

RCMW-FSP

May 2016

U.S. NAVAL AIR STATION
WILLOW GROVE PA.

NATIONAL
MODEL AIRPLANE
CHAMPIONSHIPS
JULY 29 - 1957 - AUGUST 4

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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 - May 2016 Issue



Full
Size
Plans



Spring has “sprung” again in Northwestern Illinois and now the rains have started. Good to my wife’s garden and flowers but not so hot for chasing models in the wet grass. We have another month’s worth of plans, projects and information for you and our updated website is now running smoothly. We hope you like it.

One of the biggest problems with selecting plans and construction articles for each issue is the wide variety available. We try to mix it up so that there is something for everyone and this month we have one of Walt Musciano’s U-Control scale designs, the HUGHES H-1 racer in which Howard Hughes set at least one world speed record.

There are large numbers of aviation and model aviation video clips on the internet and we selected a few related to the career of Hughes, in particular those about his best known project, the SPRUCE GOOSE as it is known. I had the privilege of seeing it in the flesh a few years ago and even had a special tour including sitting in the pilot’s seat.

The ALKIE IV is a Delanne style free flight said to have remarkable flying characteristics even though the Delanne layout is not well known and quit a bit of a novelty. Might be worth a try, particularly with electric power and one of the new electronic timers.

The YARDBIRD is a small schoolyard rubber powered job that might be just the thing to show off to some of the kids at the local grade school. Who knows, you might find a new modeler to add to our shrinking membership.

CORKY is an all balsa sport free flight biplane that should be rugged enough to stand a summer’s worth of flying. Like the well known DAKOTA biplane it is not likely to set any endurance records but you could electrify it and probably wouldn’t need to worry about a dethermalizer - Just use a salvaged RC system from one of the foamie ARF’s to shut down the motor.

Our monthly download of a model magazine is the Flying Models August 1957 issue. Lots of memories here.

And how about more memories? - The Dave Long MIDGET MUSTANG 3-View included in this issue comes from the October 1972 issue of RC Modeler. It has been sized to two inches to the foot scale and would make a nice 37 inch wingspan model.

Don’t know how many scale rubber powered models the late Walt Mooney designed but there were a lot of them. Included here is his treatment of the AERONCA DEFENDER, the Aeronautical Corporation of America’s answer to the WWII Piper Cub. Should be a good flier and might also benefit from conversion to electric power, maybe even with rudder and elevator RC controls.

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

What's New

Your editor is a member of a group of plans collectors that collectively call themselves the "Co-op Plans Project" and whose goal is to archive and preserve as many of the model airplane plans that have been published world-wide over the past 125 years or more. Our emphasis was initially on early and rare plans but we are expanding into more modern designs.

The current archives contain well over 10,000 plans with more being added almost daily. As a service for RCMW subscribers, many of these plans are available at no charge and are distributed as PDF files the same way that the full size RCMW plans are included in each issue.

An index of currently available plans is in Excel Spreadsheet format and can be obtained by clicking on the link below. Please note that this index is updated about every 6 months or so.

So if you are looking for the plan for that special model that you remember from your younger days, here's the place to go. We might have it or it is highly likely that we can find it for you.

[CLICK HERE FOR PLAN LIST](#)

You will find the zip file in your download folder and it can be left there or moved to another location of your choosing

WHY SUBSCRIBE TO RCMW

Regular subscribers know a couple of things about our online magazine, RCMW, that sets it apart from some of the others. But for those reading this for the first time, we would like to point out some advantages.

First, we include full size PDF files of all plans in each issue. They are embedded in the issue so they stay with each issue and the related construction article and can't get lost, damaged or mislaid. No storage problems either.

The plans can be printed at a copy shop or office supply store such as Staples. Just note the pages on which the plans are located and ask the operator to print them at 100% size. No postage required.

You can print out the entire issue or just a construction article to use in the shop without any danger of glue, dope or coffee stains getting on your original issue. If you do have an accident you can just print out another copy.

You will note that we include active links in each issue. Something not possible with printed plans. Just click on the links and you will be taken to the location. Great for finding sources for supplies.

Also note that we don't have pages full of advertising to slog through to find what you are looking for. Advertising will also be active links that you can click on or not as you choose.

Construction articles are continuous followed by their respective plans. No need to look all over the magazine to find the rest of an article.

The subscription is a low \$24 per year for 12 monthly issues. I has been that price for several years and will remain at that price, the good Lord willin' and the crick don't rise.

Because we don't have a two or three month wait between something happening and the news appearing in a printed magazine, you will get the news faster from us than from the "other guys."

AUTHOR - AUTHOR - AUTHOR

Any of you readers out there who scratch build your own designs of models shouldn't keep your "light under a bushel" - Don't be shy and just send us photos and a description of your project. We're always looking for authors who would like to see their project in print and share it with other model builders. Drop me an email at ---

cardinal.eng@grics.net

CONTEST AND SWAP NOTICES

We welcome your notices for contests and swap meets or other model related doings. There is no charge to have them entered in issues of RCMW. Publicity will increase the number of folks attending your "do." Just use the email address given on this page

HUGHES H-1 & SPRUCE GOOSE

There are dozens, maybe even hundreds of video clips and other information about Howard Hughes and his aviation and other exploits. Since one of the models in this issue is of Hughes' H-1 record breaking speedster, here are a few links to some of the video clips on the internet.

The SPRUCE GOOSE is in a museum in Oregon and I had the pleasure of a private tour of the airplane when I visited there several years ago. It helps to have friends who are docents in the museums. Even got to sit in the pilots seat and imagine what it must have been like.



Here are some links to the videos from which the photos were taken.

SPRUCE GOOSE MODEL - 8 COX .010 ENGINES

[CLICK HERE](#)

12 FT SPRUCE GOOSE WITH 8 ENGINES
- WATER LAUNCH

[CLICK HERE](#)

MUSEUM TOUR OF SPRUCE GOOSE

[CLICK HERE](#)

SPRUCE GOOSE HISTORY - BEING
BUILT AND MOVED

[CLICK HERE](#)

HUGHES H-1 RACER

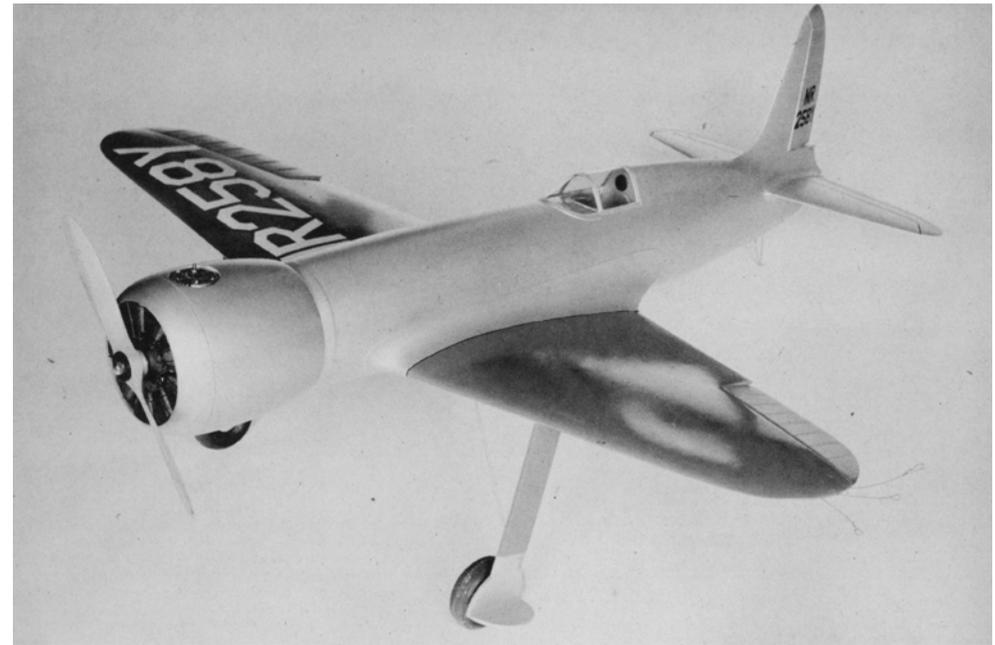
FAMOUS OLD RACER FROM THE EARLY THIRTIES
REPRODUCED IN ACCURATE SCALE FOR CONTROL
LINE—SLEEK ENOUGH FOR GOOD PROTO SPEED.

This model, by well known scale U-Control designer Walt Musciano, comes from the November 1963 issue of Model Airplane News. The original printed plan came from the Dave Shipton collection.

Multi-millionaire playboy, aircraft manufacturer, airline owner, manufacturer of oil-well drilling machinery, movie producer, motion picture company owner, around the world airplane record holder, and speed record smasher: This was Howard Hughes, almost a legendary figure in his time. Although he is known today mainly for his financial manipulations, during pre-World War II years Hughes was considered one of the world's leading pilots.

After creating a sensation with his moving picture Hell's Angels and speeding through the sky in his Northrop Gamma, Howard Hughes decided, early in 1934, to make an attempt on the world's landplane speed record. At that time it stood at 305.33 miles per hour, held by the famous pilot-designer, James Wedell.

Hughes hired Richard Palmer to help him design the Hughes H-1 Special and work began that spring. The sleek craft slowly took shape with its long, slender all-metal fuselage and short, stubby wooden wings. The racer was completed eighteen months later, in the fall of 1935, by which time the speed record had jumped to 314.32. But Hughes remained undaunted because wind tunnel tests indicated that his plaything was capable of 365 miles per hour!



On September 13, 1935 the Federation Aeronautique Internationale (F.A.I.) officials were gathered at the three kilometer, or 1.86 mile, speed course. Young Hughes climbed into the cockpit of his spindle-legged silver, blue, and yellow racer and took off. He headed into the distant sky and then returned to streak across the measured course.

Again and again the 1,000 horsepower Pratt and Whitney, Twin Wasp powered speedster raced over the course until six dashes had been completed. But as the jubilant flyer turned to land, the giant engine sputtered and gasped, and finally stopped. A glance at the instruments showed that the fuel tank was empty! In directing his full attention to the record attempt the pilot had neglected to check his fuel gage.

As the craft lost altitude Hughes realized that he was too low to bail out and he knew he could not reach the landing field. He quickly headed for a nearby farm and made a belly landing on a plowed field. Despite the crash landing the flight was very successful and Hughes, who had attained an average speed of 352.39 miles per hour, became the holder of the world landplane speed record.

The 5,500 pound Special was repaired and then went on to establish a new United States Intercontinental speed record of 327.1 miles per hour in a flight from Burbank, California to Newark, New Jersey.

Our model of the Hughes H-1 Special is built to the scale of one-and-three-quarters inch to one foot, the same scale used for our "Howard Ike" control-line model which appeared in the 1962 model annual. This scale produces a man-sized airplane which is a joy to fly.

We installed a J. Roberts control system, which uses a third line to actuate simultaneous engine speed and flap control. Any engine from .29 to .60 cubic inch displacement can be used and it should be fitted with a speed control attachment specifically designed for it. For best results the engine should have a factory equipped control such as a Johnson Throttle Master or a Roberts Vari-Speed.

Before describing our model we wish to express our appreciation to Vincent Vecchio and George Egley for their contributions to this article.

Construction begins with the wing. Cut the spars, ribs, and joiners to shape, and cement joiners to the spars forming the correct dihedral. Be sure to notch spars for the wing ribs and cut joiners in one piece.

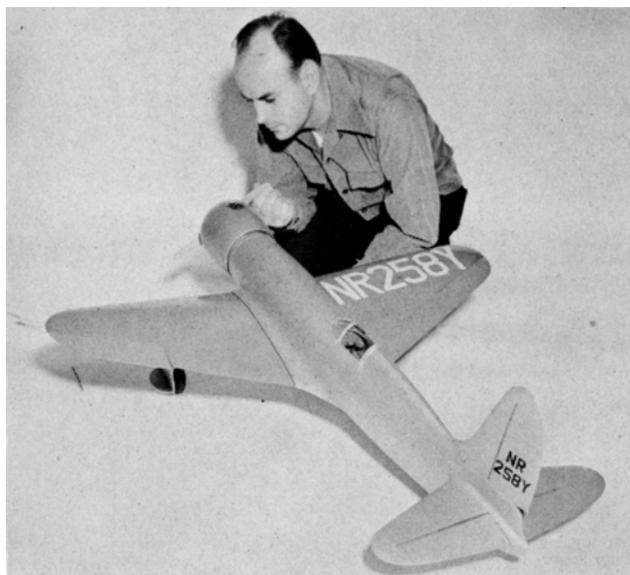
Cement all ribs except 3, 4, 6 and 7 into the spar notches and, while these are drying, cut the wing covering to shape and butt-join to form the correct chord distance. Be sure to allow room for the flaps. Apply plenty of cement to the ribs and spar, press the covering in place and hold it with straight pins until the cement has dried.

Bend the landing-gear struts to shape and join by binding the joints with fine copper wire and soldering. Cut the landing-gear supports from plywood and drill holes for the J bolts.

Fasten the wire strut assembly to the plywood support and smear cement around the J bolts and wire. Slip the supports into the slots of ribs 3, 4, 6 and 7.

Cut a narrow slot in the lower covering to admit the landing-gear struts and cement the landing-gear assembly to the wing structure. Use plenty of cement during this operation and replace the piece of covering which was removed to admit the strut.

Cement the bellcrank mount firmly to the spar and ribs. Carefully drill an additional hole in the secondary bellcrank arm for the flap-control rod. It will also be necessary to enlarge the elevator-control hole in order to accommodate the 3/32" control rod. Bend and attach the three control rods and solder a washer to the end of each.



Cut the wing flaps from sheet balsa and cement the dowel in place after the control horn has been securely attached. The control horns are standard Veco, or similar elevator equipment, with one side of the attachment bar removed. Drill holes and drive wire pins into the ends of the flap dowel. Use hardwood block anchors with tubing inserts for hinges and cement into place.

When the flap is secured be sure that it fairs with the bottom covering. Tape the flap in the closed position and, with the bellcrank in the high speed position shown, bend the flap-actuating wire rods. Bind and solder the joints carefully.

Add the lead-out lines to the bellcrank and be certain to stagger the ends. Run the three lead-out lines through the holes in the ribs. Check the control bellcrank and be certain that the flaps operate easily.

Bevel the leading and trailing edges of the lower covering to follow the contour of the rib upper camber. Cut and butt-join the upper covering and cement it to the spars, ribs, and beveled portion of the lower covering.

Use plenty of cement and hold the sheet balsa in place with pins, then set aside to dry. Be sure to cut adequate slots for the three control rods. Add balsa wing 'tips and sand the wing smooth.

As a departure from the normally solid sheet-balsa tails, the tail surfaces on the prototype model were built up with ribs and then covered with sheet balsa in order to lighten the empennage.

This becomes necessary because the ratio of engine weight to model weight becomes greater as the model increases in size and the larger scale models become increasingly tail heavy. The Hughes H-1 Racer possesses a long nose which tends to offset this disadvantage, but even so our model required a few ounces of lead in the nose to balance properly.

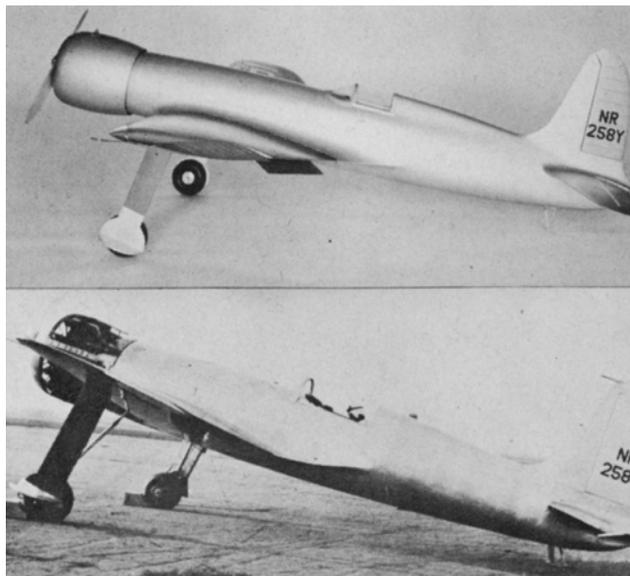
To further lighten the tail, it is suggested that the rudder and elevator be covered with silk in lieu of sheet balsa. This also increases the fidelity to scale by simulating the fabric-covered control surfaces of the full-size plane.

The simplest method for making the tail structure is to cut the spars, and the leading and trailing edges to correct size. Cut rectangular rib blanks from 1/16" hard, sheet balsa and cement them between the spars and edges. Add the tips and when dry gently carve the ribs and edges to proper shape. Finish by sanding using sandpaper around a large block of wood.

Re-cement all joints and add the control horn to the elevator. Hinge the elevator to the stabilizer using music wire and aluminum tubing. Be sure the tubing and wire are firmly cemented and bound with silk strips.

Cut the fuselage keel to shape from butt-joined sheet balsa. Take care to make the cutout for fuel tank, fin spar, cockpit, and wing and stabilizer locations. Cement keel to the wing and install the fuel tank.

Cut fuselage bulkheads and cement these to the keel, being sure to slip the control rod into the holes in the bulkheads. Cement the stabilizer to the keel at this time and connect the control rod to the control horn. Bend, assemble, and install the tail skid very securely.



Engine mounts are cut from hardwood and cemented in place. Temporarily bolt engine to the mounts and proceed to bend the forward end of the engine speed-control rod. It is advisable to solder thin sheet metal or sheet-brass gussets as shown in order to prevent excessive flexing from the large number of bends in the wire.

Install bellcrank and connect the leadout wires to it. Attach push rod to the engine speed-control unit and test operation of the controls. Add plastic fuel-line filling, vent, and feed lines to the fuel tank.

Now plank the entire fuselage, carve the tail block, and hollow and cement into place. Sand the fuselage smooth and add the fin and rudder. It is important to check the control horn movement to be certain the block is sufficiently hollowed. Sand the fuselage smooth and add fin and rudder. Slip fin spar into slot in the keel and offset the rudder.

One of the most distinctive features of the Hughes Racer is the enormous fillets on the wing and empennage. Cut a basic planform for the wing fillet following the top view outline. Cement the center of the fillet to the wing and fuselage.

This not only becomes a base upon which layers of Plastic Balsa can be built up, but also aids in maintaining the correct fillet outline. With the fingers mold the Plastic Balsa until the fillet is slightly oversize to allow for sanding. When thoroughly dry, sand very carefully.

As the cowl is round it is advisable to turn it on a lathe. If you are not equipped to handle this operation, take your block of wood and the full-size drawing to the nearest wood-working shop, which should be glad to turn the cowl and hollow most of it for less than two dollars. It is well worth it.

If the cowl block is built up of several smaller pieces it is imperative that the joints be double cemented. Apply cement to the pieces and press them firmly together to distribute the cement evenly on both surfaces, then separate.

When the cement is thoroughly dry re-cement each piece and press together permanently. Do not try to work the assembled block for several days, but let it dry completely.

The method of cowl attachment was ingeniously developed by Vincent Vecchio and has been successfully used on many model projects. First carefully cut the plywood cowl-retainer ring to the shape of the engine cylinders as shown in the front view.

Now, very gently cut the nose ring away from the cowl and groove the rear portion of it to fit the plywood exactly, then cement the plywood in place. Cement bulkhead A to the fuselage: it must fit the cowl interior very snugly.

Slip the cowl on the fuselage and place the nose-ring assembly against it. Mark the location of the wood screw on the engine mounts and drill a pilot hole 1/16" in diameter. Add the wood screws and presto the cowl is in place. It is easily disassembled and the screw heads are almost invisible.

Only the front portion of the dummy cylinders need be carved as in bas-relief sculpturing. The cylinders are cemented to the plywood cowl retainer and dummy crankcase and are wrapped with heavy thread to resemble cooling fins. The valve push-rods are added after the cowl is painted. Now remove the cowl and engine. Aileron ribs can be indicated with plastic fish line.

A final sanding prepares the craft for finishing. Apply three liberal coats of Sanding Sealer to the entire model and when thoroughly dry sand with 9/0 Flex-i-grit abrasive coated Mylar. Repeat the procedure until a dozen coats have been applied, then thin the sealer about ten percent and brush on at least five more coats, with intermittent sandings with 10/0 Flex-i-grit after each coat. Continue until a glasslike surface is obtained.

The entire model is colored aluminum except for the wing panels outboard of the fillets, which are medium blue. Paint the aluminum first and follow with the blue. This should be rubbed to a high gloss with automotive rubbing compound and a soft cloth.

Cockpit detail is optional and should be added now if desired. The cockpit cover on the full-size plane was unusual because the main portion lifted off in one piece while the windshield fitted on tracks which enabled it to slide forward to permit easier entry to the cockpit. This is for the benefit of any super-detail boys who care to duplicate the feature.

Wheel covers are cut from shim brass, tin can metal, or 1/16" plywood and are firmly attached to the landing-gear strut. Add the rudder static-balance rod and the wing mounted pitot tube. Paint the engine cylinders and wire landing-gear strut black and add the engine push rods.

The wing license numbers are cut from yellow Wondur-Cal and appear on the upper left and lower right wing. Tail license is cut from black Wondur-Cal which can also be used to simulate the landing-gear retraction well on the underside of the wing.

Install the engine, and cowl plus propeller, and carefully balance the model. If it is tail-heavy screw lead weight to the forward portion of the engine mounts until the unbalanced condition is corrected.

The engine should be run while the model is on the ground and adjusted to peak power when the center wire is pulled out. Conversely, the engine should idle slowly when the flying wires are pulled tight and the center wire slackened.

Smooth paved surfaces are of course the ideal flying sites. Using the J. Roberts control handle and sixty feet of stainless steel, braided

.012" diameter flight lines, takeoff under full power with flaps up and engine wide open on the first few test flights. Once you have the feel of the craft, begin to slowly relax your trigger finger; the engine will slow and flaps extend proportionately for some real flying fun with a man-sized model airplane.

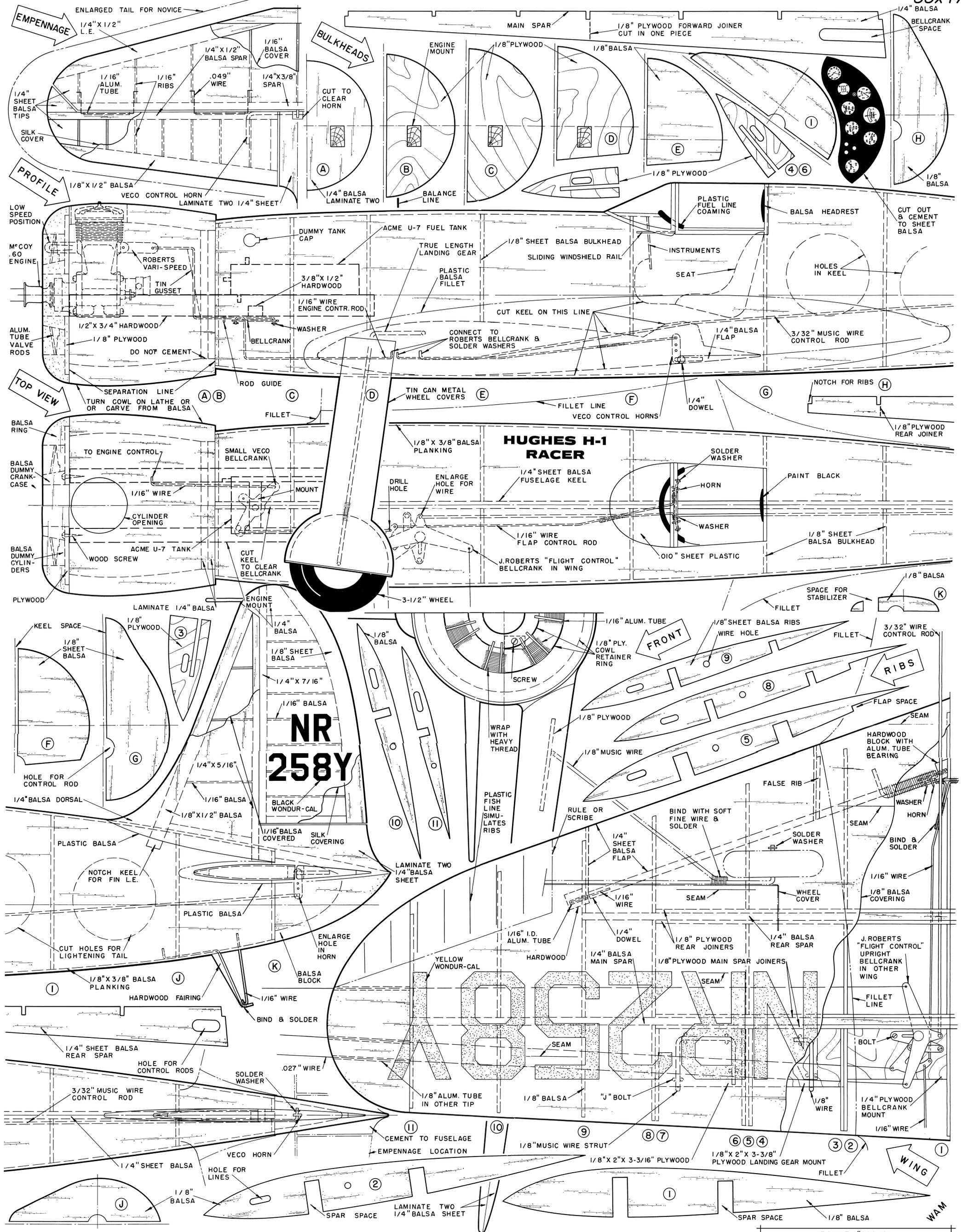
Optional Modifications

This model of the Hughes H-1 Special can be converted into a unique radio-controlled pylon racer by a resourceful model builder. Wing and fuselage construction must be lightened and the cowl can be made from fiber-glass.

Increase the number of ribs and reduce the thickness of the material. Silk-cover the wing and reduce the fuselage planking thickness by half. A craft of this size should accommodate engines from .19 to .29 cubic inch displacement.

Modelers who like a speedy scale job can reduce the plans to half size, install a .19 to .29 cubic inch displacement engine, and reduce the fuselage and wing covering to 3/32" sheet balsa.





HUGHES H-1 RACER - DESIGN BY WALT MUSCIANO
FROM NOVEMBER 1963 MODEL AIRPLANE NEWS

CONSTRUCTION ARTICLE IN
 RCMW MAY 2016
www.fullsizeplans.com
 CLICK HERE TO GO TO WEBSITE

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CLUBS - NEWSLETTERS - FORUMS - PLANS

There are mountains of information on the internet, a combination of trash and treasure. This is our first shot at compiling a list of useful links related to model airplanes. We will expand this page and after another issue or two it will be moved to a location accessible from the website rather than being part of each issue of RCMW.

If you belong to one or more model airplane clubs, this would be a good place to have a link to your own website. It would be a good way to find potential members in these days when model building and flying seems to be losing out to television, ipads and computer games.

Get your club listed here so a modeler looking for a club to join can find you.

Send me the details and we can get it done !

E-Mail to - cardinal.eng@grics.net

SOCIETY OF ANTIQUE MODELERS
<http://www.antiquemodeler.org/>

ASSOCIATION OF VINTAGE AERO-
MODELLERS NEW ZEALAND
<http://newsarchives.yolasite.com/>

PAUL AND RALPH BRADLEY'S MODEL
AIRPLANE PAGE
<http://www.parmodels.com/>

NATIONAL FREE FLIGHT SOCIETY
<http://www.freeflight.org/>

PRECISION AEROBATICS MODEL
PILOTS ASSOCIATION (U-Control)
<http://www.pampacl.org/>

FLYING ACES CLUB
<http://www.flyingacesclub.com/>

BRITISH MODEL FLYING ASSOCIATION
<https://bmfa.org/>

VINTAGE RC SOCIETY
<http://www.vintagercsociety.org/cms3/>

FAI - AEROMODELLING
<http://www.fai.org/aeromodelling>

MODEL AERONAUTICAL ASSOCIATION
OF AUSTRALIA
<http://www.maaa.asn.au/>

DC MAXECUTERS
<http://dcmaxecuter.org/>

HIP POCKET AERONAUTICS
<http://hippocketaeronautics.com/index.htm>

STICKS AND TISSUE
<http://sticksandtissue.yolasite.com/>

MODEL AERONAUTICS ASSOCIATION
OF CANADA
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RC GROUPS
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RC UNIVERSE
<http://www.rcuniverse.com/>



ALKIE IV

by ROLAND T. MAYER

No freak, just to be different, this is a high performance ship with many special and desirable attributes. This duo-mono configuration was proved by the French Delannes—real aircraft.

Originally published in Model Airplane News, May 1954

As the name implies, this is the fourth in a series of duo-mono configurations that we have had the pleasure to design and fly in the past few years.

After this rather lengthy association with these little by-wingers, we will go on record as saying that for sure at least one of those fifty million Frenchmen wasn't wrong. M'sieur Delanne, who turned out several admirable duo-monos just before the roof fell in on La Belle France, really had something.

As the latest in our series, Alkie IV displays the type of performance we had hoped might eventually be attained when the number one ship was started. Like the previous models this ship has shown itself to be extremely stable, particularly with respect to stalls, and excellent for windy weather flying.

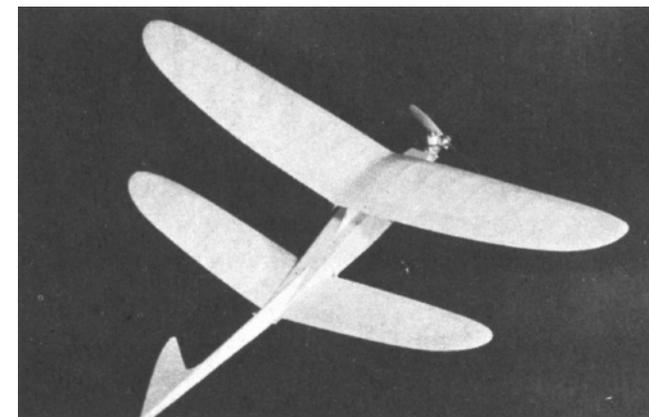
Under power the climb is steep and steady with none of the eccentricities so common to many hot free flights, and because of the unique characteristics of the duo-mono configuration, the transition from climb to glide is a sight to behold.

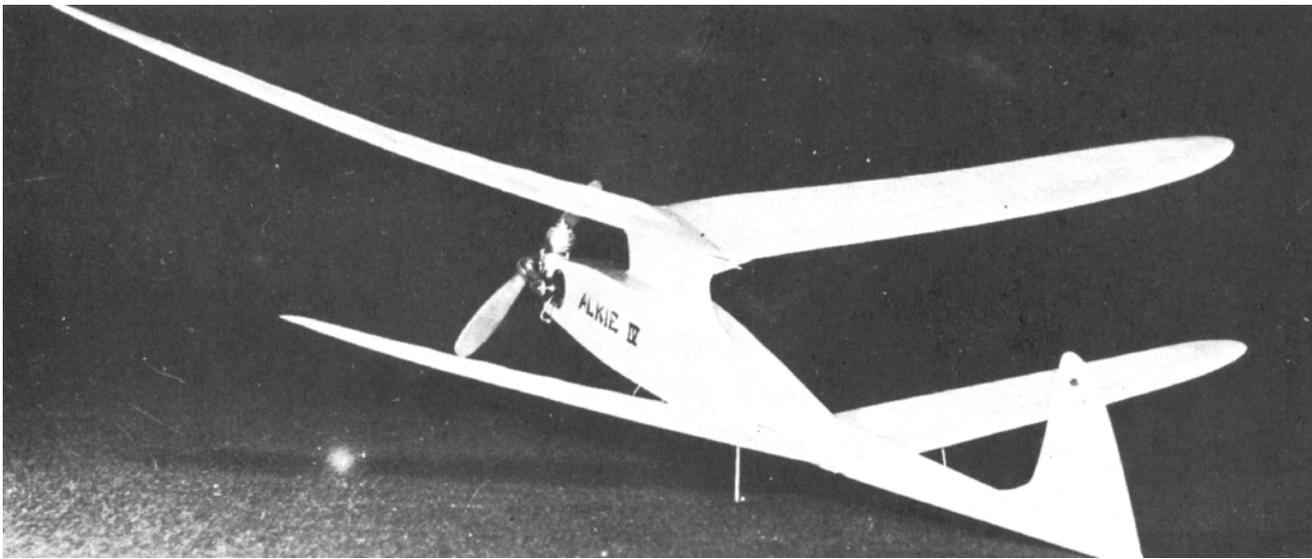
This helpful peculiarity further accounts for an extremely stable, flat glide by virtue of its automatic compensation for gusts and rough air in general. The gimmick boils down simply to the proper use of decalage.

In the case of Alkie IV, the main wing was set at $+3^\circ$ and the secondary wing set at -2° . The idea is to have the secondary wing approach its position of maximum lift as the main wing approaches its stalling point.

The resulting unbalanced pitching moment immediately acts to restore the ship to its normal flight attitude. This arrangement, simple as it may seem, accounts for the unique and pleasing characteristics of the ship.

Since the performance of a free flight model is generally proportional to its flying weight, care should be exercised during construction to keep the ship as light as possible without sacrificing structural strength. If intended for competition, Alkie IV should be held close to the 5 oz. Minimum for Half A's.





The ship should balance approximately at the mid-point of the main wing chord. Hand glide the model as you would a conventional ship and correct for any stalling or diving tendencies by changing the incidence in the secondary wing as you would the stab on a regular free flight.

Upon obtaining a flat glide, adjust the rudder tab for a slow circle to the left. When you are satisfied with the glide, make the first flight with the engine running as slowly as possible and a short timer setting, hand-launching the ship into the wind. Now increase power gradually until peak performance is obtained.

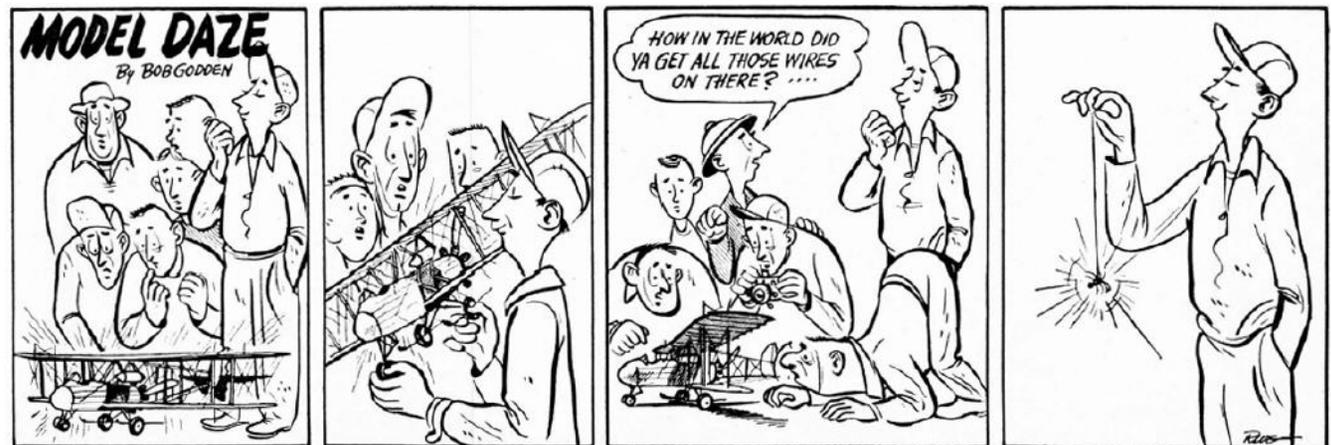
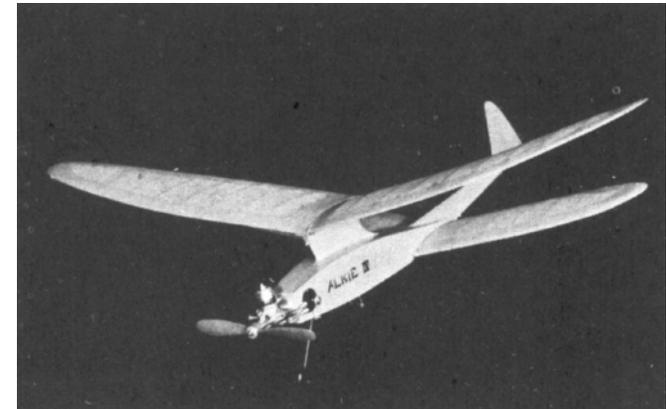
The wings are of conventional Ritz type construction built on a simple jig made up of two 1/8 sheet plates cemented to the work bench at the positions indicated on the plan.

The fuselage is built around a center keel. First the center ply of the pylon is cemented in place as shown. Then all the bulkheads except number two are added. Next add the top and bottom sheets.

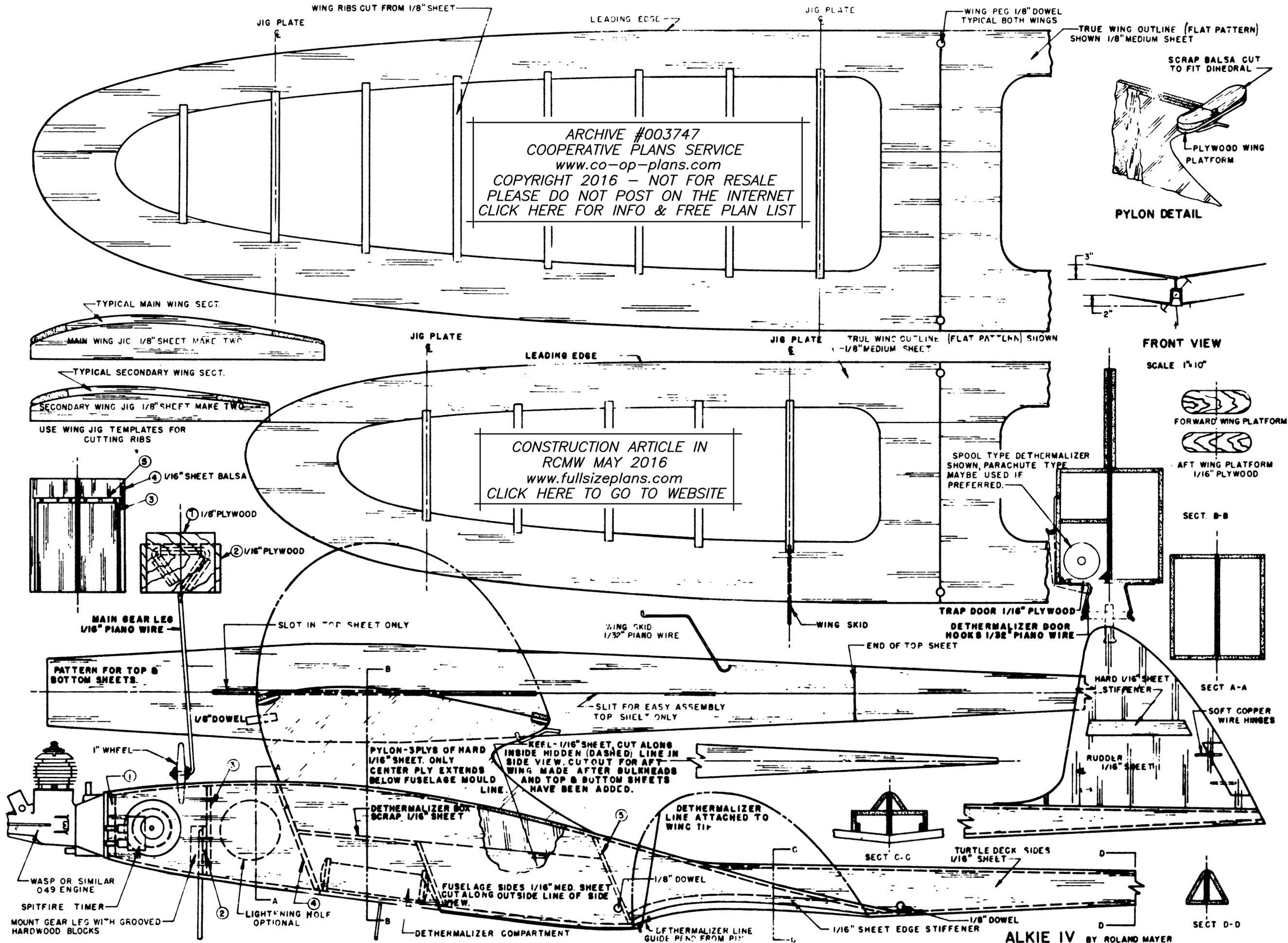
Now cut away keel and bottom sheet, previously marked to allow passage for the secondary wing. Also cut a slot to facilitate installation of bulkhead number two and landing gear attachment. Next add the fuselage sides, turtle deck and rudder. Finally complete the fuselage and add the hardware as indicated on the plan.

Since there is no stab to pop up, either spool type or parachute dethermalizer may be used. We chose the former and housed it as shown in a compartment opening at the bottom of the fuselage with the trap door actuated by a burning fuse.

For additional strength in the nose the fire wall should be covered with light gauze or silk extending aft 1/2 in. Then the entire ship is covered with lightweight Silkspan. The original model was finished off with three light coats of butyrate dope. Bright colors should be used for good visibility.



Cartoon from MAN February 1951



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ALKIE IV BY ROLAND MAYER

PLAN FROM MAY 1954 ISSUE OF MODEL AIRPLANE NEWS

Photos & Video



Not exactly model airplane related but there are several flying items in this clever animated clip, including a pigeon, ICBM and a jet powered suitcase.

[CLICK HERE](#)



Photo of Don Srull's Scientific PARATROOPER model, a 1940's vintage design that I believe dropped a parachute in flight. Photo by Pat Daily. For more click on the link

[CLICK HERE](#)

Note - Photos on this page from Maxecuter web site



Stew Meyers with his Backyard Pusher - It flies!



Stahl HURRICANE - This and other Stahl photos by Bob Schlosberg



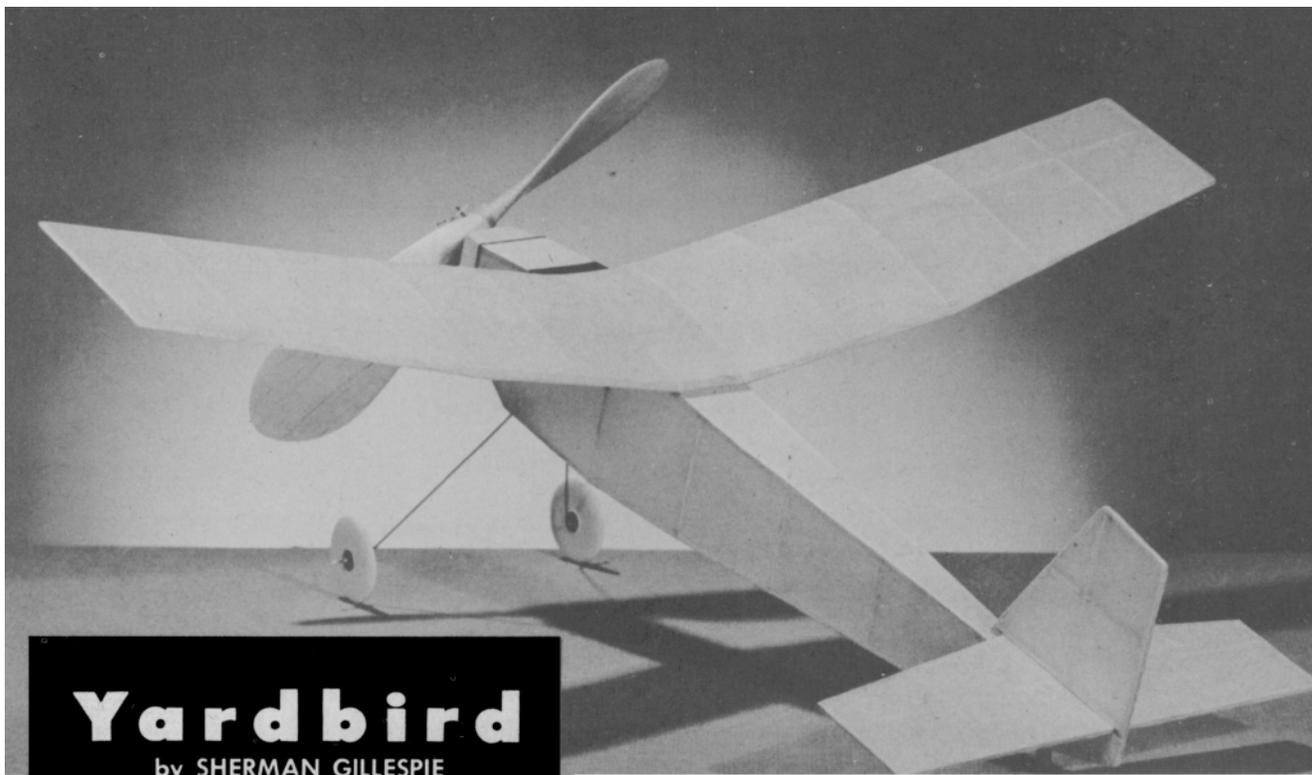
Stahl WEIGHT RULE MODEL



Stahl PT-19



Stahl INTERSTATE CADET



Yardbird

by SHERMAN GILLESPIE

Another model from the May 1954 issue of Model Airplane News

The Yardbird is a simple model designed for your school-yard pleasure flying. With its low cost and short construction time it will prove a breather from the big jobs. Don't let its small size fool you. This little crate is a real altitude hound!

Tests in cool air gave many flights of from 45 to 55 seconds hand-wound with top time to date a fine 1 minute 5 seconds. Warm air conditions should give some spectacular flights.

Construction is quite easy but work carefully to keep the weight of the model down. The finished ship should weigh approximately 1/2 oz. ready to fly.

Select straight grained, medium hard 1/16 in. square balsa for the fuselage. Build the two fuselage sides separately. Assemble the sides over the top view striving for square construction which is essential for accurate alignment of the wings and tail surfaces.

Cut the nose block from medium soft scrap balsa and drill it to receive the removable thrust button. The button shown was turned from maple but the plastic or wooden ones available at the hobby shops will work very well. Cement the completed nose block in place and give it a coat of sanding sealer.

Form the landing gear from 1/32 in. diameter wire and cement securely in place.

Trim away any excess cement at the fuselage joints and sand the entire structure lightly. Give the framework a coat of clear dope to seal the wood before dopping on the tissue.

Cover the fuselage with Jap tissue if possible. Water shrink the tissue and give one coat of thinned clear dope.

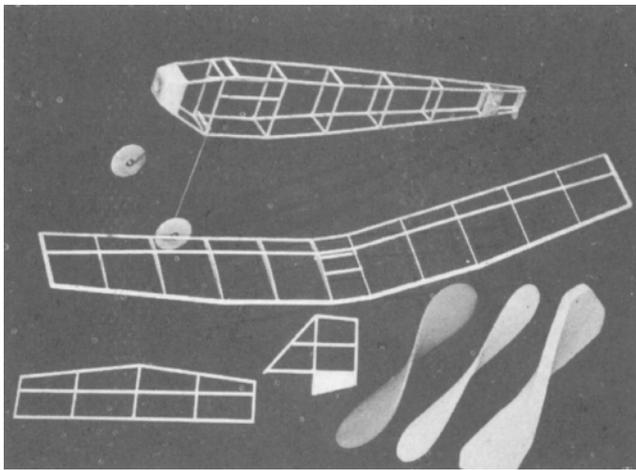
The tail surfaces are made from 1/16 in. square balsa and are covered on both sides with Jap tissue. They may be water shrunk and clear doped if they are pinned down to a flat surface during the shrinking and dopping process.

Select medium hard 3/32 in. square balsa for the wing leading edge. The trailing edge is made from 1/16 x 1/8 in. medium hard stock. All wing ribs are cut from 1/32 in. sheet balsa. Build the wing in right and left panels.

Trim and sand the leading and trailing edges to form the proper airfoil. Block and pin the wing panels in place over the plan to give the correct dihedral of 1-1/2 in. under each wing tip.

Insert the cut and shaped leading and trailing edge pieces for the center section and add the 1/16 in. square spar pieces. Use good glue technique and allow ample drying time.

Give the completed wing framework a final sanding and a coat of clear dope. Cover the wing in sections to avoid wrinkles, applying the dope to the outlines of the wing sections only. Do not dope the tissue down to each wing rib.



Water shrink the tissue and brush on one coat of thinned clear dope. It is best to block and pin the wing during the shrinking and doping process to minimize warping.

Various propellers may be used with the Yardbird. The 7-in. props shown are the plastic, the Paulowina wood, and the machine-cut balsa blanks which are available at most hobby shops.

The prop shown on the completed model was finished from the 7-in. balsa blank. It requires the most work in finishing but it is the lightest and most efficient. The Paulowina prop is also quite efficient though a little hotter. The plastic prop is the easiest to install but it is the heaviest.

With any of these props a small freewheeling device will improve the glide. The device shown is simple and foolproof. Cut a piece of 1/16 in. diameter aluminum tubing and insert and bend a piece of straight pin as indicated.

The bends are made at right angles so that the top pin is pressed against the prop when the lower pin is engaged with the winding hook. Bind the tube unit in place with light thread and cement.

Form the winding-hook-connecting-pin part of the prop shaft, and then slide on the prop, washers, and nose button. Form the motor hook after assembly of the prop-nose-button.

Begin final assembly of the model by cementing the stabilizer and the rudder in place. Check alignment carefully. Add the 1/16 in. sheet tail skid.

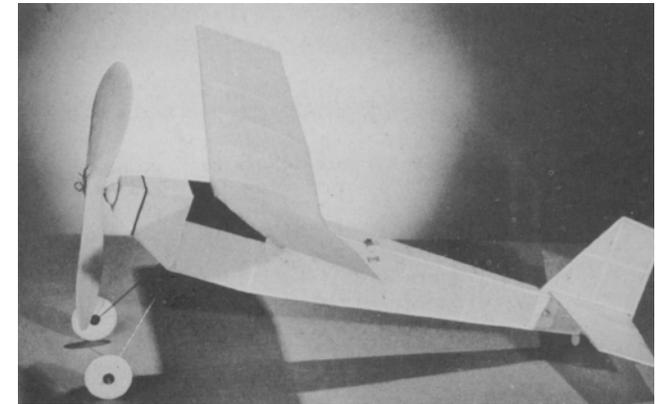
The wheels shown are made from 2 ply 1/16 in. sheet balsa laminations. Use 1/16 in. diameter aluminum tubing for bushings with 1/4 in. copper washers as collars. A drop of cement on the axle ends will hold the wheels in place.

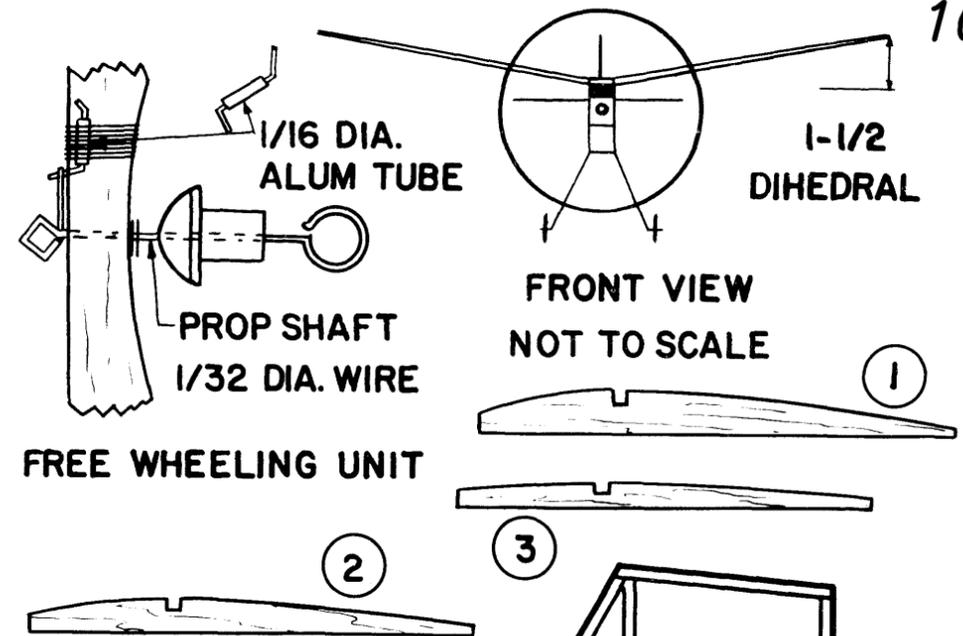
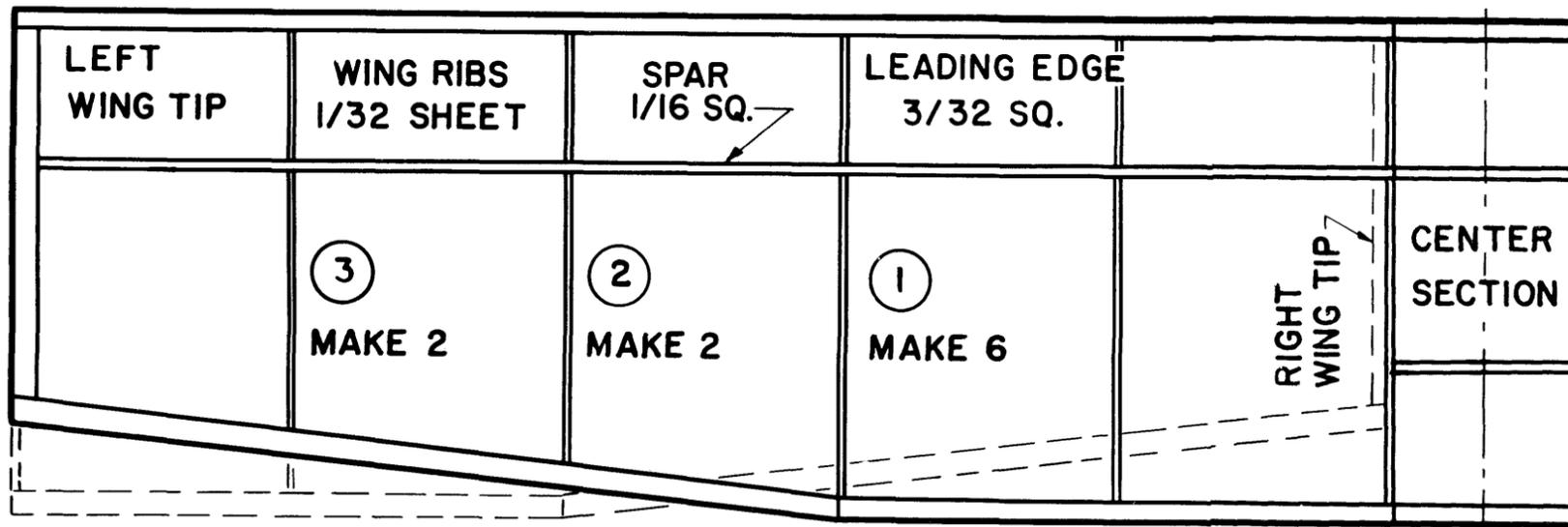
Dope on black tissue to stimulate the cabin and give the nose and wheels a coat of colored dope of your choice.

Cement the 1/32 x 1/8 in. balsa wing mount pieces in place on the fuselage. Cement the wing directly to these mounts. Although this is a rigid mounting, little if any crash damage will result with a model this light.

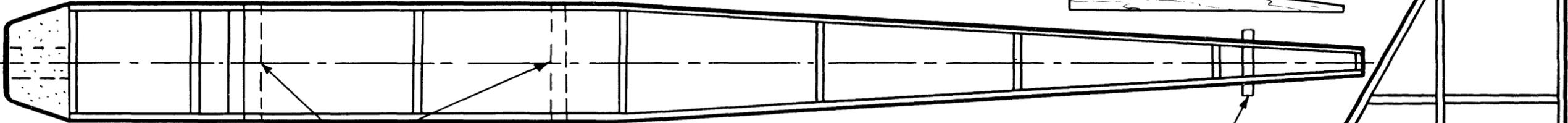
Make up a four-strand motor from 1/8 in. flat T-56 rubber. Lubricate the motor thoroughly before installing. Use light rubber tubing on the prop hook to protect the motor. Use a piece of 3/32 in. dowel for the rear motor pin.

Balance the model for a long flat glide, and then adjust for a right turn. Use slight right thrust for a right climb under power. Only small adjustments are needed. With careful work during construction and assembly, your Yardbird will fly beautifully right off the board!

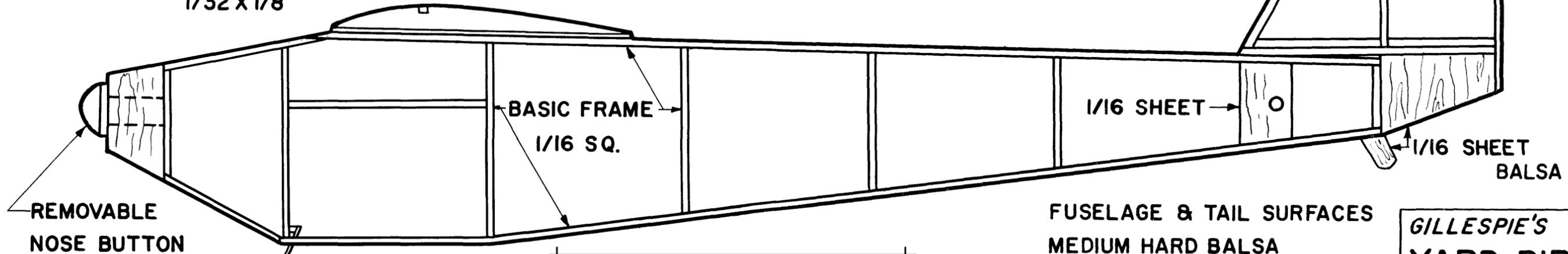




FROM MODEL AIRPLANE NEWS MAY 1954 TRAILING EDGE 1/16 X 1/8



3/32 DIA. DOWEL

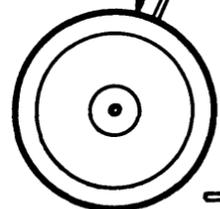


FUSELAGE & TAIL SURFACES MEDIUM HARD BALSA

GILLESPIE'S YARD BIRD

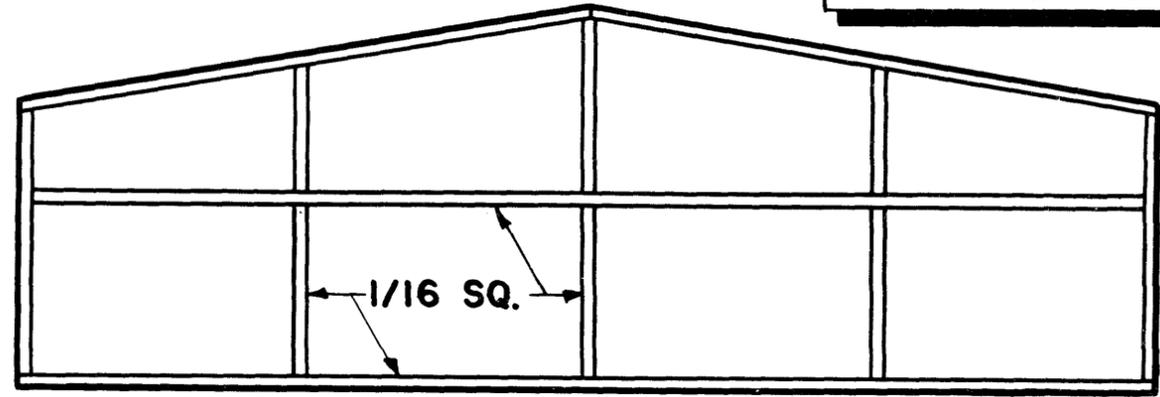
CONSTRUCTION ARTICLE IN
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2 PLY 1/16 SHEET WHEELS



LANDING GEAR

1/32 DIA. WIRE



CORKY

by Van Hereford

From November 1963

Model Airplane News

A biplane has a certain, indefinable quality which most modelers find irresistible. In designing Corky the basic idea was to produce a model with the classic lines of the modern home-built biplane, and one which would still be a practical, easy-to-build, sport flyer.

All-balsa construction results in a rugged, long-lasting model and makes those beautiful ellipses possible with a minimum of building time. I regret to say that the original recently took off cross country and is now resting deep in some very thick woods. So be sure you know how much fuel is left in the tank!

Begin construction with the wings. The upper and lower are alike in wood size and construction, and differ only in area and dihedral. If you are not lucky enough to find a sheet of 3/32" balsa of the required width for the upper wing, you must splice two sheets of obtain the 5" cord.

Leave each wing in one piece until you are ready to add the dihedral. Cement the spruce leading edge to each wing blank. This leading edge should not be omitted as it adds greatly to the durability of the model.

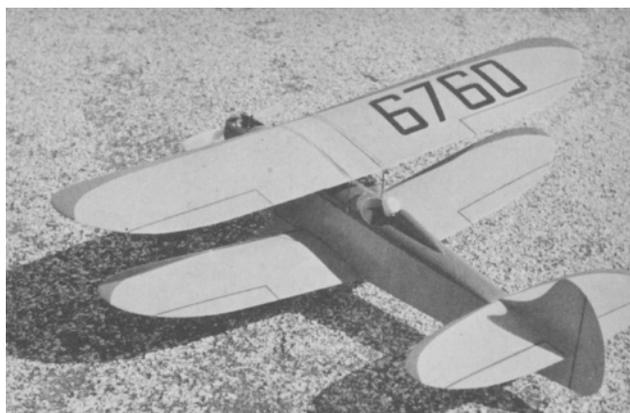
Using a ball point pen, mark the tip outlines and rib locations and cut wings to shape. Carve and sand to an airfoil cross section but don't try for feather-thin trailing edges.

The eight ribs of each wing are cut from hard 1/8" sheet. Turn the wings upside down on your worktable and cement only the trailing edge of each rib in place. All of them should now be standing up off the wing at the same angle. When dry, apply cement to the remainder of each rib, turn the wings right side up, and pin the sheeting down to top of rib.

Leave the wings pinned from eight to ten hours. Now trim off the trailing edge of the tip ribs and sand the bottom to form a straight line, joining the leading and trailing edges.

Cut the wings apart, taking care to get the correct amount of sweep-back on the upper wing. Bevel the cut edges until you obtain the correct dihedral angle.

Place one panel flat on the worktable and block the other to twice the required dihedral, or 3". This is the same for both wings but since the lower wing is shorter, it will have greater dihedral. To complete the wings, glue 1/32" plywood tabs beneath the trailing edge of each wing.



The rudder and stabilizer require no instruction; simply cut to outline and sand to an airfoil shape.

Cut two identical fuselage side patterns from 3/32" sheet and mark off locations of the formers. Make sure that the cut-out for the lower wing fits the top wing contour perfectly.

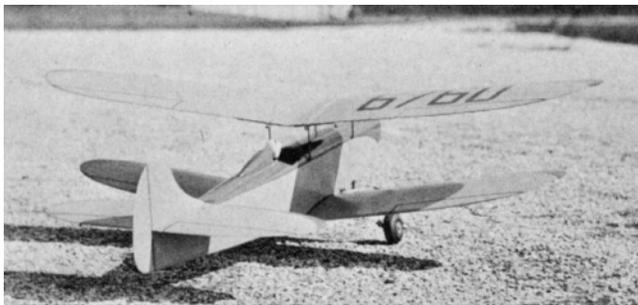
Cut the firewall and formers and glue formers A, B, C, and D to one fuselage side, checking to be sure that they are at right angles. Now add the other side, and when dry install the firewall, cement rear of sides together, and add formers E and F.

When installing the fire-wall, check the fuselage top view to get the correct amount of right thrust.

Bend the 1/16" wire wing supports to the shape shown on the plan. Both the front and rear wing supports are identical except that the rear one is 5/16" shorter to give the correct incidence. Bind them to the 1/16" plywood plates with copper wire, and solder (thread and glue may be substituted).

After installing the wing supports in the fuselage, glue the 1/2" soft balsa fuselage top in place and carve to shape. Now add the 1/16" sheet fuselage bottom behind the lower wing.

Cut a 3/32" plywood plate, which is the landing gear support, to fit flush between formers A and B. Glue a 3/32" sheet of hard balsa to this plate as shown on the plans and cut the grooves for the landing gear.



Now add block 1/2" thick in front of the landing gear and next the Vs" hard-balsa cowling front. The cowling front is purposely left square on the plans so that it may be carved to shape after it has been glued in place.

Cut lengths of 1/16" wire to join the front and rear wing supports, wrap with copper wire, and solder. Make the cutout for the cockpit, add the head rest and tail skid, and the fuselage is complete. The stabilizer and rudder are now glued in place.

The landing gear arrangement is borrowed from the radio boys and works very well. In case of a hard landing, it will knock off with no damage to it or to the fuselage (usually).

Don't be afraid to put a good finish on Corky as weight is not an important factor. After all, this is a sport model, and the last thing we want is a floater.

The original had three coats of sanding sealer, three coats of color, plus trim, and weighed 7.7 ounces ready to fly. Judging from the way that little .020 hauls it around, it could weigh a few ounces more without seriously affecting performance.

The original Corky was cream, trimmed with orange, which was a slightly unusual, but very attractive color scheme. One word of caution

about doping the wings—dope the underside first on each coat, or they will tend to flatten out and lose their airfoil shape.

One-sixteenth-inch wide black tissue strips were used for the control surface outlines. Add a few final touches, such as the windshield and the pilot, and you are ready to make a trip to the flying field.

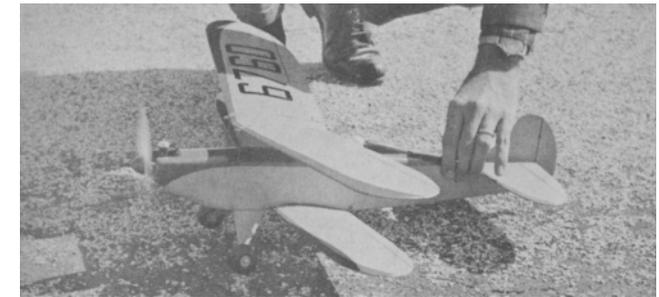
My Corky proved very easy to adjust, and if you have been fairly careful in building your version, you should have no trouble. Test until a fast, flat glide is obtained. If ballast is necessary, use clay, which can be substituted for lead and placed out of sight after you have completed your flight test.

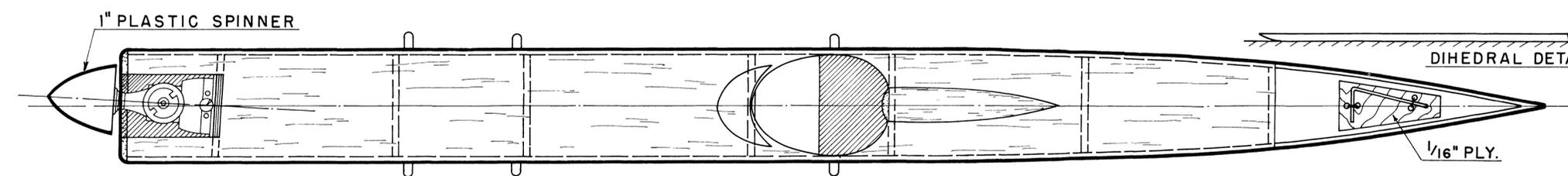
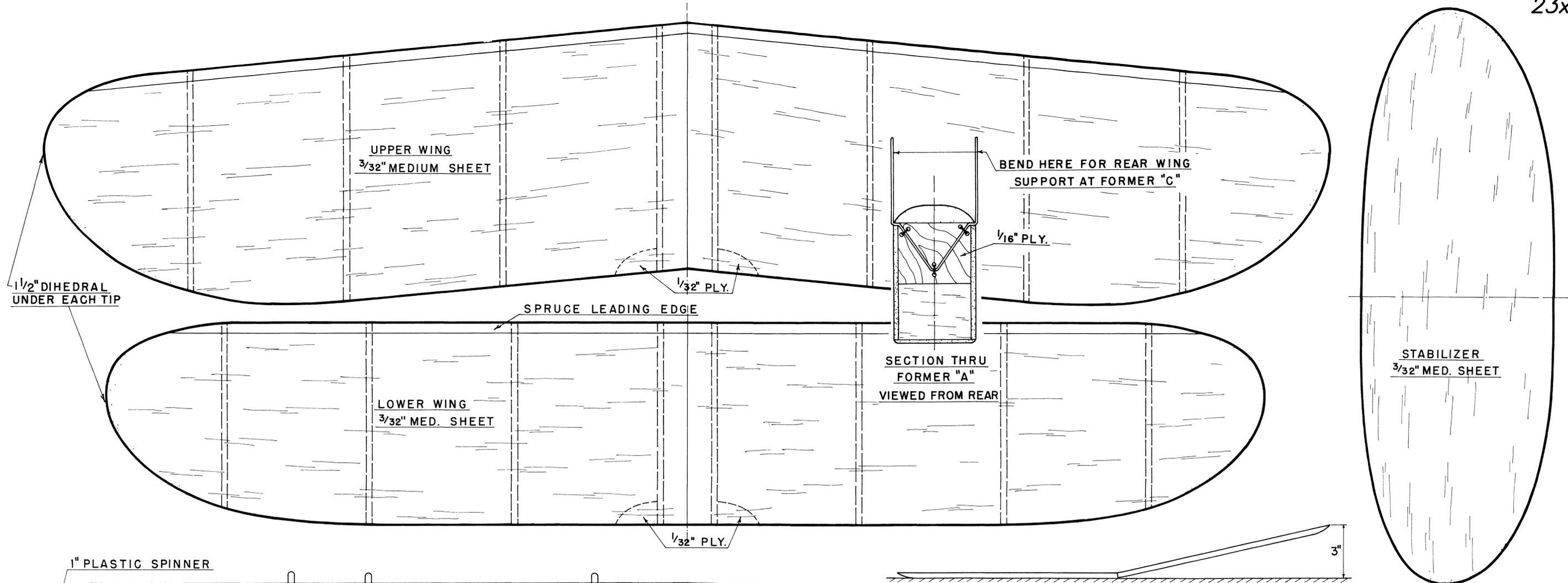
Bend the rudder trailing edge to get a slight left turn. Now you are ready for power. A 6" diameter 3" pitch, Top Flite prop is recommended. This may sound a little large for an .020, but this little engine can handle it easily, and it is just right for this model.

With the prop on backward and about ten seconds worth of fuel left in the tank, launch the model directly into, or slightly to the left, of the wind. Corky should go into a gentle left climb, and when the motor cuts, continue in the same turn with no sign of a stall.

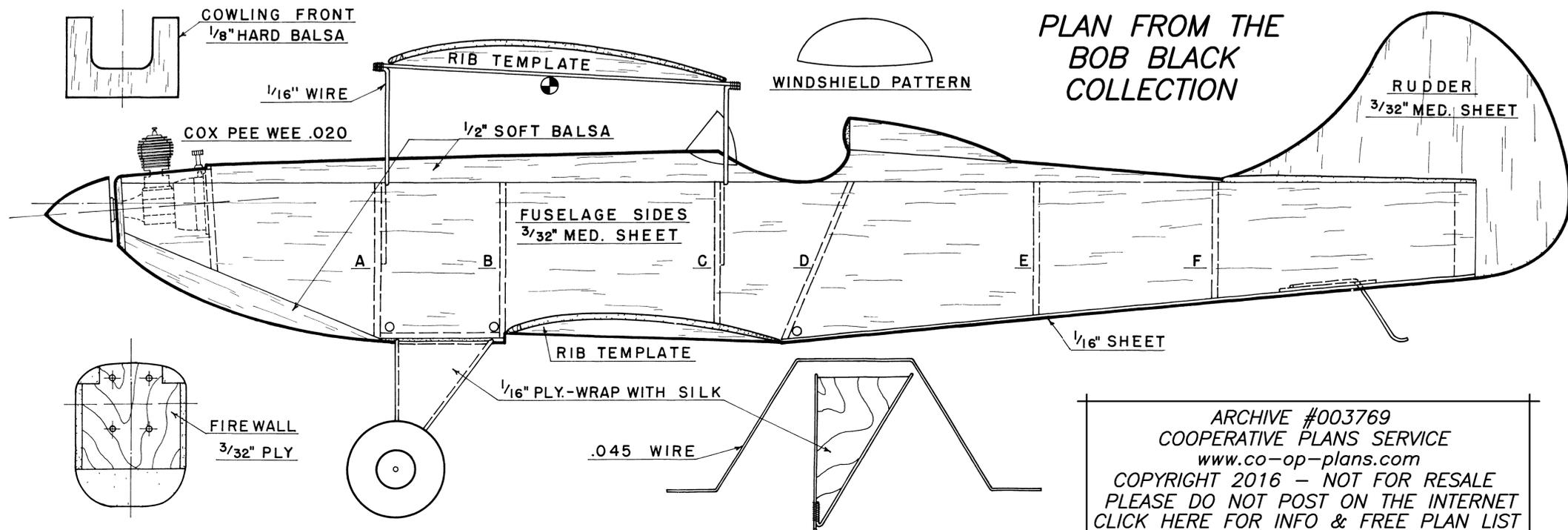
On my first test flight the little bear climbed in a tight left corkscrew at an angle that would put some contest ships to shame. Oh yes, I had forgotten to put the prop on backward!

The addition of a little more down thrust and a little more right thrust produced a flight pattern much more realistic and more to my liking.

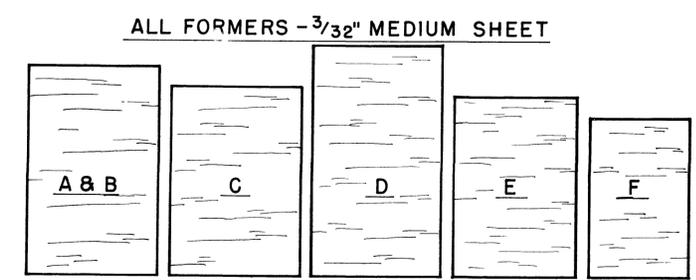




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DESIGN BY VAN HEREFORD
ORIGINALLY PUBLISHED IN
MODEL AIRPLANE NEWS
NOVEMBER 1963

Back Issue MAGAZINE ARCHIVES

By Roland Friestad

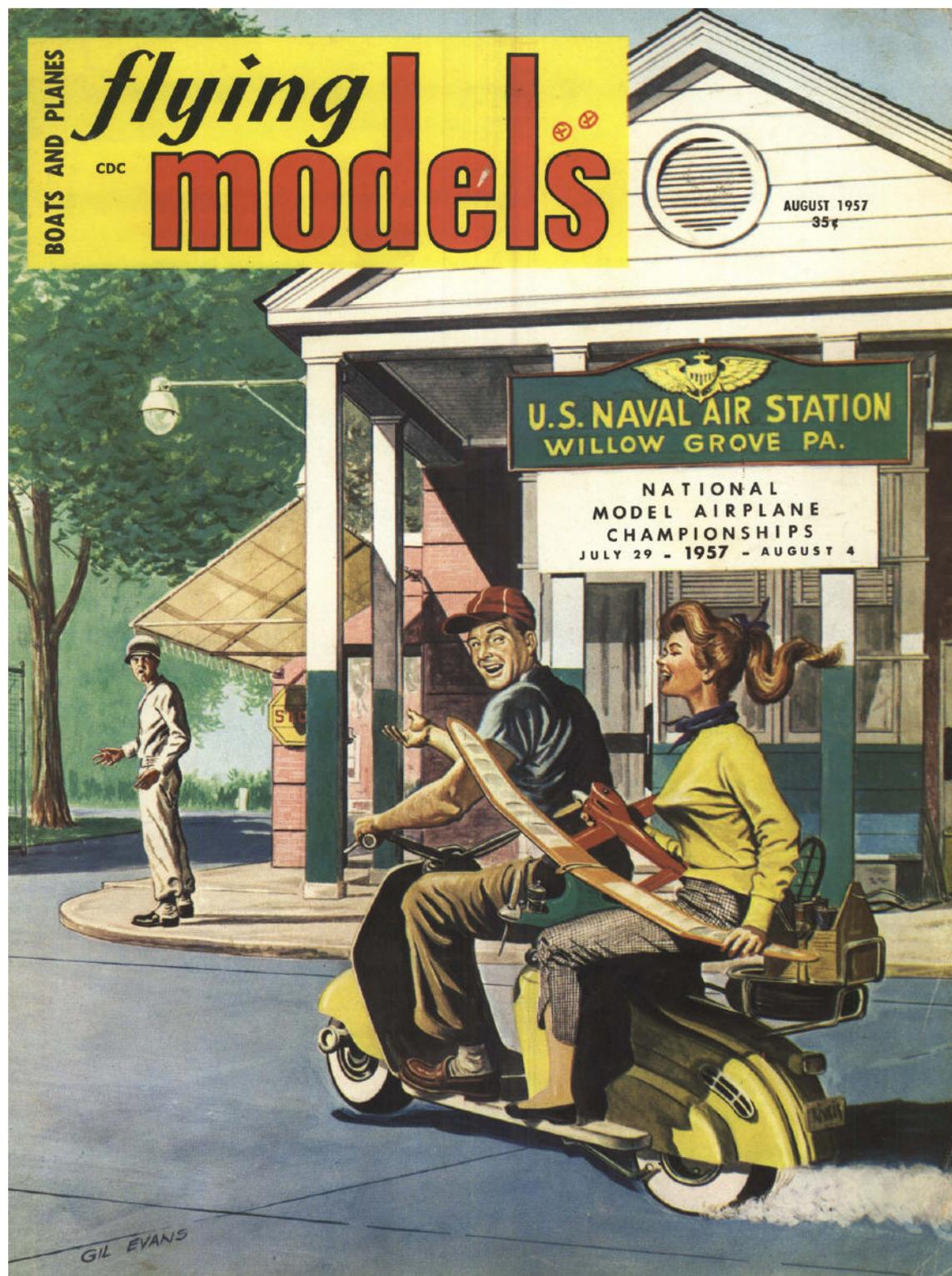
Here's the next in our series of monthly complete back issues of model airplane magazines available for download to subscribers. This time it is a selection from Flying Models, an issue from August, 1957. The cover art was by Gil Evans who was also one of the authors and artists of the popular Fixit Wright series in the same magazine.

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 expire on August 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.



AERONCA DEFENDER

BY WALTER MOONEY

RUBBER-POWERED SCALE FREE FLIGHT IS STILL THE BEST AND MOST EXCITING OF ALL MODEL AIRCRAFT FLYING ACTIVITIES.

From the November 1963 issue of
Model Airplane News

Aeronca Defender tandem trainers were produced by the Aeronca Aircraft Corporation of Middletown, Ohio in 1941. Some, sold to the Army Air Force and designated 0-58-A, were used as "Grasshoppers."

The model depicted in our plans is a rubber-powered version with Army markings and several deviations from scale, which are indicated on the plans. Some exact-scale details have also been provided to give the avid scale builder more information.

For a scale three-view of the aircraft, see Page 261 of the Aircraft Year Book for 1942, published by the Aeronautical Chamber of Commerce of America, Inc.

Deviations from scale include increased dihedral, increased horizontal tail area, longer landing gear, and a rectangular fuselage cross section. The rubber-powered version is still quite realistic and has excellent flight performance. Flights of over ninety seconds have been made by the original model.

Model construction is simple and because it will appeal to younger builders, the wood sizes are 3 / 32" square or larger, which makes for better handling during and after construction.

All wood parts are balsa and a ready-made Paulowina propeller was used. For the simplest possible flying model, struts, landing gear fairings, tail wheel, and freewheeler can be omitted.

Start construction with the fuselage sides, which should be built one on top of the other to ensure that they are identical. Side structure is cross-hatched on the side-view plan for clarity.

While the sides are drying, cut wing ribs from 3/32" sheet balsa. Note that four ribs are solid and twelve are built up from sliced upper caps and 3/32" square bottom caps. From thin sheet metal or cardboard make a template to the shape of the upper surface of the rib and use it for a guide while slicing the upper rib caps.

When the fuselage sides are dry, carefully remove them from the plans and separate. Cement together at the rear and then add cross pieces as shown in the top view. This gives a rectangular fuselage framework.

Now cut the formers 1-t, 1-b, 2-t, 2-b, and 3, cement them into proper positions, and add square 3/32" stringers in six places to give the nose its rounded shape. Sand a stick to a round cross section and add the windshield braces.

Laminate the noseblock up out of five cross-grained pieces of sheet balsa. Carve to the shape shown and add a two-lamination locator block to the back of the nose-block so it will just fit in the front of fuselage structure.

Drill a hole through the noseblock and install the front motor hook as shown on the plans. If a free wheeler is desired, make it from aluminum tubing, cement and wrap to the propeller with thread as shown. Don't forget thrust washers between the propeller and noseblock.

Bend the landing-gear wire and cement it securely into the fuselage. Install the lightest possible wheels, either wood or air-wheels. They can be held in place by bent wire, or a drop of cement. Bend the tail-wheel wire up and install the tail wheel.

Build the tail surface directly on the plans. Note the grain direction shown on the sheet-balsa tips.

Cut out the wing spars, center spar, and spar splice. Build the wings over the plans. Pin down the trailing edge, then the leading edge, and then add the twelve lower caps for the six outer ribs of each wing.

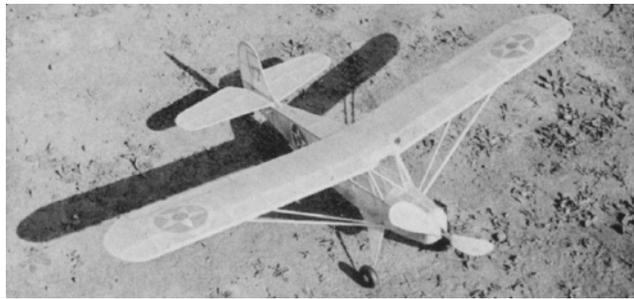
Slip two solid ribs over the spar splice and cement them and the center spar to the splice. Add the center-section leading and trailing edge. When this is dry remove it from the board and complete the outer panels by adding spars, twelve upper caps, two solid root ribs, and the tips.

When these are dry, remove from the plans and slip over the center splice. Cement the spars to the splice, the solid ribs to each other, and the

leading and trailing edges where they butt together. The wing will now have the proper dihedral for the rubber-powered model. Carve the leading and trailing edges to the section indicated at the wing-rib drawing on the plans.

Sandpaper entire structure until smooth, removing any glue blobs, and prepare for covering. Water shrink lightweight tissue, cover, and then give the model two coats of thinned dope, before adding the tissue trim.

The lettering is made from black tissue and goes only on the bottom surface of the wing. The stars, which are white with a red center and blue surroundings, go on both top and bottom of the wing, as well as on both sides of the fuselage. Add the side windows and windshield, and outline the windows with tissue paper.



Carve the struts to a streamlined cross section and cut the landing-gear fairings from sheet balsa. Carve the engine details from scrap balsa if desired. Cement the tail surfaces and wing to the fuselage after you have made sure they are properly located. Cement the other details, such as struts, fairings, etc., into place.

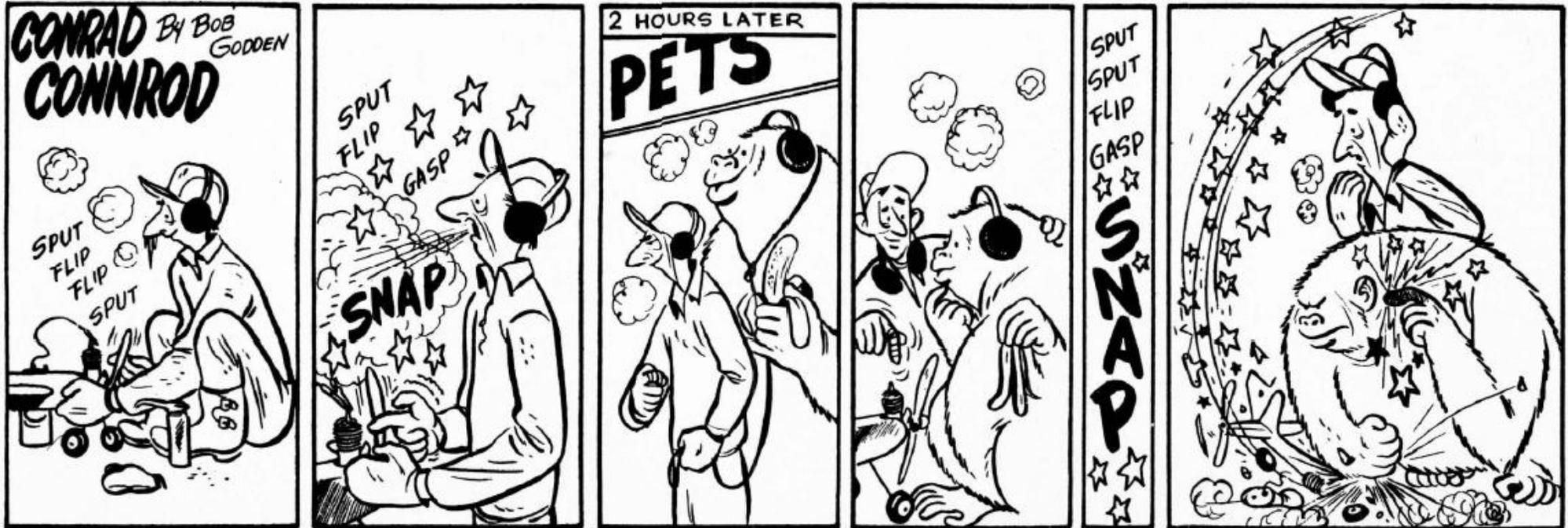
Check the wing and tail to make sure there was no warping from the dope. If any warps show

up, remove with steam while twisting the surface in the opposite direction from the warp.

Ballast the model as required, to get the center of gravity (CG) where it is shown on the plans. The model should balance horizontally when supported at the ends of the spars.

Test glide the model, adjusting the horizontal tail to eliminate a stall or dive and to give a smooth glide. Make the first test flight using fifty hand winds and work up to maximum turns.

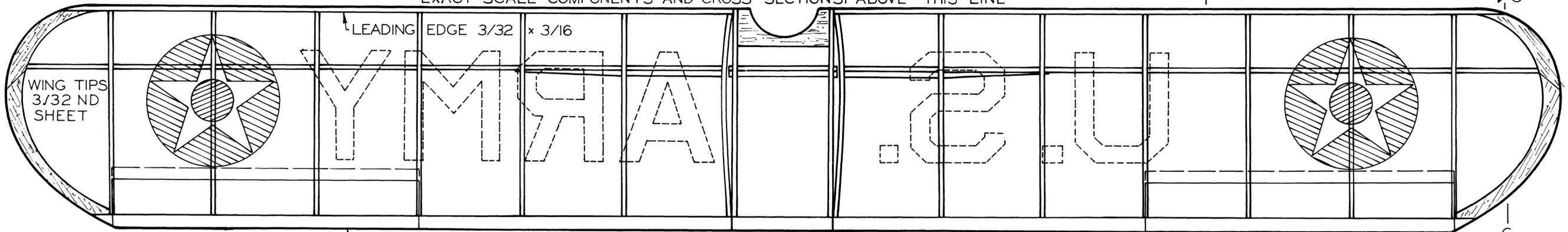
If the model tends to nose up under power, add downthrust by putting a paper match between the top of the noseblock and former 1-t. The original model was powered by two loops of 3/16" flat rubber.



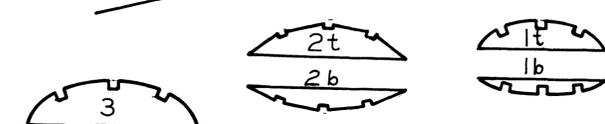
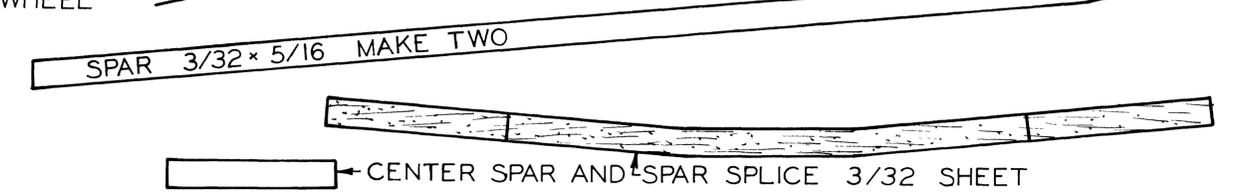
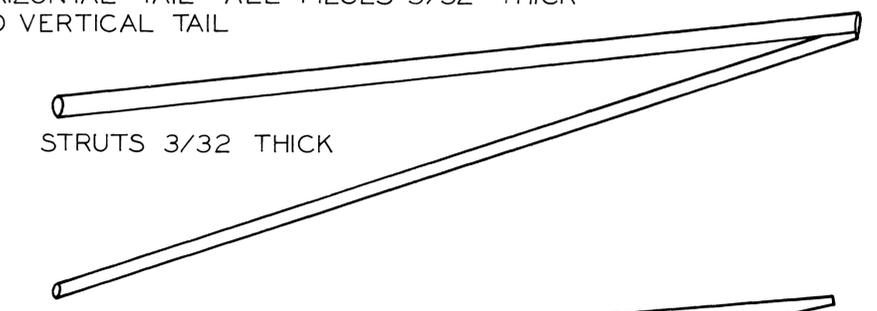
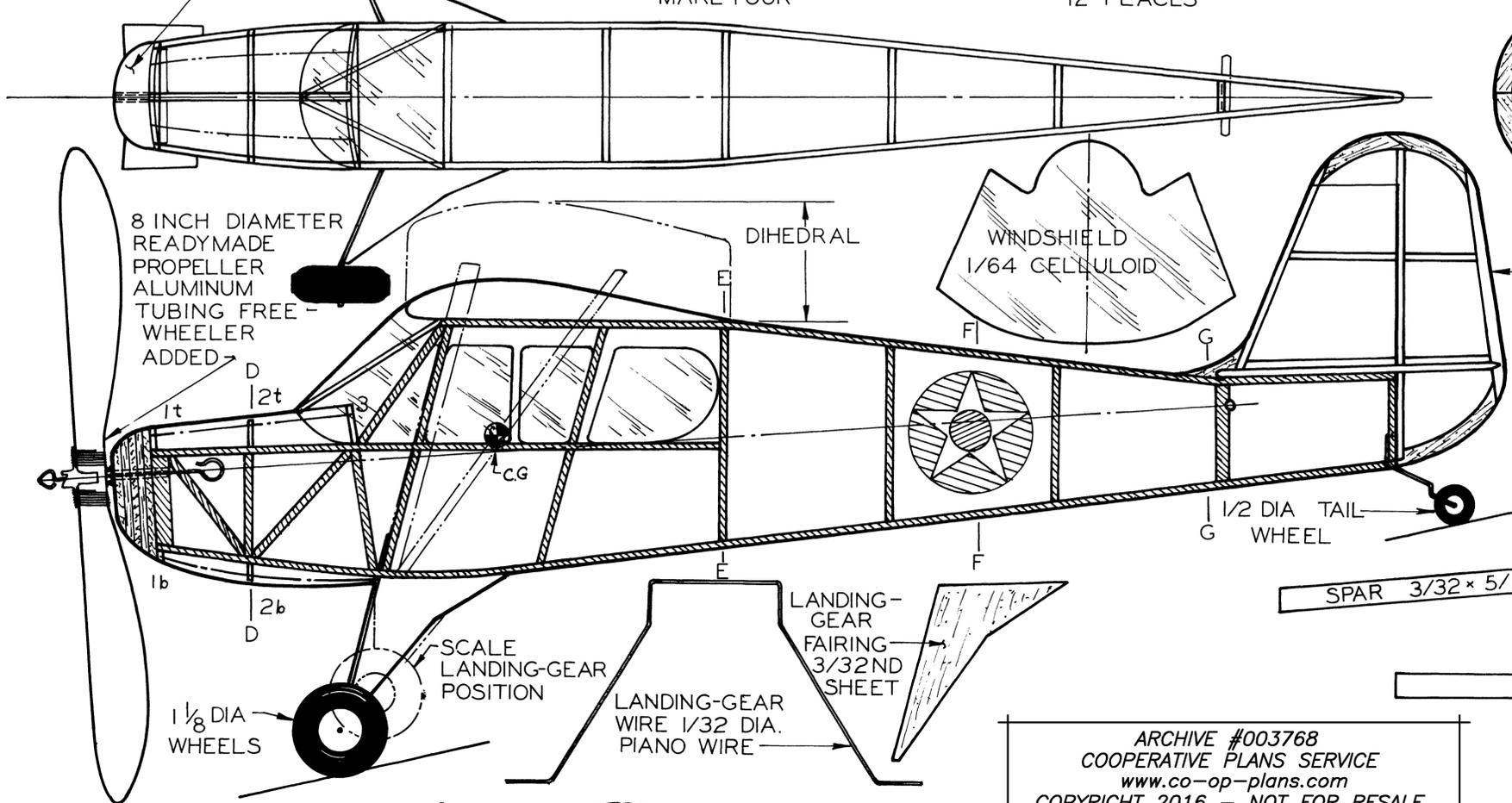
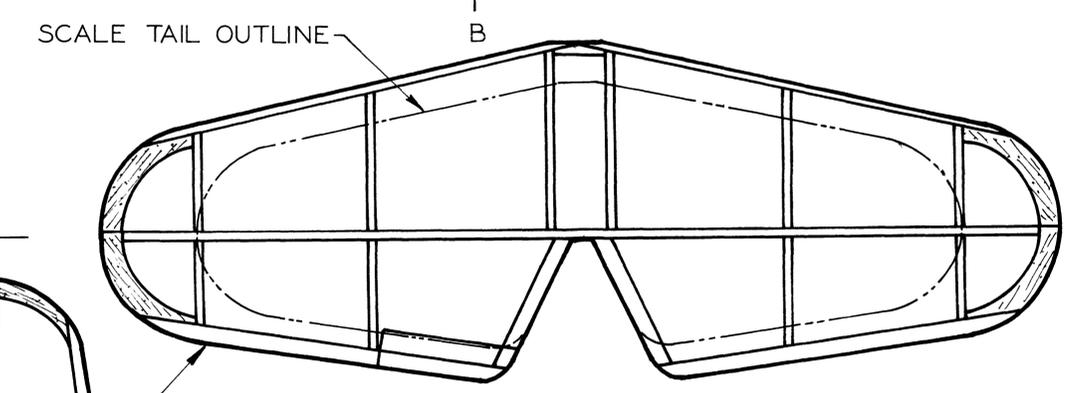
Cartoon from Model Airplane News, April 1951



EXACT SCALE COMPONENTS AND CROSS SECTIONS ABOVE THIS LINE



NOSE BLOCK IS CARVED FROM A LAMINATED FROM 3/32ND SHEET



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AERONCA DEFENDER
A RUBBER POWERED FLYING SCALE MODEL
Walt Mooney 12-5-62

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.

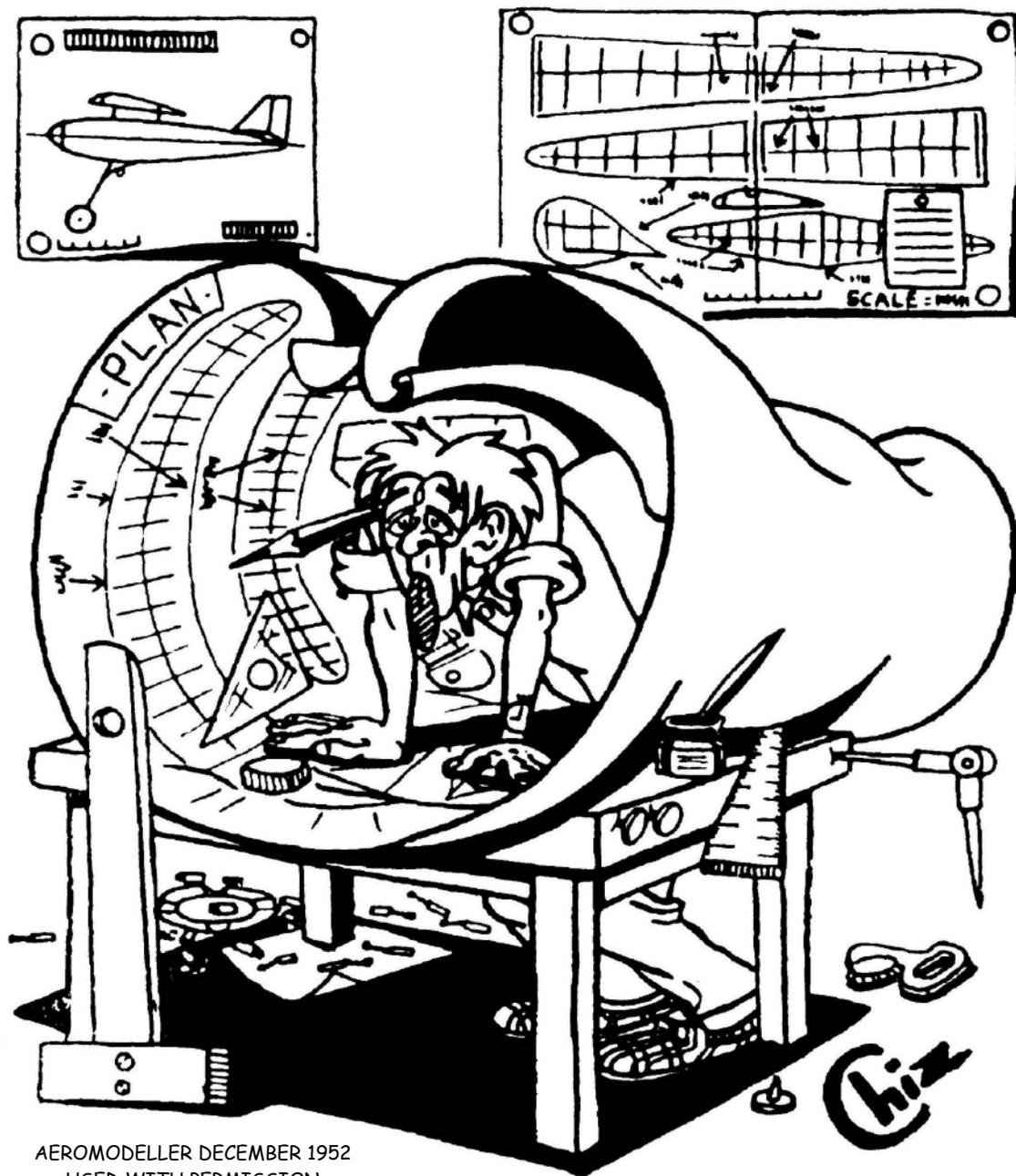
That's NOT the way it was in the past, when you had to build a model before you could fly it. If you're an old-timer, as I am, you have fond memories of Air Trails, Flying Models, Model Airplane News, Aeromodeller and many of the several other magazines available "way back when".

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?"

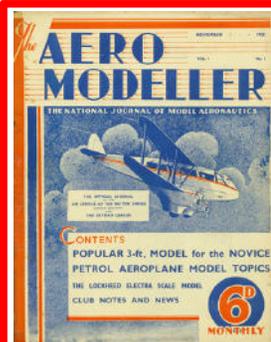
I admit to being a bit of a "nut case" but have been collecting these magazine for over 50 years and now I am trying to digitize them to preserve them for other modelers. They are now available as digital PDF files. See the details on the next page.

Keep 'em Flying - Roland Friestad



AEROMODELLER DECEMBER 1952
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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

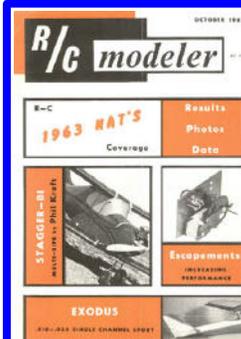
MODEL BUILDER - This magazine ran from the first issue of September~October 1971 through the final issue dated October, 1996 -

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.

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