

# RCMW-FSP

June 2016



Cover Art by Harold Stevenson  
From March 1959 American Modeler

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## **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.

Subscriptions are \$24 for a full year of 12 issues and you can also download the previous 11 issues on a rotating basis if you wish.

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Roland Friestad  
1640 N Kellogg Street  
Galesburg, IL 61401  
USA

# For the Model Bulder and Flyer - June 2016 Issue



Full  
Size  
Plans



This issue has some unusual models for your enjoyment. You might even be inspired to get out the balsa and glue. All the plans are from our archives but in the next couple of issues we have some new designs coming “down the pike” as they say in Pennsylvania.

The ELECTRO MITE may be one of the first successful electric powered Free Flight models published. It’s about Half-A size and is by Paul Del Gatto. It appeared in the December 1960 issue of American Modeler. New electric motors, dethermalizers and batteries could make this a high performer.

The next two plans were part of a package designed and sold by Paul Plecan back around 1980. First was a rubber powered scale model of the TURBO PORTER. With it’s high aspect wing and light construction it could put up some really respectable times for a scale model. The second plan in the package is an Old Timer, the TORNADO II, an update of the April 1946 design from Model Airplane News.

Bob Aberle is working on a Micro RC version of his original SEAWEEED RC floatplane. Photos of the Micro SEAWEEED under construction are in this issue and plans will be in the July or August issue, depending upon when Bob gets everything ready. In the meantime, we have included the plans for the original SEAWEEED that originally appeared in the March 1975 issue of Flying Models

Speaking of the March 1975 Flying Models, we have included that issue as our monthly full issue download this time. That allows you to also

have the construction article for the original SEAWEEED as well as a lot of other neat stuff. Just click the link on page 14.

The ARISTOCRAT plan included in this issue is just one of a series of Flyline Kits, now out of production. Most of the Flyline kits were designed by Col Hurst Bowers. We have more in the archives and you will see them in subsequent issues.

The X-AC-5 is a very unusual unsymmetrical FF model by Fisher. It looks like it would be tricky to fly but the author swears it is very stable. This one would get a lot of attention at the flying field.

Joe Wagner updated the Veco COMANCHE FF into a PAA load model and the plan is included here. I think Bob Aberle is working on an RC version of this one too. Watch for it.

Last, but not least, is the TYRO TRAINER a biplane UC Speed model by Walt Musciano that appeared in the July 1948 issue of Aeromodeller. Musciano is best known for his long series of Scale UC designs and this is a departure from his regular offerings.

My project of digitizing the earliest issues of Aeromodeller is coming along, thanks to Tahn Stowe of Australia who is allowing the use of his late Father’s collection. These are pretty rare and hard to find and it will be good to have them preserved for the future. See the brochure in this issue.

Keep ‘em Flying,  
Roland Friestad, Editor

# Coming Attractions & Request For Help

## COMING ATTRACTION

As mentioned elsewhere in this issue, Bob Aberle is working on a Micro RC version of his RC floatplane SEAWEEED. We will have it in either the July or August issue of RCMW, depending upon when it is completed and test flown. There are some photos of it under construction on page 11. In the meantime we have included the full size plans of the original SEAWEEED and our monthly magazine download features the Flying Models issue in which the original design appeared.

**Send Plans and Questions to  
Roland Friestad, Editor  
RCMW  
1640 N Kellogg Street  
Galesburg, IL 61401  
E-Mail - cardinal.eng@grics.net**

## WE'RE LOOKING FOR PLANS

Starting in the middle to late 1940's model magazine like Air Trails, Flying Models, Model Airplane News, Aeromodeller and others began selling full size printed plans of model designs that appeared in their respective issues. Prices were reasonable at 25 to 50 cents which usually included postage.

I know that I purchased quite a few of those plans thinking I would like to build certain models, but after looking the plans over, many of them were just folded back up and stashed away for the future.

Now, more than 60 years later, I am trying to put together a complete collection of those plans in order to respond to requests from subscribers. Many of our readers recall a favorite model built in the past and would like plans so they can build again one of the models they enjoyed years ago.

We have a lot of plans but there were a lot more published and we need to have a complete collection. So if any of our readers have old plans stashed away and would be willing to share them with our other subscribers, we would like to hear from you.

Go through those stacks of old plans and send them in to RCMW. We will digitize them and make them available FREE to subscribers as PDF files. All digital plans will have the name of the contributor included on the plan to recognize your contribution to preserving our model airplane building heritage.

**Use the address on this page**

## YOU CAN HELP HERE

Another area where we get requests are for sources to have plans printed.

We usually suggest that your local office supply store or copy shop such as Staples can print PDF files to any reasonable size and at reasonable cost. Many folks don't have a local Staples or other similar store nearby.

For those of you who know of other places to get plans printed, please send us their names and contact information. We will put together a listing of printing sources and have it available in our Frequently Asked Questions (FAQ) area on the website menu.

## YOU CAN HELP HERE TOO

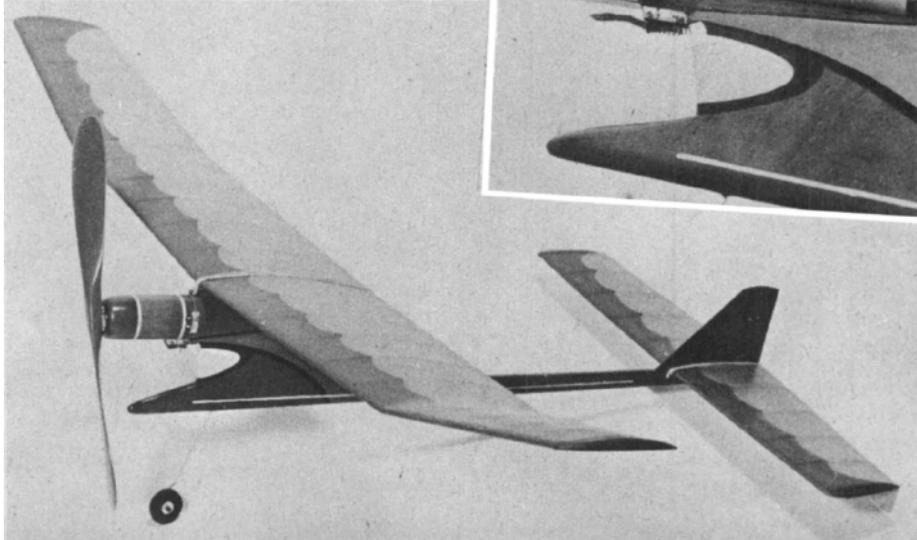
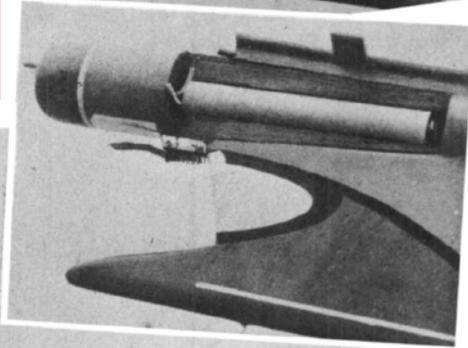
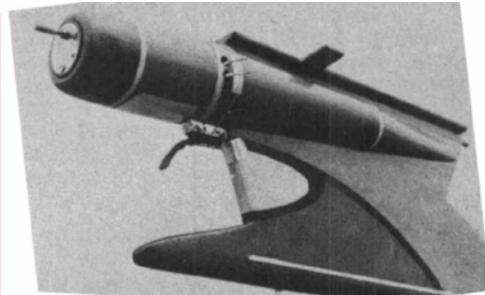
As more and more suppliers add laser cutters to their capabilities it would be a good resource for our subscribers to have a list of laser cutting services.

RCMW can email plan files directly to any laser cutting service. Just let us know which plans you need to have cut and we will forward the PDF file to them by email at no charge.

We will also keep a list of kit cutting services whether using a laser or some other method of making parts. This list will also be available by clicking the FAQ selection on our menu. Help your fellow modelers by telling them where to get their parts cut.

# ELECTRO - MITE

In the December 1960 issue of American Modeler, Paul Del Gatto showed the results of his experiments with electric powered free flight models. Things have sure come a long way. You could probably install an RC unit and Lithium batteries for less weight than the pen cells he used. Why not try it?



For some time we have been exploring the possibilities of a new type powerplant for model aircraft . . . electric motors. Based on the improvements made in lightweight motors during the last two years, there is no doubt that electric power for model airplanes is here . . . and to stay.

To say that airborne electric motors compare favorably with hot glo-plug engines is like comparing an old G.H.Q. with a Taplin Twin. However, the foundation has been laid. Forthcoming developments in electric power are certain to make it more attractive to more model builders and more widespread its application.

Electric power offers the advantages of instantaneous starting, quiet running and no fuel proofing problems with your plane. Suitable batteries are fast becoming commonplace. We have used all types and all the well known brands including Burgess, Eveready and Mallory.

The batteries we have been most successful with are the miniature pen cells made for hearing aids, these are available at a very small cost. Now released by Union Carbide are the new Eveready "Energizer" high capacity pen cells, also well suited to our needs.

To use the electric motor successfully for free-flight, your model must have a very light wing loading and be large enough to take a 10" to 12" diameter low pitch propeller turning at the motor's maximum operating rpm. It took much experimenting before we were able to develop an efficient combination of prop, plane and power.

Our model looks not unlike a competition free flight type built for today's hi-powered glo-engines. One design aim was to eliminate the long (heavier) landing gear a low thrust line set-up needs—hence the up-high power pod. Striving for the simplicity of a profile body and the lighter weight of a built-up frame, we combined both to give you a built-up profile fuselage.

We wanted the wing and tail to be light in weight and sturdy. This resulted in rib cap-strips, except at dihedral breaks, instead of the usual sheet balsa ribs. We find this method not only lighter, but quite simple to build.

**CONSTRUCTION:** Begin fuselage assembly by cutting the required pieces for both fuselage sides. Cement them together. Nacelle sides and cowl are completed after basic fuselage profile has been made.

Pin one fuselage side to a flat board, cement the proper longerons and diagonals to it. When thoroughly dry, remove pins and excess cement, then add 3/16" sheet fill-in where specified.

Landing gear strut is bent from .049" diameter wire, then recessed into nose fill-in and cemented securely in position. Pin remaining fuselage side to the longerons and diagonals, permit glue on structure to dry completely.

The battery cut-out takes two pen cells or three hearing aid batteries. (If you decide on a different arrangement, vary cut-out to suit your set-up.)

Cement nacelle formers in position, add 1/16" sheet nacelle sides. Use soft pliable balsa for this; steam it to approximate curvature before cementing in place.

The left side of the nacelle is cut open at the former positions for access to the batteries. Motor cowl is shaped from soft balsa, then hollowed for the motor. Complete remaining fuselage details such as wing and stab mounts.

Begin wing assembly by cutting the few sheet balsa parts required . . . the spar, dihedral gussets and joint ribs.

Pin leading and trailing edge of one panel down on a flat board, cement. 1/8" square rib bottoms in position. Then cement the required section of the wing spar in place. Follow same procedure to complete the remaining wing panels.

To join wing panels together, first bevel all the joining edges. Then pin and cement dihedral gusset to wing spar and prop up ends of joining panels until assembly has dried. When wing has been completely assembled, add all top rib capstrips and wingtips.

Construction of the stab is similar, except there is no dihedral. The fin and sub-rudders are cut and smooth-sanded from 1/16" sheet. These are more easily cemented in position after the covering process.

Next we carve the propeller. It is not a difficult task if the procedure in the sketch is followed.

Once you have the prop block cut to the "blank outline" remove the sections keyed, in the order shown. The remainder of the job is the most important: shaping the blades to get that familiar twist.

If you're in doubt as to how to proceed, study any commercial propeller and let that be our guide. A small set-screw is used to secure the propeller on the motor hub.

**COVERING AND FINISH:** Only the wing and stab require covering. Apply covering over one panel at a time, beginning with the top of one panel. Use a 50-50 mixture of dope and cement—apply this adhesive only to the leading and trailing edge and dihedral joint ribs. Use a single edge razor to trim away the excess paper after covering each section.

When the wing and stab have been covered, lightly spray the surfaces with water to remove wrinkles from paper and pull covering tight. Then smooth-sand the completed fuselage assembly and prop, and apply at least two coats of clear dope throughout.

If you prefer some color on the sheet balsa parts, as we do, then mix the dope with an aniline dye. This will add color without the added weight of pigmented dope.



The engine cut-off is very simple, being fundamentally a fuse-operated arrangement. The wire leads from the engine are normally free.

To start the engine, a rubber band is placed over them and they are held in place against a small contact plate from which the battery leads run back to the batteries.

As soon as this contact is made, the engine starts to run, and in a like manner, when the "timer" fuse burns through the rubber band, the leads pop away from the metal plate, breaking the contact, and the engine stops immediately.

**FLYING:** These electric models, at best, are calm weather flyers, so do not attempt operations in gusty conditions. Begin testing by trimming the model for a glide. Our model proved to a whisker on the nose heavy side, but a slight bit of increase in wing incidence remedied this.

If your total battery weight exceeds 1-1/2 oz., then be sure to locate them a little more rearward. A total battery weight of more than 2 oz. is not recommended, and should not be necessary. Use about a fifteen second fuse for your first power flights, so that you can observe trim requirements under power.

It is not likely that you will require thrust adjustments, since power is limited and the model climbs very slowly.

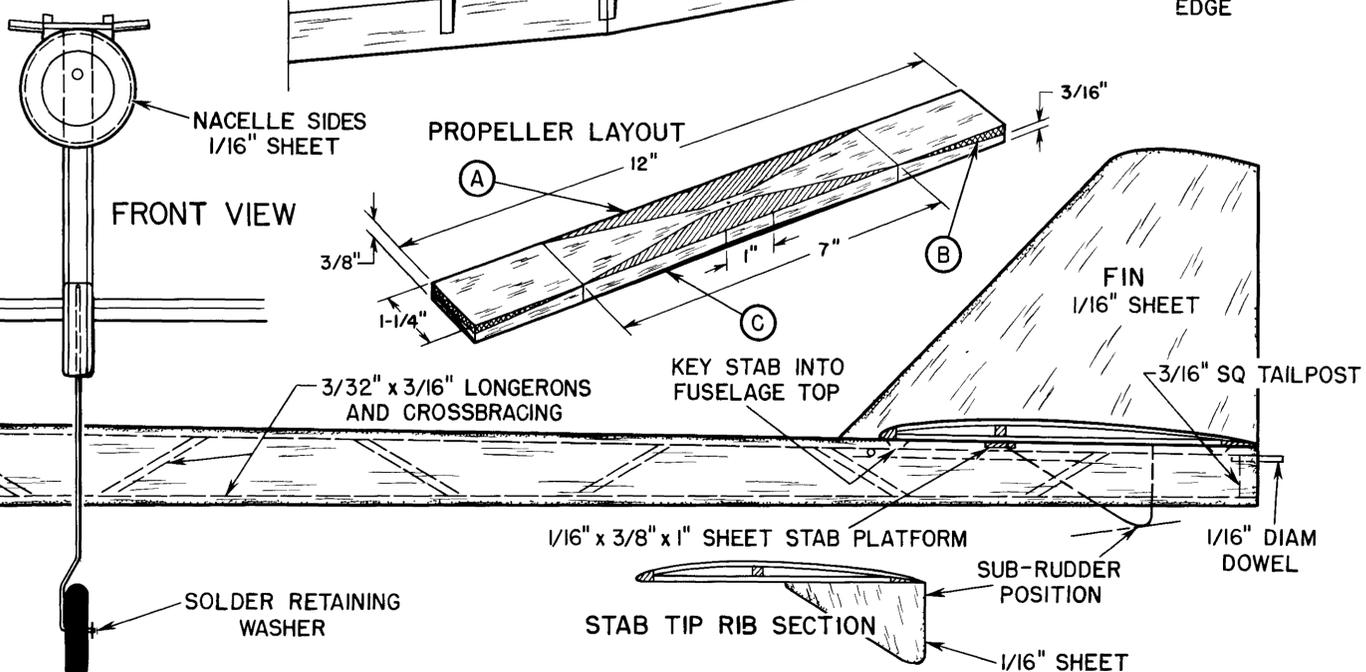
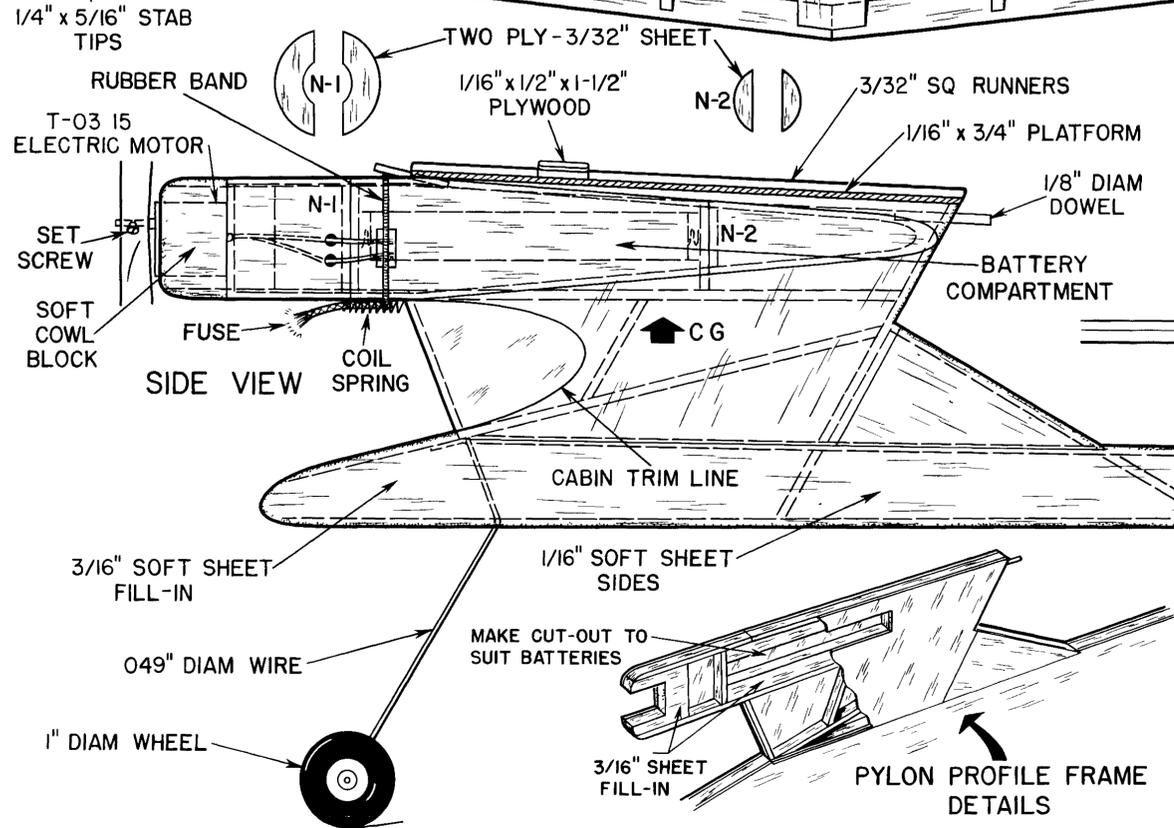
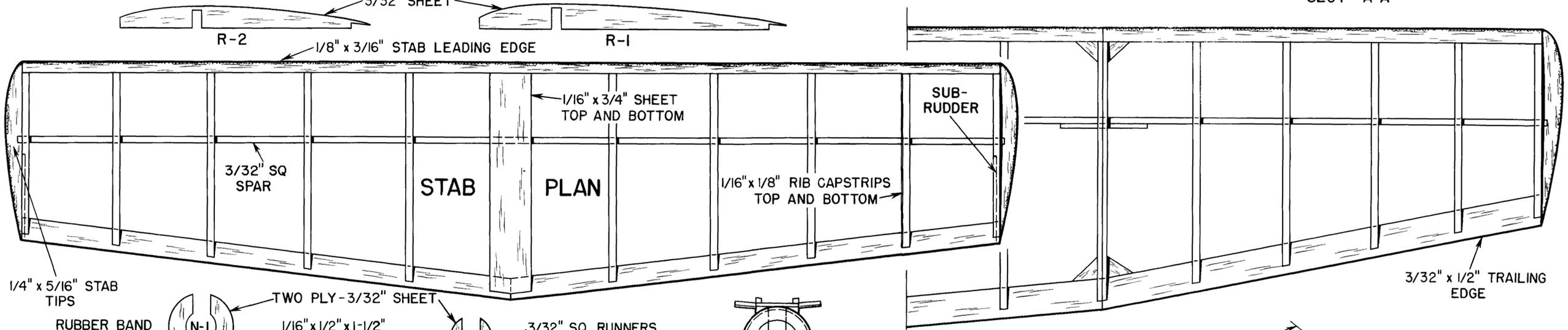
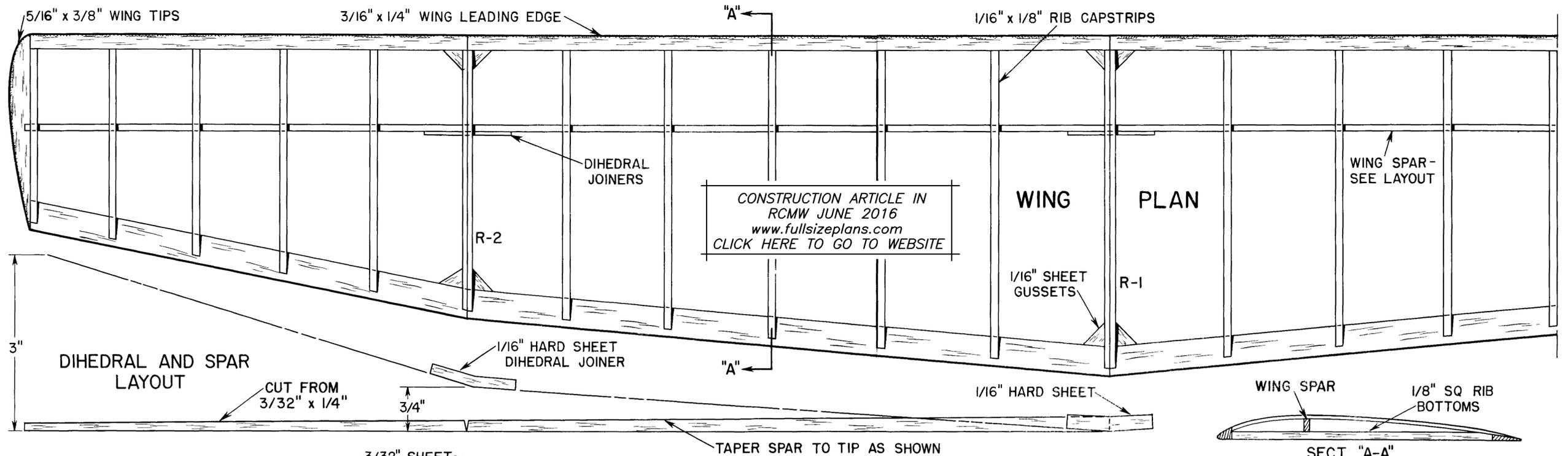
Once you feel satisfied that the model is suitably trimmed, increase the motor run to 20 seconds or more, depending on your flying field facilities.

#### Electro-Mite Bill of Materials (Balsa unless otherwise specified)

- (4) 1/16 x 1/8 x 36 (med.): Wing and stab top capstrips; stab bottom capstrips.
- (2) 1/8 x 1/8 x 36 (med.): Wing bottom capstrips.
- (1) 3/32 x 3/32 s 36 (hard): Stab spar and wing runners.
- (4) 3/32 x 3/16 x 36 (med.): Fuselage longerons and crossbracing.
- (1) 1/8 x 3/16 x 18 (med.): Stab leading edge.
- (2) 3/16 x 1/4 x 21 (med.): Wing leading edge.
- (2) 3/32 x 1/4 x 21 (hard): Wing spar.
- (1) 1/16 x 3/8 x 18 (med.): Stab trailing edge.
- (2) 3/32 x 1/2 x 21 (med.): Wing trailing edge.
- (1) 3/32 x 2 x 12 (med.): Dihedral wing ribs and nacelle formers.

- (1) 1/16 x 3 x 18 (soft): Nacelle and cabin area.
- (1) 1/16 x 3 x 36 (med.): Main fuselage sides; wing platform; stab centersection and fin assembly.
- 1/8" diameter dowel;
- 1/16" diameter dowel;
- 5/16" sheet;
- soft scrap blocks;
- 1/16' plywood;
- light weight Silkspan or tissue covering;
- 3/8" x 1-1/4" x 12" medium balsa prop block;
- 3/16" sheet balsa;
- .049" diameter wire;
- T-03:15 electric motor;
- 3 to 4.5 volt pen cells or hearing aid batteries;
- cement; clear dope; colored dope trim;
- 1" diameter wheel.





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**ELECTRO-MITE**  
 DESIGN BY PAUL DEL GATTO  
 AMERICAN MODELER DEC 1960

NOTE USE Balsa UNLESS OTHERWISE SPECIFIED.

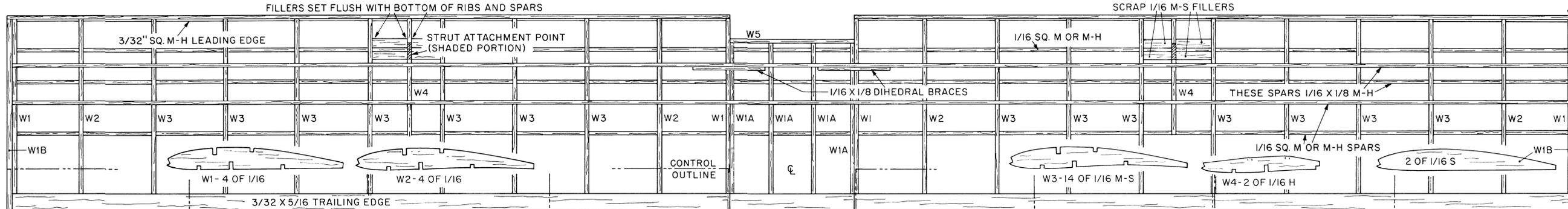
SHEET ONE

DOUBLE-PAN PACKET NO.1

COWL (AFT SECTION) COVERING 1/16 (SOFT, FLEXIBLE BALSAs)

DOTTED AREA CAN BE MADE OVERSIZE (SANDED TO FIT)

MAKE 2

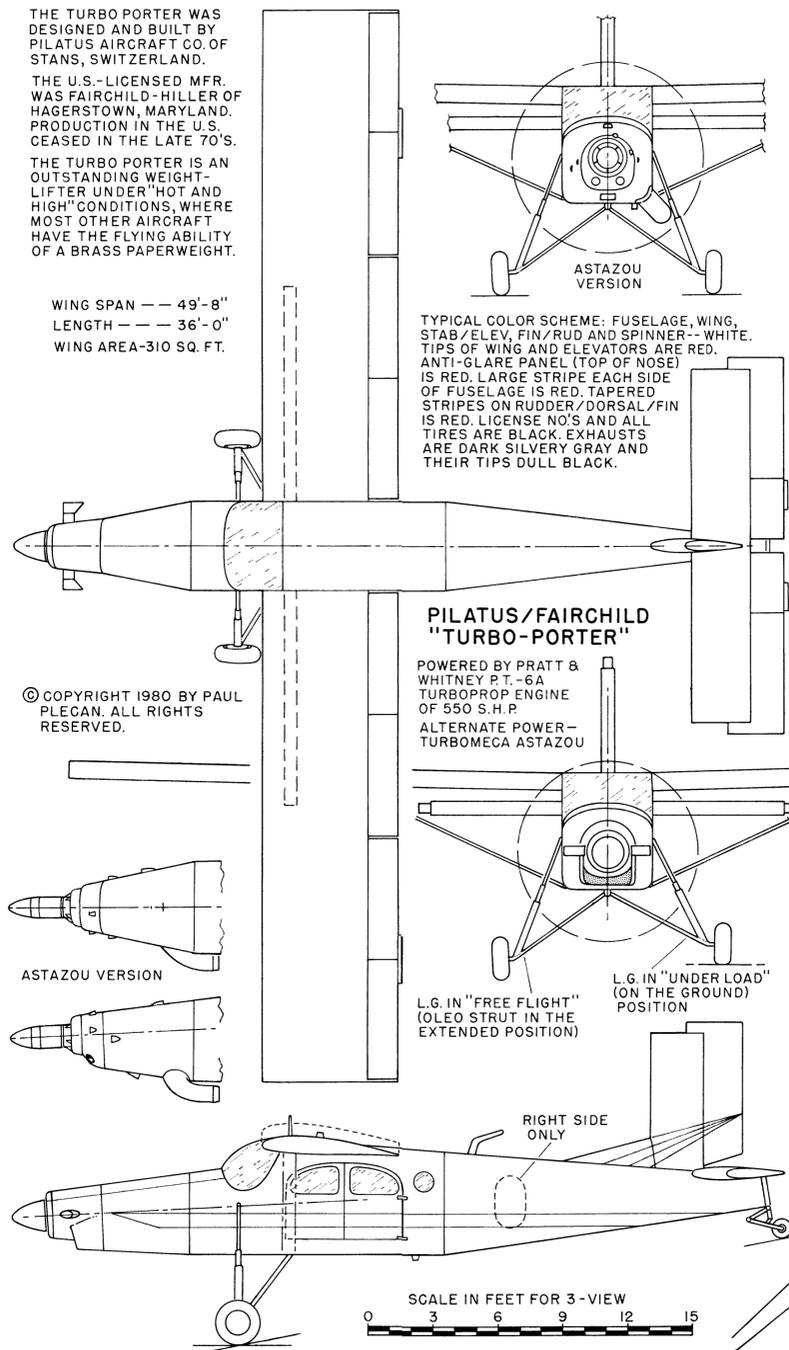


UNLESS INDICATED OTHERWISE, FRAMEWORK TO BE BALSAs. "S" INDICATES SOFT, "H" FOR HARD BALSAs. WHERE NO GRADE IS SPECIFIED, ASSUME IT TO BE MEDIUM BALSAs. WHERE ONLY ONE DIMENSION IS CALLED OUT, IT IS SHEET STOCK. WHERE TWO SIZES ARE CALLED OUT (OR "SQ." APPEARS) IT IS STRIP BALSAs. THIS SYMBOL (→) INDICATES GRAIN DIRECTION.

THE TURBO PORTER WAS DESIGNED AND BUILT BY PILATUS AIRCRAFT CO. OF STANS, SWITZERLAND. THE U.S.-LICENSED MFR. WAS FAIRCHILD-HILLER OF HAGERSTOWN, MARYLAND. PRODUCTION IN THE U.S. CEASED IN THE LATE 70'S. THE TURBO PORTER IS AN OUTSTANDING WEIGHT-LIFTER UNDER "HOT AND HIGH" CONDITIONS, WHERE MOST OTHER AIRCRAFT HAVE THE FLYING ABILITY OF A BRASS PAPERWEIGHT.

WING SPAN --- 49'-8"  
LENGTH --- 36'-0"  
WING AREA-310 SQ. FT.

TYPICAL COLOR SCHEME: FUSELAGE, WING, STAB/ELEV, FIN/RUD AND SPINNER-- WHITE. TIPS OF WING AND ELEVATORS ARE RED. ANTI-GLARE PANEL (TOP OF NOSE) IS RED. LARGE STRIPE EACH SIDE OF FUSELAGE IS RED. TAPERED STRIPES ON RUDDER/DORSAL/FIN IS RED. LICENSE NO'S AND ALL TIRES ARE BLACK. EXHAUSTS ARE DARK SILVERY GRAY AND THEIR TIPS DULL BLACK.



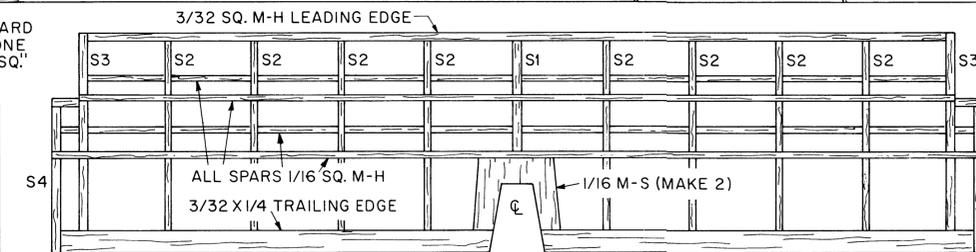
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PILATUS/FAIRCHILD "TURBO-PORTER"

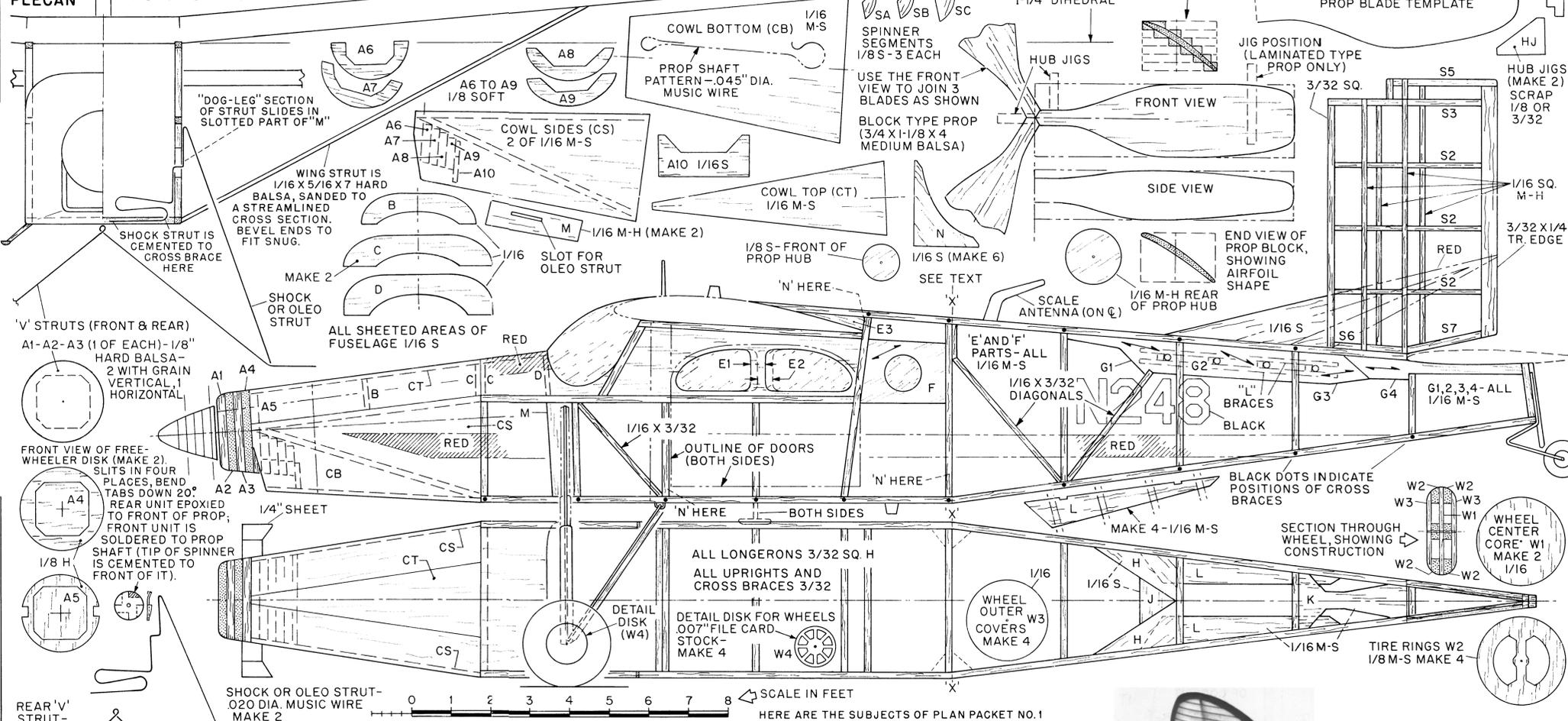
POWERED BY PRATT & WHITNEY P-T-5A TURBOPROP ENGINE OF 550 S.H.P. ALTERNATE POWER-TURBOMEGA ASTAZOU

L.G. IN "FREE FLIGHT" (OLEO STRUT IN THE EXTENDED POSITION)  
L.G. IN "UNDER LOAD" (ON THE GROUND) POSITION

SCALE IN FEET FOR 3-VIEW  
0 3 6 9 12 15

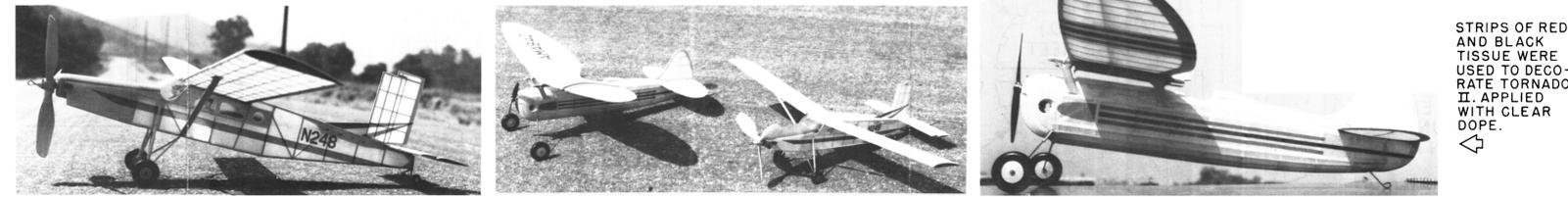


DESIGNED BY PAUL PLECAN PILATUS/FAIRCHILD 1/20 SCALE RUBBER-POWERED TURBO-PORTER MODEL

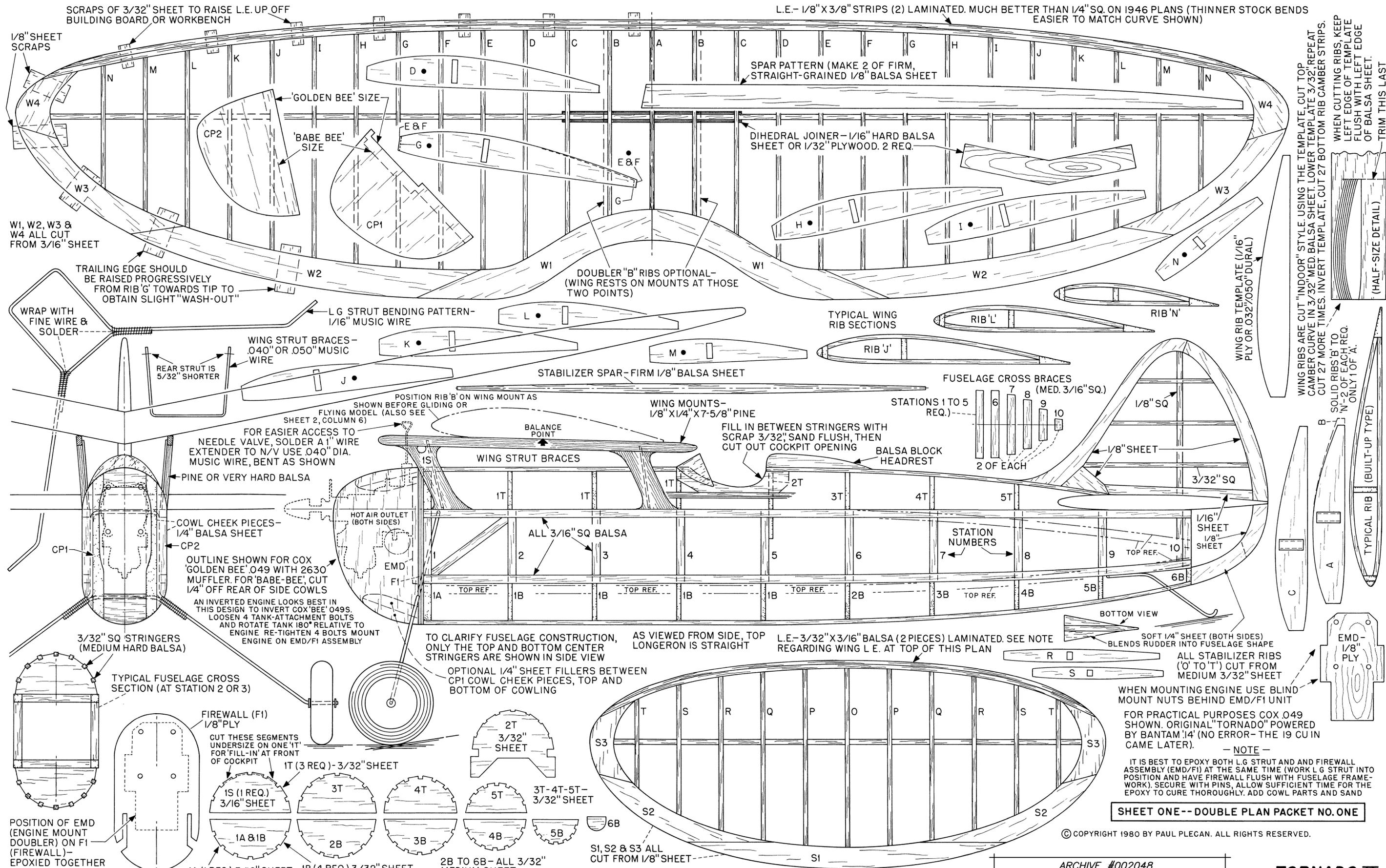


SCALE IN FEET  
0 1 2 3 4 5 6 7 8

HERE ARE THE SUBJECTS OF PLAN PACKET NO.1



STRIPS OF RED AND BLACK TISSUE WERE USED TO DECORATE TORNADO II. APPLIED WITH CLEAR DOPE.



WING RIBS ARE CUT "INDOOR" STYLE. USING THE TEMPLATE, CUT TOP CAMBER CURVE IN 3/32" MED Balsa SHEET. LOWER TEMPLATE 3/32" REPEAT CUT 27 MORE TIMES. INVERT TEMPLATE, CUT 27 BOTTOM RIB CAMBER STRIPS. WHEN CUTTING RIBS, KEEP LEFT EDGE OF TEMPLATE FLUSH WITH LEFT EDGE OF Balsa SHEET. TRIM THIS LAST (HALF-SIZE DETAIL)

SOFT 1/4" SHEET (BOTH SIDES) BLENDS RUDDER INTO FUSELAGE SHAPE  
 ALL STABILIZER RIBS ('O' TO 'T') CUT FROM MEDIUM 3/32" SHEET  
 WHEN MOUNTING ENGINE USE BLIND MOUNT NUTS BEHIND EMD/F1 UNIT  
 FOR PRACTICAL PURPOSES COX .049 SHOWN. ORIGINAL "TORNADO" POWERED BY BANTAM '14' (NO ERROR- THE 19 CU IN CAME LATER).  
 - NOTE -  
 IT IS BEST TO EPOXY BOTH L.G. STRUT AND AND FIREWALL ASSEMBLY (EMD/F1) AT THE SAME TIME (WORK L.G. STRUT INTO POSITION AND HAVE FIREWALL FLUSH WITH FUSELAGE FRAMEWORK). SECURE WITH PINS, ALLOW SUFFICIENT TIME FOR THE EPOXY TO CURE THOROUGHLY. ADD COWL PARTS AND SAND

**SHEET ONE-- DOUBLE PLAN PACKET NO. ONE**

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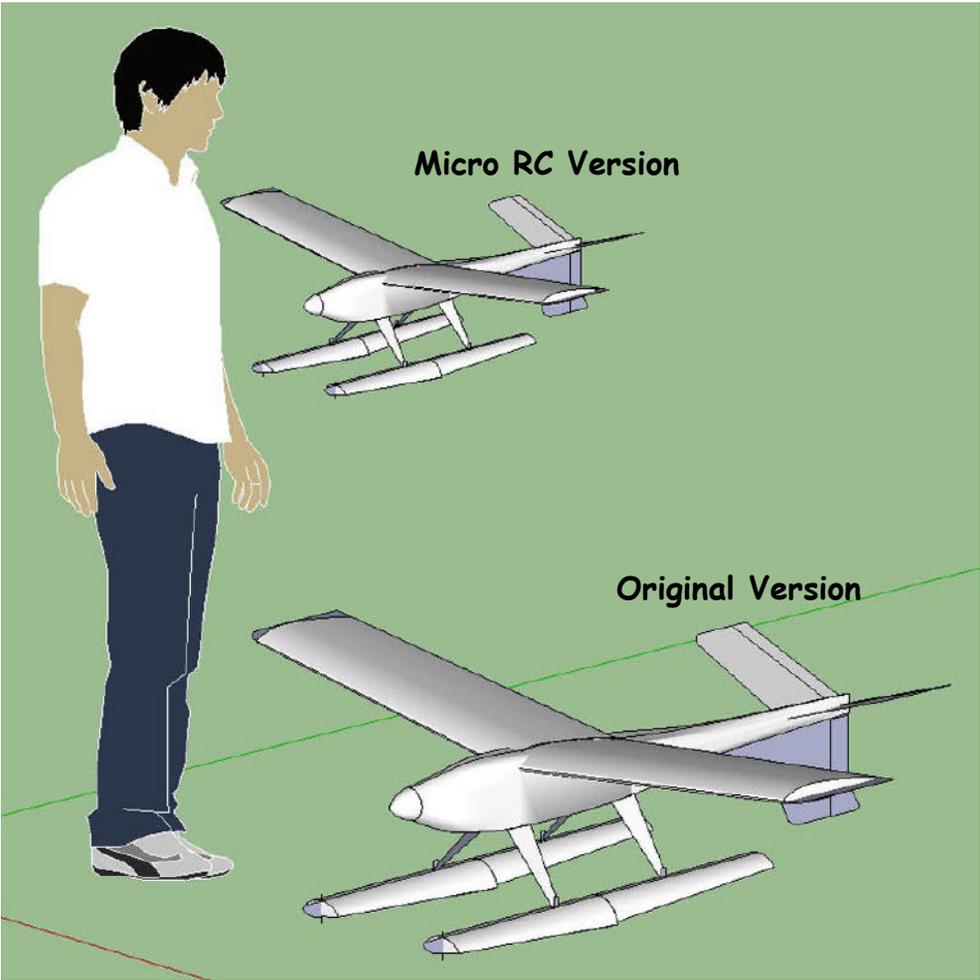
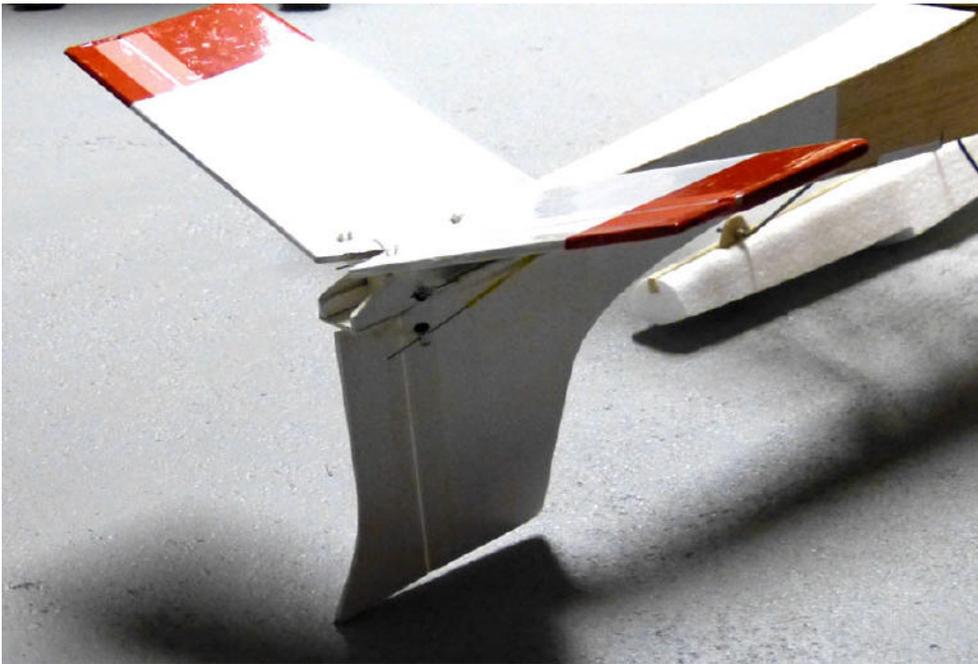
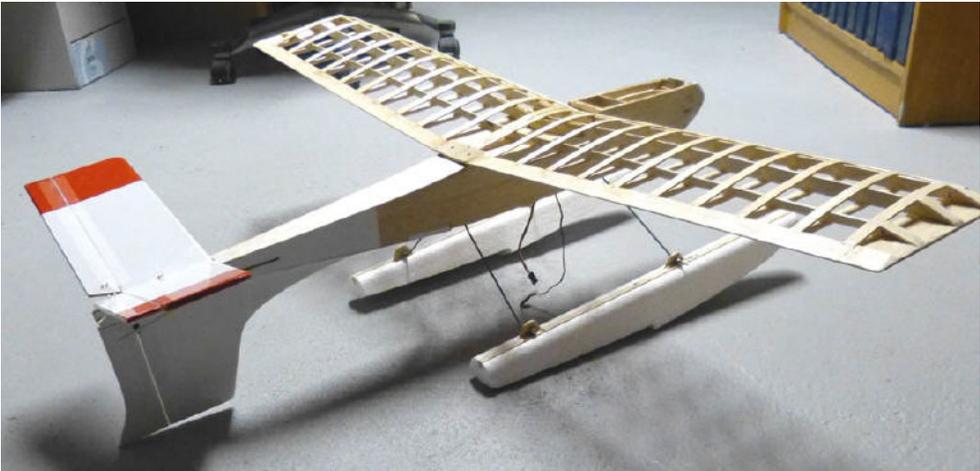
**TORNADO II**  
 DESIGNED AND DRAWN BY PAUL PLECAN

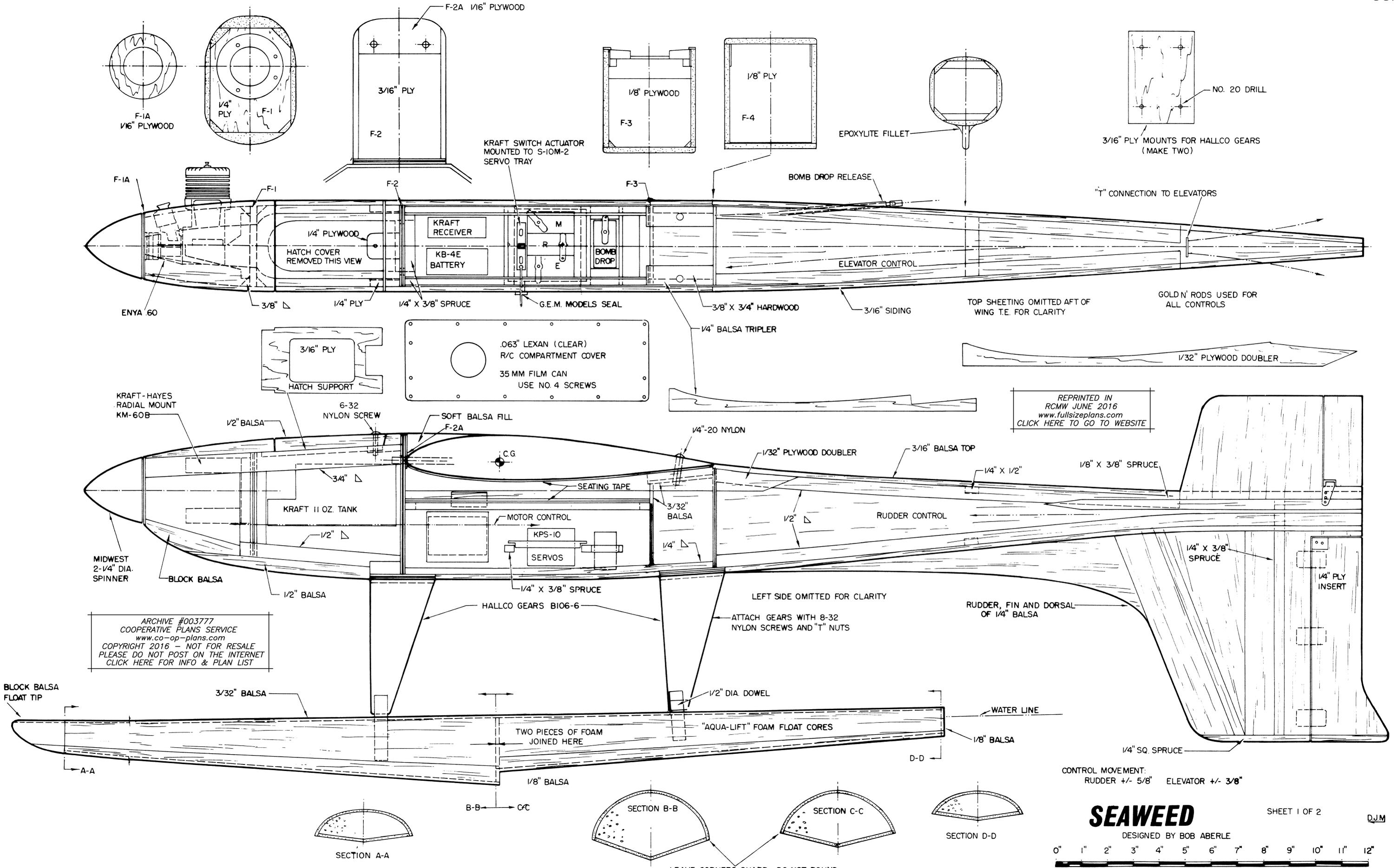
REPRINTED IN  
 RCMW JUNE 2016  
 www.fullsizeplans.com  
 CLICK HERE TO GO TO WEBSITE

ORIGINALLY PUBLISHED IN APRIL 1946 MODEL AIRPLANE NEWS  
 REDRAWN AND RENAMED AS TORNADO II BY PAUL PLECAN  
 PLAN DONATED BY MIKE MYERS

# Aberle's Micro SEAWEED

## Work in Process





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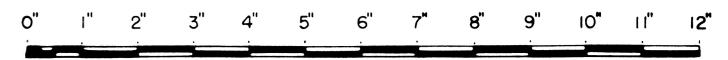
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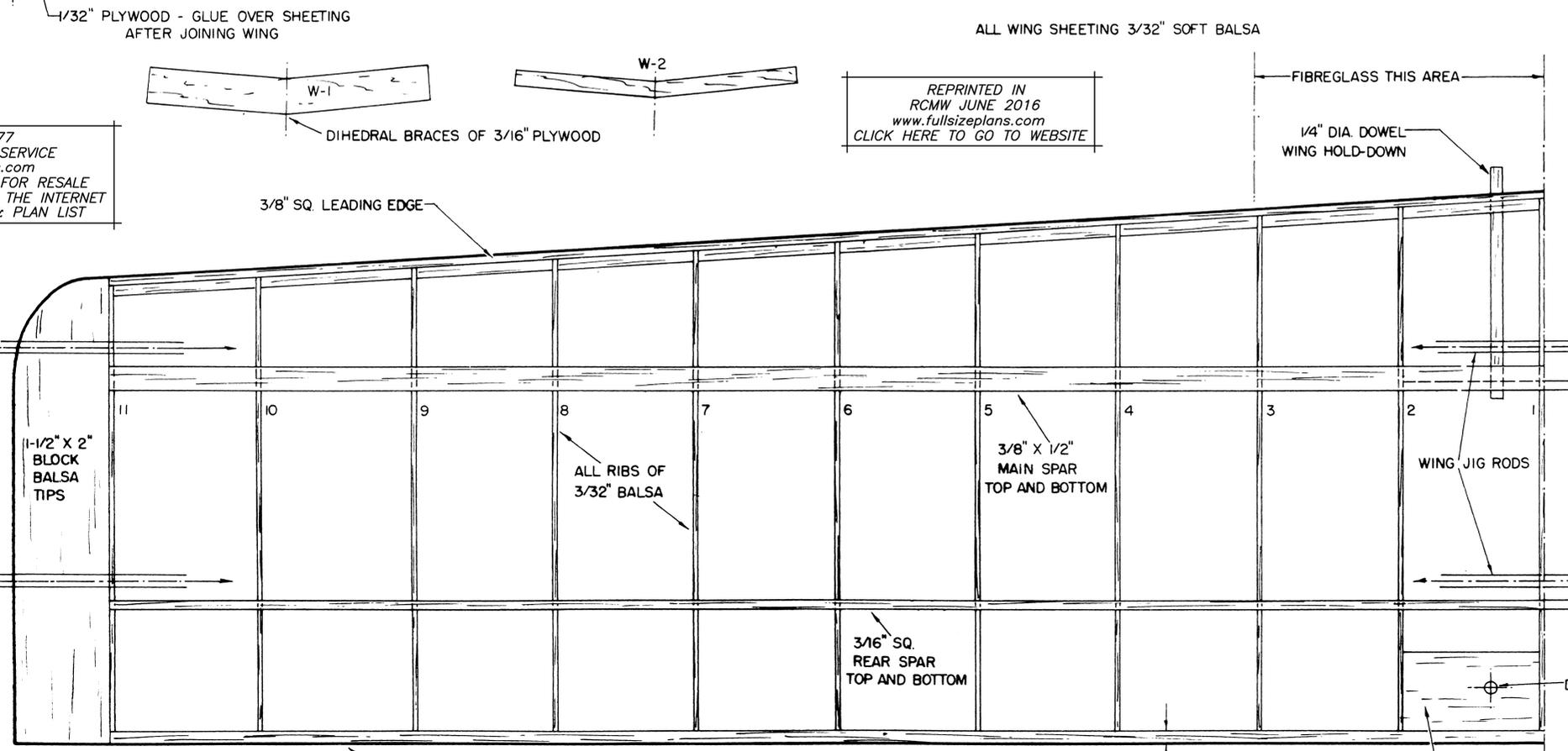
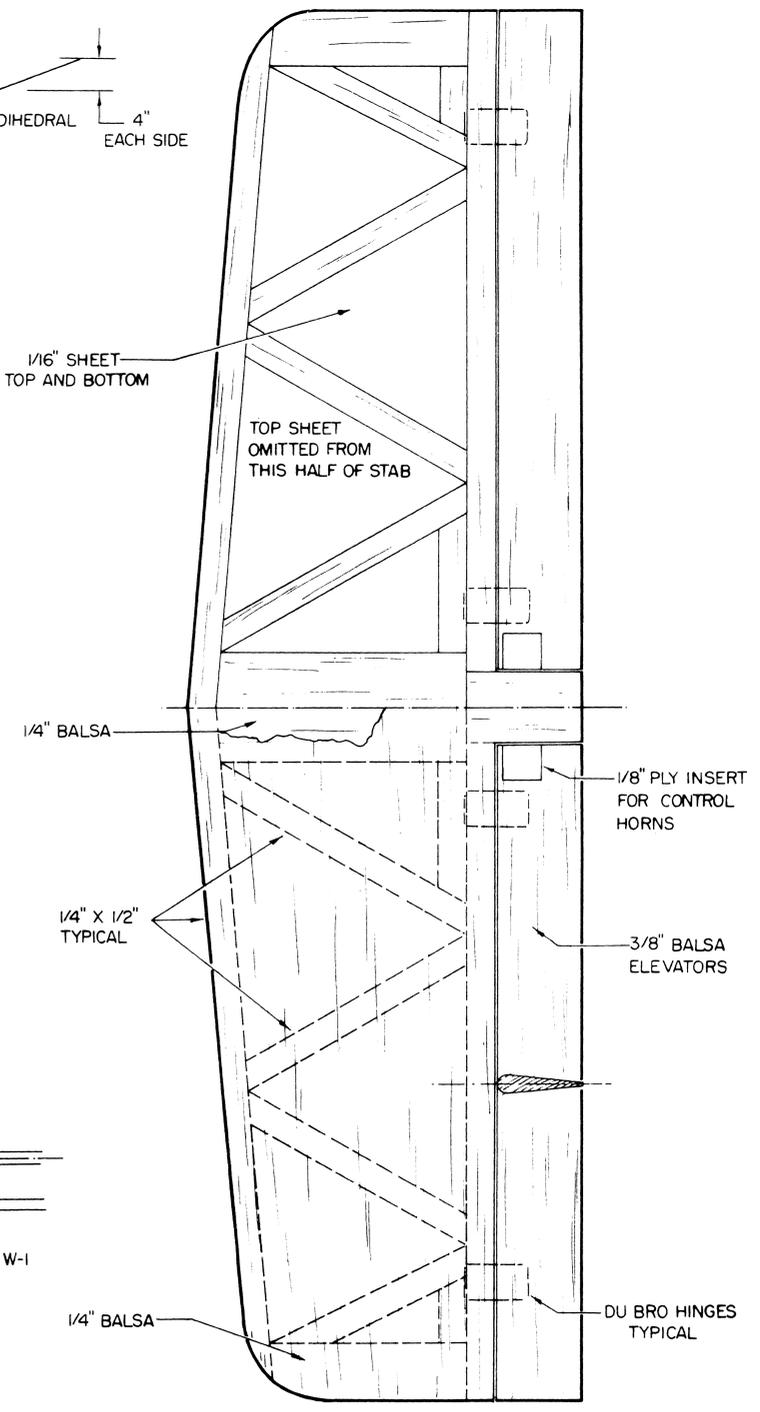
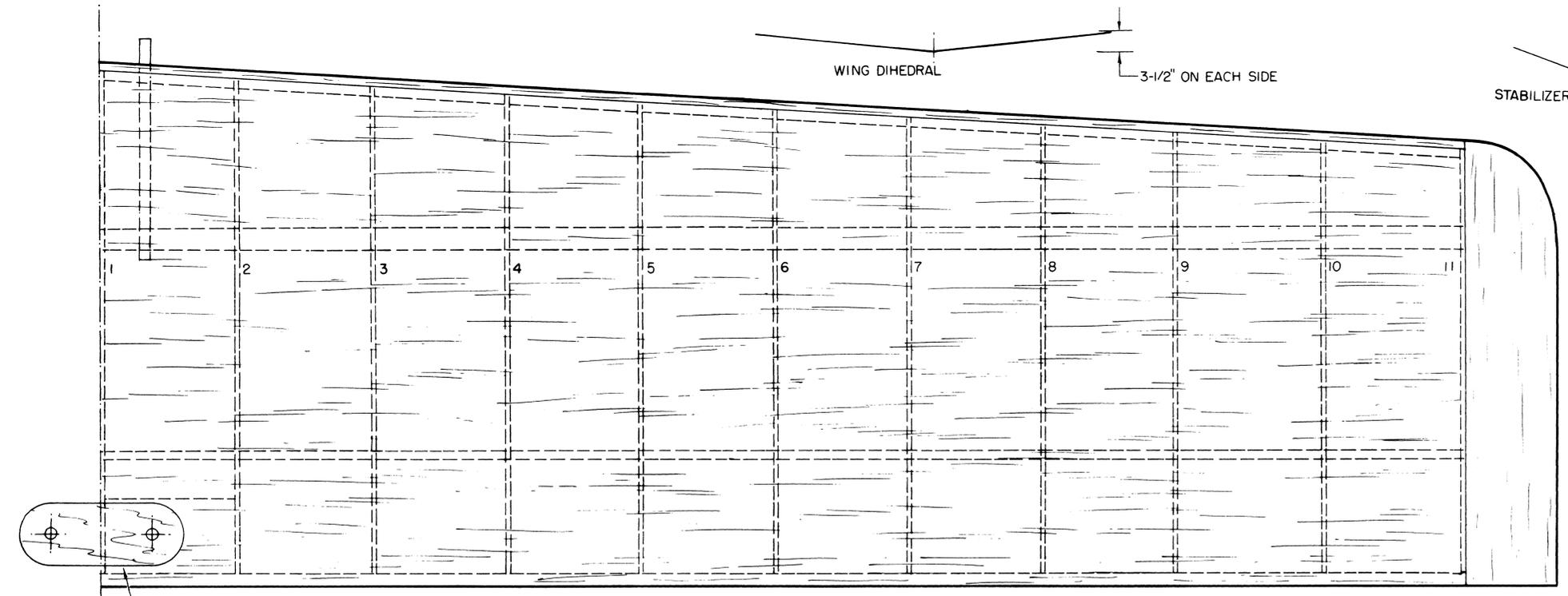
CONTROL MOVEMENT:  
 RUDDER +/- 5/8" ELEVATOR +/- 3/8"

**SEAWEED**  
 DESIGNED BY BOB ABERLE

SHEET 1 OF 2

DJM





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ORIGINALLY PUBLISHED IN MARCH 1975  
ISSUE OF FLYING MODELS

**SEAWEED**

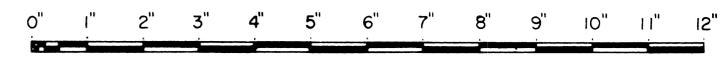
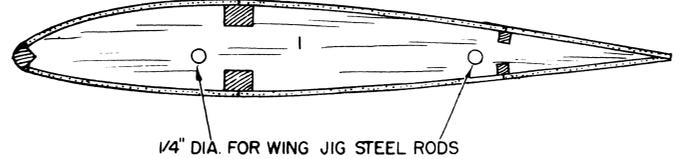
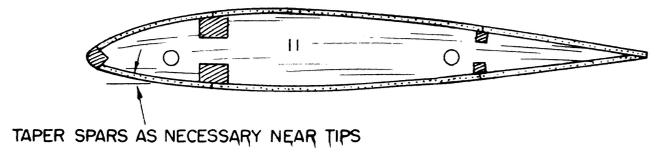
PLATE 2 OF 2

DESIGN AND PENCILS BY BOB ABERLE W2QPP

WINGSPAN: 65" WINGSPAN 700 SQ. INCHES

WING LOADING - 25.3 OUNCES PER SQ. FOOT

D.J.M



# Back Issue MAGAZINE ARCHIVES

By Roland Friestad

Here's the next in our series of monthly complete back issues of model airplane magazines available for download to subscribers. This month's selection is the March 1975 issue of Flying Models, chosen because the cover photo by our regular contributor Bob Aberle shows his wife holding the SEAWEED RC design by Bob. The fullsize plan of the SEAWEED is in this issue of RCMW and by downloading this issue of Flying Models you can also have the construction article by printing out selected pages.

Please note that Bob is working on a reduced size version of his SEAWEED design to use the RC Micro systems that were unavailable when the original model was built. We expect to have it featured in our July or August issue.

To get your copy, just go to the following link and click on the download button that after a short time will appear in the upper right corner of your browser screen. The issue will be downloaded as a PDF file and you can read or print out any or all of the pages as you choose.

[-- CLICK ON THIS LINK PLEASE --](#)

This download link will be expire on September 1, 2016, so if you'd like this issue for your own collection, better do it now.

As a note of interest, this issue is stored in the "cloud" that you see mentioned as one of the latest of the buzzwords used by the computer folks. I use a service called Mediafire which can easily handle very large files that would otherwise cause problems with downloading.





# X-AC-5

Slightly psychic (sensitive to nonphysical or supernatural forces and influences—Webster), in shape, this fully asymmetrical free flight is a stable consistent flyer.

By O. F. W. FISHER

This unusual design is from the pages of the July 1967 issue of AMERICAN MODELER

The experimental MK 5, X-AC-5 for short, is the culmination of several years design and development work in the field of asymmetric configuration free flight flying machines.

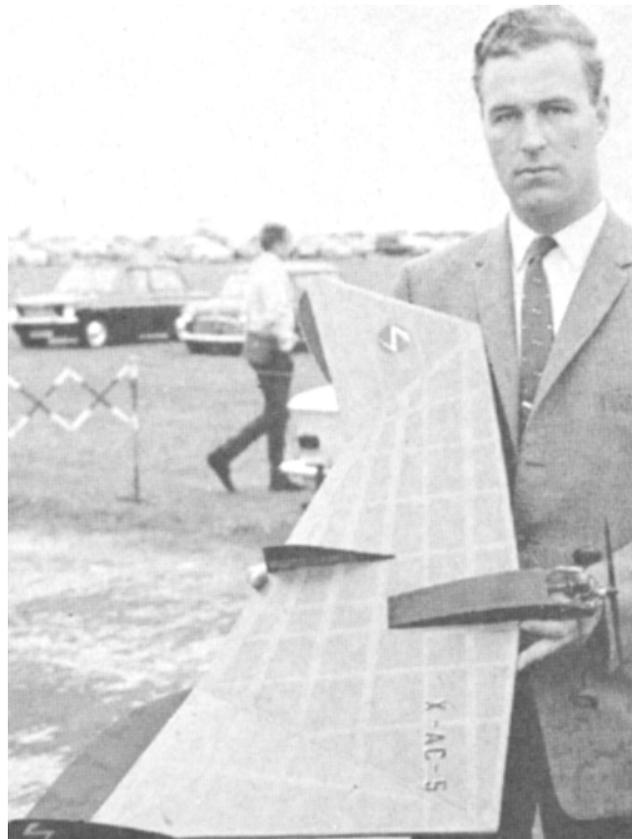
The X-AC-5 is ultra stable and can be flown in strong winds, once it has been correctly trimmed. Stall recovery is faster than for orthodox layouts.

**Design:** The X-AC-5 was designed to combine the excellent lateral stability of a flying wing with the longitudinal stability of a medium moment-arm orthodox machine; and at the same time provide an extremely light and robust structure.

Induced drag on the starboard tip and elevon is reduced by a large tip fin, which also affects directional stability.

The XAC-5, due to its low wing loading, is fitted with a self-stabilizing "flat plate" type airfoil section; this has proved very effective in practice and is also very easy to build.

If the wing loading was increased, by fitting RC for instance, it would then be necessary to incorporate an asymmetric reflex type airfoil.



The C of G of the model is on the thrust line of the engine and located 4.5" back from the leading edge of the wing.

Considering the areas H1 (port tip), H3 (port center-X), H4 (starboard center-X) and H2 (starboard tip), the line joining the centers of pressures P1, P2 of H1 and H2 is behind the line joining the centers of pressures of H3 and H4, thus providing a longitudinal correcting moment about the latter.

If F1 to F4 are the forces acting through the centers of pressures P1 to P4 of the respective areas H1 to H4 and, if m1 to m4 are the horizontal distances between P1 to P4, respectively, and the thrust line; we can take moments about the thrust line as follows: (i)  $F_1 \cdot m_1 = F_2 \cdot m_2$ ; (ii)  $F_3 \cdot m_3 = F_4 \cdot m_4$ .

It will be apparent that as  $F_2 > F_1$ ; in order to ensure that the equation (i) holds true, it is essential that  $m_1 > m_2$ . Similarly for areas H3 and H4 to produce equation (ii). The foregoing is not intended as anything like a complete design analysis, but merely to give the builder an idea of the basic concept. It can easily be seen from the equations (i) and (ii) that the center of pressure of the entire machine lies on the thrust line and behind the C of G.

**Trim:** The starboard tip elevon is to adjust the basic lateral trim. Increase negative elevon incidence (up elevon) to correct dive tendencies and decrease negative incidence (down elevon) for stall correction.

In the normal way the model flies with a negative incidence elevon setting of about 10 degrees. It must be remembered that alterations in elevon incidence also affects turn, i.e., up elevon for righthand turn and down for lefthand turn (viewed from the rear). The small port elevon is for final trim setting; and with a correctly built model it may be omitted altogether. Trim for a left-hand climb under power.

**Construction:** Build the flat center-X I-13/ H4 first. Pin the sectioned 1 x 1/4 trailing edge and 3/8 x 3/8 leading edge over the plan followed by the lower 1/2 x 1/16 lateral main spars. The longitudinal 1/4 x 3/8 rib spars are now notched to fit over the 1/2 x 1/16 spars, so that they are flat on the plan and butt joint against the L.E. and T.E. The rear portions of these spars are sectioned to meet the T.E. The 1/4 x 3/8 lateral spacer spars are fitted next, together with the 1/4 sheet gussets.

Notch the tops of the rib spars and fit the top 1/2 x 1/16 main spars. Sheet the section under the fuselage on the wing top surface with 1/16 hard sheet balsa. Remove from the plan, shape L.E. to section and chamfer the ends of the center-X to allow for the dihedral of sections H1 and H2.

H2 is built similarly to sections H3 and H4. H1 is a simple butt jointed structure built directly over the plan. Remember to taper the outer 3/8 x 3/8 L.E. section to meet the T.E. and fit the transverse 1/4 x 3/8 members afterwards. The T.E. itself should also decrease in depth from its standard 1/4 to about 1/16 at the tip; this gives a double taper. Sandpaper all sections carefully. Chamfer the root 1/4 x 3/8 rib spars to mate up with those of H3/H4 to give the correct tip dihedrals. Dihedral at the tip of H1 is 2.6 and at the tip of H2 it is 2.2. It is absolutely essential to ensure that these dihedrals are exact. Cement the three sections securely together.

Cover with heavy-weight tissue or ultralight-weight nylon or silk. Cover the lower surfaces first. When covering top surfaces, stick the covering material to the sheeted section under the fuselage, dihedral joints, and the top of the rib under the dorsal fin with balsa cement. This is to prevent lifting. Give two coats of clear dope.

Cement the 3/16" sheet fuselage sides in place over the center-X, and fit engine and landing gear unit ready mounted on their bearers. Check down-thrust angle carefully. Reinforce with fuselage bulkhead F1-F10. Fit 3/32" sheet lower and 1/16" sheet upper fuselage sheeting with grain running longitudinally. Sandpaper carefully.

Smear engine compartment with cement for fuel proofing purposes. If a radially mounted engine is to be used the engine bearers should be cut flush with F9/F10 and this combined former should be replaced with a 3/16" ply bulkhead.

The dorsal fin is cut from soft 3/16" sheet, shaped to airfoil section, and cemented in position. The 1/16" ply end plate is also sectioned and cemented in place. The 3/32" balsa elevon is hinged with tape as indicated, and cemented in place.

Give all natural balsa parts two coats of clear dope and two of color dope. Sand all coats with 00 grade paper except for the final coat of color. The finished model gets one coat of fuel proofer, unless a fuel-proof type of dope has been used throughout.

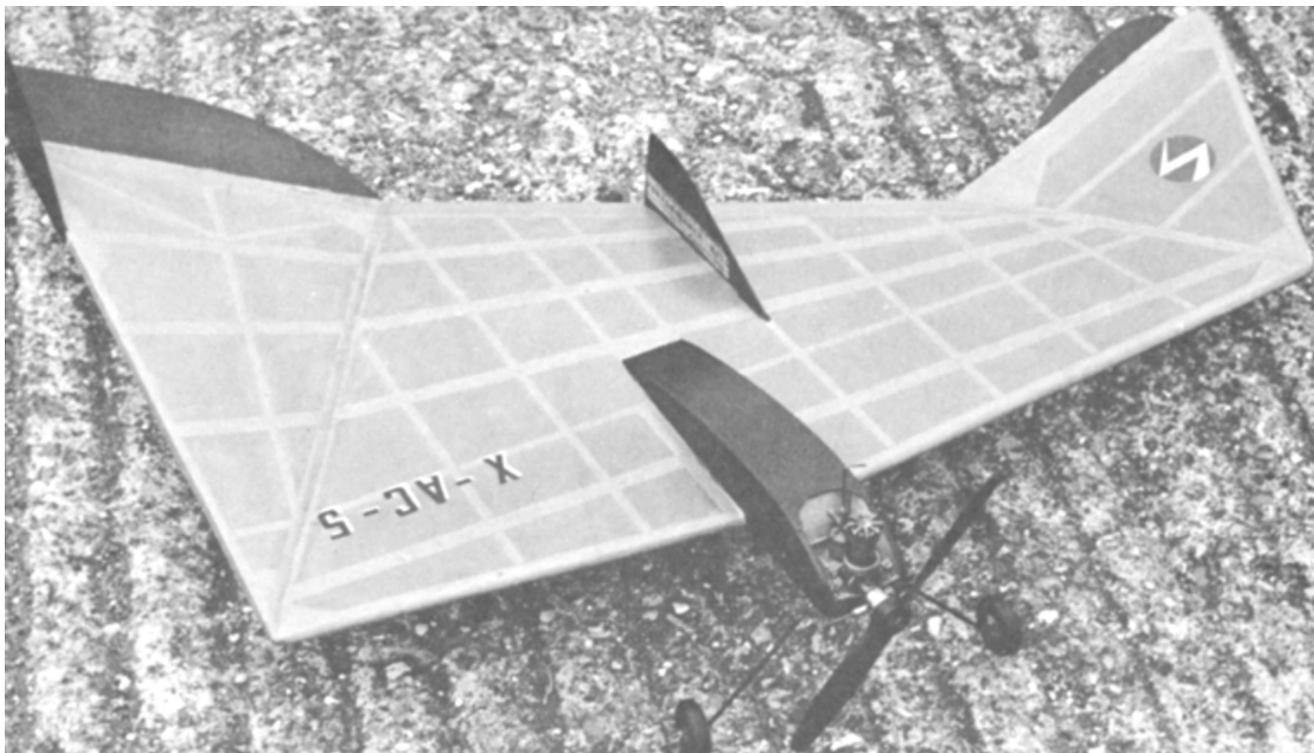
**Flying Tips:** After the correct glide trim has been attained (see Trim above) your X-AC-5 is ready for powered flight. Check that tests glides give a L.H. turn. With the 1cc Diesel used for the prototype models an 8 x 4 propeller was found ideal.

If using an 0.049 cu. in. glow motor fit a 6 x 4 or 7 x 4 propeller. The X-AC-5 is ultra stable in L.H. powered turns, but may spin in if allowed to turn to the right, particularly if it is fitted with high revving power unit, when the gyroscopic effects in a R.H. turn further aggravate the situation.

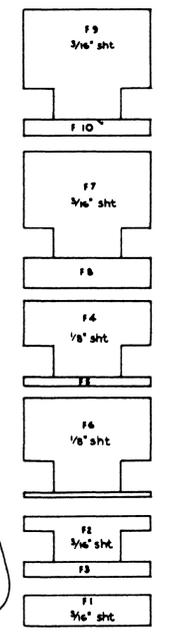
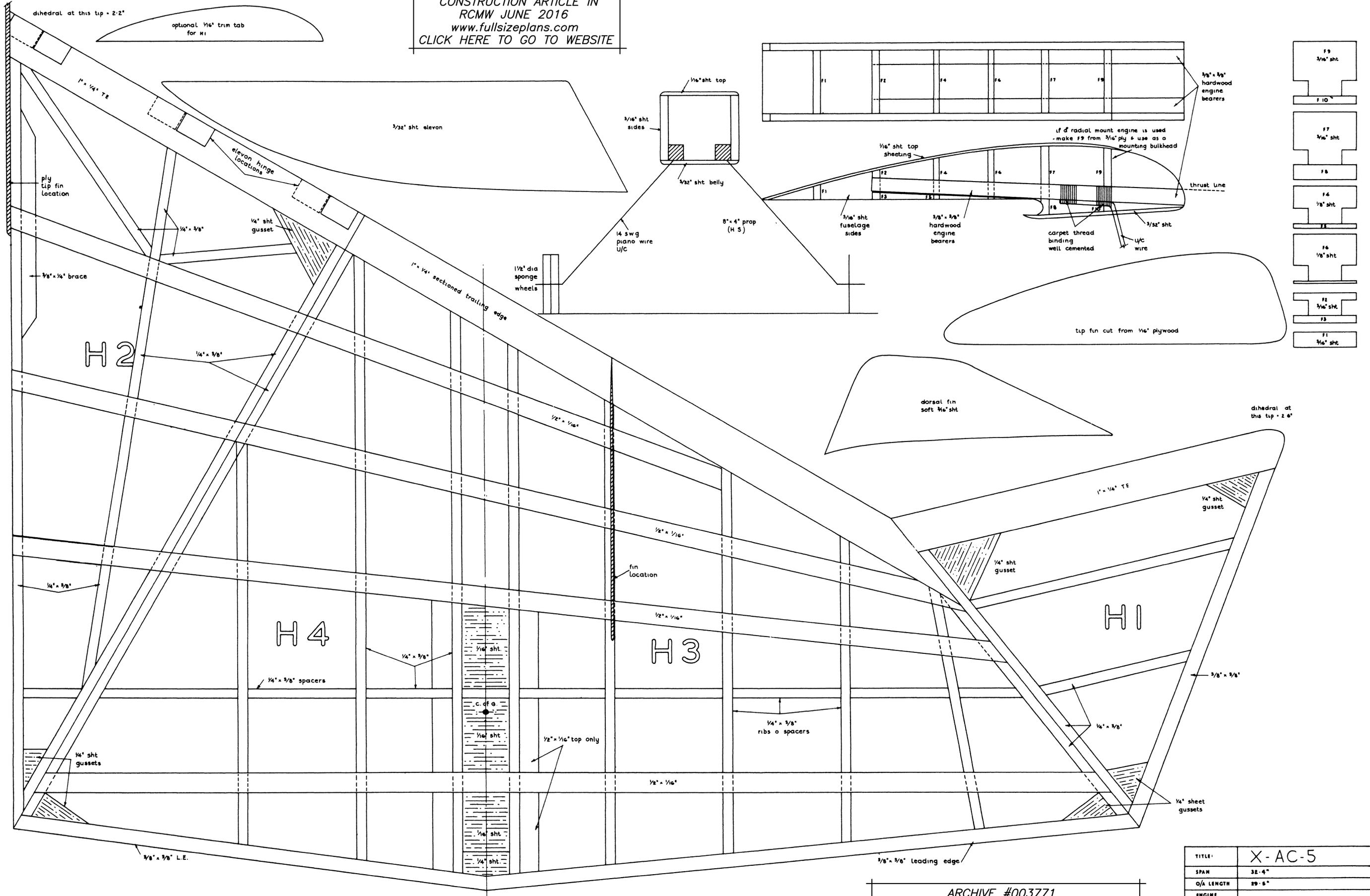
This is due to the fact that a component inertia force is acting downwards from the propeller, and tending to drag the nose down.

Prototype models have achieved hundreds of delightfully stable flights, which have provided many hours of pleasurable sport flying. It is my sincere wish to pass this pleasure on to you with your own X-AC-5.

Photos by A. T. R. Aslett.



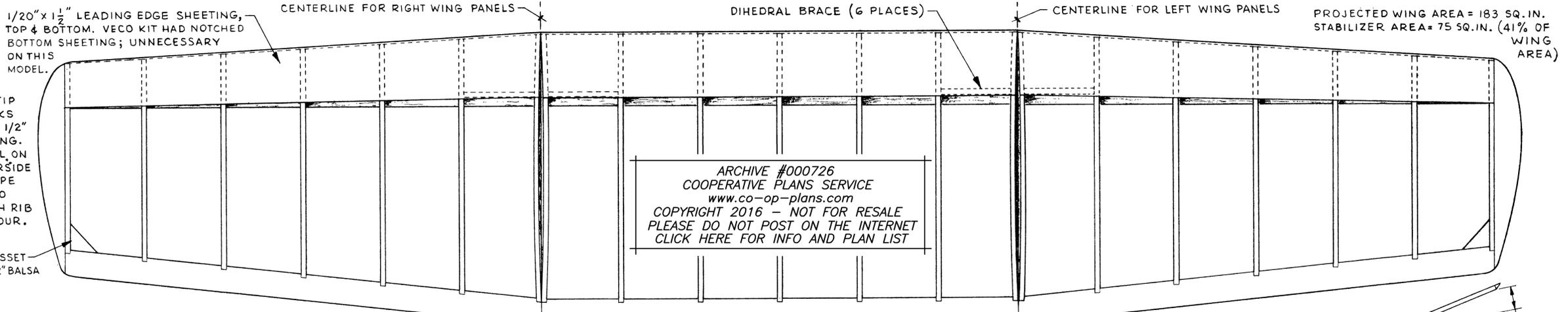
CONSTRUCTION ARTICLE IN  
RCMW JUNE 2016  
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TITLE:	X-AC-5
SPAN:	32.4"
O/A LENGTH:	29.5"
ENGINE CAPACITY:	0.75-1.5cc 0.049-0.051cu ins
DESIGNED & DRAWN BY:	

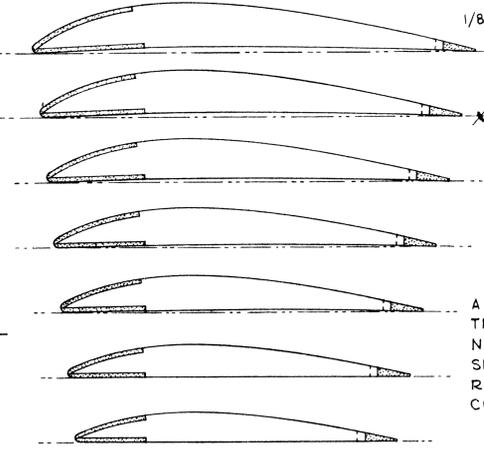
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ORIGINALLY PUBLISHED IN AMERICAN MODELER (AIR TRAILS) JULY 1967  
PLAN FROM THE ROLAND FRIESTAD COLLECTION



ALL TIP BLOCKS 3/8" x 1/2" 4" LONG. BEVEL ON UNDERSIDE & SHAPE TOP TO MATCH RIB CONTOUR.

GUSSET 3/32" Balsa

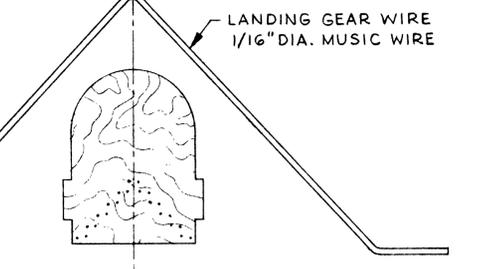
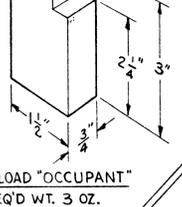
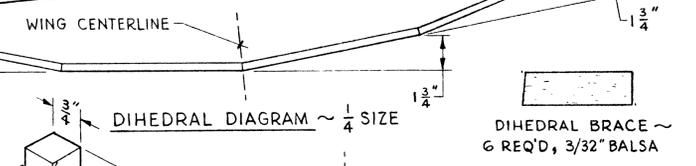


BUILD 4 WING PANELS: 2 MAIN PANELS & 2 TIPS. BUTT JOIN, WITH DIHEDRAL AS SHOWN AT RIGHT.

THE "COMANCHE" WAS DESIGNED FOR PAA-LOAD COMPETITION, AND WAS ALSO A FINE CONTEST MODEL WITHOUT THE "OCCUPANT". IT WAS THE FIRST KITTED FREE-FLIGHT DESIGN WITH A "SHARP L.E." AIRFOIL. THIS MODEL USED JOE WAGNER'S SPECIAL F-F ADJUSTMENT METHOD: 5° LEFT THRUST TO COMPEL A LEFT-CIRCLING CLIMB; RIGHT RUDDER TAB TO KEEP NOSE UP UNDER POWER & PRODUCE A RIGHT-CIRCLING GLIDE.

THIS MODEL WAS DESIGNED & BUILT BY JOE WAGNER, AUG. 1951; KIT ENGINEERED BY HI JOHNSON; ISSUED BY VECO IN NOV. 1951.

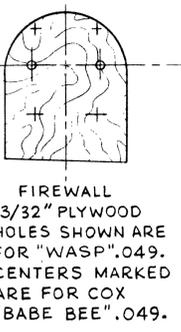
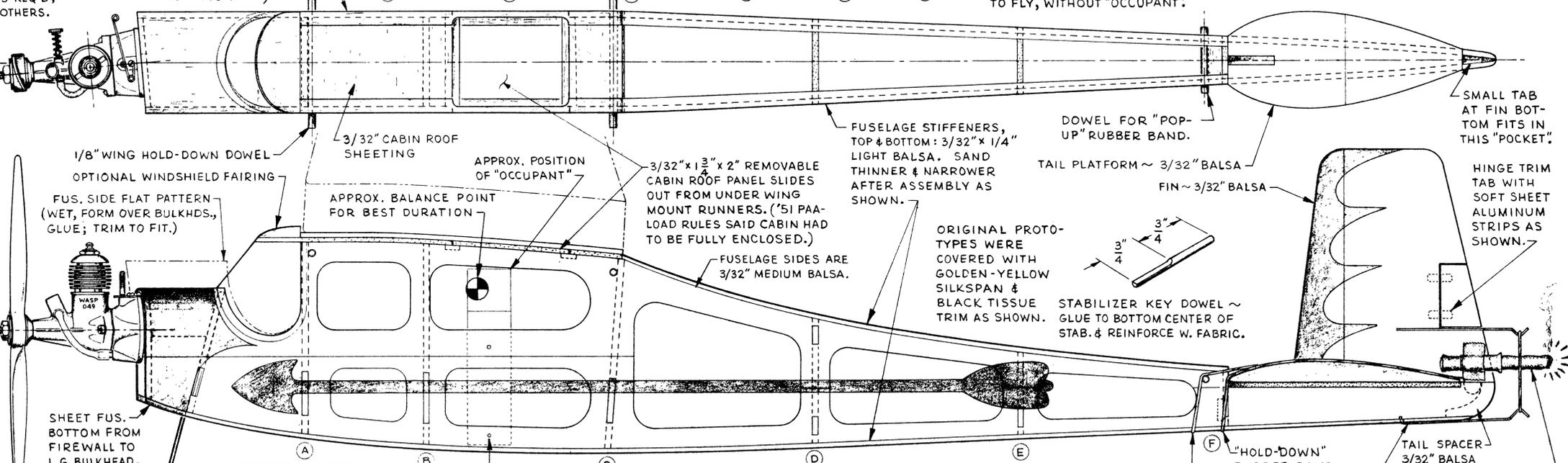
ALL BULKHEADS ARE 3/32" Balsa. REINFORCE BULKHEAD (F) WITH PLYWOOD AS SHOWN.



WING RIBS ~ 3/32" MEDIUM Balsa 16 MAIN RIBS REQ'D; 2 EACH ALL OTHERS.

WING MOUNT RUNNERS 3/32" x 1/4" HARD Balsa. (CUT AS SHOWN FOR ACCESS TO "OCCUPANT".)

- 5° LEFT THRUST
- LIFTING SURFACE CONSTRUCTION
1. PIN T.E. & BOTTOM L.E. SHEET TO WAX-PAPER-COVERED PLAN.
  2. ADD RIBS & GUSSETS.
  3. UNPIN; SAND L.E. SHEET TO BEVEL MATCHING RIB NOSE CONTOUR.
  4. PIN BACK ON FLAT SURFACE & ADD TOP L.E. SHEETING.
  5. UNPIN & SAND L.E. NOSE TO A RADIUS AS SHOWN.



SHEET FUS. BOTTOM FROM FIREWALL TO L.G. BULKHEAD.



- TAIL ATTACHMENT METHOD
1. SLIP RUBBER BANDS OVER TAIL END OF FUSELAGE, AHEAD OF TAIL PLATFORM.
  2. INSERT STABILIZER DOWEL INTO SLOT IN LAST BULKHEAD & LIFT TAIL INTO "DETHERMALIZED" POSITION.
  3. PULL RUBBER BANDS UP OVER FIN, AROUND & UNDER FIN D.T. WIRE, THEN SNAP INTO GROOVE AT STABILIZER T.E.
  4. PUSH TAIL DOWN & ADD D.T. RUBBER BAND.

STABILIZER LEADING EDGE SHEETING (TOP & BOTTOM): 1/20" x 1" x 18" LIGHT Balsa ~ 2 REQ.

TRAILING EDGE: 1/8" x 1/2" x 18"

STABILIZER RIB ~ 14 REQ. 3/32" MEDIUM Balsa

(THE VECO KIT HAD 1/16" PLY FIREWALL & L.G. BULKHEAD.)

1 1/2" DIA. WHEELS

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NO.	LIST	PCS.	SIZE	MAT'L	WT.
TOLERANCE UNLESS SPECIFIED					
DRAWN BY Joe Wagner					
CHECKED BY J.W.					
SCALE FULL SIZE					
DATE 21 FEB. 1984					
SUPERSEDES ORIG. VECO PLAN					
CORPORATION					
NEW CASTLE - PA.					
DWC. NO. JWV-5					

# Tyro Trainer

**Walt Musciano, best known for his U-Control scale models, also designed other types as well. Here's an early UC speed model design from the July 1948 issue of Aeromodeller**

Control line speed flying has attracted many new enthusiasts since its conception. Unfortunately, many modellers become discouraged because their attempts proves unsuccessful.

This failure can be attributed to the fact that they have had no training in handling fast ships. Naturally one cannot expect to fly a De Havilland 108 before having flown at least a Miles 'Master.

It was because the author observed numerous incidences where inadequate training was at fault that the "Tyro Trainer" was designed for his younger cousin and, when the easy handling and fine speed were apparent, the author proceeded to build one for himself!

Primary consideration was given to simplified construction. Anyone familiar with solid models can carve the wings and empennage and no special experience is required for the fuselage.

A take-off dolly was used in order to increase the speed, and give the modeller experience in flying from these carriages which are used for all speed models.

Many speed designs have a low stalling angle but the "Tyro Trainer" has been power stalled on many occasions, and incidentally the flyer derives much satisfaction when performing this manoeuvre. The speed is moderately high, approx. 72 m.p.h., to make it an excellent transition trainer.



Cut the sides from 1/8 in. hard sheet balsa and cement the engine mounts in their proper location. This will depend on the type of engine used. While this is drying, cut the fuselage bottom of 3/8 in. stock and the bulkheads of 1/8 in. Cement the bulkheads to the bottom and attach the sides in place.

The bellcrank can be assembled on the foundation and this assembly cemented well between the mounts. The nose is carved from a block of balsa in order to form the transition from the rectangular fuselage section to the circular spinner section. This also provides additional strength.

The fuselage top is not attached until later but the sponge rubber belly wheel can be attached at this time. The tail surfaces are cut from 1/8 in. hard sheet balsa.

Aluminium or other tubing is used as a hinge. This must be well cemented to the elevator. Attach the rudders to the stabiliser before assembling the elevator. Cut the control horn from aluminium or brass sheet and bend as shown.

Connect the 1/16 in. wire control rod to the bellcrank and horn, cutting away the bulkheads where necessary, and then cement the empennage to the fuselage.

Select a straight grained 3/8 in. thick piece of medium soft balsa for the wings. Balsa planks the entire chord of the wing will be difficult and expensive to obtain, therefore, two narrow pieces cemented together span wise under pressure will prove satisfactory.

Both wings are identical. The platform is cut first with a coping saw and then carved to the correct airfoil section. When sanded complete, a coat of clear dope and a light sanding will prepare it for assembly.

Because of the fact that the root chord is less than the maximum chord, a rectangle must be cut out of the fuselage side to install the lower wing. This need not be larger than the maximum chord and thickness of the wing.

The lower wing is inserted and cemented well to the bulkhead, fuselage side, and bottom through the open fuselage top. When dry, the rectangles may be replaced with space removed to accommodate the wing root. Cement the upper wing in place and cover the fuselage top with 1/8 in. sheet balsa.

For the beginner who is fearful of wrecking his creation, two coats of clear dope and three of coloured will present an attractive



appearance. The experienced flyer should endeavour to polish the model using wood filler before and rubbing compound after the application of the colour.

The take-off dolly is conventional in design and simple to construct. Bend the 1/8 in. wire to shape and wrap all joints with soft fine wire and solder well.

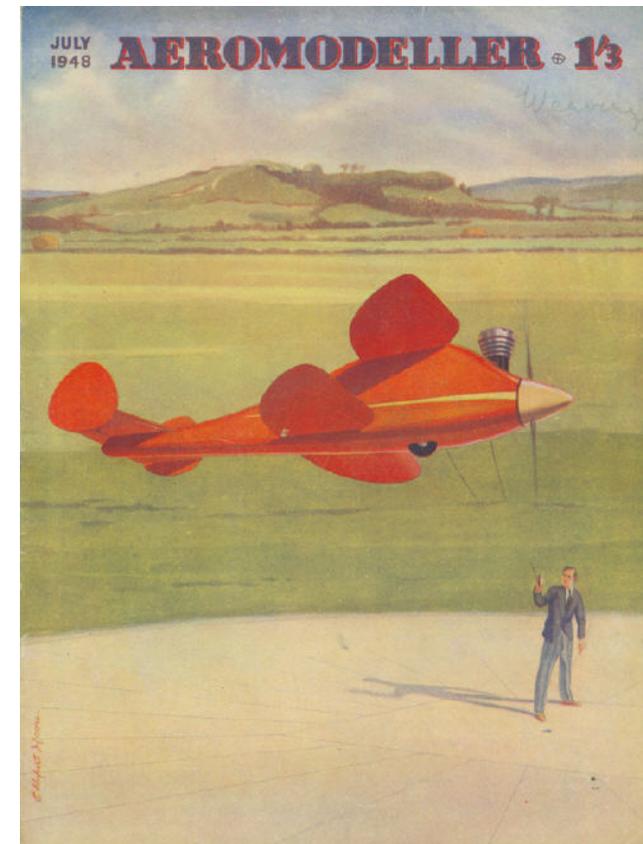
The wheels can be solid rubber at least 3 ins. in diameter. Large wheels perform better than smaller ones. Portions of the dolly that come in contact with the model can be wrapped with tape to prevent scratching.

The original model was powered with a "Drone Bee" diesel engine developed by Mr. Leon Shulman. Other models have used power plants from a "Bantam" .19 in. to a Mighty Midget" .45 in., the former operating without electric ignition using a " glow plug " and special fuel.

Regardless of the power plant, the model should balance 3/8 in. behind the front control wire. The author disapproves the use of "shot lockers" or other methods of adding useless ballast unless it is unavoidable. Instead, the modeller should decide on the power plant he will use and construct the model accordingly.

Considerable power should be used on the test flights in order to avoid "mushing." Flight lines about 45 feet long of .014 in. stranded stainless steel wire have been used successfully.

The model should be lifted gently from the dolly in about one lap. Do not try to climb into the wind and be sure to maintain tension in the lines. Loss of tension means loss of control. If this does occur a step or two to the rear should prove a remedy.



A 22 1/2" WINGSPAN CONTROL LINE SPEED TRAINER

# THE TYRO TRAINER.



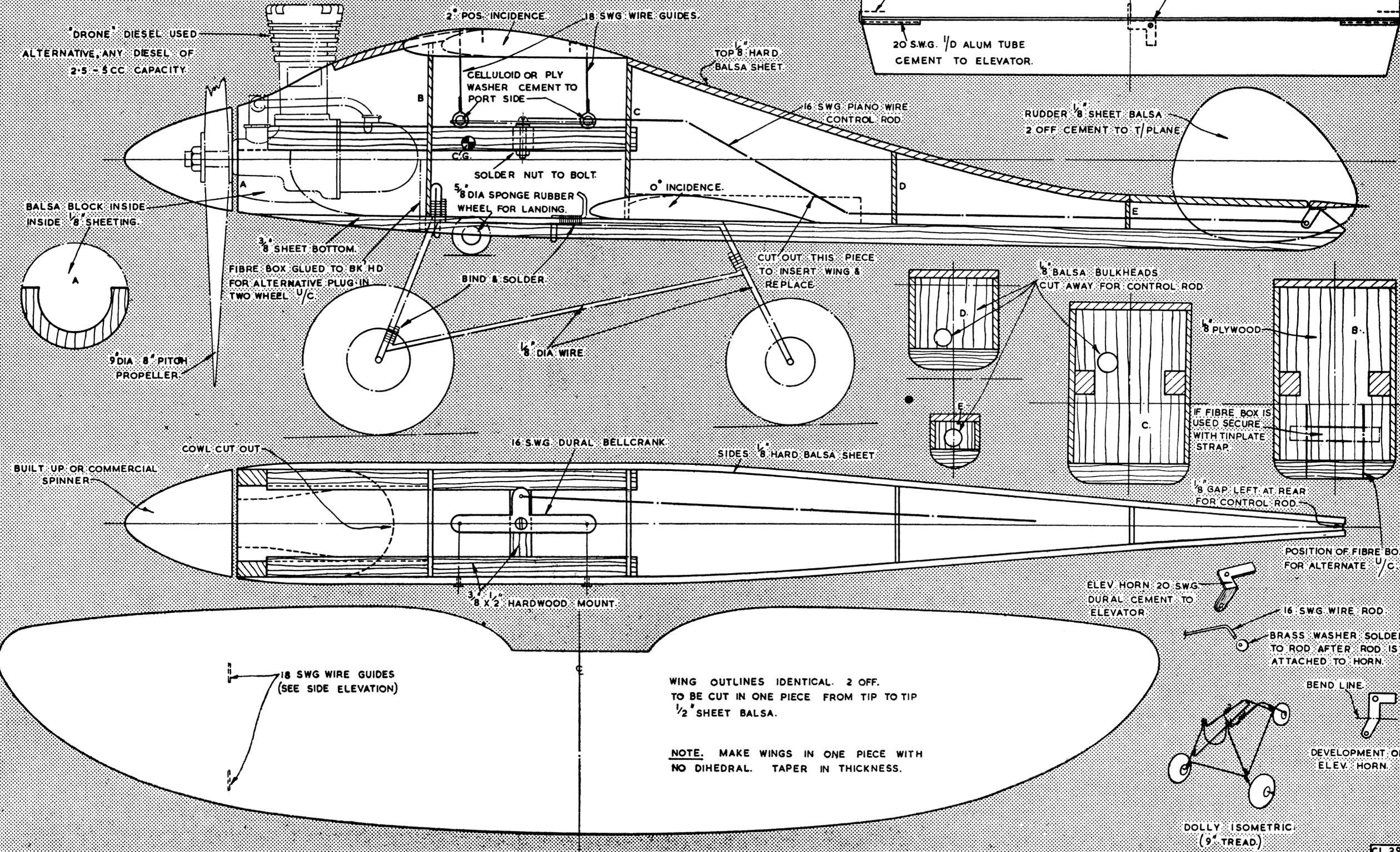
DESIGNED BY  
W. MUSCIANO.



ALLEN HOUSE, NEWARKE STREET, LEICESTER.

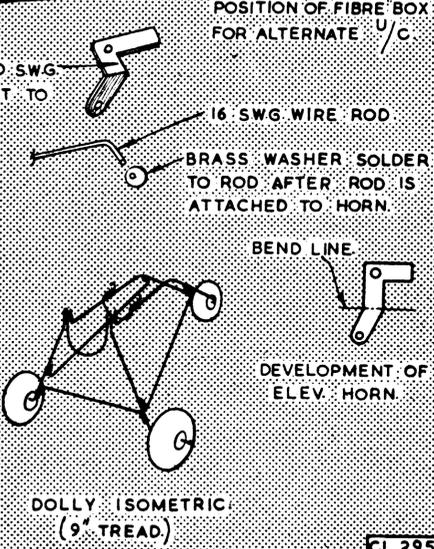
MATERIALS USED.	
3 SHEETS 1/8" X 3" X 36" HARD Balsa	1 - 2 1/2" DIA WHEEL
3 3/8" X 3" X 36" MED "	18" OF 16 SWG PIANO WIRE.
1 Balsa BLOCK 3" X 2" X 4"	10" " 18" " " "
2 STRIPS OF 3/8" X 1/2" X 7 1/2" HARDWOOD	60" " 10" " " "
5/8" DIA SPONGE RUBBER WHEEL.	3" " 20" " 1/2" ALUM TUBING.
2 - 3" DIA WHEELS	2" DIA SPINNER.
	3" X 3" OF 16 S.W.G. DURAL SHEET.

ALL WOODS UNLESS OTHERWISE STATED ARE Balsa



WING OUTLINES IDENTICAL. 2 OFF.  
TO BE CUT IN ONE PIECE FROM TIP TO TIP  
1/2" SHEET Balsa.

NOTE. MAKE WINGS IN ONE PIECE WITH  
NO DIHEDRAL. TAPER IN THICKNESS.



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DESIGN BY WALT MUSCIANO  
PUBLISHED IN JULY 1948 AEROMODELLER

CONSTRUCTION ARTICLE IN  
RCMW JUNE 2016  
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# Back Issues of 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.

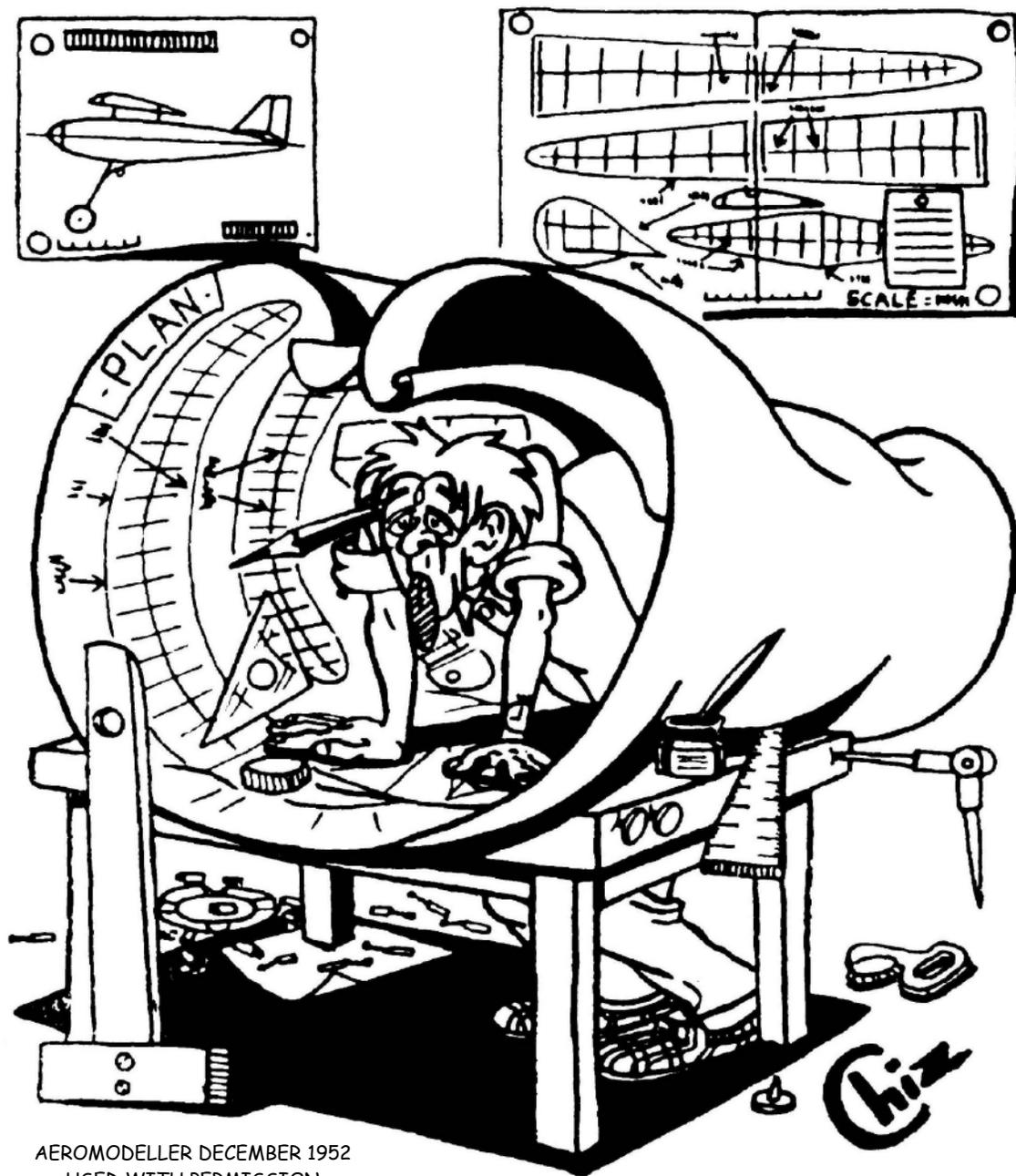
That's NOT the way it was in the past, when you had to build a model before you could fly it. If you're an old-timer, as I am, you have fond memories of Air Trails, Flying Models, Model Airplane News, Aeromodeller and many of the several other magazines available "way back when".

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?"

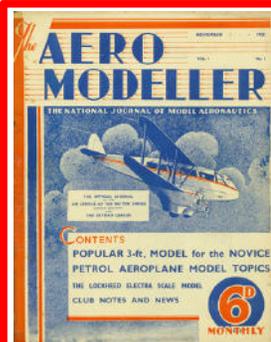
I admit to being a bit of a "nut case" but have been collecting these magazine for over 50 years and now I am trying to digitize them to preserve them for other modelers. They are now available as digital PDF files. See the details on the next page.

Keep 'em Flying - Roland Friestad



AEROMODELLER DECEMBER 1952  
USED WITH PERMISSION

# All Collections Furnished On Our Custom USB Flash Drive Cards



**AEROMODELLER**, the premier British model airplane magazine is being digitized. **Ready now are all 240 issues from 1950 and 1960** including the full size plans that were sometimes included in each issue. On the left is a reproduction of the November 1935 cover of Vol 1, No 1. All of the earlier issues will also be available later in 2016

**Catalog # D001033 - \$75 - Postage Paid**

**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 being published. 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

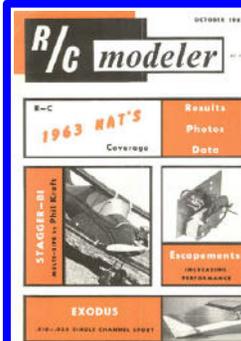
**MODEL BUILDER** - This magazine ran from the first issue of September~October 1971 through the final issue dated October, 1996 -

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



**RC MODELER** - Now available is the digital collection of the early issues of this magazine. The collection includes all issues from Vol 1, No 1 (October 1963) through December 1972. 109 issues all on a single USB Flash Drive.

**D001017 - \$50 - Postage paid**

**All prices include postage paid worldwide**

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