-FSP SUBSCRIBERS - BUY- SELL - SWAP

Your Ad Could Be Here
Give It A Shot - The Price Is Right !!
Contact the Editor - cardinal.eng@grics.net

For the last few issues we have not had any free classified ads in the magazine - We have received some questions asking if this service has been discontinued -
The answer is NO !, the ads are still available free to subscribers on a non-commercial basis
If you want to clean house or are looking for something special, or just want to swap, here's the place to go -
No messing around with eBay and it is hard to understand rules and regulations -
Advertise here - Simple & Inexpensive

Old Model Airplane Magazines

If you're like me, you enjoy paging through model airplane magazines and plans, sometimes to find a project to build, to research a particular aircraft, or to just spend some pleasant time away from the daily grind.

If you like to build models, the magazines of today don't offer much since they are primarily expensive catalogs of ready-to-fly models. There's nothing wrong with RTF or ARF models but they don't offer much to interest model BUILDERS.

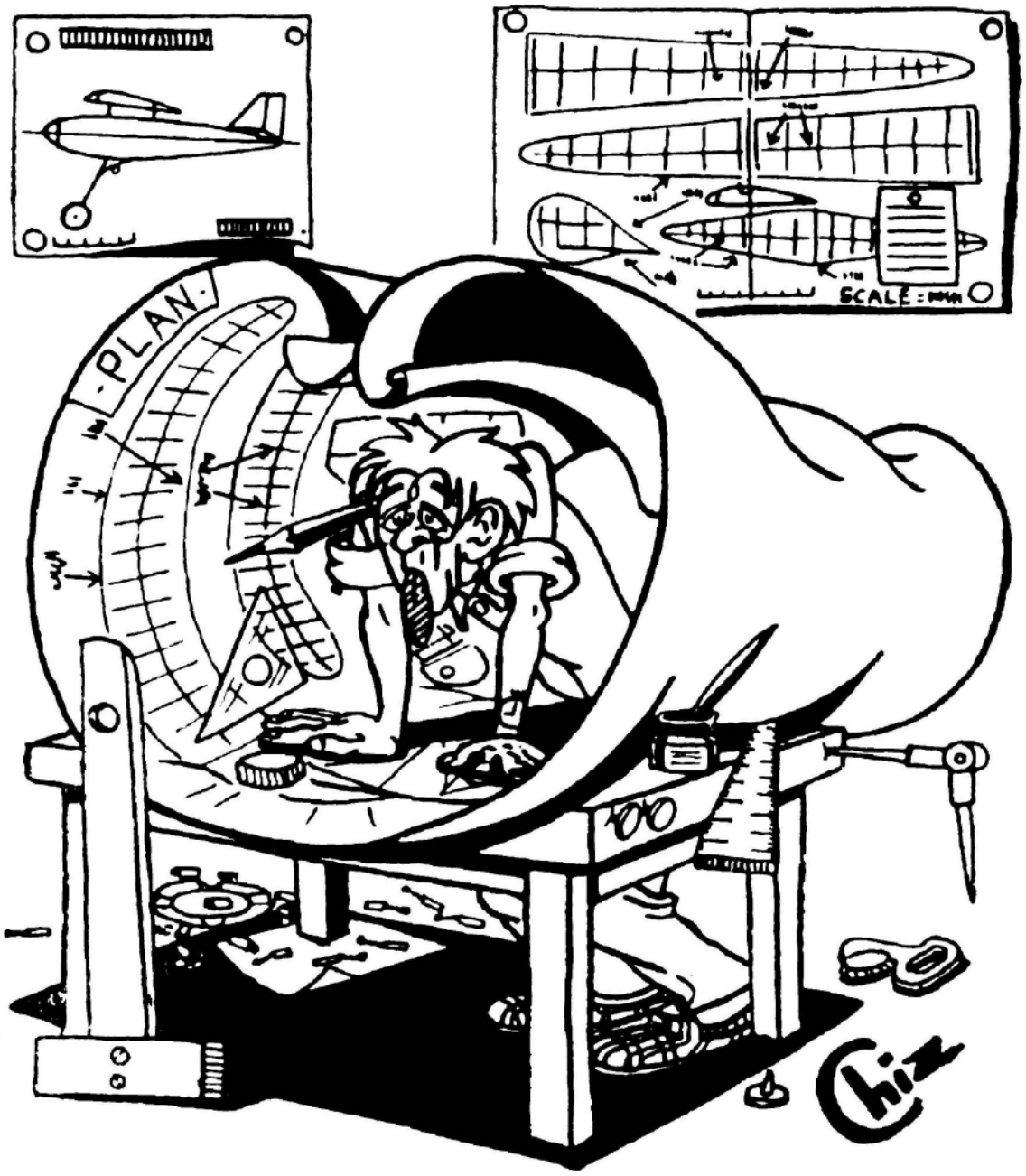
That's NOT the way it was in the past, when you had to build a model before you could fly it. If you're an old-timer, as I am, you have fond memories of ***Air Trails***, ***Flying Models***, ***Model Airplane News***, ***Aeromodeller*** and many of the several other magazines available "way back when".

If you're a relative newcomer to modeling and want to learn how to build them, those old magazines can provide a wealth of useful information, plans and how-to-do-it articles.

There are several problems with those old magazines. They are sometimes hard to find, often in bad condition, and in many cases they are so fragile that they can fall apart just by turning the pages. This is because they were often printed on pulp paper, also known as newsprint. Newsprint is inexpensive, but has residual chemicals that cause it to deteriorate when exposed to the air and particularly to sunlight. Your wife or "significant other" might also ask "When are you going to get rid of all those smelly old magazines?"

I admit to being a bit of a "nut case" but have been collecting these magazine for over 50 years and now I am trying to digitize them to preserve them for other modelers. They are now available as digital PDF files. See the details on the next page.

Keep 'em Flying - Roland Friestad



AEROMODELLER DECEMBER 1952
USED WITH PERMISSION

We have switched to USB Memory Cards No increase in Price

Magazines are scanned at the same or at higher resolution than was used in their original publication and all pages can be printed out if desired.

It is easy to page through each issue and, unlike the old paper originals, they won't be damaged by handling.

Prices shown include postage worldwide. USB drives are burned to order and posted weekly.

AIR TRAILS - This magazine went under several names. The final issue was published in March of 1975. There are 435 monthly issues included in the complete set and priced as follows ---

D001010 - January 1937 through December 1943 - 84 issues - **$50**

D001011 - January 1944 through December 1950 - 84 issues - **$50**

D001012 - January 1951 through December 1961 - 132 issues - **$50**

D001013 - January 1962 through December 1971 - 96 issues - **$50**

D001014 - January 1972 through March 1975 - 39 issues - **$25**

AIR TRAILS ANNUALS -
D001009 - 1938 through 1969 - All 25 issues - **$30**

D001015 - SPECIAL - Complete set including the annuals - $200

MODEL AIRPLANE NEWS - The first issue of this magazine was published in July of 1929 and it is still in publication. We have the following collections currently available ---

D001002 - July 1929 through December 1942 - 161 issues - **$50**

D001004 - January 1943 through December 1952 - 120 issues - **$50**

MODEL BUILDER - This magazine ran from the first issue of September~October 1971 through the final issue dated October, 1996 -

D001001 - The complete run - 295 issues - **$75**

FLYING MODELS - The first issue of this magazine to use the name was published in June of 1947 and it is still in publication. We have the following collections currently available ---

D000013 - June 1947 through December 1963 - 123 issues - **$50**

RC MICRO FLIGHT & RC MICRO WORLD - The complete run of RC Micro Flight, 1999 through 2004 and all issues of RC Micro World, 2005 through 2012 are available - D001016 - **$30**

Currently being digitized are complete runs of **RC MODELER** and **AEROMODELLER**. These should be available later in 2014.

The digitizing of several other magazines will follow including **MODEL CRAFTSMAN, FLYING ACES, POPULAR AVIATION, MODEL AIRCRAFT** (British) and others. This is a long term project. Many thousands of hours and dollars are represented in these collections.

All prices include postage worldwide

Send payment using Paypal to
cardinal.eng@grics.net

Or check or money order to
Roland Friestad
1640 N Kellogg Street
Galesburg, Illinois 61401
USA

Makes a Great Gift for Modelers
Circle your interests and give this sheet to someone who has a hard time finding you a gift

October 29, 2013 - Prices & Specifications subject to change without notice