

# RCMW-FSP

May 2018



Cover From Air Trails April 1938

# RCMW-FSP - Index - May 2018

We have made a revision to the way the RCMW Index Page works. It will make it much easier to browse each issue of the magazine.

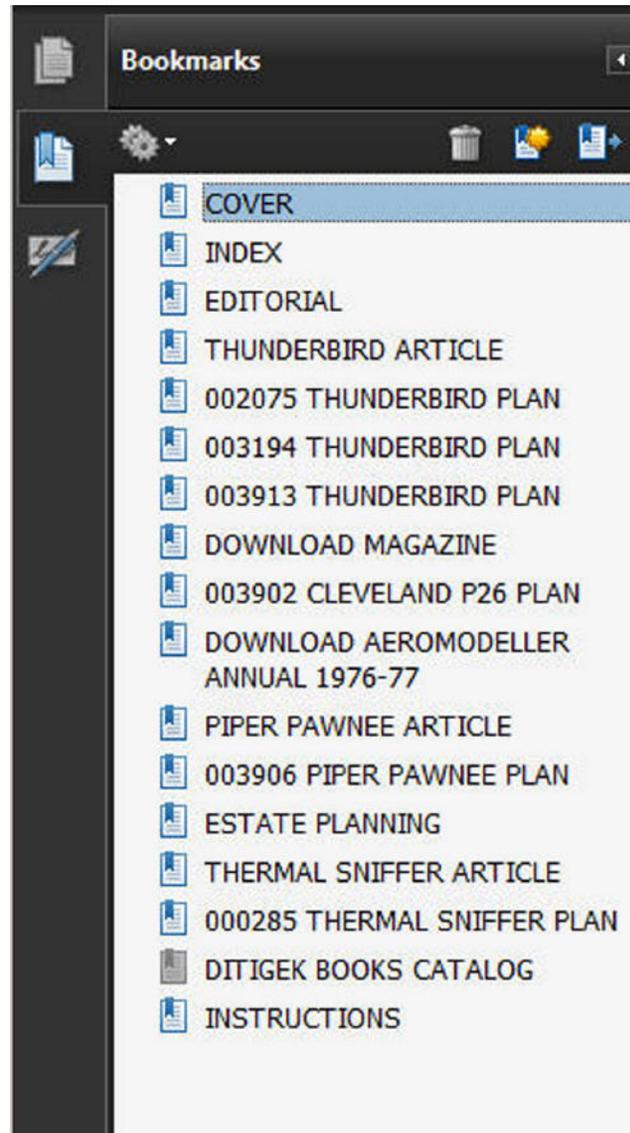
We are assuming you are using the Adobe Acrobat Reader or a browser that works like the Acrobat Reader.

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On the left side of the issue you will see several icons. Click on the Bookmark icon as shown below.



A list of Bookmarks will appear on the left edge of the screen as shown in the column. If you click on a given bookmark you will be taken directly to that area of the issue. This makes it a lot easier to navigate around the pages.



Try it out. This allows you to go directly to the area you want to view and we think you'll like it.

## Subscribe to RCMW

RCMW is the only model airplane magazine that provides all plans as full size PDF files in every issue. All pages of the monthly online magazine can be printed out, including the full size PDF files, using your own computer printer.

If you like to build models you will appreciate the ability to see again antiques, old classics, reproductions of kits, as well as new designs made for the reliable, lightweight Micro RC equipment currently available.

If you are one of the "Buy-&Fly" fraternity and would like to learn how to build and repair models, RCMW is also the magazine to read.

Each issue is full of useful information rather than just a seemingly unending series of advertising for expensive models and equipment.

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Roland Friestad  
1640 N Kellogg Street  
Galesburg, IL 61401  
USA

# For the Model Builder and Flyer - May 2018 Issue



## Full Size Plans



Because of a change in schedule (theirs, not mine) I hadn't been to Augustana College in Rock Island, Illinois for several years. There is a small but enthusiastic group that flies indoor models in the gymnasium there on Fridays and I managed to get there yesterday. Will have to get an indoor model finished and make the trip again.

This month's issue continues with downloading of full issue of books and back issues of magazines as usual. This time we include the final issue of AMERICAN MODELER, also known as AIR TRAILS among those of us who are "more mature" modelers. Frank Zaic also wrote a two volume MODEL AERONAUTIC ENCYCLOPEDIA and both volumes can be downloaded using the links in this issue.

Dave Platt and Beppe Fascione provided us with a copy of Platt's FIESTA, a nice looking RC ship for aerobatics. Don't believe it was ever a kit but you can get it here.

We have added a page with links to several good short videos, including a long one about the Northrop flying wings.

The RASCAL was a Wakefield design from the 1940's. Personally I don't often use the term "pretty" to apply to Wakefields but in this case I make an exception. Try it, you'll like it.

Ken Wilard's SCHOOLBOY was a Top Flite kit as well as being published in *Model Airplane News*. Get the plan and construction article.

Those of you who remember Capitol kits know them as being similar to the Comet fifty cent offerings. But they also had a kit called the FLAMINGO, an amphibian with a 72 inch wingspan and gas engine powered. It's pretty rare but we have the plans here.

The BAC SUPER DRONE was a popular British ultralight from before WWII and quite a few were built. The picture above on this page is a photo of a large scale model. The *Aeromodeller* plans are in this issue.

Another large model in this issue is the MG-2, an early competition gas engine powered model of 114 inch span by Mike Granieri. This was requested by a SAM member. Takes a lot of balsa !!

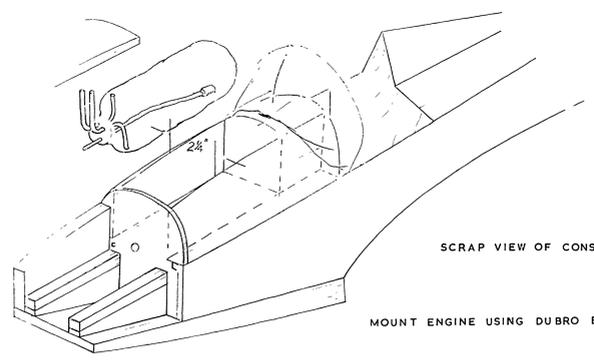
The late Earl Stahl was well known for his rubber powered scale models but he also did some other types of modeling. One of them is here, an early style U-Control scale version of the CORSAIR fighter plane.

This issue is rounded out with articles about making laminated props for rubber models, printing plans and pages from RCMW, some notes about the new DigitekBooks catalog.

The spring winds have calmed down in this area of the country so get out there and fly a model. That's an order !!

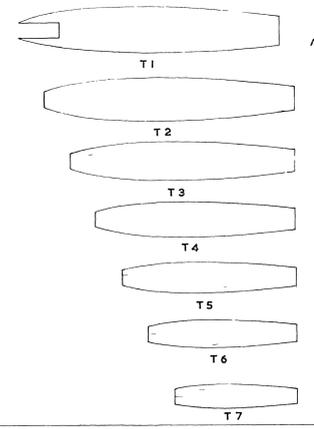
Until Next Time - Keep 'em Flying - Roland Friestad, Editor

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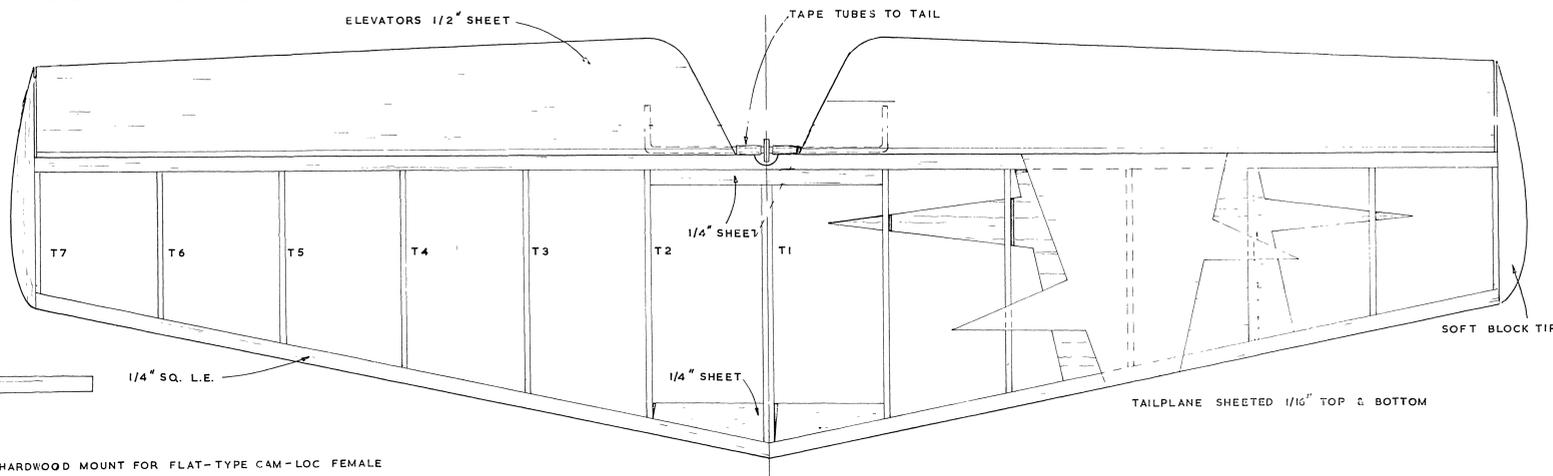


SCRAP VIEW OF CONSTRUCTION AT NOSE

MOUNT ENGINE USING DUBRO BLIND NUTS



ALL TAILPLANE RIBS 2 OFF 3/32" SHEET

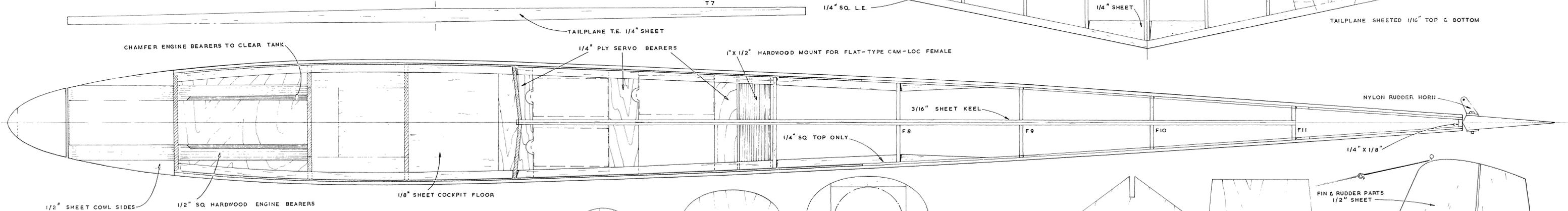


ELEVATORS 1/2" SHEET

TAPE TUBES TO TAIL

SOFT BLOCK TIPS

TAILPLANE SHEETED 1/16" TOP & BOTTOM



CHAMFER ENGINE BEARERS TO CLEAR TANK

TAILPLANE T.E. 1/4" SHEET

1/4" PLY SERVO BEARERS

1" X 1/2" HARDWOOD MOUNT FOR FLAT-TYPE CAM-LOC FEMALE

1/4" SQ. L.E.

NYLON RUDDER HORN

1/4" X 1/8"

1/2" SHEET COWL SIDES

1/2" SQ. HARDWOOD ENGINE BEARERS

1/8" SHEET COCKPIT FLOOR

3/16" SHEET KEEL

1/4" SQ. TOP ONLY

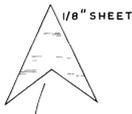
F8

F9

F10

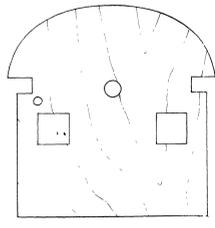
F11

OPTIONAL SEAT ETC.



1/16" SHEET EACH SIDE

F1



F2

F5

F6

F3

FIN & RUDDER PARTS 1/2" SHEET

O.S. MAX-H .50 RC ENGINE

ACETATE SCREEN

AFTER FILLING TANK THROUGH VENT WHICH GOES TO BOTTOM, PLUG OTHER VENT.

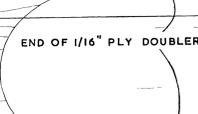
6 OR 8 OZ. TANK

VECO 2 1/2" CAST ALL SPINNER

3/16" SHEET KEEL

MOTOR & ELEVATOR

RUDDER



END OF 1/16" PLY DOUBLER

3/32" SHEET SIDES

F7

F8

F9

F10

F11

VEE TOP 1/16" SHEET

3/8" SQ. PUSHRODS

KWIKLINK

1/8" PLY

BIND 14G. TUBE TO PLY

1" M.K. WHEEL

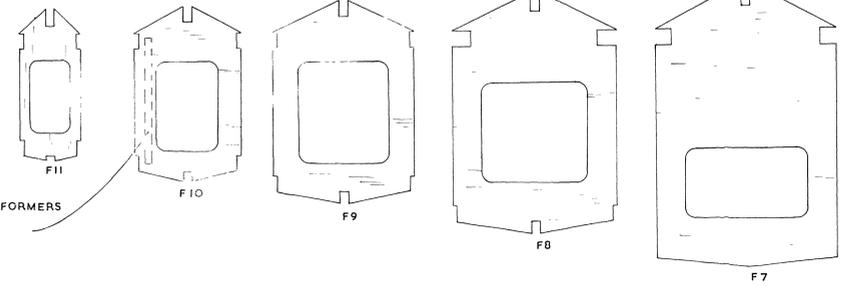
PROP. 11" X 7" REV-UP

1/2" SHEET UNDER BEARERS

SOFT BLOCK

LOGICROL RECEIVER

IMPORTANT SERVO & FEMALE CAM-LOC BEARERS ARE GLUED BETWEEN PLY DOUBLERS. DO NOT LET-IN



STRENGTHEN SHORT GRAIN ON FORMERS WITH SCRAP STRIP. TYPICAL POSITION SHOWN.

GLUE PLYWOOD DOUBLERS TO SIDES WITH EVO-STICK CONTACT ADHESIVE USE EVO-STICK RESIN W/ WHITE GLUE FOR ALL OTHER PLY OR HARDWOOD JOINTS.

© 1967 GRANGER WILLIAMS OR M.R. SMOOTH CONTOUR WHEELS

DRAWN AND TRACED BY D.R. PLATT SHEET 1 OF 2

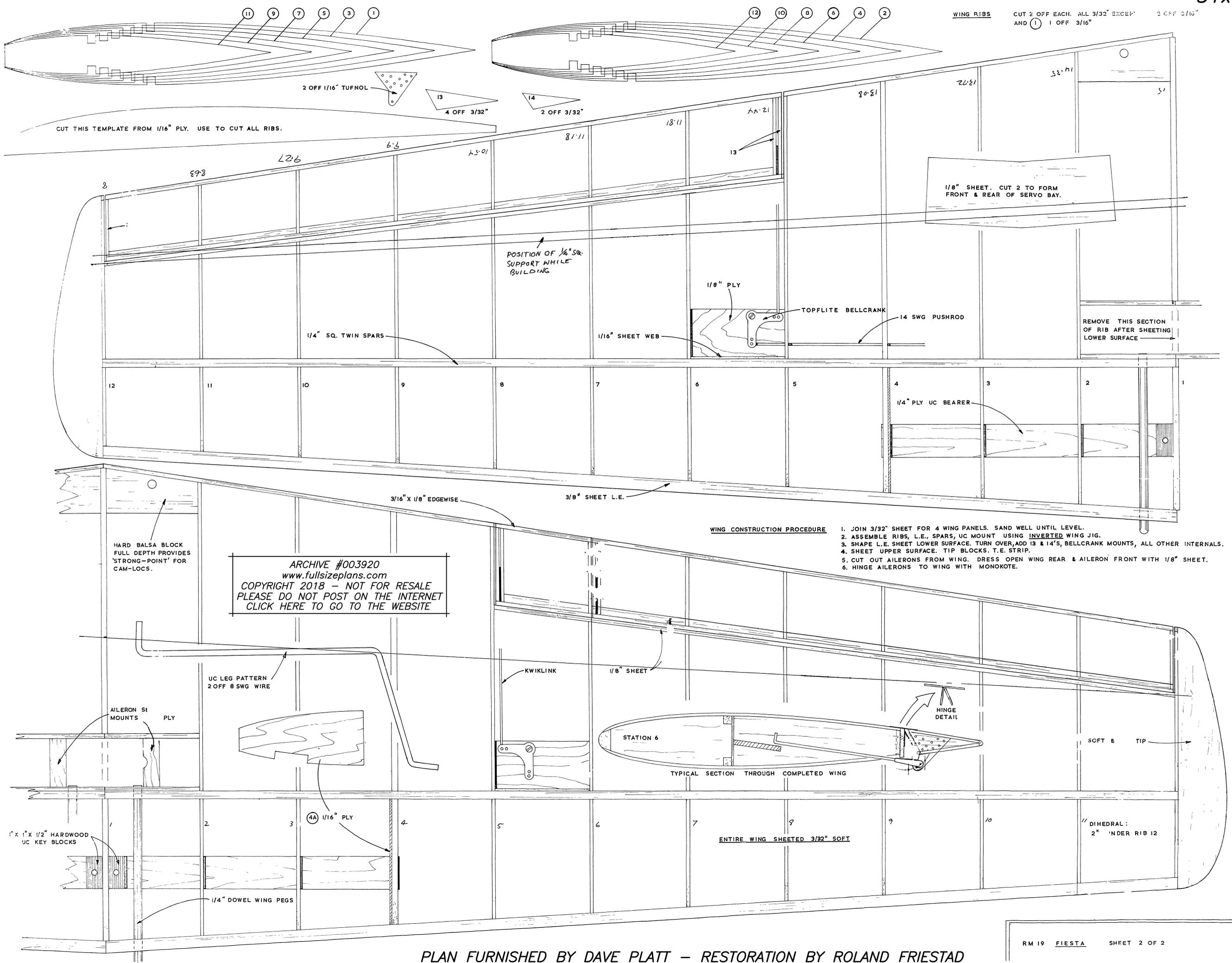
**RM19 FIESTA**  
DESIGNED BY DAVE PLATT

MULTICHANNEL AEROBATIC MODEL FOR PROPORTIONAL CONTROL SPECIFICATION. SPAN 85" OAL 50" WING AREA 700 SQ. INS. WEIGHT UNDER 6 LBS

COPYRIGHT OF RADIO MODELLER AUGUST 1967

PLAN FURNISHED BY DAVE PLATT - RESTORATION BY ROLAND FRIESTAD

WING RIBS CUT 2 OFF EACH. ALL 3/32" EXCEPT AND (1) 1 OFF 3/16"



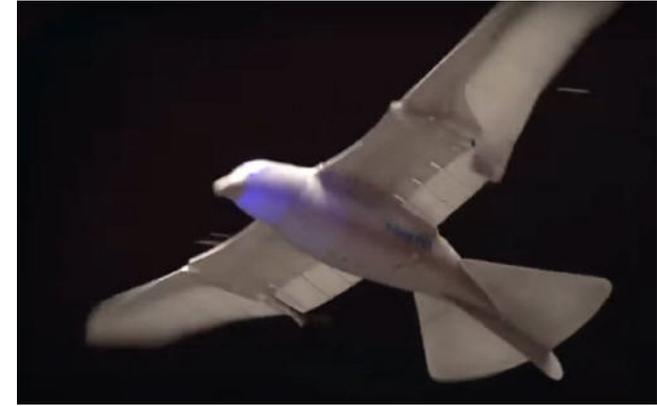
PLAN FURNISHED BY DAVE PLATT - RESTORATION BY ROLAND FRIESTAD

## Some Interesting Videos



The builders of this experimental high speed (150 mph) ground (water) effect machine hope that it will revolutionize short hop commercial over water traveling

[--Click Here For Video--](#)



This ornithopter flies by flapping its wings like a real bird

[--Click Here For Video--](#)



Here's a video from France showing a micro-light aircraft flying with migrating birds. The birds are orphans and the pilot raises them and then helps them migrate to safer locations

[--Click Here For Video--](#)



This is a prototype of a projected solar powered airplane that can stay in the air for at least a year, running on sunlight during the day and charging batteries to use at night

[--Click Here For Video--](#)



This DORNIER was the largest flying boat ever built. Watch the luxury and stability of this 12 engine behemoth.

[--Click Here For Video--](#)

# Rascal

BY CLAUDE McCULLOUGH  
AN AMERICAN TYPE WAKEFIELD MODEL  
CAPABLE OF HIGH CLIMB, FAST GLIDE  
AND MEET WINNING TIME

With the grand old mug of modeldom, the Lord Wakefield trophy, back in competition again, and events for this class being held at many big regional meets, interest again turns to 200 sq. in. jobs after a rash of super big crates ranging up to 400 sq. in. Much more convenient to fly and carry, a 200 sq. incher gives little to big ships in the way of performance.

In addition, you don't need Man Mountain Dean on the winder to get in those last few turns.

The Rascal is strictly in the American Wake tradition, a little on the boxy side, strong simple construction, no unnecessary frills or frippery and designed to pack a whopping rope of rubber for a quick climb to thermal country.

The high angle of climb is aided by the use of a thin low-drag wing section, a setup that gave such spectacular results for many of the experts at the Nationals.

The original Rascal uses 28 strands of 3/16" T-56 brown rubber, and turns out a climb that would make a Zipper envious. If you are really looking for a jet-propelled take-off, a few more strands will give it, although at the cost of a few winds.

Built-in downthrust (positive stabilizer) helps to control all of the power you can pack in. Altitude is what you are shooting for; ground huggers seldom bring-home the money at a contest.

Tiring of having the covering punctured like an archery target after a few flights, we used silk on the entire ship. You needn't raise your eyebrows. We hasten to explain that the ship turned out only 3/4 ounce over the required weight of 8 oz.

This small extra weight has more than paid off, for after literally hundreds of flights the ship is still in perfect shape after some thumping encounters with trees and fences.



However, you'll end up with surfaces looking like pretzels if you just stick on the silk and slap on the dope. By not stretching it too enthusiastically while applying and then patiently dopping a wing rib section at a time, and carefully checking while drying, we got a super strong covering job free of warps.

But a framework is necessary before you have to decide whether to silk or not, so enlarge the plans to full size or send for the full size drawings.

The fuselage is a box, built from 1/8" sq. hard balsa strips. Formers U, V, W, X, Y and Z are installed on the nose section and stringers of 3/32" sq. are added.

The dowel for rear rubber attachment is seated in two small aluminum squares drilled to fit the dowel and cemented to the inside face of the filled-in 1/8" sheet section.

The 1/16" steel wire landing gear and tail skid are cemented securely in place. Wheels are 1-3/4" diameter, cut from 1/16" birch plywood and equipped with large face bushings to serve as bearings.

Wakefield s require unassisted take-off, so a straight free running gear is an essential for competition.

Details of the nose plug and prop hinge and rubber tensioner appear on the plan. Both Jasco and BBT produce complete sets of the hardware components for this part of the job and are of good design and handy as well, saving the time of producing your own.

Carve the prop carefully from a medium balsa block and cover with silk and dope to strengthen the blade.

Full size wing and stabilizer ribs appear on the plan and are cut from 1/16" sheet balsa. The wing and elevator are of similar construction, with 1/8" sq. spars, 1/32" leading edge sheeting and soft scrap balsa block tips. The ribs are indented into the 1/8" sheet trailing edges.

Block the wing up for the indicated amounts of dihedral and coat the joints with cement several times.

The rudder is built up with 1/8" x 1/16" capstrips curved over the 1/8" sq. spars to form a symmetrical section. Dorsal fin is made of 1/16" hard sheet balsa.

If you do not agree with my arguments for silk covering, use Silkspan or jap tissue. In any case add drops of castor oil to the dope until an application doesn't curl up a piece of tissue. This reduces warping tendencies and gives a gloss to the finish. Be careful not to use too much castor oil or the finish will be tacky. Decorations were marked on in India ink, painted with black dope and pin-striped with aluminum paint used in a draftsman's ruling pen.

Glide-test the ship until an even glide is obtained, shifting the wing to obtain balance. Go easy on the winder on the first flights.

Recommended adjustment is right turn in the power and glide. This will probably require a little right thrust. A small aluminum tab cemented to the trailing edge of the rudder serves as an

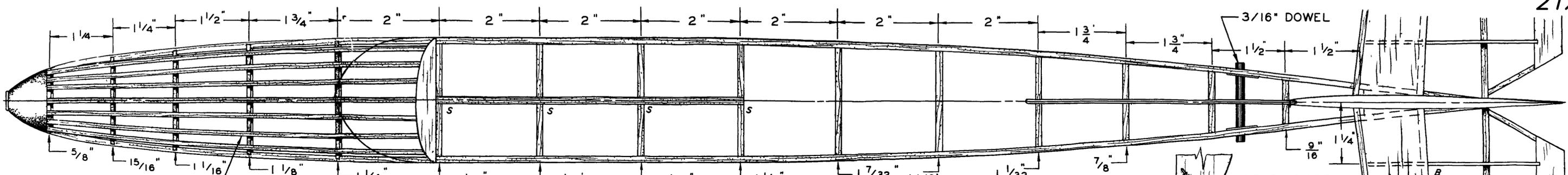


adjustment for the glide. Shoot for a tight circle for better thermal riding characteristics.

When you get your version of the Rascal performing nicely, get out the old Kodak and take a few snaps, keeping in mind the tips that have been passed out on model photography in Air Trails' series on the subject. Send along several to the Dope Can.

With the Rascal on tap you can be assured of being in the money at contests and have a ship that will provide many hours of sport flying as well.





**FUSELAGE TOP VIEW**

STRINGERS ARE 3/32" SQ.

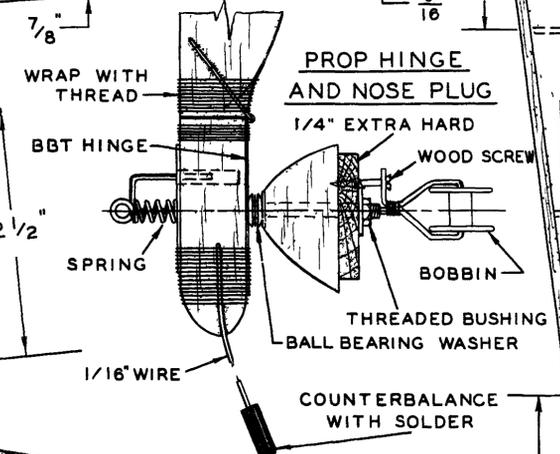
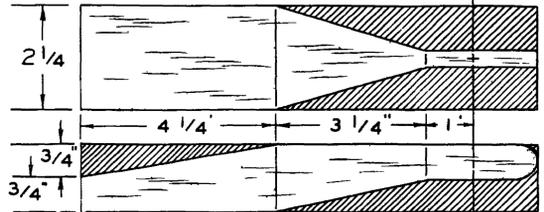
POWER - 28 STRANDS OF 3/16" FLAT



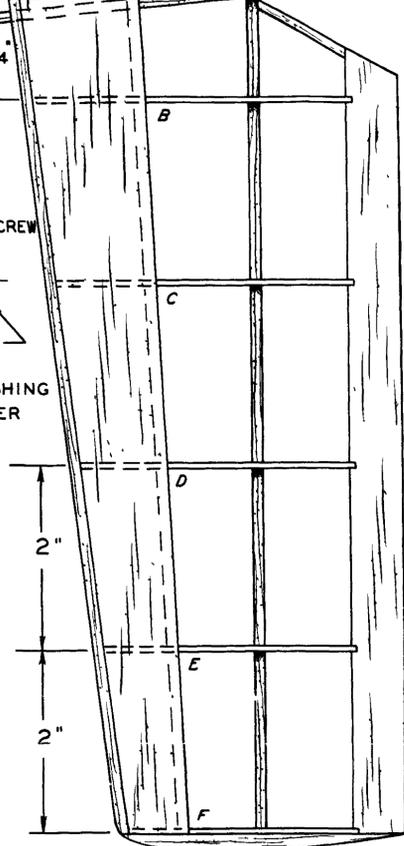
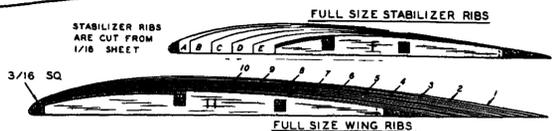
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**PROP BLOCK DETAIL**

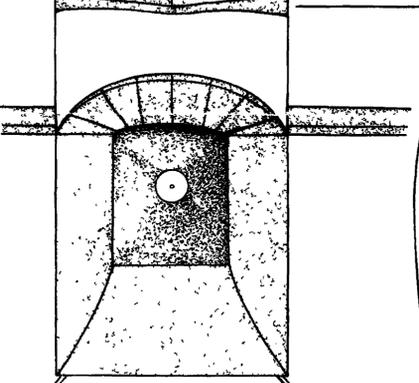
CARVE PROP FROM  
 1-1/2" X 2-1/4" X  
 9 7/8" MEDIUM  
 Balsa BLOCK



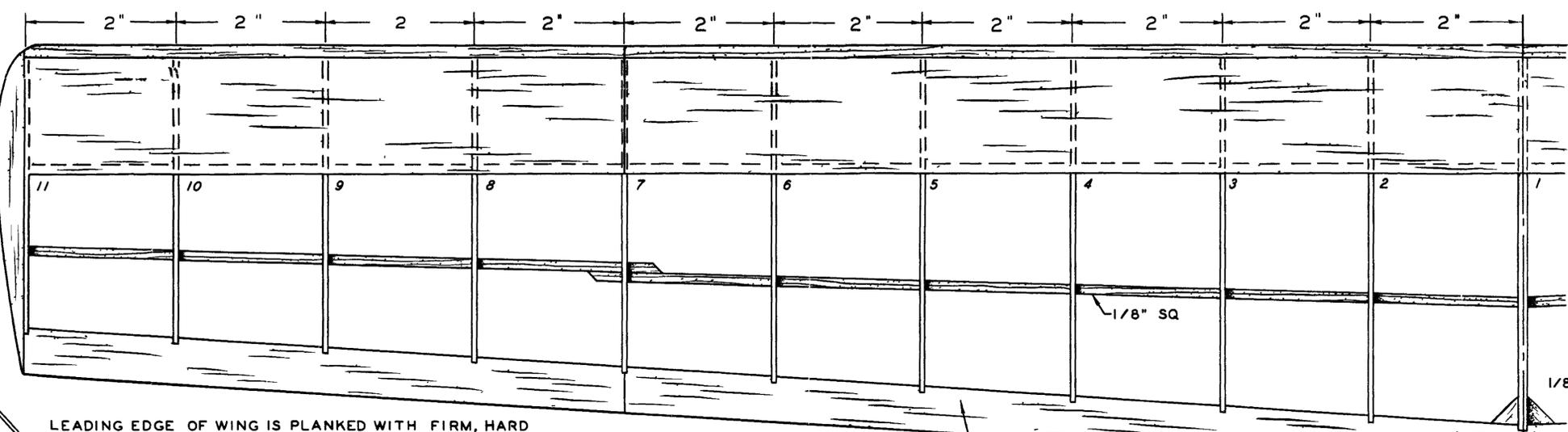
**PROP HINGE AND NOSE PLUG**



**RUDDER CROSS-SECTION**



**FRONT VIEW**

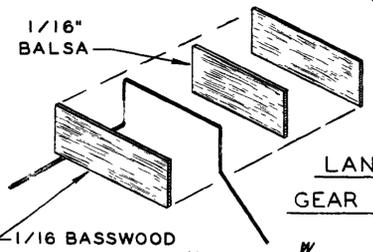


**LEFT WING HALF**

LEADING EDGE OF WING IS PLANKED WITH FIRM, HARD  
 1/32" SHEET Balsa, AS IS STABILIZER L E

1/8" X 5/8" Balsa TRAILING EDGE

DORSAL FIN IS HARD 1/16" SHEET Balsa



**LANDING GEAR DETAIL**

LIGHT CELLULOSE CABIN

**RASCAL**  
 FROM NOVEMBER 1948  
 AIR TRAILS



**FUSELAGE SIDE VIEW**

# Download Frank Zaic's Model Aeronautic Encyclopedia Volume 1 of 2 Digitek Books Collection

Digitek Books has an extensive collection of model aircraft and aviation books and will be making them available here for subscribers to download each month.

Frank Zaic was a well known modeler and the manufacturer of the JASCO line of kits, (Later known as JETCO). His line drawings and analysis of models appearing at contests world-wide appeared in many magazines and also in his own series of annuals.

Digitek has a complete collection of the Zaic books and digital versions will be periodically available at no charge for download by subscribers to RCMW.

This issue has been processed using OCR (Optical Character Resolution) and is searchable.

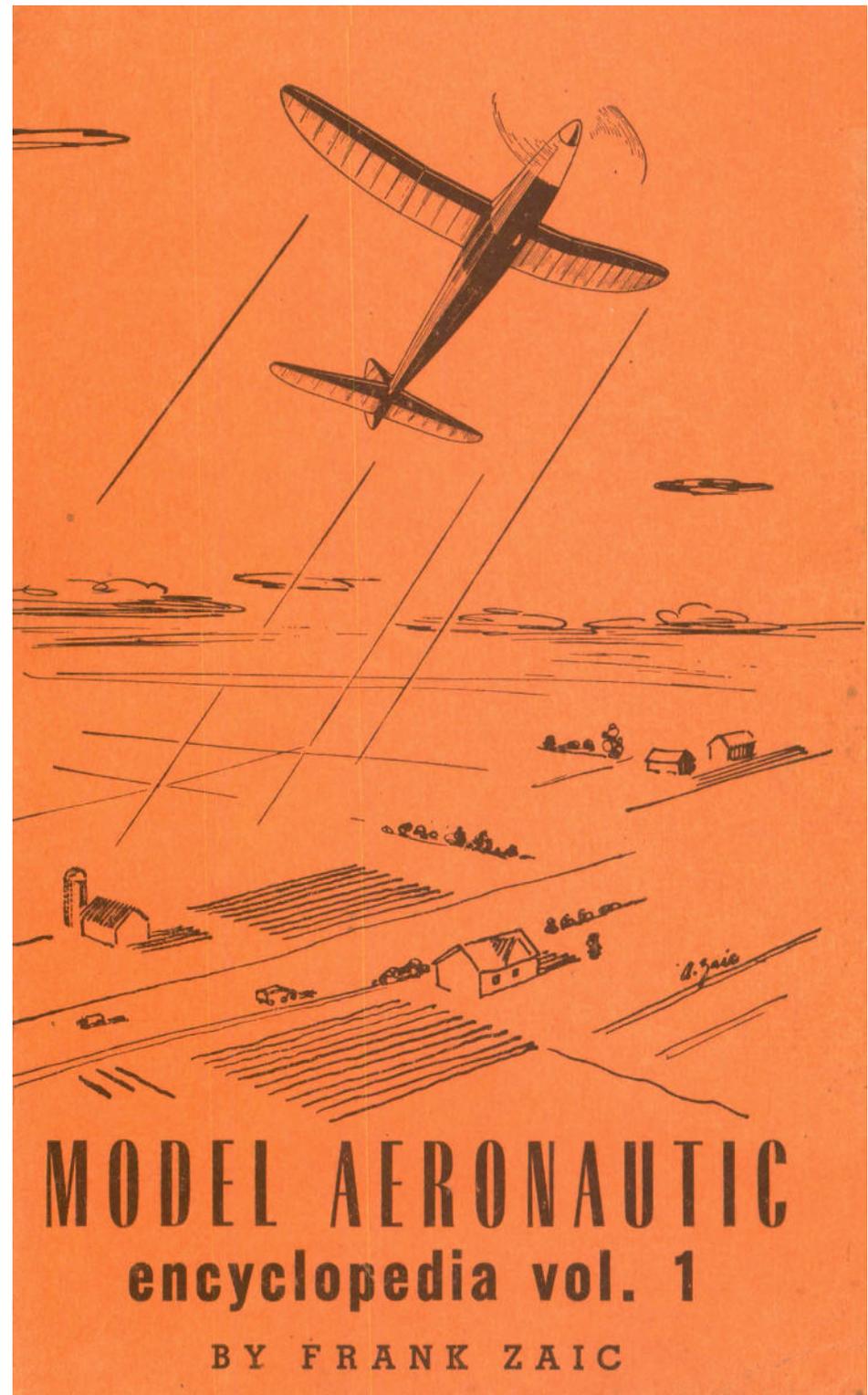
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Download for Volume 2 of the Encyclopedia is on page 16 of this issue.



# THE SCHOOLBOY

**Ken Willard's SCHOOLBOY originally appeared in the January 1961 issue of Model Airplane News and was also made into a Top Flite kit. It enjoyed a lot of success and would be even better with electric power and the newer even smaller RC gear with servos. Send us Photos.**

Small R/C is really big-good power coupled with the assured reliability of the small transistorized receivers make the small ones a must for every dedicated radio control man worth his salt.

As any Schoolboy will show you, the new Cox Tee Dee .010 glow engine puts out more than enough power to fly a hot little radio job. That is, of course, if the airplane is designed so that the power of the .010 is converted into useable thrust rather than a big blast against a firewall.

So let's see how the Schoolboy figured this out and got into the air so soon after the engine was available. The Schoolboy is designed with a long tapered nose, since the 3 inch diameter prop for the .010 Tee Dee has to have a fairly clear area behind it for the blast from that small a blade to have any effective thrust.

Aside from this feature, the rest of the model is so conventional and straight-forward that it almost needs no construction directions at all. It's about as simple as you'll ever see, but the pleasing lines and the hot performance will give

you a real source of fun while you're building that big beautiful monster with 'steen channels, and it'll keep on giving you a thrill or two even after the big one is done.

The name is derived, of course, from the fact that the model can easily be flown in any normal sized schoolyardal though you should get permission first, naturally.

When I first heard that the L. M. Cox Company was going to market an .010, I naturally-along with a lot of others-wanted to see if I could come up with a successful R/C model for it. I'd experimented with the .020 a lot, had several successful designs, and knew the engine characteristics pretty well.

I'd found out, for example, that with the little 3 bladed prop on, the .020 flew my little seaplane with far more power than was required. This was a function of the engine placement up on the pylon above the wing where the entire propeller disc was exerting effective thrust. I could probably have used that design, but I wanted something more along the classic lines of R/C.

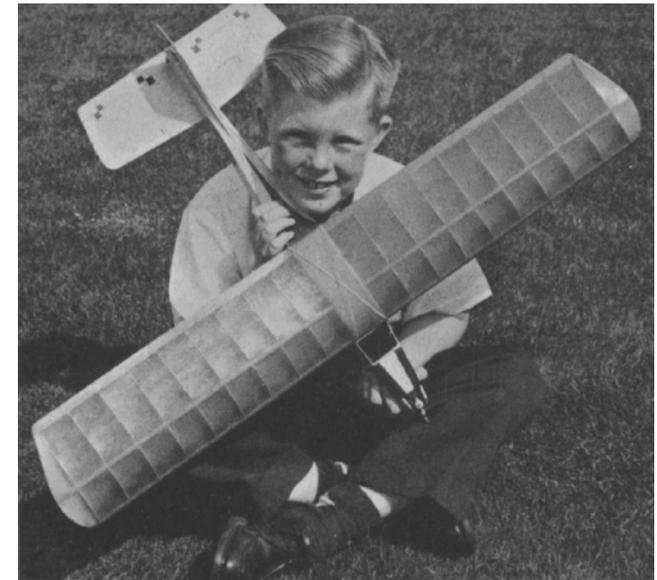
So, using the basic layout of the proven cabin monoplane high wing design, I just stretched it out a bit, tapered the nose, swept the tail for the modern look, and in no time at all the Schoolboy was designed.

The dimensions were set so that the fuselage would accommodate a standard Babcock compound escapement, a standard F & M Pioneer receiver, and two pencils for receiver power.

I built the model up rapidly, installed the radio gear, and mounted an .020 in the nose. All ready to fly, it weighed in at 10 ounces. There was no question of whether it would fly or not-I'd flown a similar model back in 1958 which weighed 15 ounces but needed a pretty-hot engine run to perform well.

The first flight on the Schoolboy proved the soundness of the design-both aerodynamically and structurally. Frankly I forgot, in my usual first flight excitement, and neglected to put the prop on backwards. I launched the model, it screamed up and over in a tight loop and banged into the ground-hard.

It was easy to replace the prop and glue the firewall back in place. The tough part was trying to heal my wounded pride-somehow these models always have a way of whittling you down to size when you get overconfident, don't they?



The next flight I used better sense, put the prop on backwards (a 5-1/4 x 3 prop) and this time I was rewarded with a very nice flight. The model still needed some downthrust, and after I put that in it was a real joy to fly.

Takeoffs were straight and fast, and the model handled very well. The only thing sensitive about it was the elevator. It does have to be adjusted carefully to the right neutral setting.

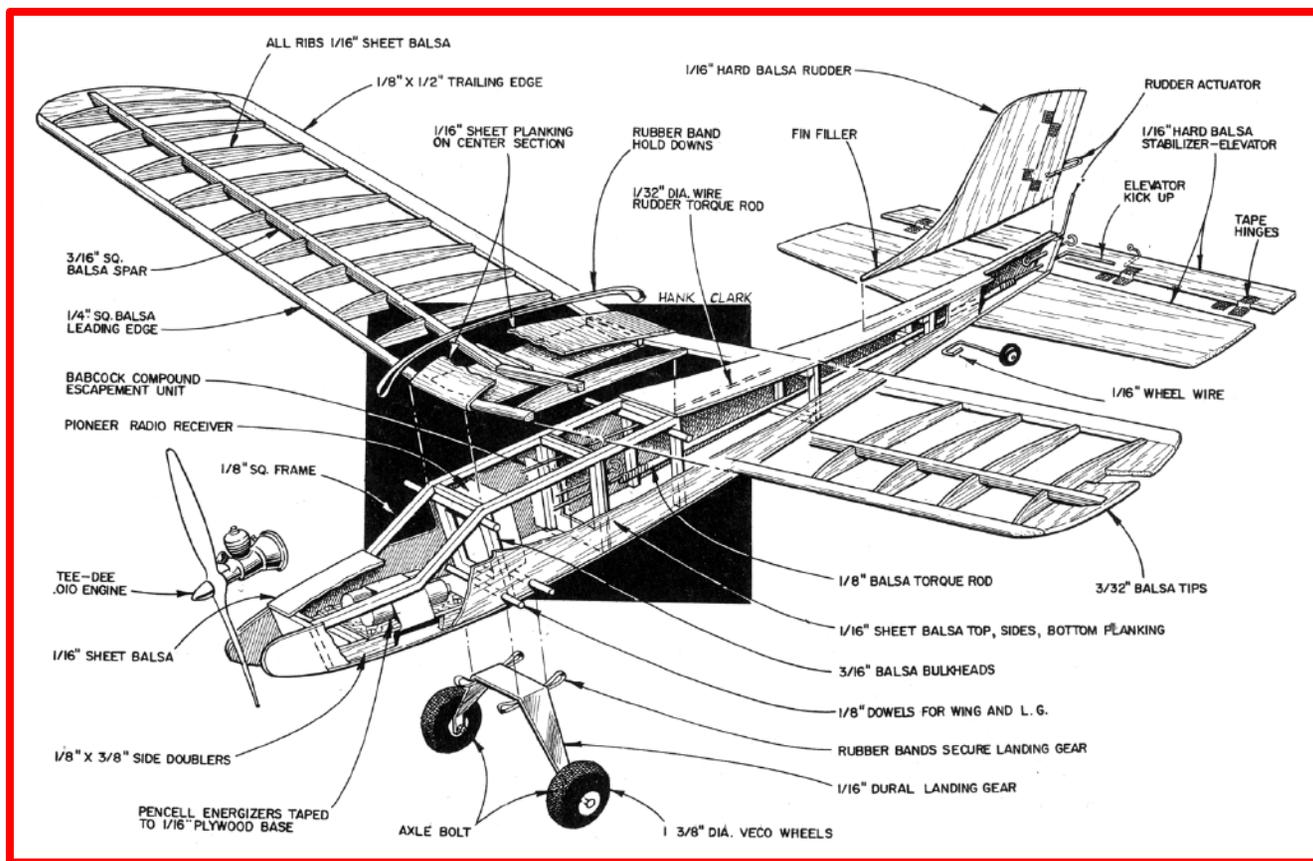
With this experience under my belt, I figured I had it about made. With the prop on backwards, the .020 was only developing about half power insofar as thrust was concerned, yet I had ample thrust. I put the model away until I could get one of the new .010's.

Since the .020, when it came out amazed everyone with its power, which approached some of the old .049's, I figured the new .010 would probably do the same thing.

During a trip to Los Angeles, I was able to get to the Cox plant and tell Bill Selzer the plant manager, some of my plans. They were shipping the .010's for release to the hobby shops, and he agreed that it would be good publicity to have an R/C job, so he presented me with one for my experiments.

The following weekend I had the .010 mounted in the Schoolboy and ready to go. Sunday morning, March 19th, I called my flying buddy in the Bay area, Jim Wade, and out we went at 7:30 A.M. to our "private" field.

I'd checked everything-radio trim (reset to accommodate the slightly lighter weight of the .010 under the .020) and the engine, which really turns up like they say it will.



So what happens? Nothing! My booster battery is low, and I don't have a spare. I cuss, Jim commiserates, we confer. Solution - we head for Baylands park, where all the R/C guys fly, in hopes there'll be some other "nut" out that early from whom we can borrow a booster.

Naturally, there are several, in fact. We had to wait our turn although as soon as they saw what I had: they cleared the air. I don't think they really expected that little .010 to pull this "big" 36" model.

With a borrowed booster, then a prayer, the engine fired up like an angry mosquito. Jim took the model from me, went out about fifteen feet to avoid any swamping.

I checked the controls, and Jim launched the Schoolboy. Off she went on as pretty a flight as you'll ever see. The .010 R/C was no longer a dream. I flew it around, looped it, rolled it, did everything I could think of then when the engine ran out, brought it in easily.

After that, we flew it until I had to leave to catch a plane to New York. For the record, we took some snaps with a Polaroid, which you saw in the June '61 issue of MAN.

Well, briefly, that's the history of the first .010 R/C. As for constructing it, you'll find it so conventional as to almost eliminate the need for explanation.

## WING

The wing is standard single spar construction. Build it flat on your bench, cut it in two, glue it back together with dihedral braces at the center section, cover the center section top and bottom with 1/16" sheet, shape the leading edge, cover with silk, dope with butyrate dope, and it's done.

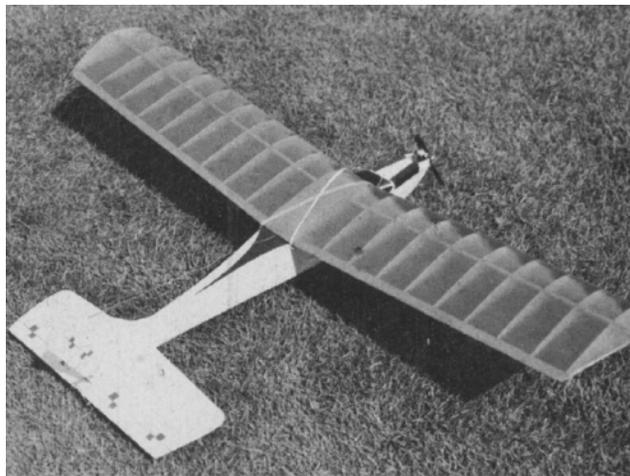
About four coats of dope slightly thinned with a couple of drops of castor oil. for each ounce of dope, yields a good finish. I used red silk with clear dope. Medium grade balsa is used throughout wing, fuselage and tail.

## FUSELAGE

This is the most complex part of the building process. Even so, it's simple. Cut the sides out of 1/16" sheet, glue the 1/8" square braces in place as they show on the plans along the top of the sides back to the rear of the wing mounting area, and the vertical braces at the respective stations.

Next glue in the bulkheads at the wing leading edge and escapement mounting and let them dry. Then glue in the cross braces at the trailing edge location of the wing. Be sure that the sides are glued together with the bulkheads at right angles so you'll have the right alignment.

Next press the forward ends of the fuselage sides together and glue the firewall in place. Note the slight right thrust and the down thrust which the plans automatically set on the firewall. You may have to make some minor adjustments, but the angles which show on the plans were the best for my model, and should be very close to what you will need .



Now you can add the skin doublers at the bottom of the sides from the firewall back to the leading edge bulkhead station, then pinch the tail together and glue the tail bulkhead in place.

Before closing in the sides with the top and bottom skin, add the dowels for mounting the wing and the landing gear and mount the escapement and the torque rods for the rudder and elevator. This way you check to make sure they clear the sides and top of the fuselage like they are supposed to, and then close in the top and the bottom with 1/16" sheet balsa.

Since I was using a radio mounting that is interchangeable with another model, I had it set on a base that could slide out of one model and into the other one. However, I've shown on the plans a bulkhead mounting which one of my friends used and which really is best if you plan to use the radio in the Schoolboy exclusively.

The batteries are taped together, then taped to a 1/16" ply base which you can screw to scrap balsa crosspieces glued to the bottom of the fuselage as shown. If necessary, you can move the batteries forward for balance.

The battery leads are soldered on. This saves the weight of a box, and the drain is so low you will get a lot of flights before you have to change batteries.

For a switch, I used a small single socket and prod connection in the battery and lead, conveniently brought out under the leading edge of the wing at the top of the windshield.

The engine bolts directly to the firewall, which already has built in downthrust and right thrust.

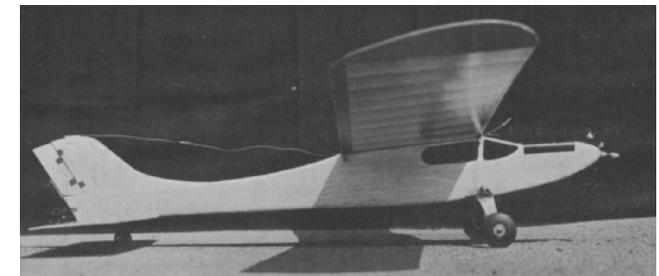
For convenience, the top covering of the fuselage from the firewall back to the windshield is removable. Make it into a sort of hatch, and you can hold it in place either with tape, like I did, or make some fasteners if you're the meticulous type.

## TAIL SURFACES

These need no explanation at all. Cut them out of 1/16" sheet, dope and glue in place, and mount the moveable surfaces with cloth hinges.

## LANDING GEAR

This can be made of spring wire or aluminum sheet - whichever is handy to you. In fact, I used both, aluminum sheet with wire bracing.



## FINISHING

For simplicity, I finished my Schoolboy with clear dope on the balsa, then added a little decorative trim in black dope. This, when combined with the red silk covering on the wing, made a simple yet effective trim. If you're so inclined, you can add a lot more, because the flight experience proved that the weight which a few trim lines would add would hardly be noticed.

## FLYING

Unless I miss my guess, most of you will add your own little modifications to the basic design. I've never yet seen one that was a copy of the original. For example, you may want a longer flying model and add a tank for that purpose. Or maybe you'll trim a Bonner escapement to fit. Possibly, you'll mount one of the new Citizenship receiver escapement combos for a rudder only job.

In any event, stay pretty close to the wing and tail angular settings and the thrust settings. This model with a wing loading of about seven ounces per square foot, is fairly sensitive to trim—particularly elevator settings, but once you get it trimmed out, you'll find it completely reliable.

Because of the comparatively long span, be sure your wing has no warps in it. Use the medium rudder throw setting shown.

Adjust the model for a fairly fast and penetrating glide. If the glide is slow and the plane sinks near the stall, it will probably stall under power.

And that about wraps it up. You'll be amazed at the performance and I think you'll agree with me that the .010 Tee Dee opens a new era in small R/C fun.

**MAN EDITOR'S NOTE:** *We have been advised by Top Flite Models who are kitting the Schoolboy that they have made the following modification to the Schoolboy and they were certain that you would appreciate knowing of it. The information arrived too late to include in the plans therefore we will outline the change.*

*The wing, instead of the conventional built-up and tissue or silk covered structure, is now all sheet balsa construction. Sheet balsa .040 thick x 6" wide is used for the top and bottom covering.*

*Construction is basic, simply pin the bottom sheet which is die cut to receive the ribs, and then cement the ribs in place. The shaped leading edge is then added and the top covering is applied by cementing it to the leading edge and then forming it down over and cementing it to the top of the ribs and joining at the trailing edge to complete the structure.*

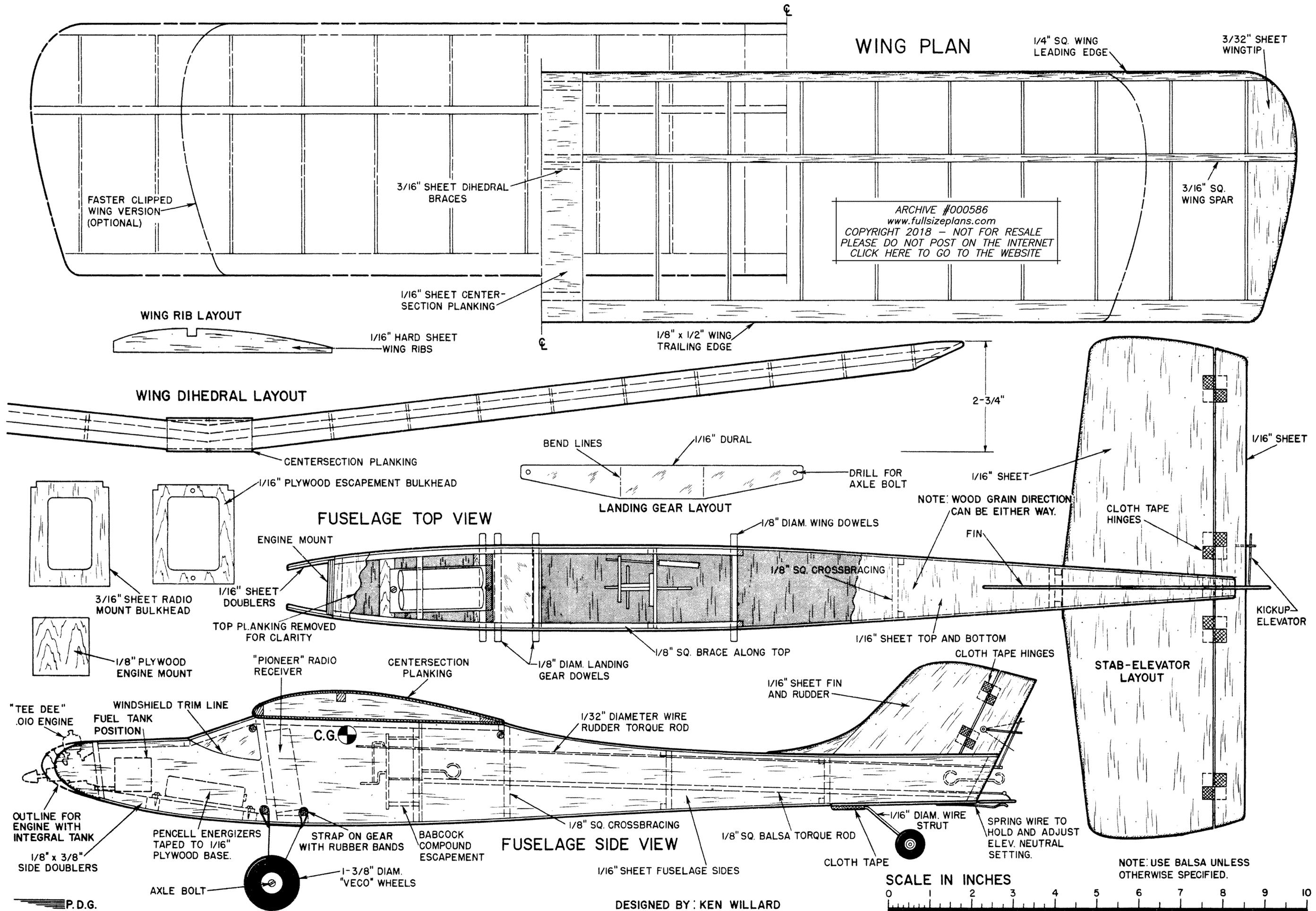
*Messrs. Schlesinger and Axelrod of Top Flite advise that the structure is completely warp-free and increases the already good flight stability of the Schoolboy.*



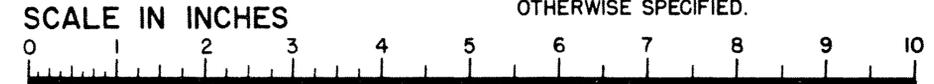
*Overall weight of the model is increased only 0.3 ounces and the strength to weight ratio is increased considerably with this small weight addition. Another advantage is the considerable reduction in the over-all building time of the model.*

*Top Flite's research department has flown both types, tissue covered and sheet balsa covered, and feels that the sheet wing offers much better flight characteristics and they recommend it to all builders of the Schoolboy.*





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DESIGNED BY: KEN WILLARD

FROM JANUARY 1962 MODEL AIRPLANE NEWS

P.D.G.

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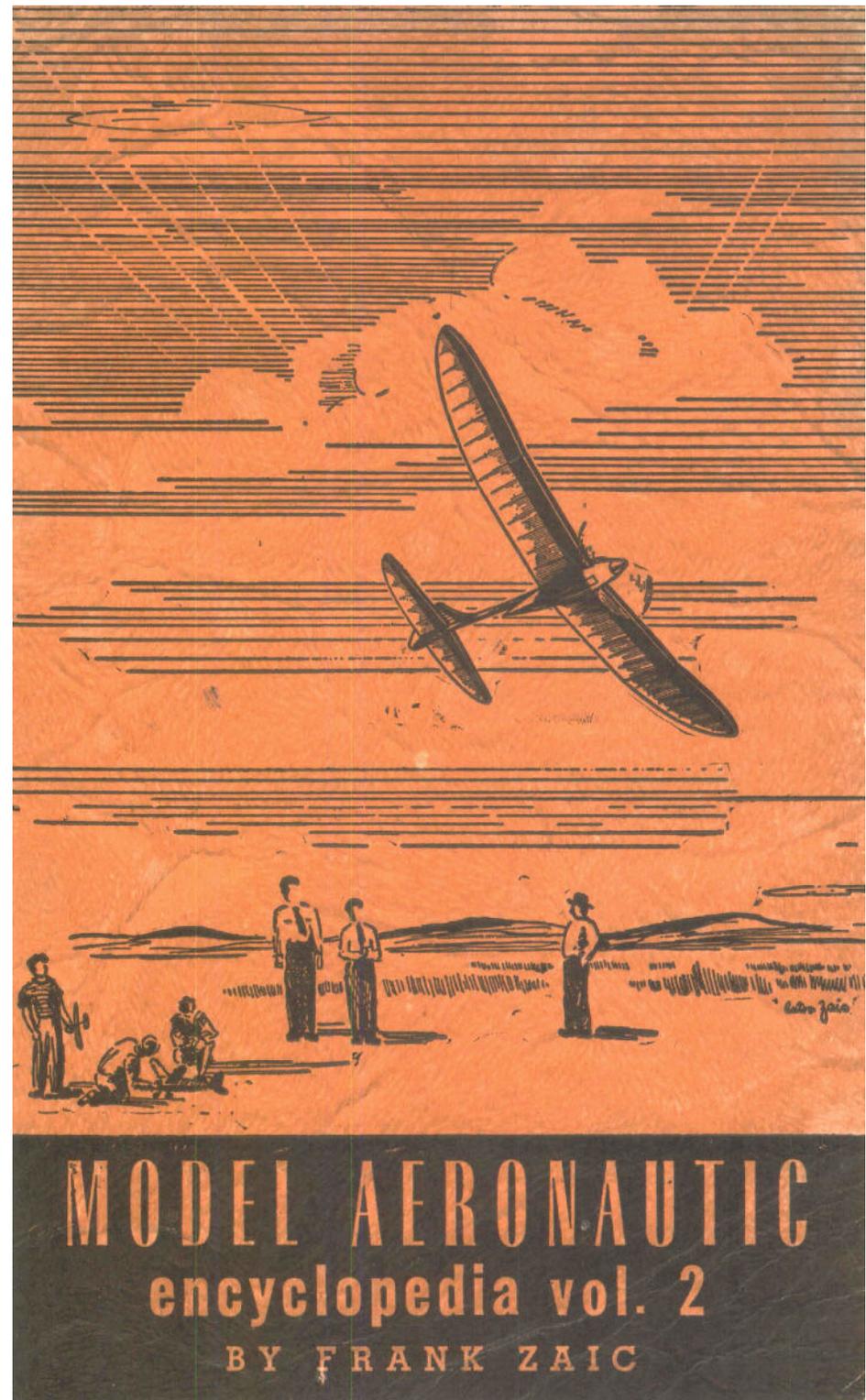
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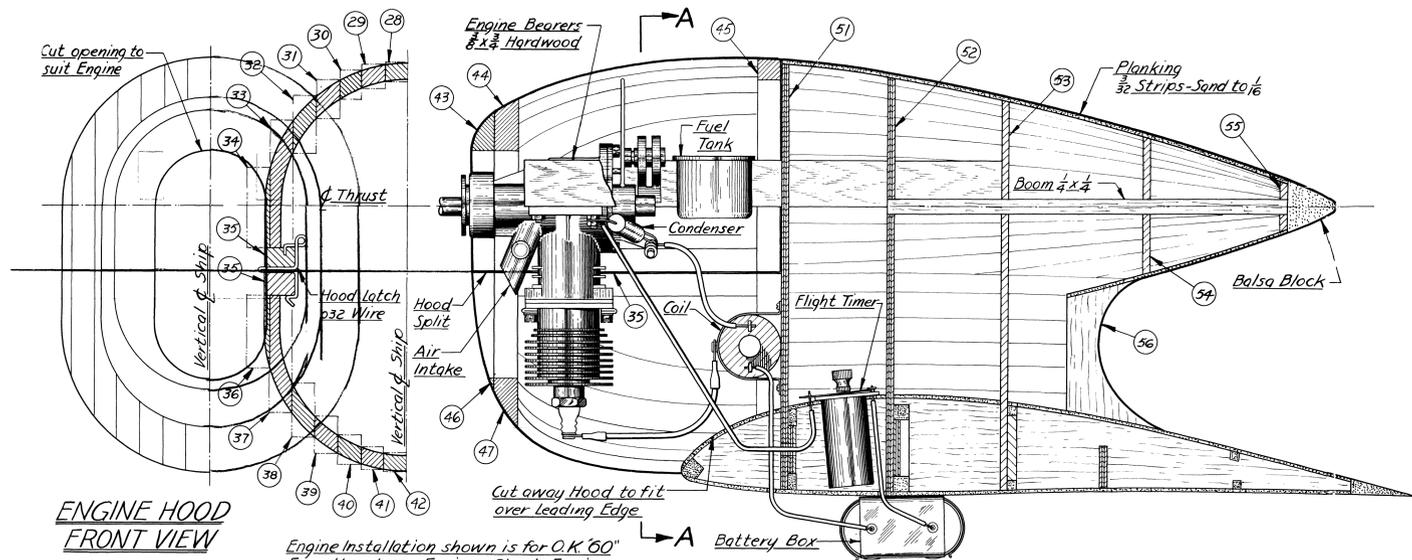
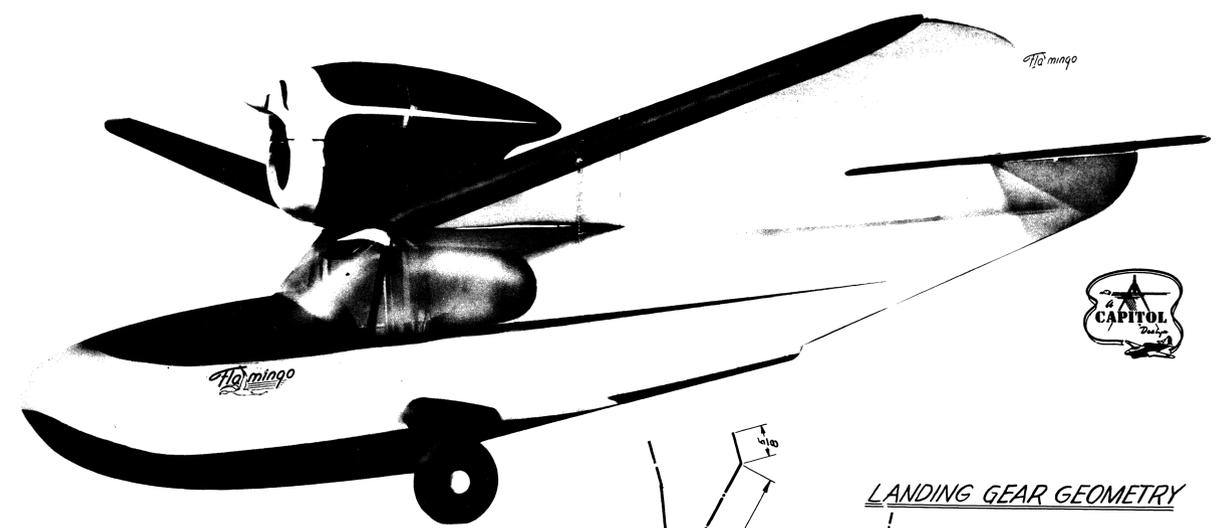
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Download for Volume 1 of the Encyclopedia is on page 10 of this issue.

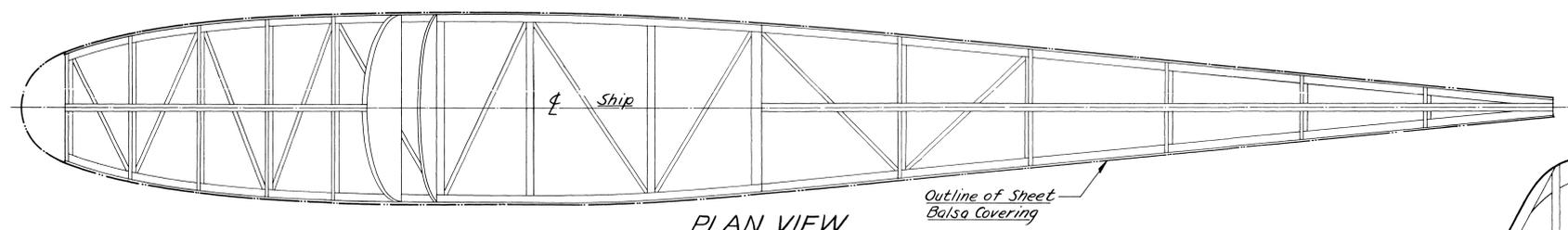
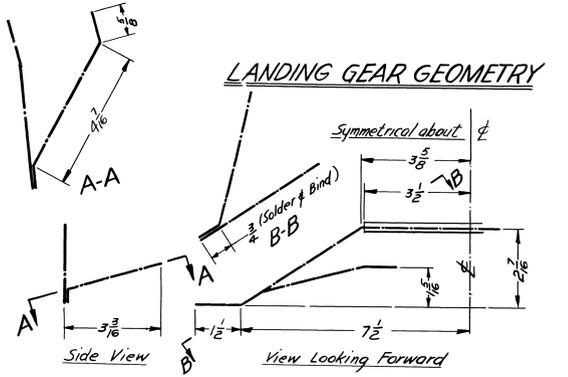




Engine installation shown is for O.K. 60"  
 For other type Engines Check Engine  
 Bearer location before notching  
 Bulkheads- & Thrust must remain as shown.

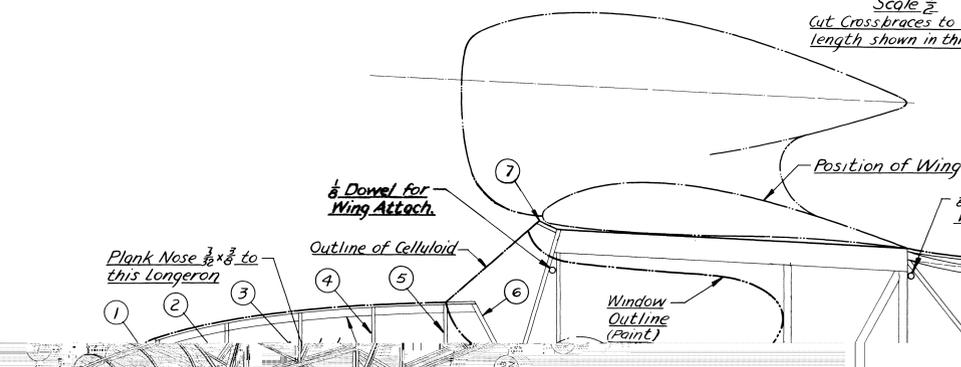
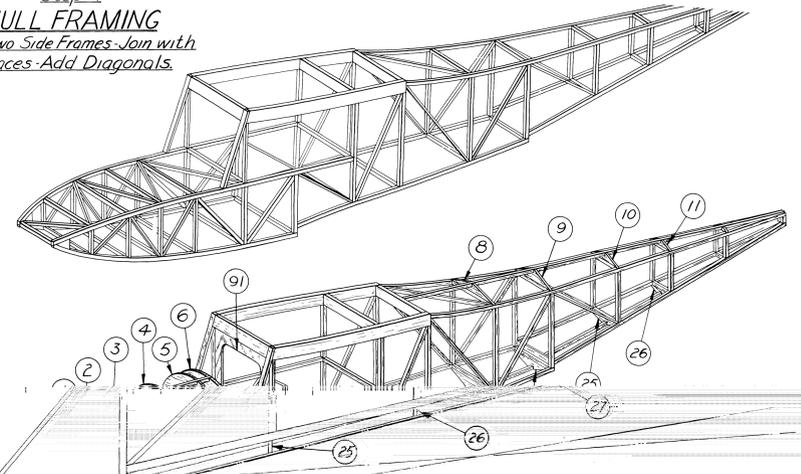
**ENGINE HOOD FRONT VIEW**

**ENGINE INSTALLATION INBOARD PROFILE**  
 Use this View for Ignition Hookup  
 and spacing Formers on Boom.

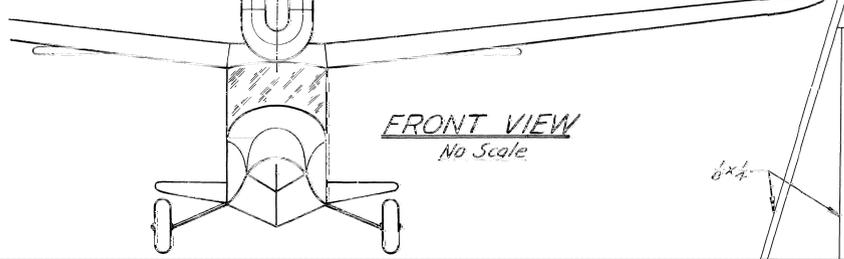
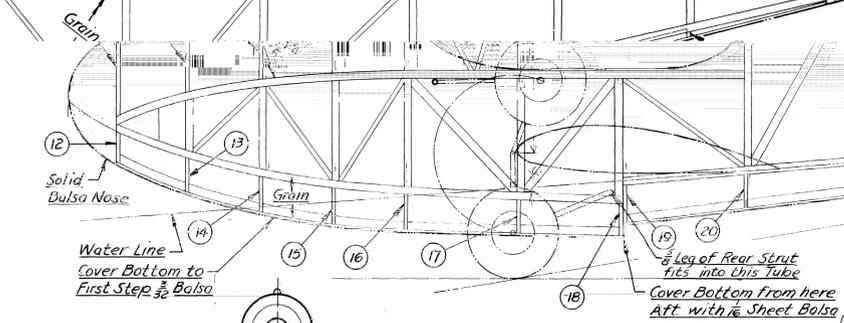


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**Step 1 HULL FRAMING**  
 Make two Side Frames-Join with  
 Crossbraces-Add Diagonals.

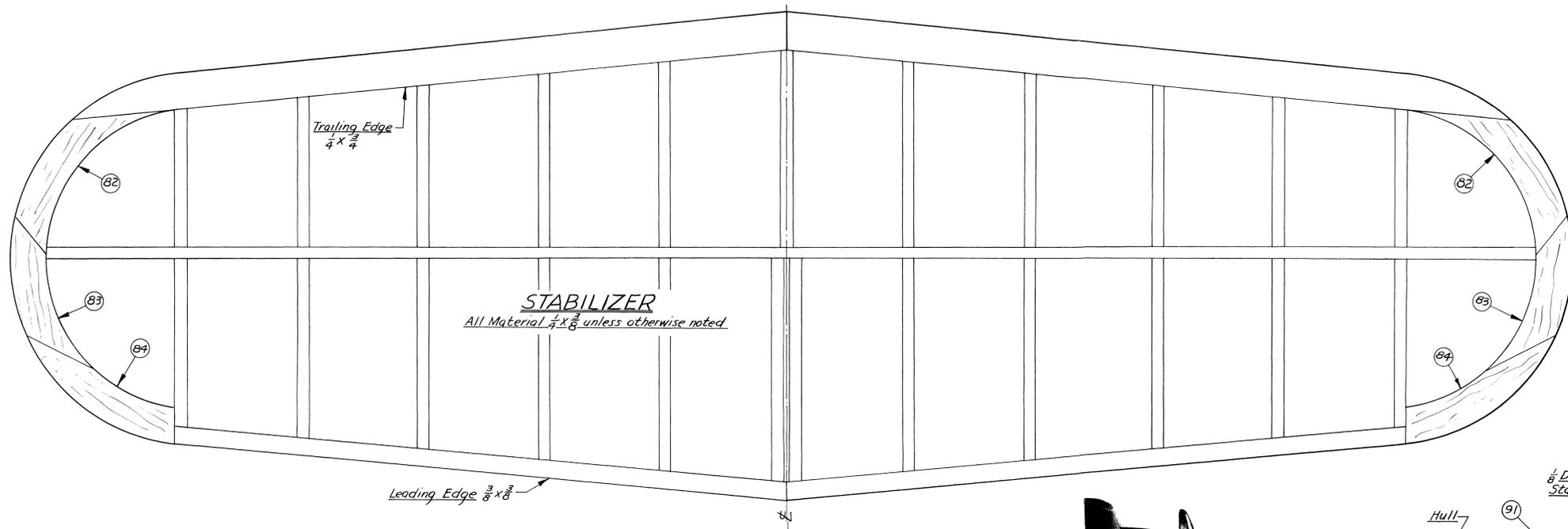


**Step 2**  
 Add V-Bottom Formers and Nose  
 Formers-Remove Brace & Install  
 Plywood Bulkhead-Add Tubing

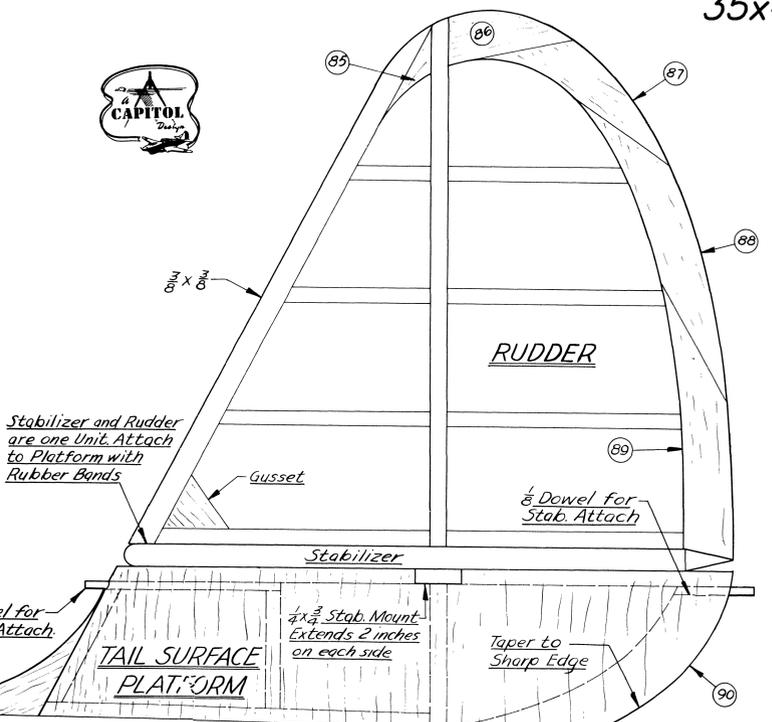


**HULL SIDE FRAME LAYOUT**  
 All Material 3/8 x 3/8 unless  
 otherwise noted.





**STABILIZER**  
All Material  $\frac{1}{4} \times \frac{3}{8}$  unless otherwise noted

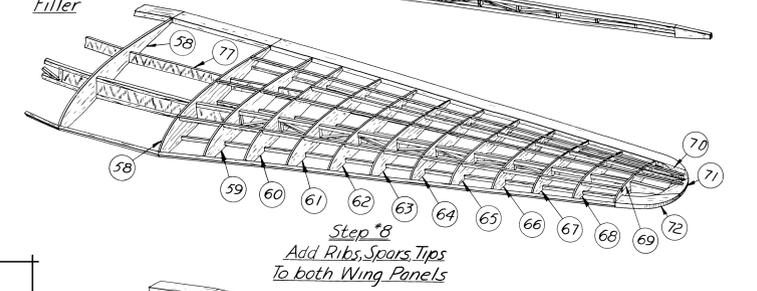
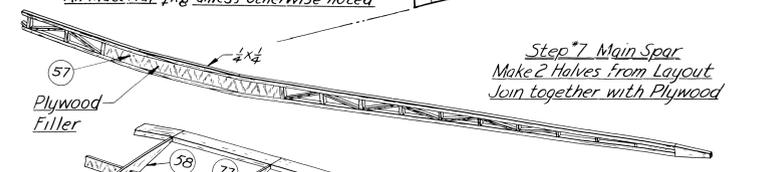


Stabilizer and Rudder are one Unit. Attach to Platform with Rubber Bands

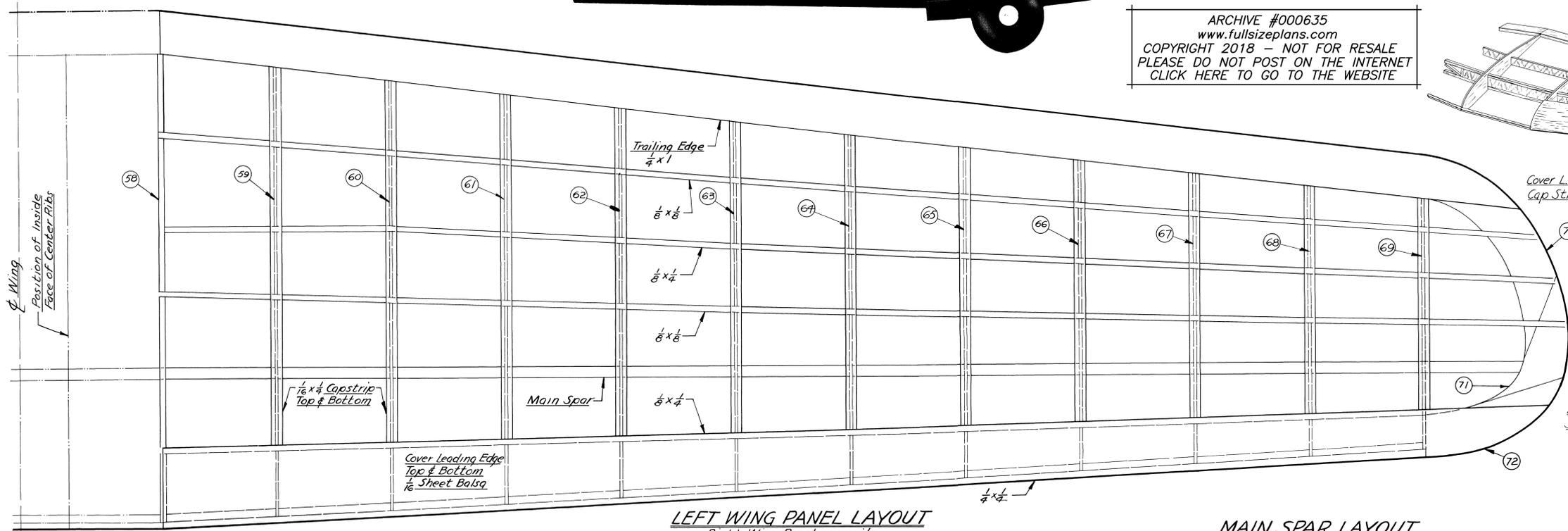
**TAIL SURFACE ASSEMBLY**  
All Material  $\frac{1}{4} \times \frac{3}{8}$  unless otherwise noted



**Flamingo**  
SHEET 2 of 3

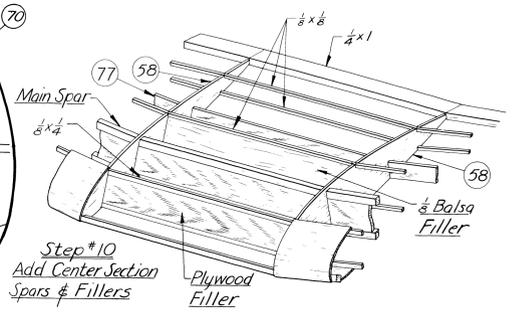


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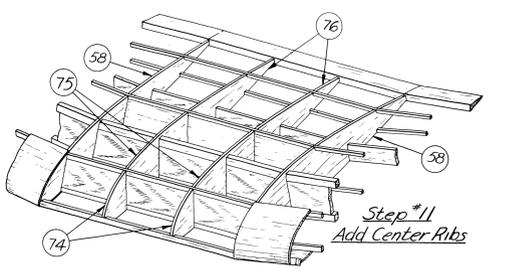


**LEFT WING PANEL LAYOUT**  
Right Wing Panel opposite

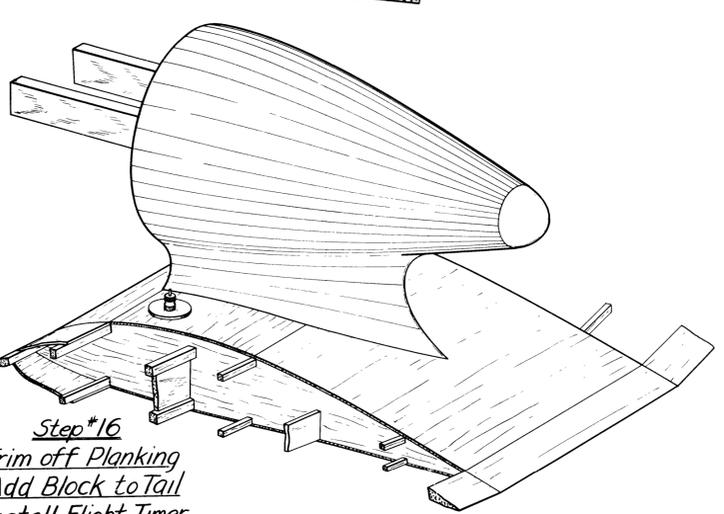
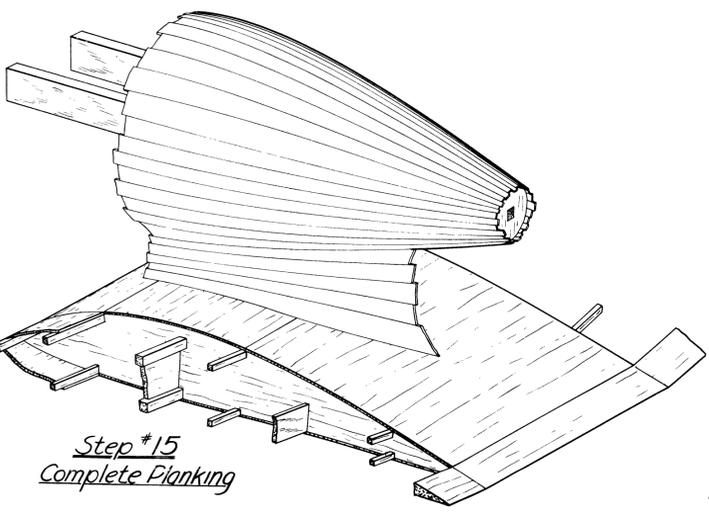
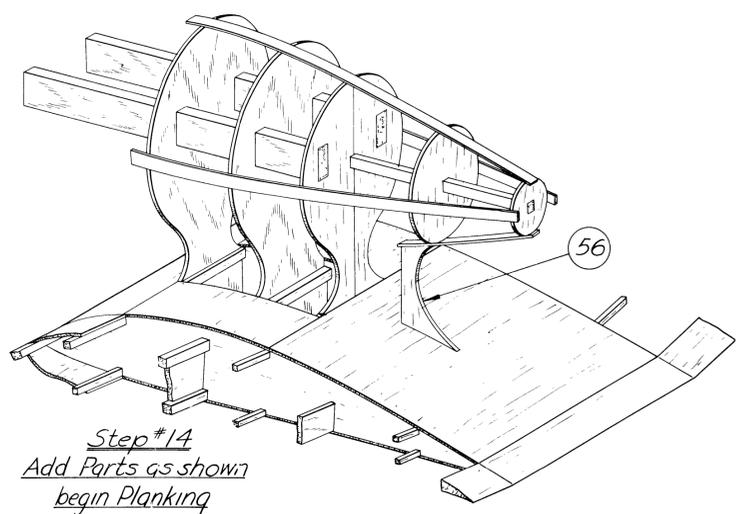
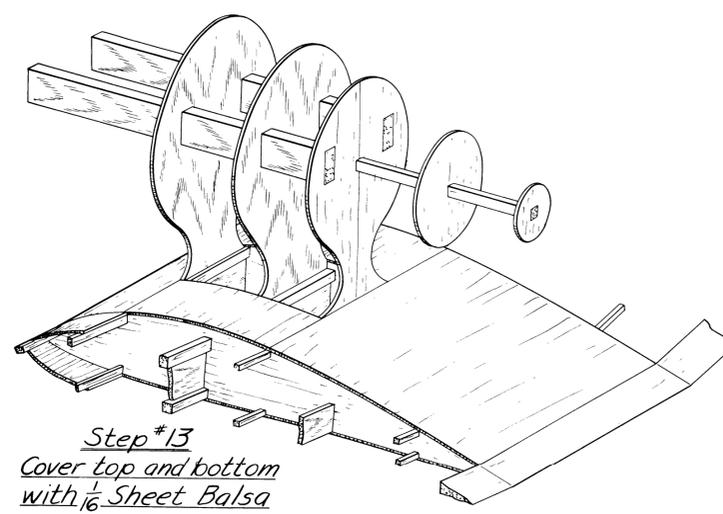
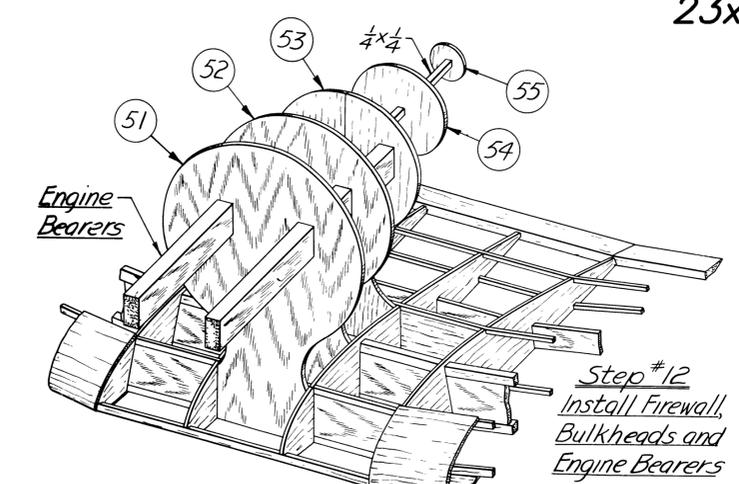
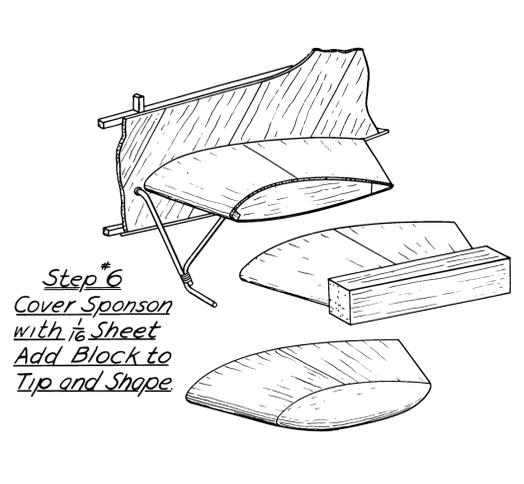
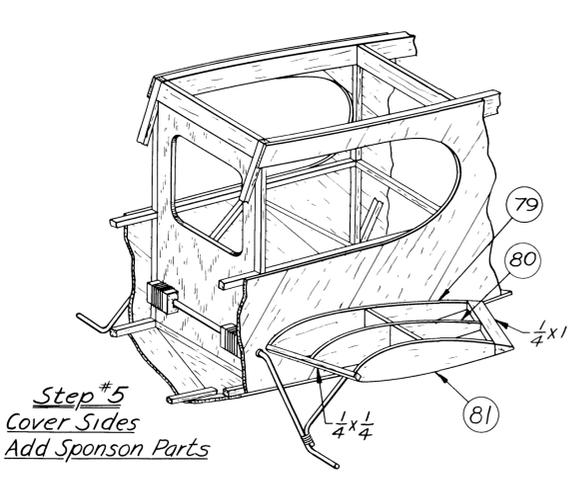
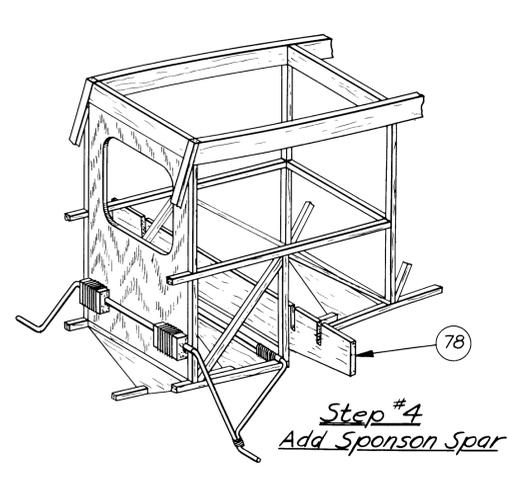
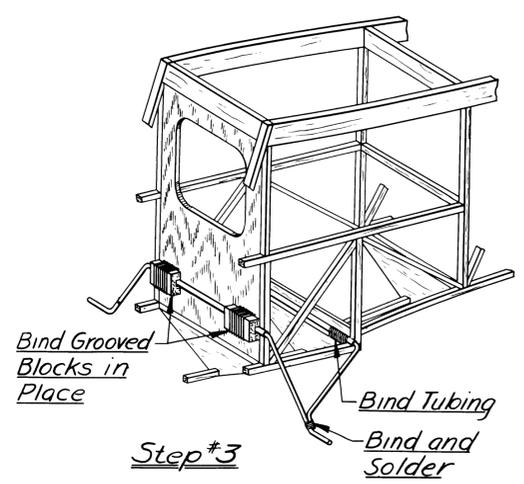
Step 9  
Cover L.E. with  $\frac{1}{16}$  sheet Balsa. Add Cap Strips top & bottom of each Rib



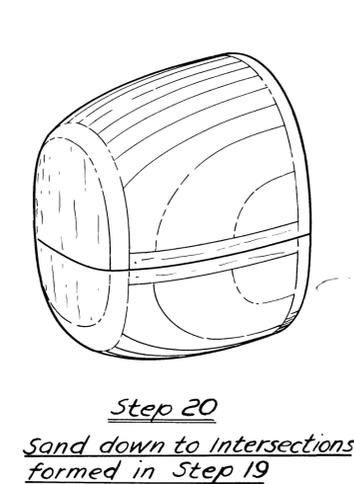
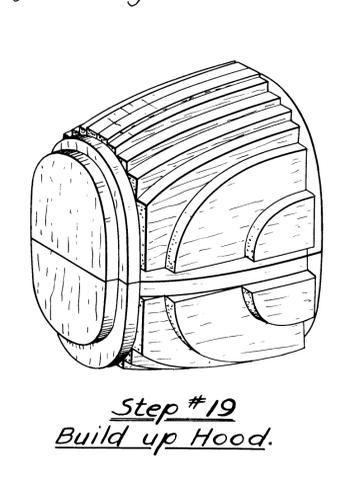
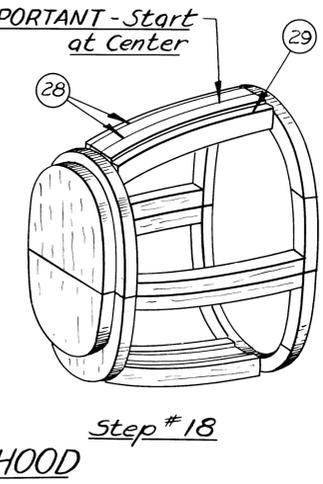
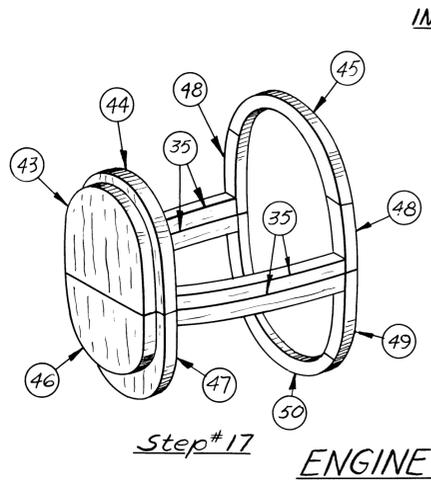
Step 10  
Add Center Section Spars & Fillers



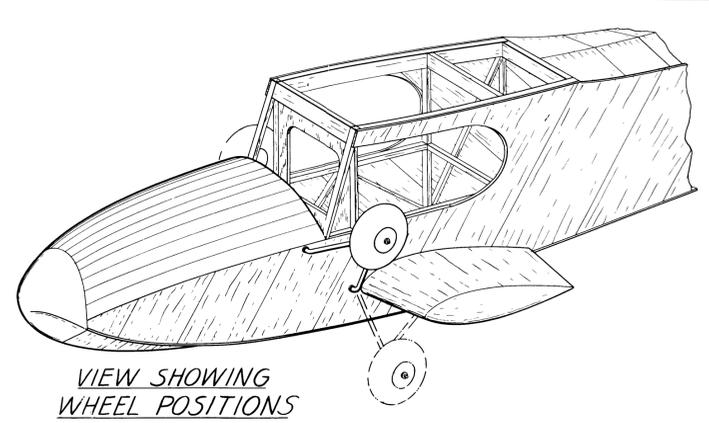
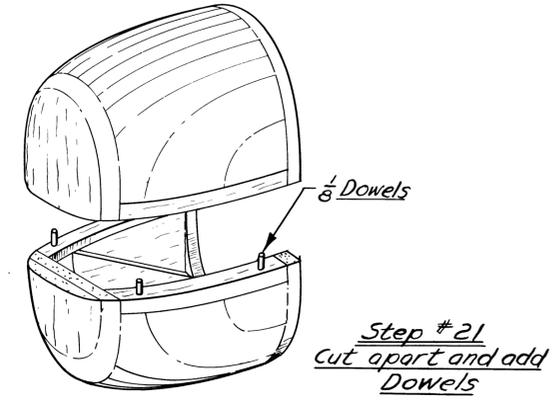
**MAIN SPAR LAYOUT**  
Make two and join with Plywood Filler (see sketch)  
All Material  $\frac{1}{4} \times \frac{3}{8}$  unless otherwise noted



IMPORTANT - Start at Center



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Flamingo



# Laminating Props

by Bob Thomson

From Model Aircraft (UK)

August 1954 Issue

THERE must be many modellers who, like myself, are handicapped as far as rubber models are concerned by their inability to carve a really efficient propeller. At every contest can be seen people who have made good models and then spoil them with poor airscrews.

When I tired of my futile attempts to make a block of balsa look like a reasonably good airscrew, I decided to discover some other method of getting that result. Laminating was the obvious solution, but the few methods I read about seemed too haphazard to me.

Finally I tried a method of my own, with immediate success. Briefly the idea was to build up the blades on jigs so arranged that a well designed propeller would result. The method has many advantages, and can be applied to all but the largest models.

Imagine that we have designed the propeller we need, or that we have the block measurements on a commercial plan. We then draw the plan and side views of one blade full size on paper (Fig. 1). These should be divided off from hub to tip into a number of equally spaced stations. In propellers of eight in. dia. or over, one, or one and a quarter in. are convenient space sizes.

The height and breadth of the propeller block at each of these stations is measured, and airscrew block cross sections are drawn full size on postcard or similar material.

As these are going to form building jigs, if the true propeller shape is to be retained they must be measured from a common base line and extra depth given to the cross sections as required. (Fig. 2).

Study the diagrams carefully to follow my meaning. Now on each of these cross-sections draw a straight line from the top right to the bottom left corner of the actual block cross-section. That does not include the part down to the base line. This line represents the chord line of the blade section.

Bearing this in mind we may construct upon it the section we desire. For true accuracy this may be plotted, but satisfactory results can be obtained by sketching in the outline.

When the blade shape is drawn in at all the stations, cut the crosssection out of the card (base line pieces as well), and divide each into two along the bottom of the blade section. The lower parts are then glued onto scrap pieces of eighth or quarter sheet, or other suitable material, which are then cut down to the shape of the templates (Fig. 3).

We now have a set of building jigs. The plan view of the block complete with stations should now be glued down on a straight board. The jigs are then glued upright in their appropriate position.

While the cement is drying cut several copies of the plan view of the block out of 1/32 sheet balsa. Make these a little broader than true as they are going to be bent over our jigs. Best results are obtained by using soft sheet, and having the grain running as nearly diagonally across the blades, alternating the direction as the width of the sheet will allow.

A glance at Fig. 4 should show what the result of our labours so far looks like. The upper surfaces of three of the balsa outlines should now be smeared with one of the less rapid drying cements such as "Britfix," leaving no part uncovered.

Put another lamination on top of these three and pin them hard down on the jigs. It is important that there be no space anywhere between any of the lamination, or the blade will be weakened at that point.

If a second blade is required it may be made in the same way as the first upon the same jig. While the second blade is setting the first may be sanded to shape, the top halves of the original card templates being used as checks on the upper surface. The same is done with the second blade. You now have two efficient and really identical airscrew blades.

They may now be slotted into a spinner or hub, and small fillets added for strength. Let us consider the advantages of laminating propellers by this method. First, of course, it is a great boon to those who cannot carve well. Secondly, when two blades are used, it is easy to make them absolutely identical and equally strong. Thirdly, it is easy and convenient to make a spare blade or two for emergencies. Lastly there is the very important matter of price.

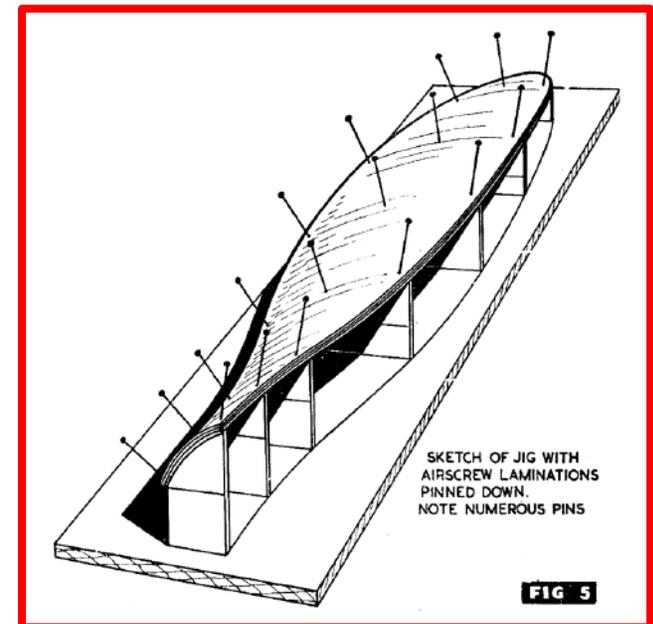
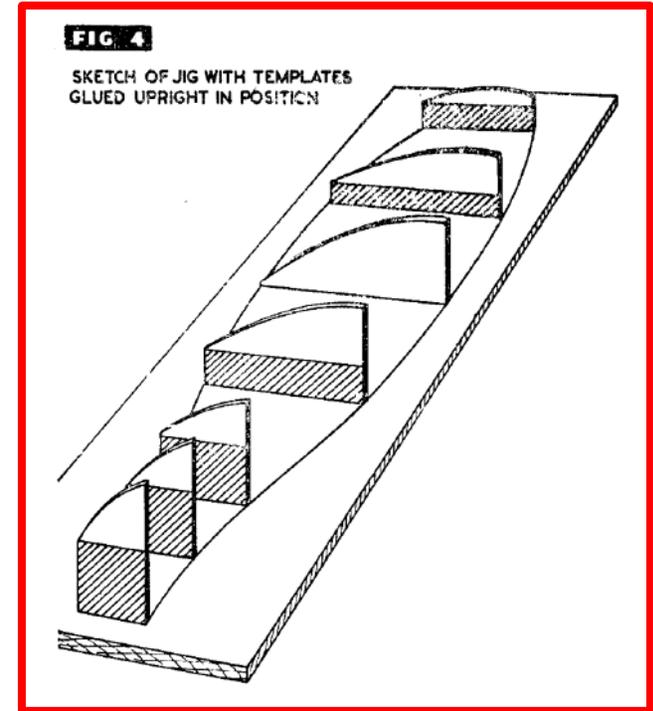
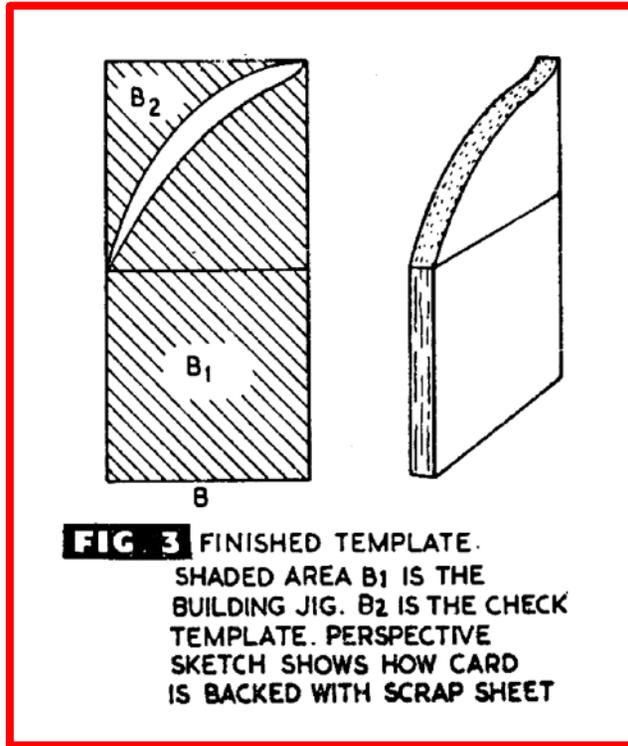
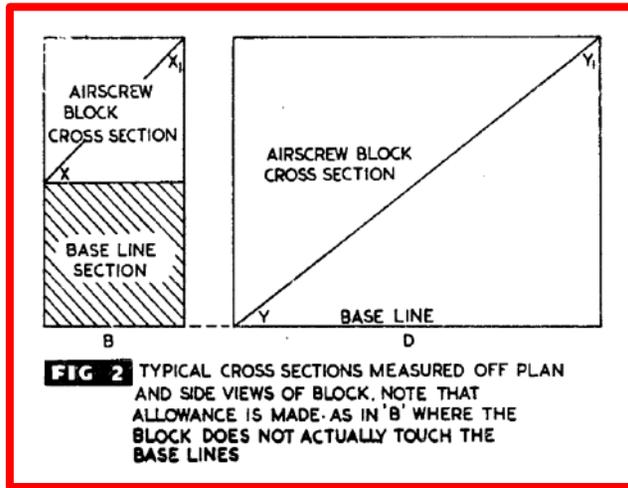
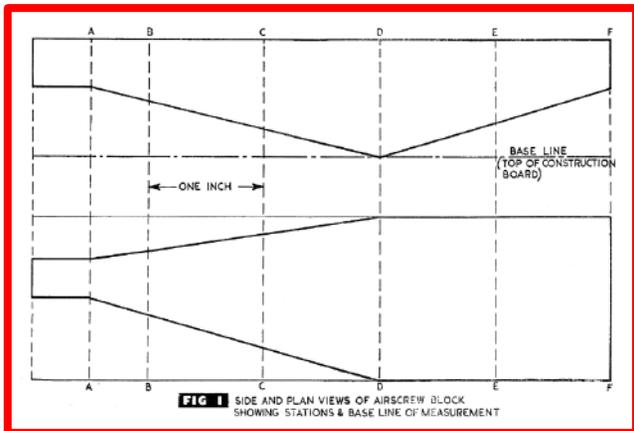
I usually build lightweights using single blade folders. This can be made from a single sheet of balsa, the hub being of scrap sheet and ply, or wire. Even a two bladed propeller of Wakefield size can be made of two sheets of balsa, so price is no obstacle.

Other advantages can be envisaged by the reader. For instance, the laminated blade is much more flexible and much stronger than the conventional type, and so an efficient blade shape can be retained much closer to the hub than on the ordinary propeller, much of which is aerodynamically useless.

Have I convinced you? Even in the matter of appearance, the laminated airscrews is attractive, the marking of the laminations lending it an unusual charm.

Why not laminate your next propeller then? You will not regret it. The success of my own can be testified by many modellers in the Merseyside area, and it was in fact their interest that prompted me to write this article.

A few words of advice in conclusion. Very soft balsa is quite strong enough once laminated, as well as being much easier to bend over the jig. Lastly, remember to cover every part of the lamination with cement and pin them down well, leaving them plenty of time to set.



**Back Issue**  
**MAGAZINE ARCHIVES**  
**from the Digitek Books Collection**

Here's the next in our series of monthly back issues of model airplane magazines available for download to subscribers.

This month's choice is the March 1975 issue of AMERICAN MODELER. This was the final issue of this series that even through several name changes was usually still fondly referred to as AIR TRAILS. The first issue using the name AIR TRAILS came out in February of 1937. Prior to that date the magazine was known as BILL BARNES AIR TRAILS and even earlier known as BILL BARNES AIR ADVENTURER.

Those early issues were predominately flying adventure stories with a bit of model building occasionally thrown in. It was in February of 1937 that more emphasis was given to modeling.

During the years of WWII the magazine emphasized military aircraft and models and had several other names. After the war the name returned as AIR TRAILS but then underwent several other name changes until the final identity of AMERICAN AIRCRAFT MODELER came about and remained until this last published issue.

To download the March 1975 issue of AMERICAN AIRCRAFT MODELER, click on the link below ---

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# THE B-A-C SUPER DRONE



Scale Model of Prewar  
Powered Glider by  
E.A. Fonteneau

From the August 1954 issue of  
the British magazine Model Aircraft.

The B.A.C. Super Drone is an ideal subject for a flying scale model. Many variations of the Drone were built ; the Super Drone being the most popular.

The basic design is a straight forward glider, but with the addition of a Douglas flat twin motorcycle engine it brought power flying within the reach of thousands of would be aviators. Running costs and maintenance were almost as low as that of a medium sized car.

The model is a fairly simple one to construct, the only difficulty likely to be encountered will be in the pylon and reference to the perspective sketch should clear up any difficulties.

## FUSELAGE

Cut out all formers and pylon parts accurately, build up the basic fuselage sides from 1/8" x 1/8".

Position formers F4 and F5 and complete with the remainder of the formers. Securely cement the wing tongue to the pylon former ensuring that it is square and 1/8" off centre to the mark shown.

Complete fuselage by adding undercarriage, tailwheel, sheeting and finally the noseblock. It is important wheels with soft tires as this is the only form of springing used in the undercarriage. Fill the pylon in with scrap sheet. Pre-cement all joints on the pylon assembly.

## WINGS

The two wing panels are built as shown on the plan. This form of construction makes for a very rigid and warp resisting wing. False ailerons are added for realism. Ensure that both wings have the same dihedral angle when fitted on the tongues. You can correct small discrepancies by shortening or lengthening the wing struts.

## TAILPLANE, FIN & RUDDER

These are made in separate units, the solid parts being cut from 3/16" sheet. This represents the plywood covered portion on the full size machine. The moveable portions are constructed and sanded to the section shown. Cement the 1/16" x 1/16" members centrally in the main frame so that they do not stick to the covering.

## FINISHING

The original model was finished in accordance with the most popular scheme which was plain wood varnished. It is rather unusual and can be very attractive.

Sand all components well before covering and give a thin coat of dope all over, finally sanding lightly again. Give all sheet parts, i.e. fuselage, wing struts, leading edges of wings, tailplane and fin, several coats of grain filler, sanding between each coat. It is worthwhile to spend a little time on this job as it pays dividends when the whole model is completed.

Having covered all the necessary parts with tissue, give 3 coats of dope, the last coat being plasticized with castor oil.

The registration letters can now be added in brown dope, G-ADPJ is an authentic registration.

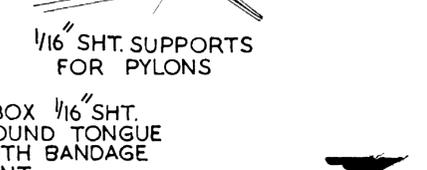
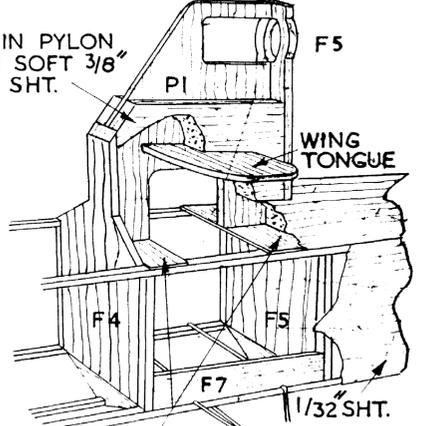
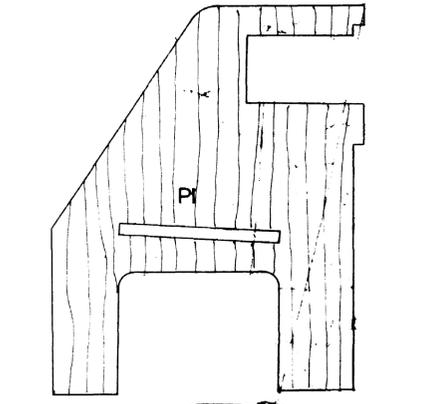
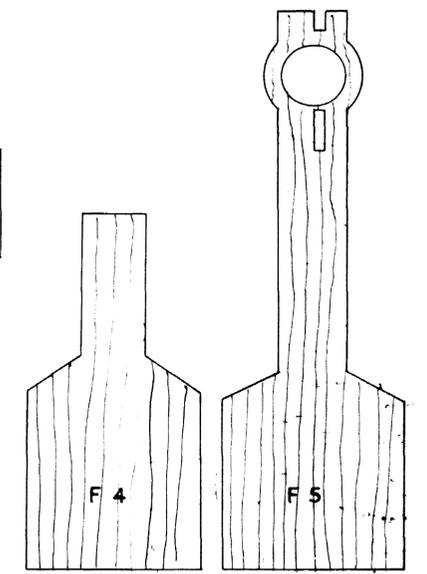
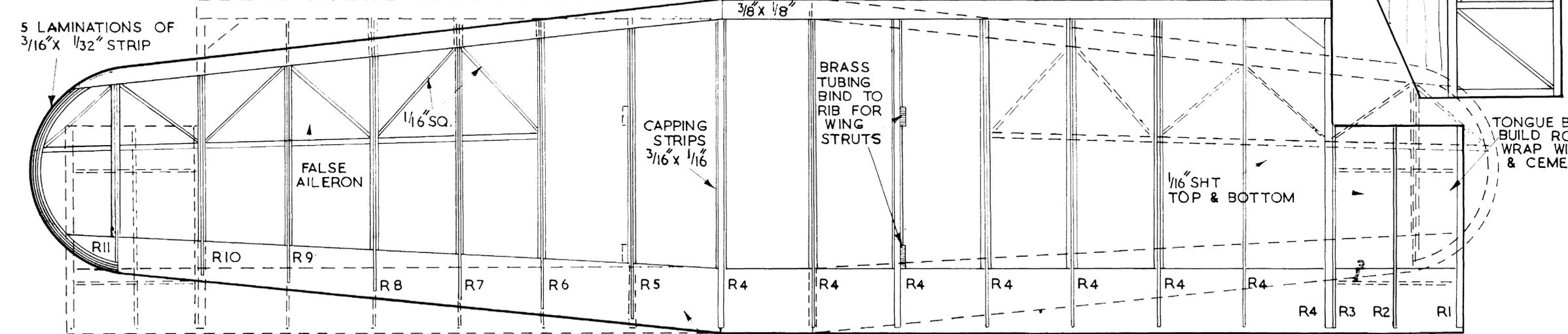
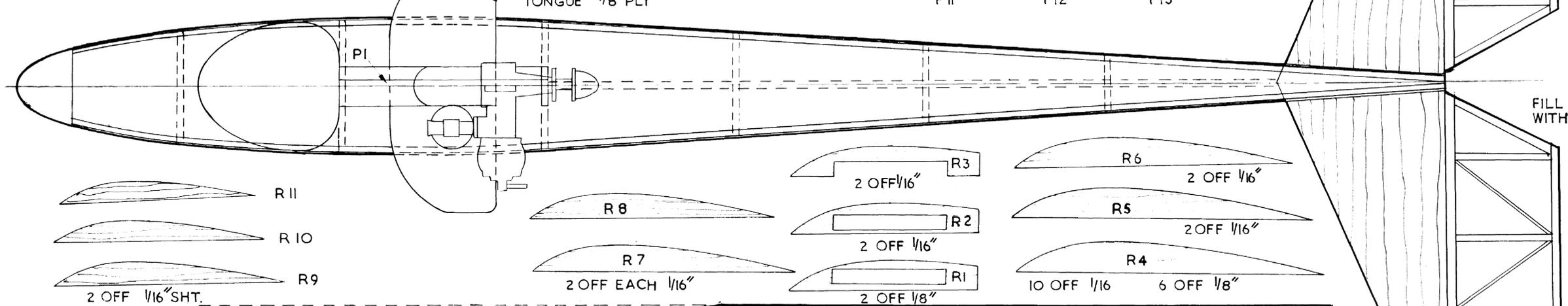
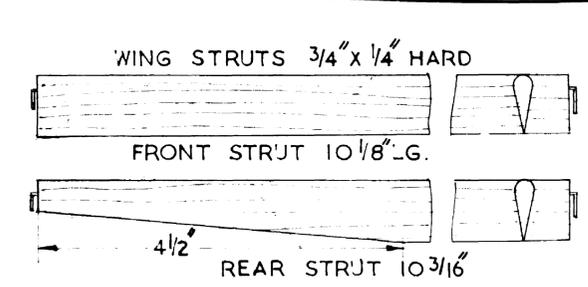
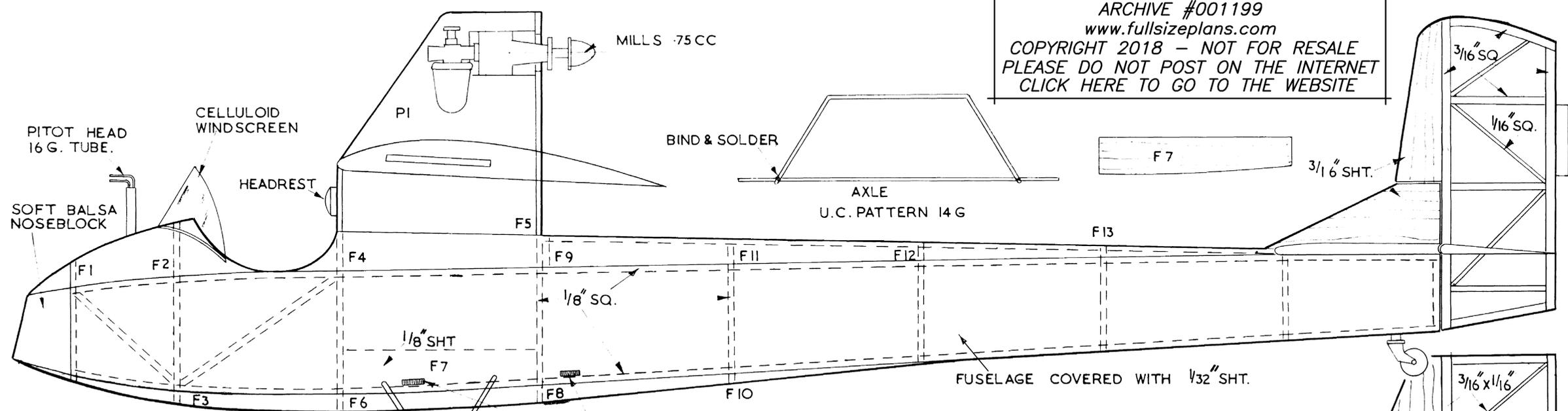
Wing struts should also be painted brown, as also should the centre of the wheels and undercarriage. A small section of the pylon above the wing tongues and a 1/2" behind the front of the pylon should be painted silver.

Finally, the tail unit may be attached to the fuselage pre-cementing first. The whole should now be given a coat of banana-oil, to represent the varnish.

Being a pusher this model is easy on propellers so carve yourself a left-hand prop from hardwood unless you use a Mills .75, in which case you can run the engine backwards using a standard prop round the other way.

Balance at the point shown by adding weight to the nose. It is important to keep the weight located low down and a heavy pair of wheels will help.

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2" DIHEDRAL  
1/16" SHT. LAID ON PLAN & JOINED BY CAP STRIP TO T.E.. RIBS LAID ON & TOP SHEETING FOR L.E..

**B.A.C. SUPER DRONE**  
E.A. FONTENEAU  
MA 193 SPAN 54 LENGTH 29 5/-  
COPYRIGHT MODEL AIRCRAFT  
19-20 NOEL ST. LONDON W1

# Printing Plans

## by Roland Friestad

We get questions about printing out the full size PDF files of the plans included in every issue of RCMW and will try to answer the typical questions here.

First, what do the numbers in the upper right corner of each plan mean? That's an easy one --- Those numbers represent the dimensions in inches to the OUTSIDE of the border when the plan is printed at 100% scale.

This makes it really easy to check whether the printed plan is the correct size. You do have to allow an approximately plus or minus 1% deviation which is a standard tolerance used by most of the plotter/printer manufacturers. If you are having your local office supply store or copy shop doing the printing, just bring your handy tape measure along with you for checking purposes.

Most of the local office supply stores and copy shops, at least in the USA, have large format printer/plotters that can take 36 inch wide rolls of paper and can print any reasonable length, usually up to 100 or 120 inches. So we try to keep all of the plans in RCMW so that they will fit this common maximum width of paper.

If you take the selected issue of RCMW containing the plan you want printed and ask the copy shop to print whichever page or pages you wish at 100% you will get your plans in a few minutes.

If you are working from a digital magazine like RCMW, the operator should bring up the desired page on the screen, select "Print" and there will be a selection named "Print Current Page" or "Print Selected Pages" There should also be a selection for size which should be at 100%

Be sure you check that the size is correct and have it corrected if not. Normally they can go up or down in 1% increments. You shouldn't be made to pay for prints that are not correctly sized. Be sure that the supplier knows that you want the dimensions to be as shown in the upper right corner of the plan.

Speaking of payment, costs should range from about 75 cents to a dollar per square foot. If you don't have a source for prints nearby many folks who make large prints can accept files sent over the internet. In that case of an issue of RCMW, you will need to send the entire issue and just send the instructions separately.

Suppliers who accept files over the internet can also mail the completed prints to you. You should expect to pay about \$6.00 to \$10.00, depending upon location and weight, to have the print sent rolled in one of those long triangular boxes available free at your local post office. Drawings sent folded in a flat rate Priority Mail Envelope will cost about \$6.00 for delivery anywhere in the USA. Mailing and printing costs in other countries may vary, sometimes quite a lot.

Some suppliers are able to print plans wider than 36 inches but printers that can do this are not as common. I've included some names of a few suppliers here. More names will be added to the list if you send them to us.

## Sources for Printing Plans

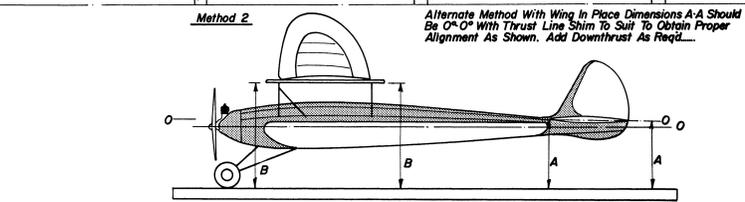
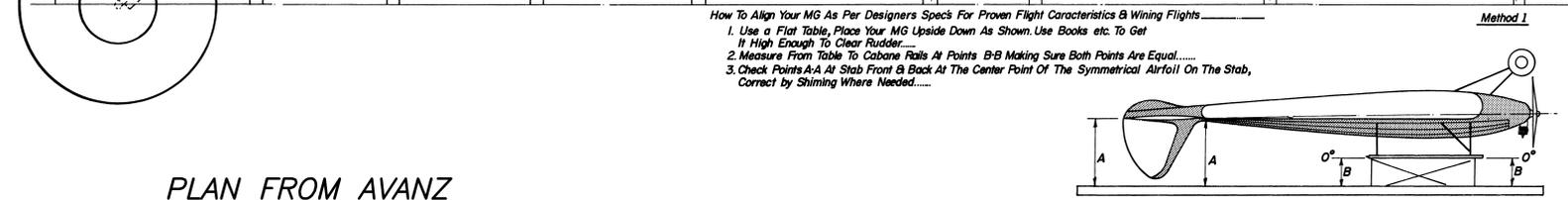
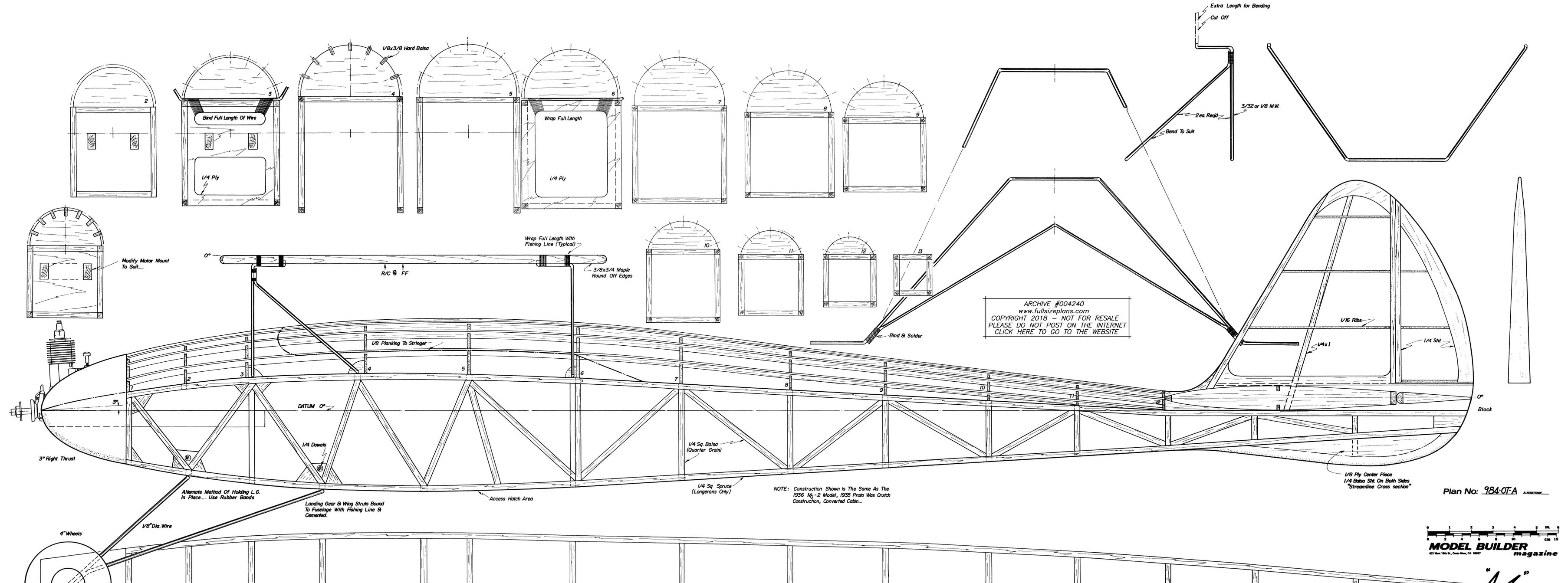
Greg Flores - Flores Printers  
541 Lincoln Street - Galesburg, IL 61401  
Phone 309-341-2477  
E-Mail - floresprinters@comcast.net  
48 inches wide - any length - \$1.00 per sq. ft.

Derick Scott  
81 Low Lane  
Torrisholme, Morecambe LA4 6PR  
ENGLAND  
E-Mail - modelplans@talktalk.net  
44 inches wide - any length

Allen Heinrich - Aerodyne  
4184 South Roberts Road  
Fort Mojave, AZ 86426-6330  
Phone - 928-219-4590  
AerodyneAI@aol.com  
36 inches wide - any length - \$1.00 per sq. ft.

STAPLES - Find A Store  
Go To - [www.staples.com](http://www.staples.com)  
Click on SEARCH - Enter "store"  
Enter your ZIP Code

Send us your other sources and we will publish them in these spaces  
Send to - [cardinal.eng@grics.net](mailto:cardinal.eng@grics.net)  
Note - Prices may change  
Check on payment methods & postage cost  
Provide full contact information  
We have no financial interest in these suppliers



Digitally cleaned by Mphisto

<b>AIRFOILS</b> CLARK "Y" EFFEL - 431 neg. trailing edge EFFEL - 431 neg. tips, 400 neg. tips SYMMETRICAL Stab Lifting Airfoil Stab	<b>SPECS</b> SPAN 9'6" LENGTH 5'6 1/2" CHORD 14"
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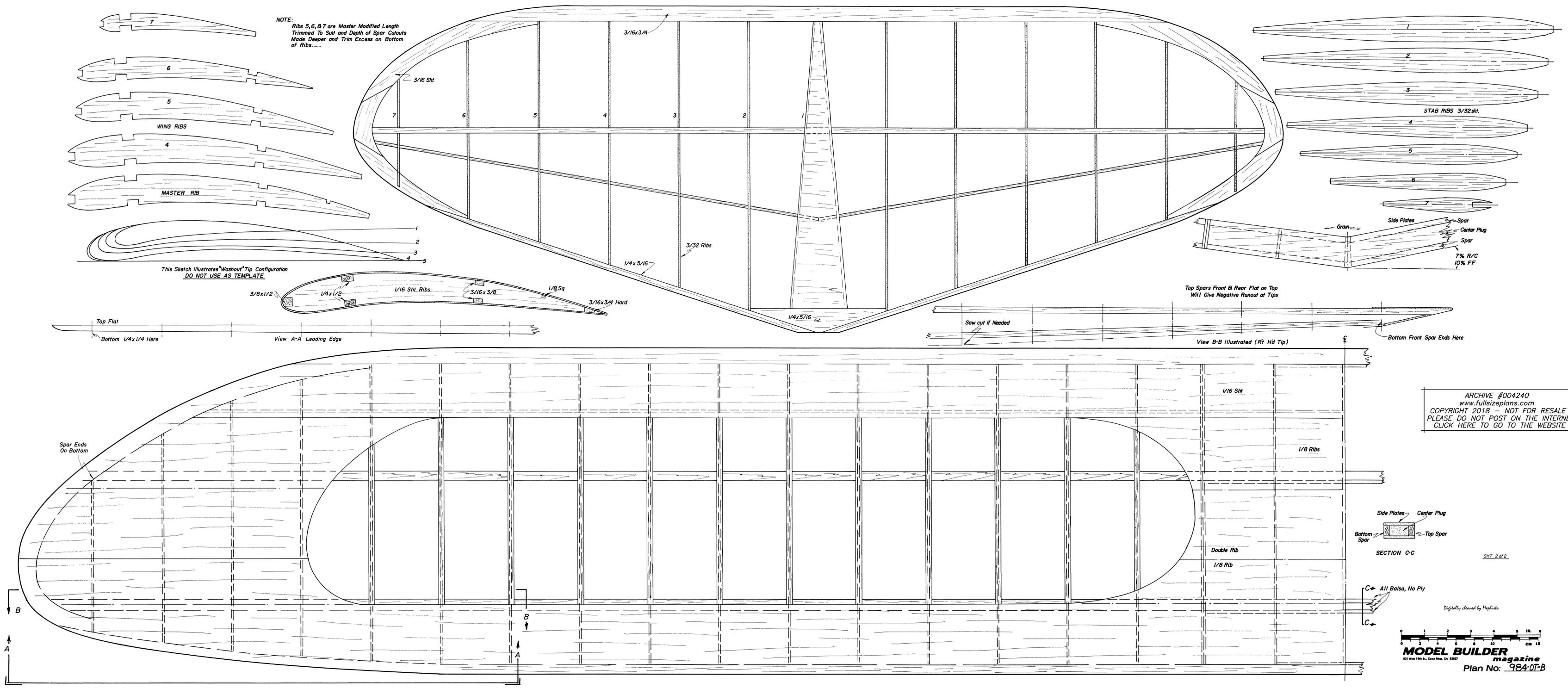
Designed & Built by  
*Mike Gianini*

SHEET 1 of 2

PLAN FROM AVANZ

Plan No: 984-07A





PLAN PROVIDED BY AVANZ

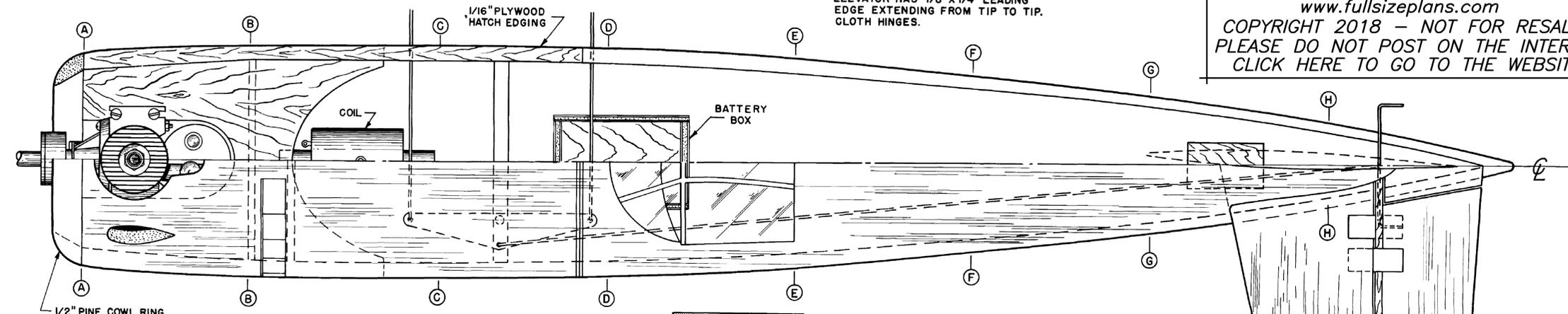
PLAN DONATED BY CHARLIE BRUCE

NOTE:-  
TAIL SURFACES 1/4" SHEET Balsa.  
ELEVATOR HAS 1/8"x1/4" LEADING  
EDGE EXTENDING FROM TIP TO TIP.  
CLOTH HINGES.

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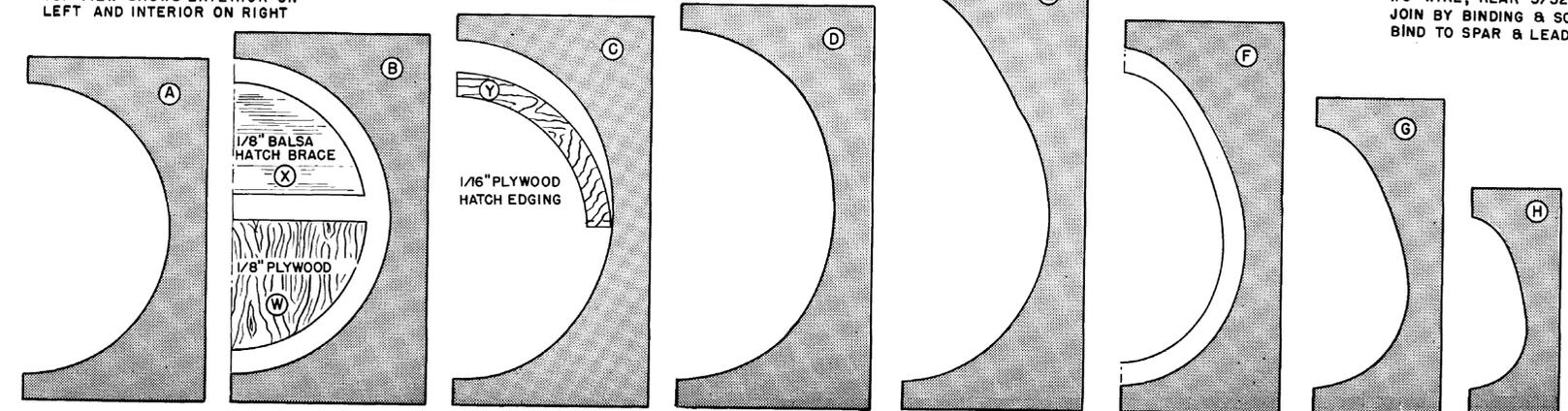
# CORSAIR

Designed and drawn by EARL STAHL  
MAGAZINE PLAN SERVICE CO.



1/2" PINE COWL RING  
TOP VIEW SHOWS EXTERIOR ON  
LEFT AND INTERIOR ON RIGHT

### FUSELAGE TEMPLATES



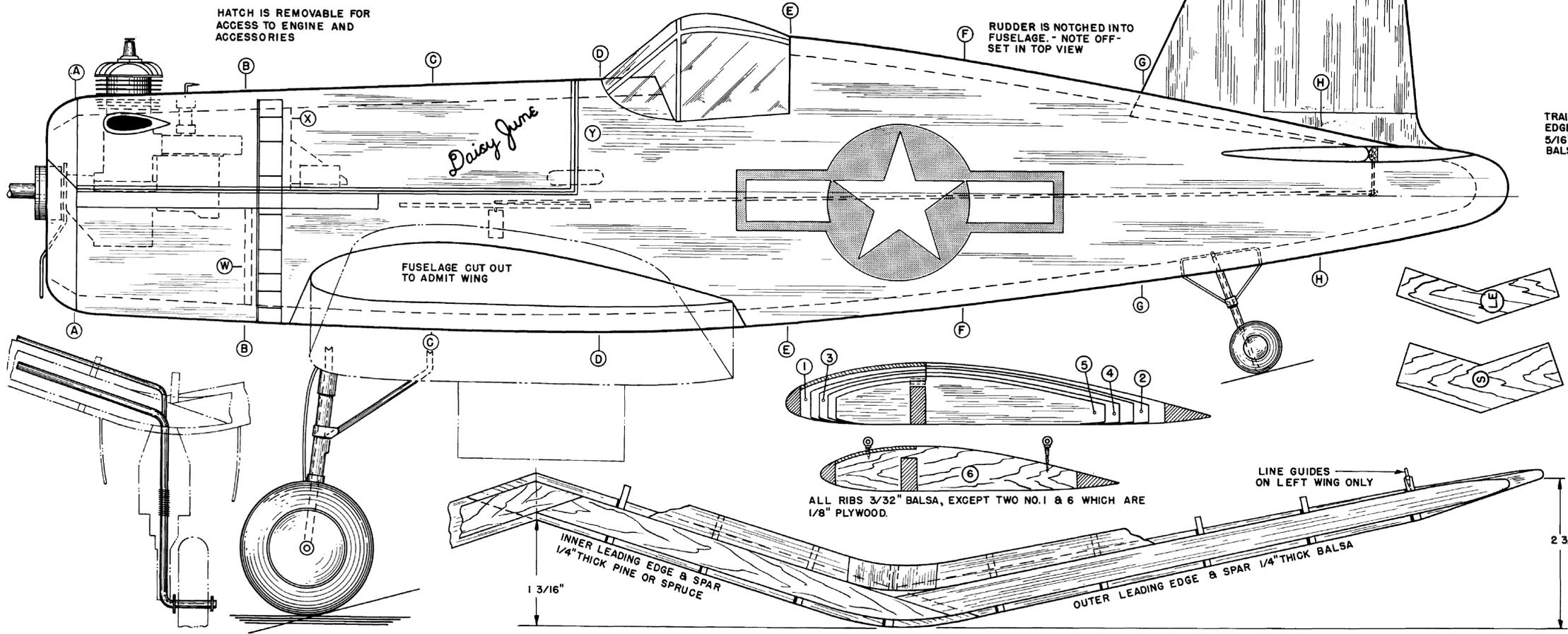
FRONT LANDING STRUTS  
1/8" WIRE, REAR 3/32".  
JOIN BY BINDING & SOLDERING.  
BIND TO SPAR & LEADING EDGE

HATCH IS REMOVABLE FOR  
ACCESS TO ENGINE AND  
ACCESSORIES

RUDDER IS NOTCHED INTO  
FUSELAGE. - NOTE OFF-  
SET IN TOP VIEW

WING PLAN VIEW SHOWN  
WITHOUT DIHEDRAL.  
SEE TEXT FOR CONSTR.  
SUGGESTIONS

ANY CLASS "B" OR "C"  
ENGINE MAY BE INSTALLED



TRAILING  
EDGE  
5/16"x3/4"  
Balsa

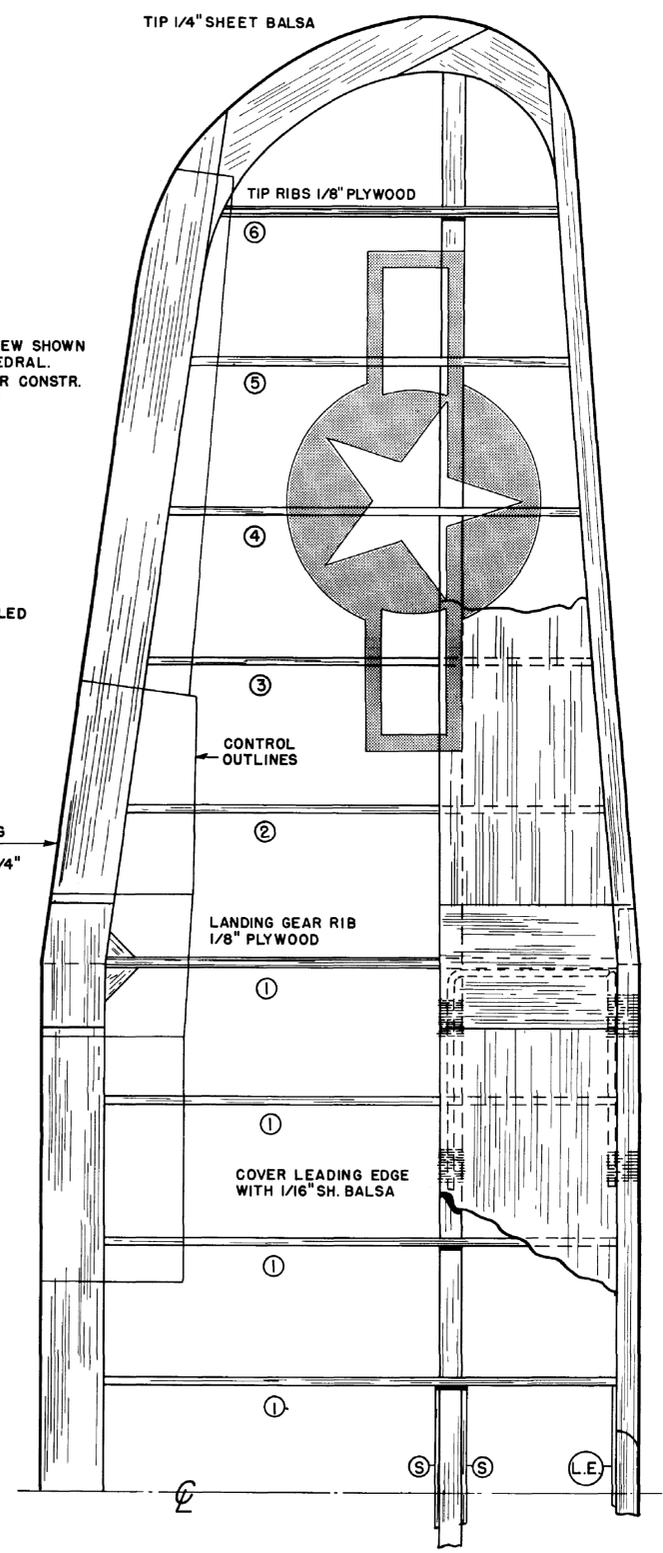
ALL RIBS 3/32" Balsa, EXCEPT TWO NO. 1 & 6 WHICH ARE  
1/8" PLYWOOD.

INNER LEADING EDGE & SPAR  
1/4" THICK PINE OR SPRUCE  
1 3/16"

LINE GUIDES  
ON LEFT WING ONLY

OUTER LEADING EDGE & SPAR 1/4" THICK Balsa

2 3/8"



TIP 1/4" SHEET Balsa

TIP RIBS 1/8" PLYWOOD

CONTROL  
OUTLINES

LANDING GEAR RIB  
1/8" PLYWOOD

COVER LEADING EDGE  
WITH 1/16" SH. Balsa

# New Catalog Notes by Roland Friestad

Regular readers know that a catalog of DigitekBooks collections of back issues of many model magazines has usually appeared on the back pages of RCMW.

The last issue of the magazine had a new version of the catalog and was intended to make it easier to place orders.

I've always heard those old sayings about "The best laid plans of mice and men....." and also the one about "The road to Hell is paved with good intentions"

Well, the new catalog looked good but the order blank that was intended to make it easier to order had a problem and didn't work as properly.

Sorry about that -- The new catalog is being fixed but isn't yet ready for this issue. So you will have to wait another month or so until we are sure that it works the way we would like.

Along with the new catalog there will be many more selections from which to choose. We are in the process of digitizing several hundred specialized books to be included.

Some are from my personal archives and some are donations from other modelers who are interested in having their collections preserved and have donated or loaned them to us for digitizing.

I have been collecting model airplane, light aircraft, engineering, and machine shop books and publications for over 50 years now and am attempting to put as much of this as possible into digital files.

This started over 25 years ago when digital preservation of records was in it's infancy, at least at costs that were affordable. The availability of better scanning equipment and software to handle the files has also helped a great deal.

But even more important and what makes this feasible is the development of methods of storing massive amounts of digital data on inexpensive hard disks and USB Flash Drives.

When you consider that the over 430 complete issues of a magazine like AIR TRAILS can easily be stored on a USB Flash Drive the size of a credit card, it is even more remarkable because those same 430 issues would have required 240 CDs or 35 DVDs.

We currently have over 300 books that are being digitized and that will eventually appear in our new catalog (when the "bugs" are fixed). We also welcome donations of additional books to be added.

This does not include the several thousands of issues of magazines that have already been digitized and are available or will be soon.

If you would like to share your own collections with other like-minded modelers or hobby machinists, please feel free to contact me for more information. All donations will have a page added to each publication giving credit to the donor for sharing with others.

I am often asked about copyrights. Most of the publications are either out of print, copyrights have expired, have never been registered, or we have permission to use them. If a copyright holder objects to our making these publications available and provides documentation to support the claim of copyright then we will remove the item from our catalog or, if possible, obtain permission to use it.

Whenever possible we will identify the source of our catalog entries, unlike many who just put them up on the internet as though they were their own work, which is an example of questionable ethics.

You will notice that we have been publishing the links to download selected magazines, books and even movies in recent issues of RCMW as a convenience to our subscribers. This will continue but when the new catalog is completed and online a much larger selection will be available.

When I started this preservation and archiving project I felt that I could record everything. How wrong I was ! But with the help of other people donating and supporting the effort we're making a serious dent in it. And at my age, currently 77, when I go on that final thermal, there will be something left for future modelers and hobbyists.