

MAXFAX



Journal of the D. C. Maxecuters

... home of the dreaded POTOMAC PURSUIT SQUADRON of the Flying Aces

Editor: Stew Meyers

MAY/JUNE 2004

*Fun at the
National Building
Museum
January 18, 2004*

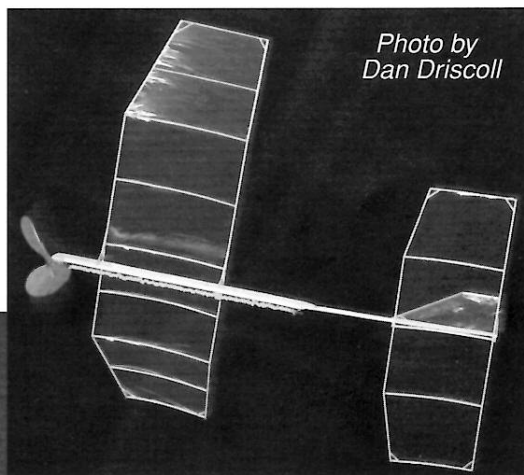
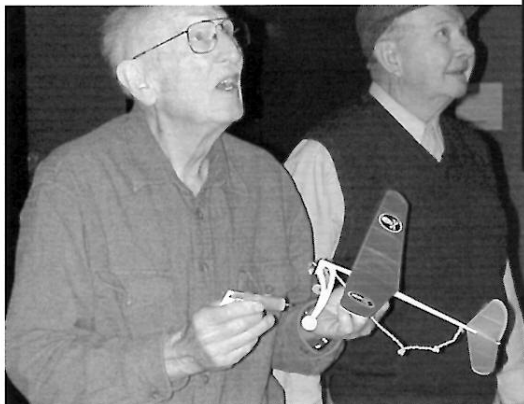


Photo by
Dan Driscoll

*Mike Moskow
and Bob Bissett
watch
John Zselezky's
Penny-Plane
in Amazement.*

COMING ATTRACTIONS.

MAY 1,2, 2004

EASTERN US FREEFLIGHT CHAMPS (MANY FAC EVENTS) INGLESIDE, MARYLAND.

May 15, 2004

BRAINBUSTER SPRING CONTEST PETERSBURG, VA --- Flyer on P-18

JULY 15,16,17,18 2004

FAC NATS AT GENESO, NEW YORK
Judging at the Days Inn on Thursday, July 15th.
Flying Friday - Sunday...July 16 - 18th.
Banquet Sunday evening at the Days Inn

SEPT. 11,12 2004

TENTATIVE DATES FOR FAC OUTDOOR CONTEST AT AMA FIELD, MUNCIE INDIANA.

SEPT. 13,14,15,16,17 2004

SAM CHAMPS AT MUNCIE INDIANA - AMA FIELD

CLUB OFFICERS -President: Hurst Bowers, 1649 Birch Rd., Mclean, VA 22101

Secretary: Bert Phillips, 1709 Crofton Pky, Crofton, MD 2111-2305

Treasurer: Norm Davison, 14008 Castaway Dr., Rockville, MD 20853 Email --- nordav@juno.com

Editor: Stew Meyers, 8304 Whitman Dr., Bethesda, MD 20817

MEETINGS - The D.C. MAXECUTERS hold meetings at 8:00 pm on the first Tuesday of every month at the College Park Airport, the oldest continuously operating airport in the world.

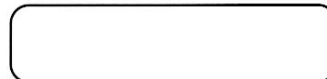
MEMBERSHIP - Dues for membership in the D.C. MAXECUTERS are \$15 per year for residents of the USA, Canada, and Mexico, and \$25 for all other countries. Your mailing label indicates the year and month of the last issue of your current membership. A red "X" in the box below is a reminder that your dues are due. Send a check, payable to the "D.C. MAXECUTERS", to the treasurer, Norm Davison.

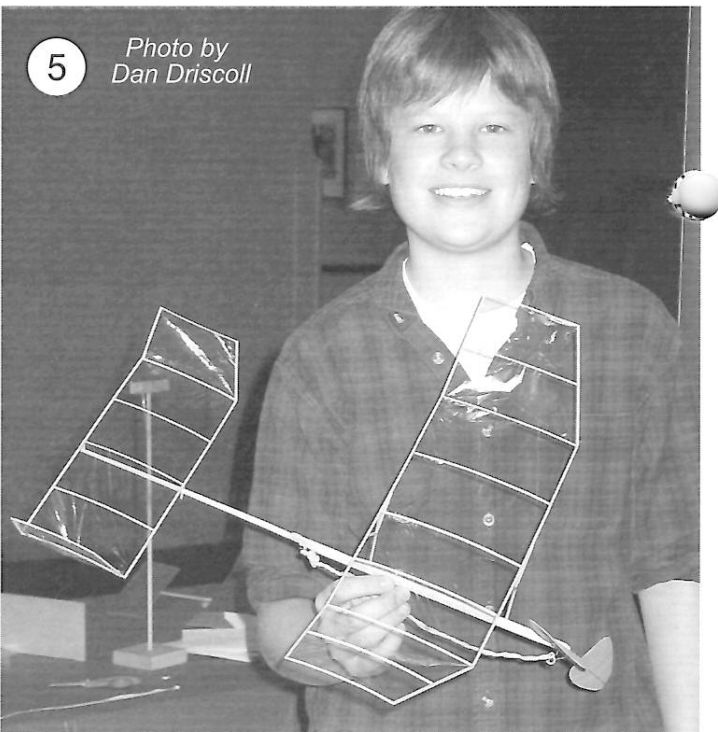
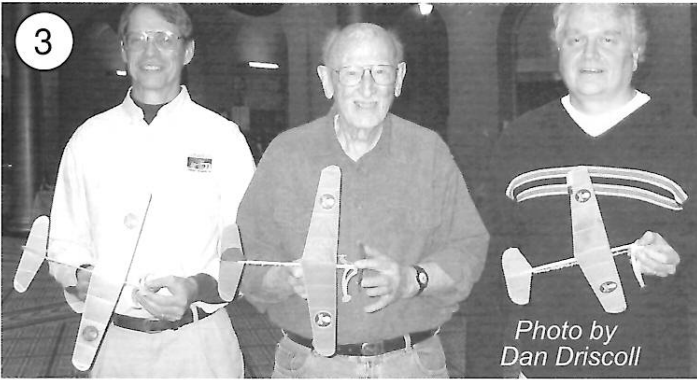
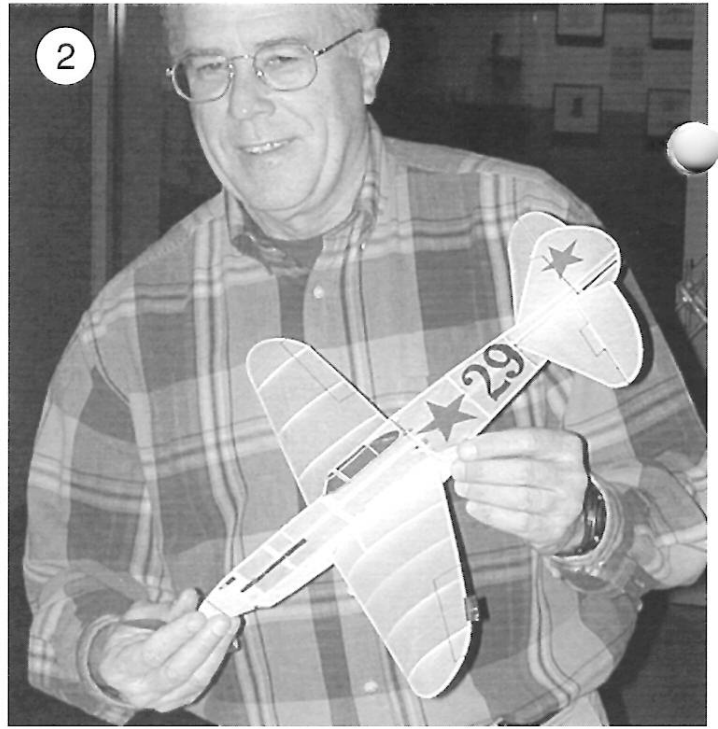
PUBLISHING DATES - Six issues of MaxFax are sent each year as close to the nominal dates as possible, but since this is a volunteer publication nothing is guaranteed except that six issues will be sent to all members.

CONTACTS - Material for the newsletter and membership questions should be addressed to Stew Meyers phone 301-365-1749. Email gets immediate attention. stew.meyers@erols.com

Maxecuter web site: www.maxecuter.com

Your DUES are due





Co-Editors

Stew Meyers & Dan Driscoll

Well, we're winging it again in this issue. No this isn't the promised "Scale Flying Wing Issue" yet. We do have the Scientific *Vance Flying Wing* which is sorta' scale and sorta' a wing. We also have a Henry Struck Flying Wing that Jack Felter built a few years ago from a Sept. 1939 MAN. The "*Tailless Plane*" from the Dec. 1933 MAN and "*Flying Crescent*" from the June 1932 MAN look like good prospects for the National Building Museum, the other part of our theme. We have the plan for the flying wing that Ross Summers has been flying at the last few NBM sessions as well as a "*Parlor Wing*". Also here is the original Phantom Flash print wood. We have published the plans several times. A must build, the cloud of PF's released in a mass launch is truly impressive. Rounding out this issue is the Guillows Curtiss Robin Dimer. Finally, a somber note with the news that Bob Thompson, one of the cofounders of this wonderful FAC has passed on.

Dime Scale Curtiss Robin

This year's special event for Dave Ree's Kudzu Kontest will be Dime Scale Curtiss Robins. The Curtiss Robin is one of the true classics of the "Golden Age" and is always a great flyer. The requirements are simple - model must be a Curtiss Robin that meets FAC Dime Scale rules. The two best known designs are the 16" kits produced by Comet (or AMCO) and Burd. The Comet plan appeared in the Mar/Apr 1995 MaxFax, and the Burd plan accompanied the Sep/Oct 1998 FAC newsletter. Reproduction kits of both are available from Penn Valley Hobby Center (www.pennvalleyhobbycenter.com/). There is also a seldom seen 16" radial engine version kitted by Guillows in 1939. The Guillows plan appears in this MaxFax. There may be other qualifying designs, but the contestant must prove eligibility. Flying will be mass launch.

There has been a slight change in the way we handle back issues. Allan Schanzle now is in charge of them. Send your check made out to the D.C. Maxecuters directly to him.

ALLAN SCHANZLE
6394 SUNSET LIGHT
COLUMBIA, MD
21045-4528

301-840-5884

aschanzle@juno.co

PHOTOS Page 2

1. Carole Meyers holding for Stew.
2. Our Contest Director at the NBM, Dan Driscoll, with his LaGG-3 NoCal.
- 3 Top three 'Flashers', Terry Slattery, Mike Moskow and Stefan Prosky. Mike won it.
4. Glen Simperts is back! Here with his son Scot and a P-47 NoCal.
5. Fourteen year-old Pete Zselezcky with his 'Pennyplane'. Pete won the event.
- 6 Paul Spreiregen with his Phantom Flash.
7. Ross Summers with his winning Bostonian.

National Building Museum Funfly Jan. 18, 2004

<u>14gr. Bostonian (9 entries)</u>		<u>P-nut (9 entries)</u>	
1	R. Summers Bustard	1	D. Driscoll OH-7
2	S. Zapolski Trey Boy	2	M. Moscow Hosler
3	D. Gray Stick	3	R. Bissett Lacy

<u>Pahantom Flash (20 entries)</u>		<u>Dime Scale (4 entries)</u>	
1	M. Moscow	1	S. Prosky Bleriot
2	T. Slattery	2	S. Meyers ?
3	S. Prosky	3	R. Gillis Howard

<u>WWII Profile (14 entries)</u>		<u>Pennyplane (4 ent.)</u>		<u>Time</u>
1	?	1	P. Zselezcky	6:17
2	?	2	J. Zselezsky	4:16
3	?	3	J. Appling	3:37

National Building Museum Funfly March 7, 2004

<u>14gr. Bostonian (7 entries)</u>		<u>P-nut (9 entries)</u>	
1	R. Summers Bustard	1	R. Bissett Lacy
2	S. Meyers Schtick	2	D. Driscoll OH-7
3	R. Gillis Zebra	3	R. Gillis Cougar

<u>Pahantom Flash (18 entries)</u>		<u>Dime Scale (6 entries)</u>	
1	S. Fujikawa	1	S. Meyers Robin
2	J. Zselezsky	2	R. Gillis Howard
3	S. Zapolski	3	E. Zapolski Fleet

<u>WWII Profile (9 entries)</u>		<u>Pennyplane (4 ent.)</u>		<u>Time</u>
1	S. Fujikawa Dauntless	1	J. Zselezsky	5:36
2	T. Slattery FW-190	2	G. Simperts	3:25
3	R. Gillis P-39			

<u>Ready-to-Fly (4 entries)</u>	
1	S. Zapolski Butterfly
2	T. Slattery Butterfly
3	P. Spreiregen Junior

How to Build a Tailless Plane

A Plane of Odd Design That Will Give Exceptional Performance and Provide Means for Experiment

By MARSHALL MULVANY

HAVE you often wanted to experiment with an odd type of airplane? If so, then you will enjoy making this interesting and successful model of a tailless airplane. It is a very high and consistent flier, often reaching 100 to 200 foot altitudes and remaining in the air 80 to 120 seconds.

The plane was designed primarily for flying outdoors. It therefore at first may appear to be a trifle heavy but experience however, has proven that it is better to build it exactly according to instructions, unless one may desire to make the plane entirely for indoor flying, then it can be lightened very materially.

All of the drawings are one-half scale except the irregularly shaped parts, and the propeller template. The wood used is a medium hard grade of white balsa.

Wing

To make the wing, first draw it full size on a sheet of paper. Build your entire wing on this full size plan so that your wing will be true to size. The complete wing is made of 1/2"x 1/16" balsa except for the five ribs, which are made of 3/64" square balsa. The ribs may either be bent or cut out with a metal template made of tin or aluminum.

Note that the stabilizing area, that is, the area behind the line X-X on the wing drawing has no rib section. After the complete wing framework is built with the exception of the two wing tip rudders, it should be allowed to dry for at least one-half hour. It may then be given the proper dihedral angle. When this in turn is dry, it is covered in two sections with superfine tissue. Then the two equilateral triangles that form the rudders are built directly on each wing tip. When the rudders are dry, each one is covered on the outside with the superfine tissue.

Make certain that both rudders are parallel and are not warped in any manner. The paper with which the wings and rudders are covered should not be shrunk or doped. The paper however should be put

on with great care so that it forms a good airfoil section. If you desire you may press the sheets of paper ahead of time between magazines to remove all of the wrinkles and creases.

The next step is to make the two clips. "A" and "B" from .014 music wire as illustrated in the plans. After these are fixed to the top of the wing in the position shown in the plans, the entire wing is then complete.

Fuselage

THE fuselage stick which is 1/2 "x 1/4 "x 11" is tapered so that it is 1/2 "x 1/2" at the ends and 1/4 "x 1/2" at the center.

When this is done, then fasten on the stick, the th bearing, can and rear hook. While this is drying the wire landing gear may be bent from .016 music wire over the full sized plans. The wheels may also be made at this time from the 1/16" sheet balsa.

It is advisable to put a small bead or aluminum bushing in each wheel. This will permit a fast and graceful take-off. The landing gear is then installed on the fuselage as shown in the plans. Make certain to check, that the model when pushed along rolls in a straight line, for if it does not, it will very likely turn over on the take-off.

Propeller

The propeller is the third important unit on this model. It is carved from a block 7/4 "x 5/8 "x 6". First, draw diagonals on the block and carve it in the regular manner. When the propeller is done, shape the blades with the aid of the propeller template. After it is balanced, the propeller shaft is inserted in the opposite direction from that of the tractor propeller, that is the hook part of the shaft extends out from the leading edge of the propeller, thus making it a pusher type of a propeller.

General Assembly

After the model is assembled, it is necessary to find the right negative angle at which to set the stabilizing areas. This can only be determined by flying the model. It is on most models, between a negative 3 or 4 degrees.

The model can be made to circle in either direction or its angle of climb changed, simply by changing the angle in either or both stabilizers. Do not try to adjust the model with the rudders. Another point for those who desire to obtain long duration flights is to use a heavier grade of 1/2" flat rubber with rubber lubricant.

This model has a high climbing angle and also a flat gliding one. Combined with this feature it makes a wonderful flying model.

You will be pleased with the results,

You will need only the following small list of materials to build this tailless airplane.

- | | |
|------|--|
| 1 | Motor stick 1/4 x 1/2 x 11" Balsa |
| 1 | Sheet 1/16" balsa for wings and wheels |
| 1/4 | sheet tissue paper (Superfine) |
| 1 | Propeller Block 7/8 x 5/8 x 6" |
| 1/2 | oz. Banana Oil, |
| 1/2 | oz. Airplane Cement |
| .016 | Wire, 3 Small Bushings |
| .014 | Wire, 2 ft. 1/2x1/32" rubber |
| 2 | Washers, and some rubber lubricant. |

This article originally appeared in the December 1933 Model Airplane News.

How to Build the Flying Crescent

Something Out of the Ordinary for Those Who Are Interested in Experimental Aviation

By Edwin O Donovan, Jr.

As THIS model is of unusual design, those who build it will find it very interesting from an experimental standpoint. It is easy to build and fly. Theoretically, it is aerodynamically more efficient because the propeller is between the wing and the empennage, and thus the prop wash doesn't interfere with the wing. A large field for experiment is offered. The circular wing gives additional stability, and it may be easily converted into a tailless model. It should ordinarily be flown indoors, but if weather conditions permit, it will fly very well outdoors. The indoor duration will average between one and two minutes. Outdoor flights will be about thirty seconds longer. The materials needed to build the Flying Crescent, are as follows:

Wing

First, make a full size drawing of the wing on a piece of cardboard. The top of a suit box will do very well. With a pencil and string compass, describe the semi-circles for the leading and trailing edges of the wing. The radii are 8" and 5 3/4" respectively. Be sure to mark the position of the 45 degree ribs. Next, fasten pins every three inches around the inside and outside of both circles. Then bend the wing spars, and put them inside the pins. It is not necessary to soak or steam them, because the expansion brace, of 3/32" balsa, holds the wing in place. First, glue in this expansion brace, then the ribs and inside tail boom. (See detail in drawing). While the wing is drying, we can work on the next step.

Empennage

The entire tail group is made of 1/16 square balsa. The spars are laid down on the table, either weighted or pinned down, and the ribs glued in. The rudder is made the same way. The bamboo tip may be bent conveniently over the flame of a candle.

Motorbase

The motorbase is 3/16 x 1/8 x 12" balsa. After it is sanded smooth, cement the wire fittings to it as shown in diagram. One can be glued in the middle of the motorbase. In order to save time, make the wing clips at this juncture, and glue them to the wing. Both of the clips are the same size, and are made so that two wires support the motorbase instead of one, as is usually the case.

Propeller

The propeller is carved the usual way, with diagonal lines from each corner, from a 1 1/8 x 5/8 x 6" balsa block. The blades may be cupped 1/6" to increase the push. After the prop is carved, sanded, and shaped, it must be carefully balanced, and the shaft put in. Two washers with a bead between are placed between the prop and the prop hanger for a bearing.

Motor

Two strands of 3/32" flat rubber are used for the motor.

Assembling

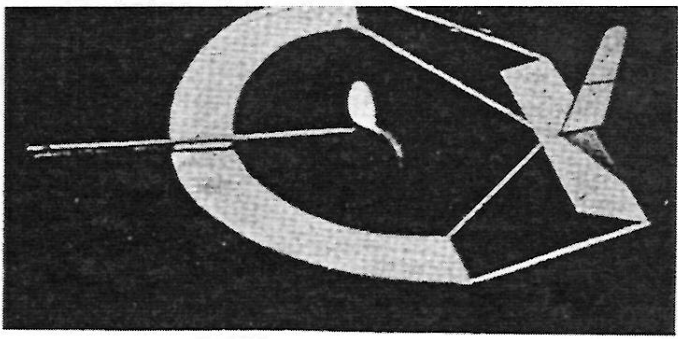
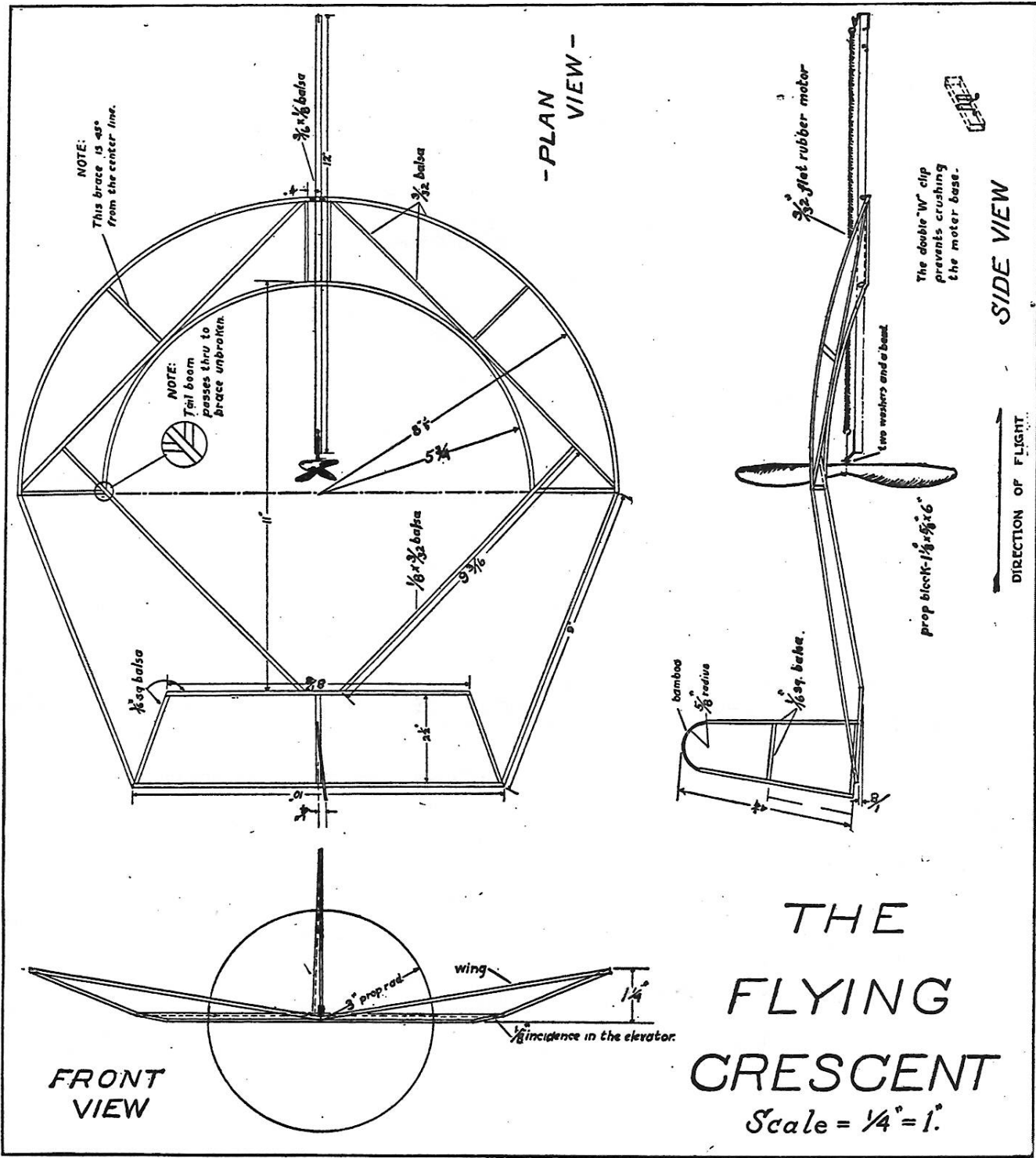
The wing clips and two of the outriggers are already in place, so the next step is to cover the wing and empennage. The wing is covered with four pieces of paper, which does away with waste. Start at the center braces and work outward to the 45 degree ribs. Then trim off the surplus tissue with a sharp razor blade, and cover from the 45 degree ribs to the end ribs. After this is done, the tail and rudder are covered. Any light tissue may be used, preferably Japanese imperial tissue No. 1. The center of the wing is cut in two and the dihedral angle glued in. Elevate the wing tips 1 1/4" above the center. The leading edge of the tail is glued to the inside outrigger. The trailing edge of the tail is raised 1/8" for negative incidence. When this is partly dry, the out-side outrigger is fastened in and the rudder glued on. The leading edge of the rudder is glued to the center rib of the tail 1/8" from the leading edge. The rear of the rudder is fastened 1/4" to the right of the center rib, so the model will circle.

When everything is dry, mount the motorbase, motor, and prop on the wing, and glide the model. If it stalls, move the motorbase forward; if it dives, move it backward. When a smooth glide results, wind the motor about one hundred turns and launch the Flying Crescent on its maiden flight. If the model is properly made, it will circle to the right and climb smoothly, and make a very pretty flight.

No. of Pieces, Material, Where Used

- 1—3/16x 1/8x 12" balsa, motorbase.
- 4—3/32 x 3/32 x 26" balsa, wing.
- 4—1/8 x 3/32 x 10" balsa, outrigger spars.
- 5—1/16x 1/16x 10" balsa, empennage.
- 1—1/32 x 1/32 x 3" bamboo, rudder tip.
- 1—1-1/8 x 5/8 x 6" balsa, prop block.
- 1—6" medium wire, metal fittings.
- 1—3/32 x 24" flat rubber, motor.
- 1—thrust bearing, prop hanger.

*This article originally appeared in the June 1932
Model Airplane News.*



Vance Flying Wing

Dan Driscoll

This issue's Scientific Hi-Flyer plan is the Vance Flying Wing. This was one of the plans we were missing when we started the Hi-Flyer series. Claude Powell noted that the Vance plan had appeared in the May 1995 *Airflow* newsletter and sent us a copy. A short while later, noted kit collector Walt Grigg informed us that he had an original plan and sent us an excellent full size copy of it. Stew Meyers scanned and rearranged the Walt Grigg copy for this issue. Thanks to Claude and Walt.

The real aircraft was one obscure and unusual bird. There was only one, and it was built in 1932 and originally called the Vance Cargo Plane. It was designed as a one-place fast high altitude cargo carrier. All cargo and fuel were carried in the wing center section. Powered by a P&W 660 hp engine, it was capable of a top speed of 185 mph. It could carry 1,200 gallons of fuel and had a projected range of 7,200 miles. It was entered in the 1932 Bendix race, but did not compete.

Designer/owner Claire Vance was killed in 1932 while flying mail in California. Subsequently, the aircraft went through a series of disputed ownerships and failed projects. It dropped from sight, with very few flying hours in 1939, and its final disposition is unknown. At various times, it was also known as the "Mason Meteor" and "Texas Ranger".

The Scientific plan shows the aircraft with its Bendix Race registration, but without the race numbers. It was all red with white registration. Photos show race #61 in block numbers on the outside of both vertical tails and on the lower right wing and, probably, the upper left wing. The tops of the wing race numbers were toward the leading edge. The aircraft later appeared in pale blue and finally in a red, white, and blue scheme.

Most of this information came from the internet site, Aerofiles, and an excellent article in the July 1994 *Skyways*.

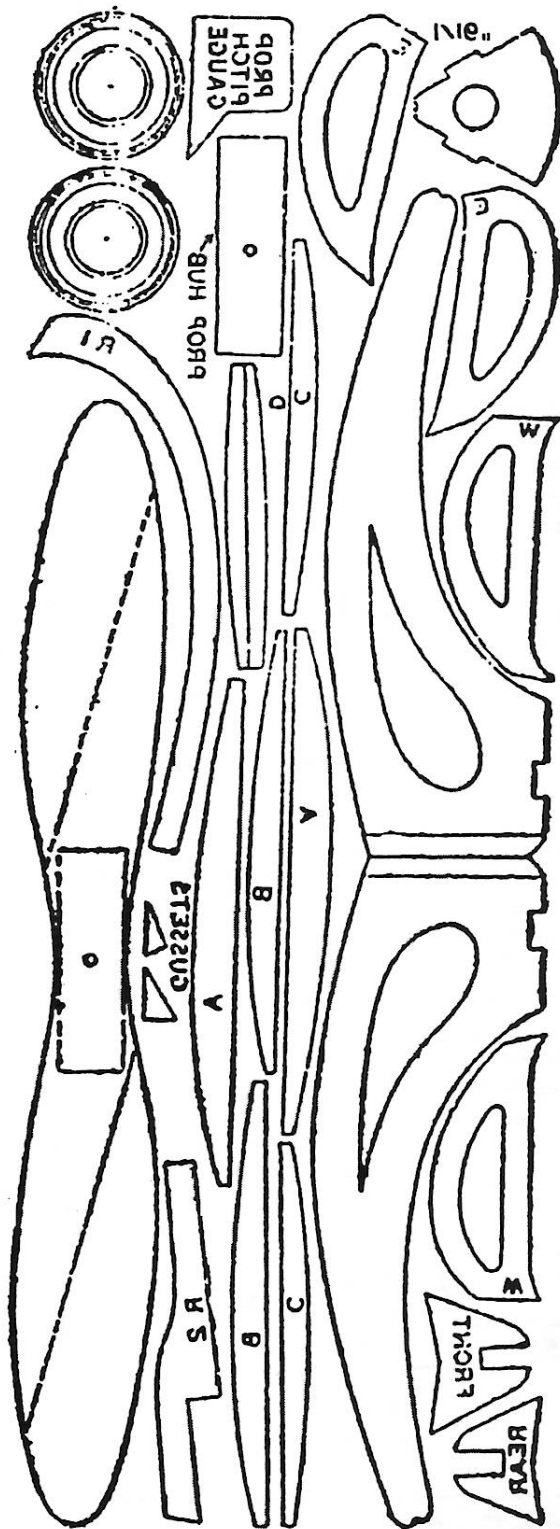
Regarding the model, Vance Gilbert said it very well in the *Airflow* newsletter:

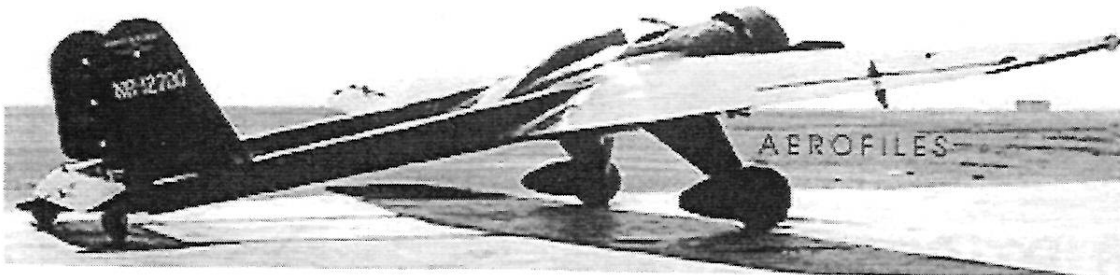
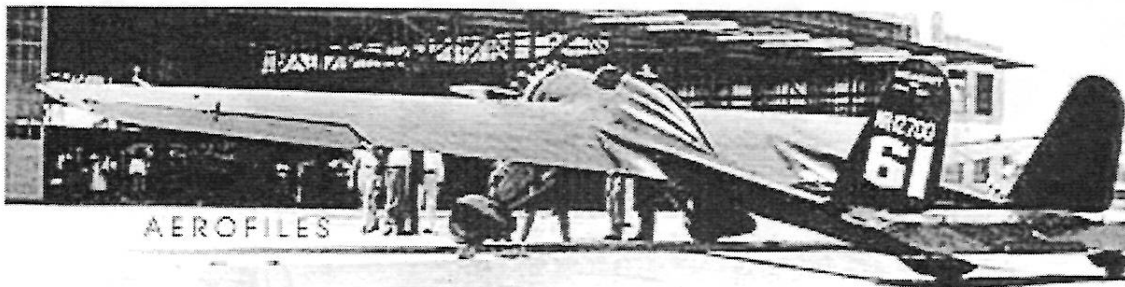
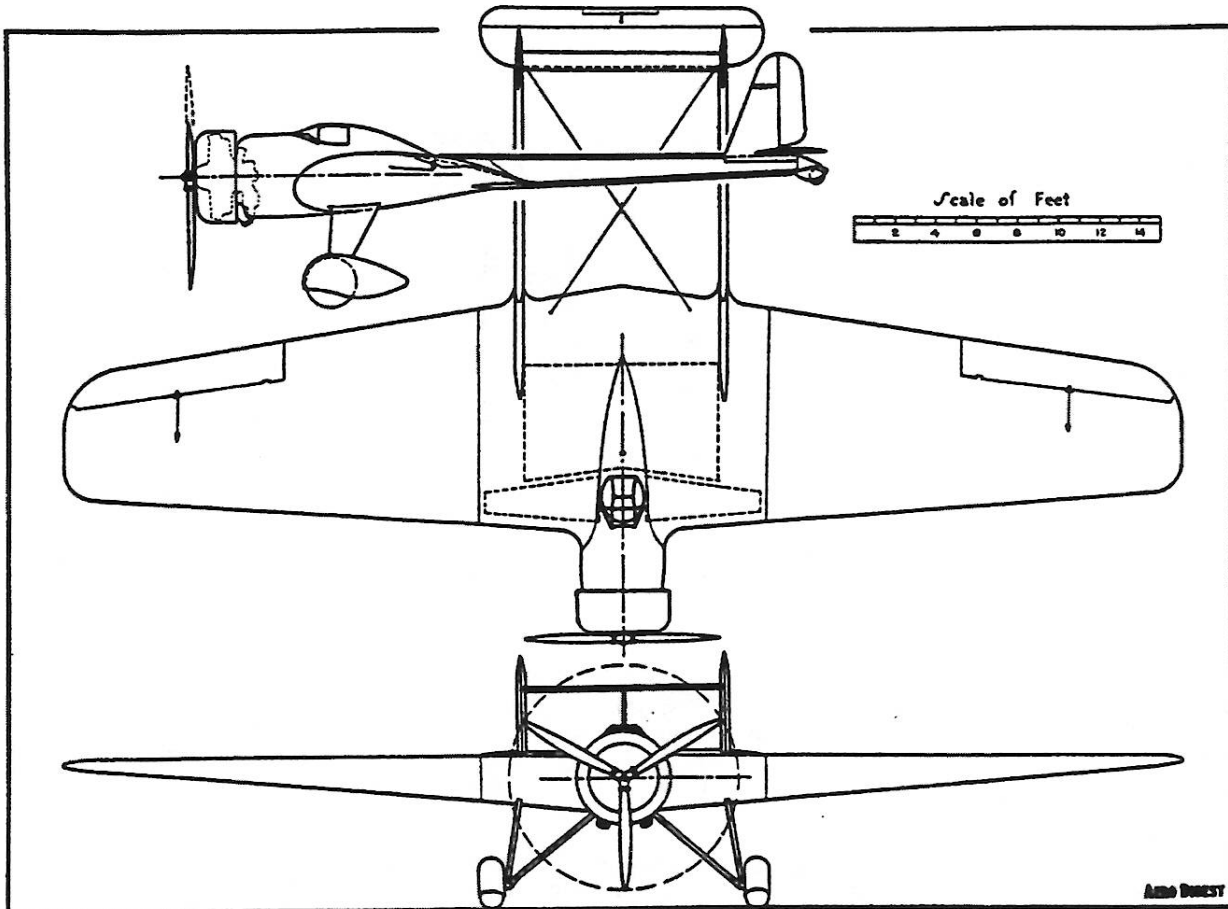
"As the model goes, the outlines aren't too bad, yet they are kinda, well, "Scientificky" and need a little work to be up to scale snuff. It looks quite electric friendly. It wouldn't make a bad rubber model either, if you could stand the rubber exiting from the back of the cockpit for a bit. Crossed wires about halfway back from the wing might make a nice place to anchor the rubber rather than stressing the stab. Take out the rubber during scale judging and win big wit my namesake!!!!"

Original Phantom Flash Print Wood

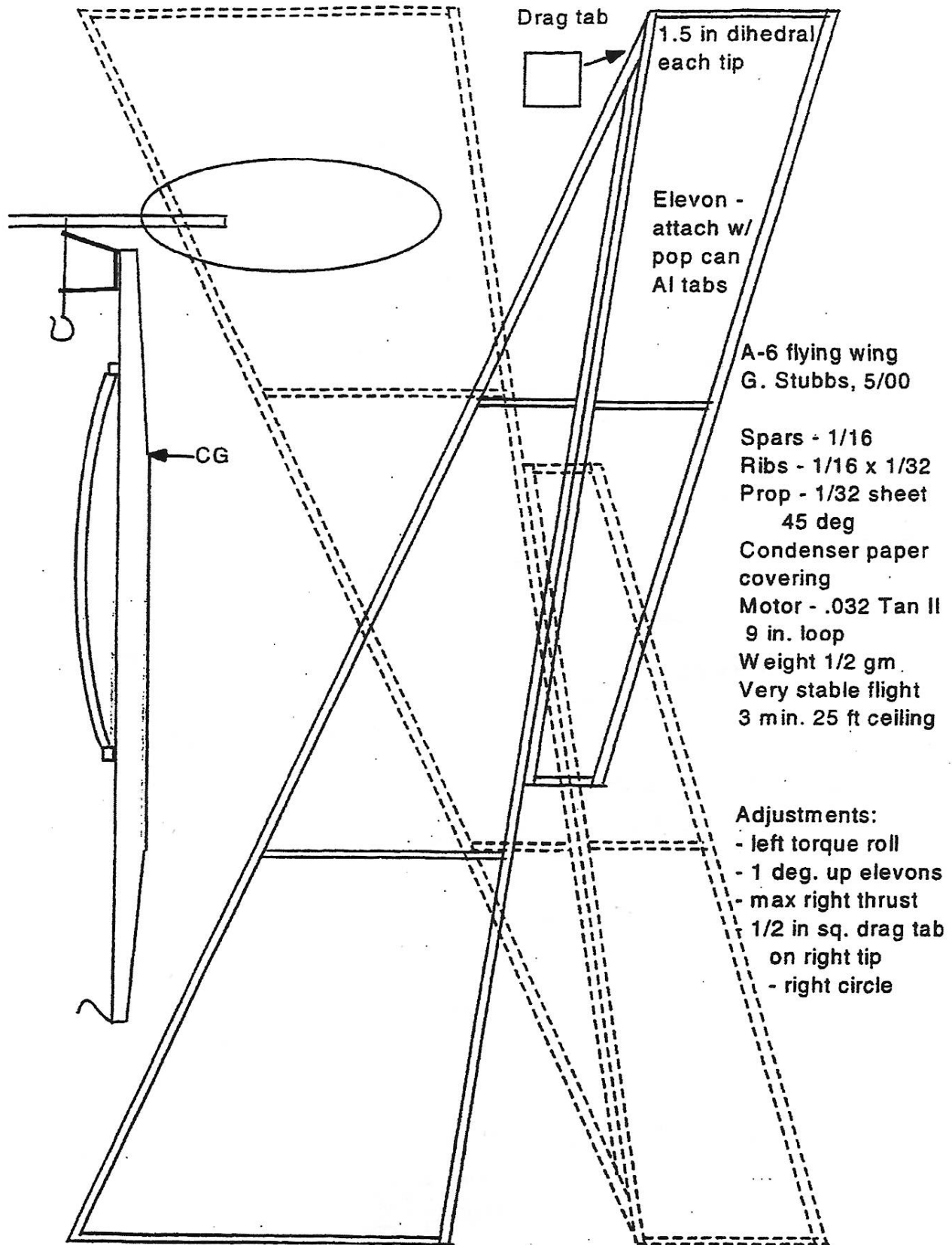
The last issue of SLIM, *The South Louisiana Indoor Modeling Journal* (don't ask me what happened to the J) contained the original print wood patterns for the *Phantom Flash*. This includes the strange sheet balsa prop that shows on the plans. I remember struggling with this as a kid.

Well here it is. Note it is a mirror image so that you can place a xerox copy of the print wood face down over some balsa and burnish the back of it with a Q-tip dipped in Acetone. This will transfer toner to the balsa and make a nice copy of the print wood on the balsa ready to cut out. You really need to build one. It only takes an evening. Join the Fun! But don't bother with the sheet prop, it's a dog. Use a Peck instead or make a cottage cheese prop. -Stew



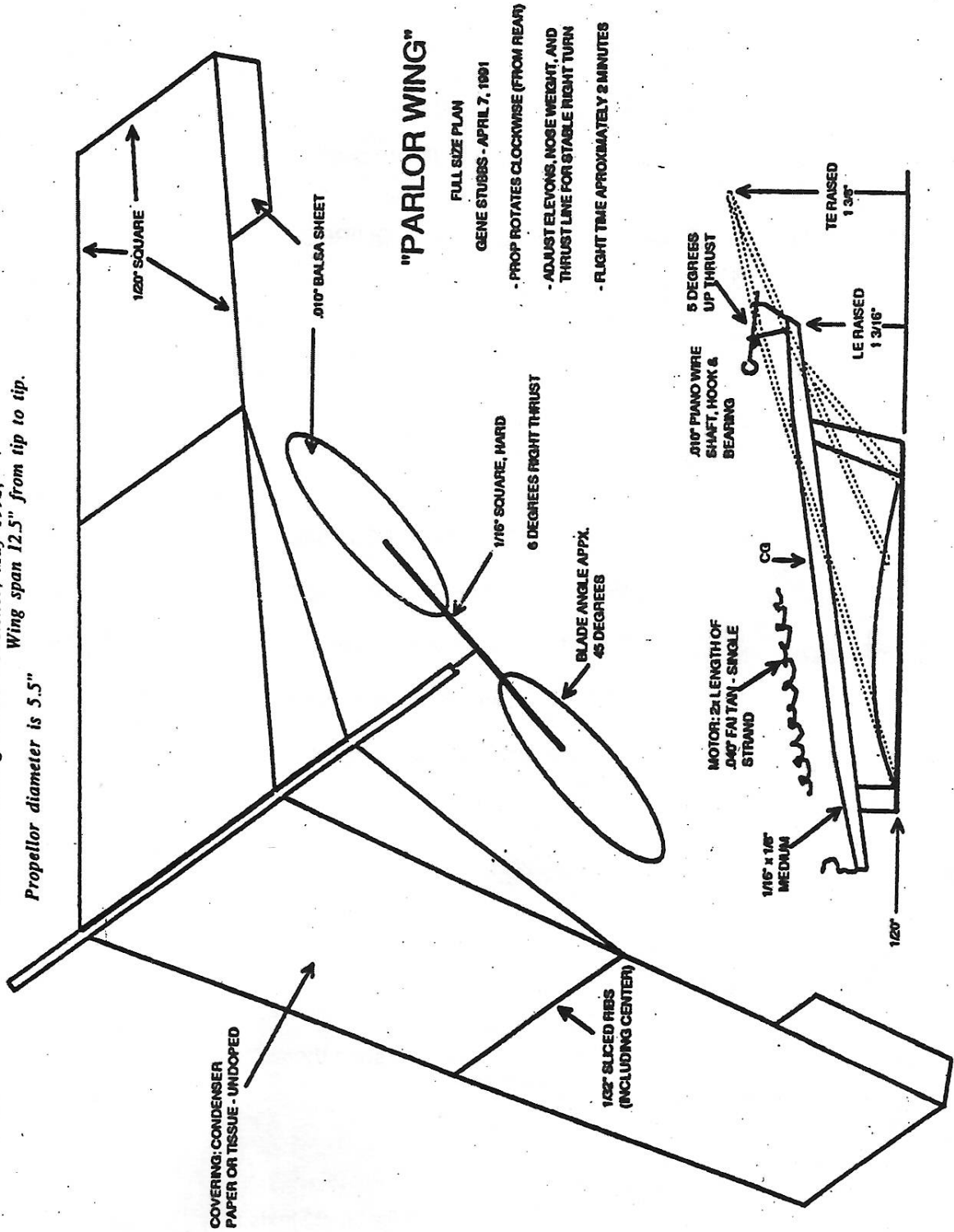


The Wing that we have been flying at the NBM



Here's another nifty indoor wing plan.

From the Boeing Hawks Newsletter, May 1992.
 Wing span 12.5" from tip to tip.
 Propellor diameter is 5.5"



DREADED BRAINBUSTER SQUADRON

of the
Flying Aces Club

SPRING RUBBER SCALE CONTEST

Dinwiddie County Airport, Petersburg, Virginia

Saturday 15 May 2004

In conjunction with the spring free flight contest

ENTRY FEE: One dollar AMA LICENSE REQUIRED

RULES: No semi-scale models allowed.
 Timed events: six attempts for three official flights.
 Mass launch events: FAC rules re: number of launches.
 Flight schedule may be adjusted to suit weather conditions.

EVENTS: Mass Launch Events:

 11 A.M. World War I Combat

 11:45 A.M. Golden Age Biplanes

 1:30 P.M. World War II Combat

 2:30 P.M. Dime Scale (non-Kanone fun event)

 3:15 P.M. Low-wing Military Trainers

Timed Events: (flown all day)

 Golden Age

 GHQ Panut Scale

 Embryo

Flying ends at 4:00 P.M. Prizes will be awarded soon thereafter.

Contest Director: Abram Van Dover

Flight Leaders: Bob McLellon (757) 481-0480 (bobmcl@exis.net)

Jerry Paisley (757)357-7642 (g.paisley@charter.net)

REMEMBERING BOB THOMPSON

Allan Schanzle

I had quite a few contacts with Bob, but two of his characteristics stand out above all others. The first represents his wonderful sense of humor and dedication to the spirit of the FLYING ACES.

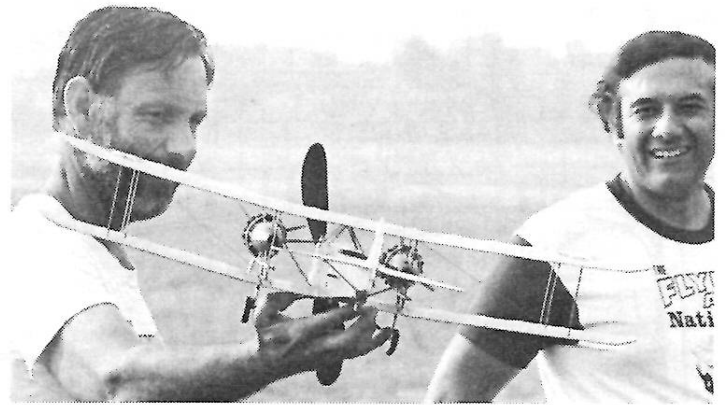
Who can forget his contest dress code of a black cape, leather helmet, and goggles?

I'm told he wore these items at every FLYING ACES contest shortly after the creation of the contemporary FLYING ACES CLUB.

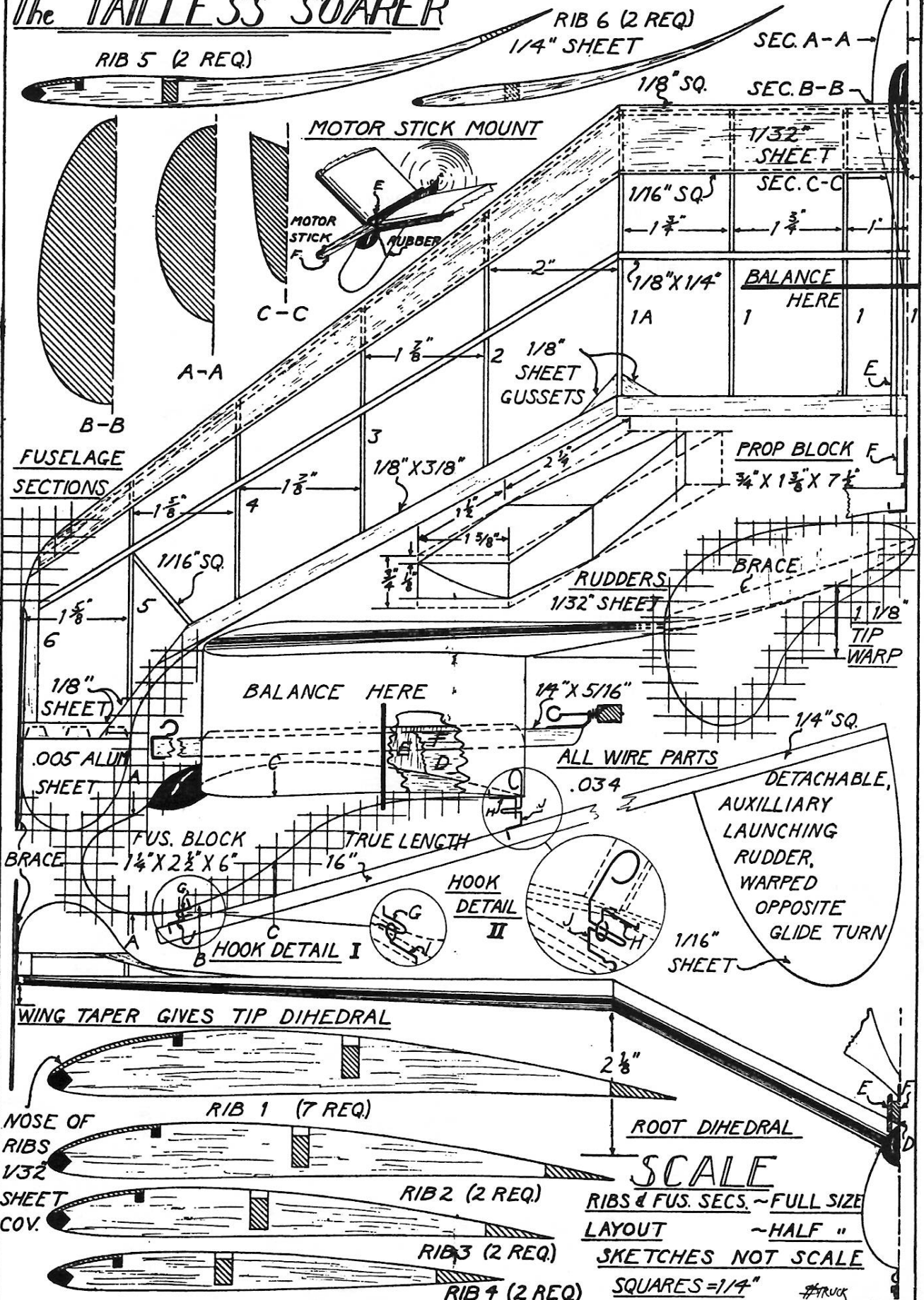
I recall that he even donned the attire several years ago when I went to the FLYING ACES CLUB FOUNDERS DAY CONTEST organized by the Connecticut area fellows to honor Bob and Dave Stott. It seemed very appropriate to acknowledge the efforts of these two individuals on a day when they both were on the field chasing their planes.

The second reflection is a personal appreciation of Bob. As some of you may remember, I designed and published in MAX-FAX quite a few 1930 German sport aircraft where the 3-views came from one of several books I purchased in Germany. The text in the books was, of course, in German, so I translated the material to the best of my ability and then sent it to Bob, who was a high school German teacher. He always responded promptly with corrections.

We have lost not only a founder of the contemporary FLYING ACES CLUB, but a dedicated modeler and a gracious friend.



The TAILLESS SOARER



RIB 5 (2 REQ)

RIB 6 (2 REQ)
1/4" SHEET

SEC. A-A

SEC. B-B

MOTOR STICK MOUNT

MOTOR STICK
RUBBER

C-C

A-A

B-B

FUSELAGE SECTIONS

1/32" SHEET

SEC. C-C

1/8" SQ.

1/16" SQ.

BALANCE HERE

1/8" X 1/4"

1A

2 1/8" SHEET GUSSETS

PROP BLOCK F
3/4" X 1 3/8" X 7 1/2"

RUDDERS
1/32" SHEET

BRACE

1/8" TIP WARP

BALANCE HERE

1/4" X 5/16"

1/4" SQ.

1/8" SHEET

.005 ALUM SHEET

ALL WIRE PARTS
.034

DETACHABLE, AUXILIARY LAUNCHING RUDDER, WARPED OPPOSITE GLIDE TURN

FUS. BLOCK
1 1/4" X 2 1/2" X 6"

TRUE LENGTH
16"

HOOK DETAIL I

HOOK DETAIL II

1/16" SHEET

WING TAPER GIVES TIP DIHEDRAL

RIB 1 (7 REQ)

ROOT DIHEDRAL

NOSE OF RIBS
1/32" SHEET COV.

RIB 2 (2 REQ)

SCALE

RIB 3 (2 REQ)

RIBS & FUS. SECS. ~ FULL SIZE LAYOUT
~ HALF " SKETCHES NOT SCALE

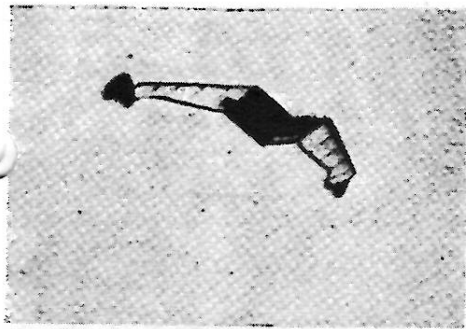
RIB 4 (2 REQ)

SQUARES = 1/4" #TRUCK

A Soarer Without a Tail

A Soaring Plane That Performs With Exceptional Stability and Provides Unlimited Flights

By HENRY STRUCK



The tailless soarer in full flight: One of the finest of this type ever designed

THE tremendous success of the conventional tractor airplane has brought about its acceptance by most model builders as the ultimate in contest design. Consequently few have thought it worth while as necessary to delve into the so-called "freak" or novelty field. That such ventures are worthy of anyone's efforts may be readily seen from one of our own trips into the "dark woods" of model airplaning, which resulted in the capture of a spirally and longitudinally stable tailless soarer.

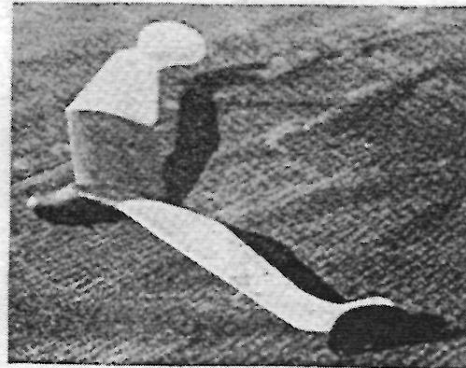
The relocation of the corrective force of the dihedral angle, ahead of the center of gravity, through the use of a straight center section coupled with generous reverse camber and sweepback of the wing tips, is responsible for the unusual amount of stability in our design. With the stability problem overcome, the natural advantages of low drag, great efficiency and lighter yet stronger construction of the tailless type may be utilized to their fullest degree.

The first model we constructed was lost out of sight after seven minutes on its second flight from a tow-line. Another model was enthusiastically completed which performed even better, frequently soaring hand-launched! This plane was entered in TI a tow-line contest where it made the only real soaring flight in the weak currents of late afternoon. The time was five minutes, forty-nine seconds, out-of-sight.

The actual launching of the tailless, or for that matter of any other tow-line glider, is greatly facilitated by the use of an auxiliary rudder or "golf club." We all know that a fairly tight circle is required for effective soaring flight. With such an adjustment the towing of a glider is an almost impossible task. However when the rudder of the "golf club" is set to counteract the turn of the glider, it is easy to get the model as high as the line will allow. The further advantages of permitting the tow-line to be moved forward or back for varying wind conditions without different hooks, and the definite release caused by the drag of the rudder, make this device a most practical piece of tow-line glider equipment.

Due to the exceedingly simple construction, scarcely a day's work is necessary to turn out a tailless soarer.

Before beginning actual construction it is best to make a full size drawing of the entire wing and other this parts. Dimensions not given on the plans may be quickly found by doubling the measurements taken from the drawing, unless otherwise noted on the "Scale." The curved parts are marked off in one-quarter inch squares to aid in their reproduction.



The reverse camber wing tips provide perfect longitudinal stability

Soft balsa of the quarter-grained variety used throughout makes it possible to construct this model of 110 square inch area as light as 1.1 ounces.

The first thing to do is to trace the wing ribs, given full size, on 1/16" sheet balsa. Seven No. 1 ribs and two each of all others are required. Note that the noses of the ribs are recessed to receive a 1/32" sheet balsa covering; also that No. 6 ribs are of 1/4" sheet.

The trailing edge is built up of sections of 1/8" sheet glued together. Pin the trailing edge to a soft board, raising the portions from 1A outward to a height of 1 1/8" at the tips.

Remember that the center section is to be perfectly flat. Only the swept-back panels are warped or "washed out."

The center No. 1, the No. 1A's and the No. 5 ribs are cemented to the trailing edge. The leading edge is glued against the noses of these ribs. The leading edge is NOT

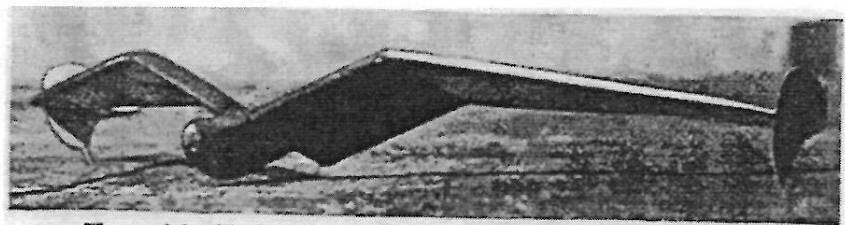
raised but remains parallel to the surface of the board. Insert the remainder of the ribs, the main spar of 1/8" sheet which is 1/4" high in the center section and tapered to 5/32" at the tip, and the stiffener spar of 1/16" square.

When the wing frame is thoroughly dry remove from the board and put 2 1/8" dihedral in each side of the center section. The outer panels are rejoined without dihedral, other than that caused by the taper of the wing.

The leading edge is carefully covered with 1/32" sheet balsa as far as the rear of the stiffener spar. Sandpaper the completed wing smooth and apply several extra coats of cement at all important points, particularly at the dihedral joints.

Cover the wing in conventional manner using separate pieces of colored tissue for each panel. The tissue must be doped to the undercamber of all ribs and to the top of the reverse camber No. 5 rib. The covered wing is lightly sprayed with water and doped when dry. Check the "wash out" of the wing frequently while drying during both the above operations. Distortion can be prevented by holding in the proper position until the covering has tightened.

The rudders are cut from 1/32" sheet balsa. A brace strip 1/32" x 3/8" is cemented across the grain to the inside of each to prevent splitting. They are covered on both sides, dopping the tissue to the entire surface. Balsa surfaces treated in this fashion never



The straight dihedral center section gives lateral stability without yaw

warp and also retain well any adjustments made in them. Cement the rudders against each No. 6 rib, carefully checking their alignment in all directions.

Elevator trimmer tabs snipped from .005 sheet aluminum are forced into and cemented to the trailing edge.

A block 1 1/4" x 2 1/2" x 6" of soft balsa is required for the fuselage. The top outline is transferred to the 1 1/4" surface. After the block is cut to this shape the side pattern is similarly treated. The body is then roughly shaped to the proper cross-sections with a knife. Note that the top has a "Vee" shaped recess to accommodate the dihedral of the center section. Pin the wing in position on the body and check the balance. The model should balance about 2 3/4" from the leading edge of the center section. If nose-heavy carve the nose a trifle narrower till the balance is perfect. In the unlikely event that tail heaviness is present, ballast may be forced into the nose to correct this condition. The fuselage may now be sanded, covered with sections of tissue, doped several times and cemented solidly to the wing.

Hooks G and H are formed of .034 piano wire and cemented securely in the positions given on the plans.

The "golf club" is simply made of a 1/4" square boom 16" long, and a rudder of 1/16" sheet. Hooks I and J are glued to the boom. The upper loop of J is NOT cemented to the wing, but merely rests against the underside to prevent the set of the auxiliary rudder from rolling it to a horizontal position. The loop should press against the left side, if the auxiliary rudder is set to the right. This is the proper lineup for counteracting the turn of a glider that circles to the left in free flight as did the original. If the model is to circle in the opposite direction all other settings are also necessarily reversed. These directions may sound a bit complicated but if followed carefully no trouble can result.

Flying

The model if properly balanced will probably glide perfectly the first time. Minor adjustments in the gliding angle may be made by bending the aluminum trimmer tabs. The tailless is best circled by warping the rudders in the desired direction, supplemented by bending the elevator on the inside of the turn-up slightly. A circle about thirty feet in diameter is most efficient.

For tow-line flying, tie about fifty feet of No. 8 cotton thread to the boom, approximately one inch behind hook I. Have your assistant hold the glider level and at a slight upward angle. Start to run slowly, increasing your speed till the model will rise no more. If the full length of the thread has not been converted into altitude, it should be attached slightly farther back on the boom. Should the model keel over while being towed, correct this tendency by giving the "golf club" opposite rudder. Unlike other soarers the tow-line may be given a strong tug to release the glider. The quick recovery and "settling down" of the tailless makes it impossible to lose altitude in spite of any maneuver this procedure may cause.

For conversion into an experimental, powered model a trough to retain a motor stick is built on the center of the wing. It consists of two sides; E, of 1/16" sheet in which the grain runs vertically and a filler block, D, of 1/4" sheet fitted on the center rib to prevent the motor stick, F, of 1/4" x

PHOTOS Page 23

8. Genial Ed Zapolski holding his Bunch Canary (a possible future 'One-Design').
9. And at the R/C end of the NBM we see Don Srull with his latest 'Skipper II'.
10. Don Gray at the NBM with a Comet Taylorcraft.
11. Stefan and Tati Prosky enjoying the show at the NBM.
12. Bert Phillips with his 'old faithful' Bellanca.
13. Bob Flickinger and his nifty NoCal P-38.

PHOTOS Page 24 (Rear Cover)

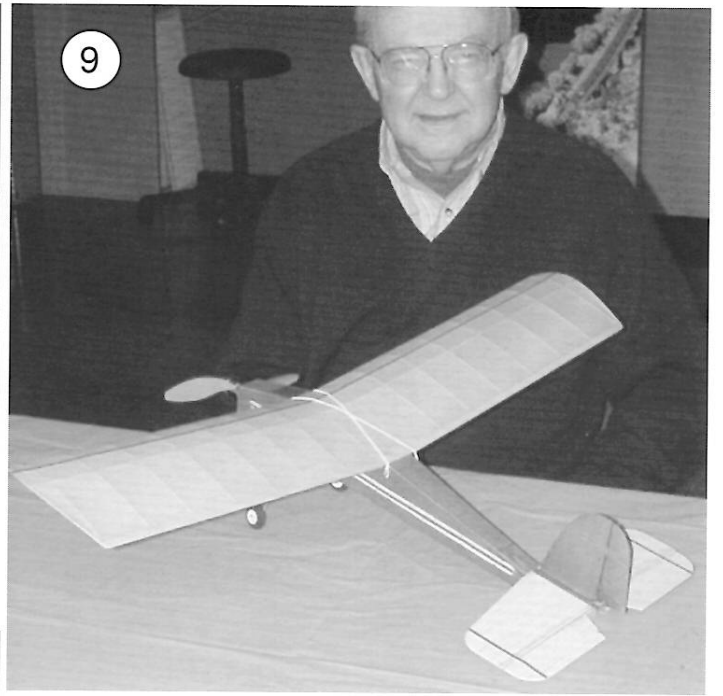
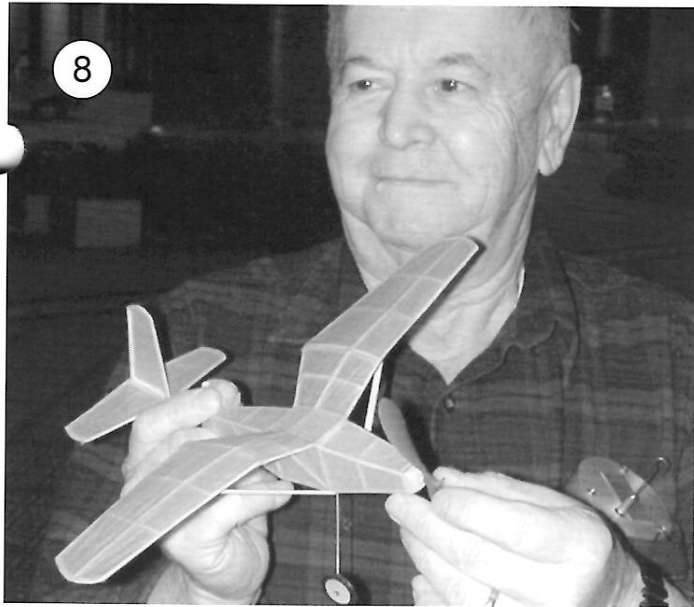
14. Stew Meyers with two of his flying wings, rubber and electric. Rubber plan in this issue.
15. John Worth the R/C flight director with an R/C Stick model.
16. Dave Mitchell built this neat Monocoupe from a Sterling Kit.
17. Bob Flickinger with a biplane Bostonian.
18. Randy Kleinert, our button maker from Baltimore with his Phantom Flash.
19. And another flyer from Baltimore, Al DeRenzis, with his Flash.
20. All 20 'Phantom Flash' flyers.

5/16" hard balsa from rocking. The prop is carved from a block 3/4" x 1 3/8" x 7 1/2" laid out as shown on the plan. It is preferable to carve a left-hand type prop, to permit hand winding in the accustomed clockwise direction. The motor stick with eight stands of 1/8" fiat rubber should be of such length that with the prop about one inch from the trailing edge, the model balances at the same point as for a soarer.

While we are personally convinced of the superiority of the tailless as a tow-line soarer, further experiments such as using a tractor propeller, increasing the model's weight and especially with gas models of this design will prove most interesting and fruitful projects.



Jack Felter with his Struck "Tailless Soarer" built in the early 1970's. Flew initially as a soarer, then with CO2 power, and finally with electric power.





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The Beautiful National Building Museum

Photo from Dan Driscoll



20

Vance Flying Wing

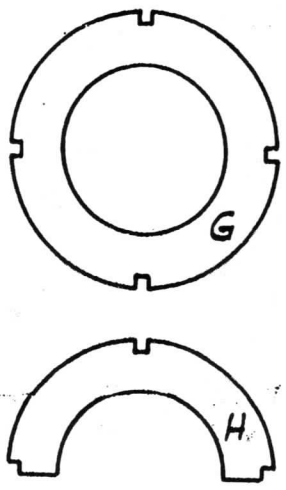
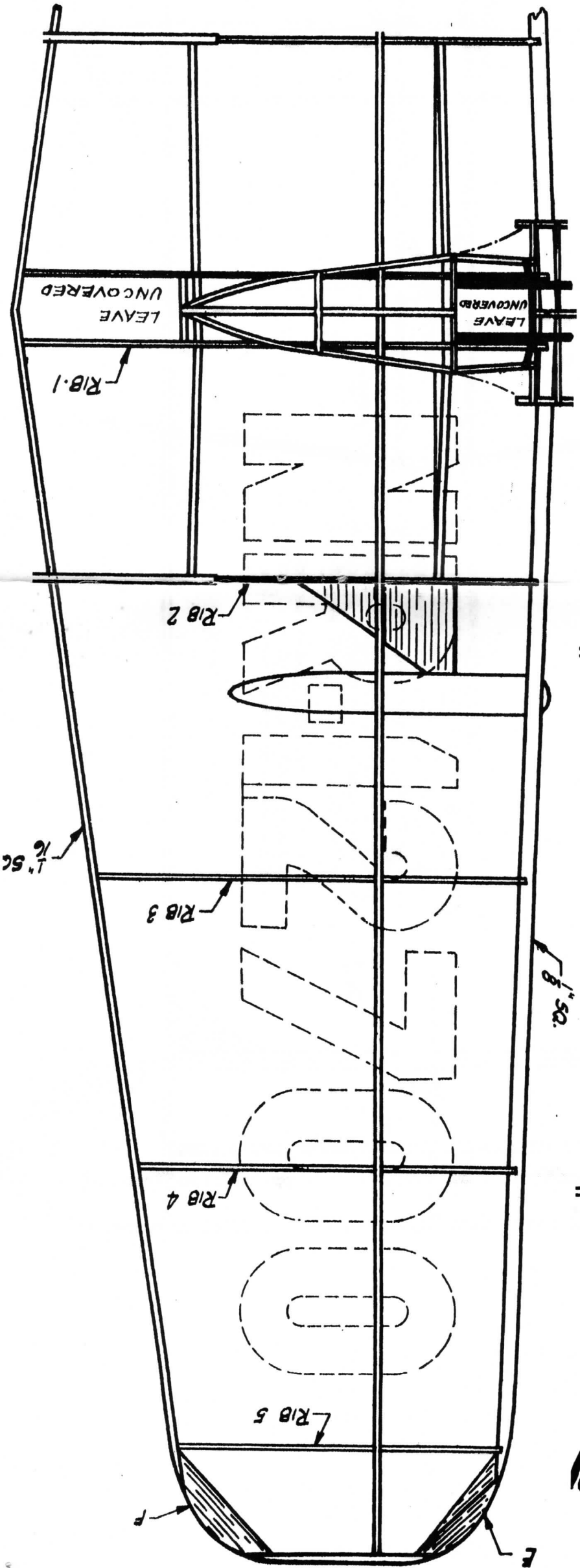
Study carefully all details and observe all notations on plans before starting to work.

Wing: Cut out ribs from sheet balsa. Build wing on flat surface. Allow 1" dihedral in each side. Cover wing on both sides with red tissue, leaving part of center section uncovered as shown in plan. Build tail surfaces on drawing using pins to insure proper shape. Cover tail surfaces, both sides, with blue tissue.

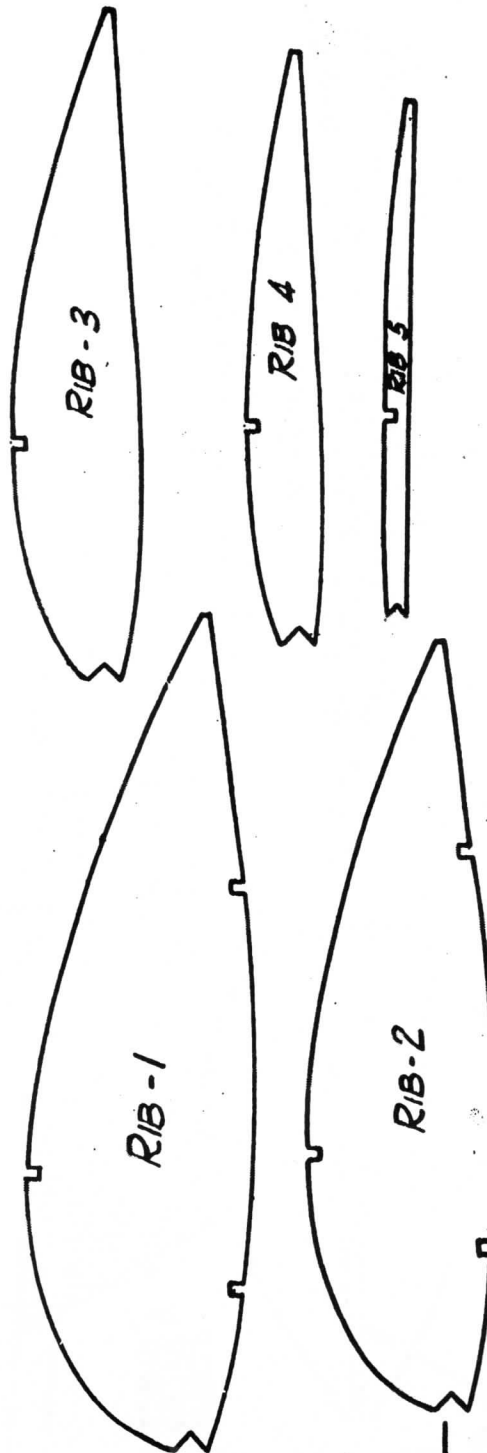
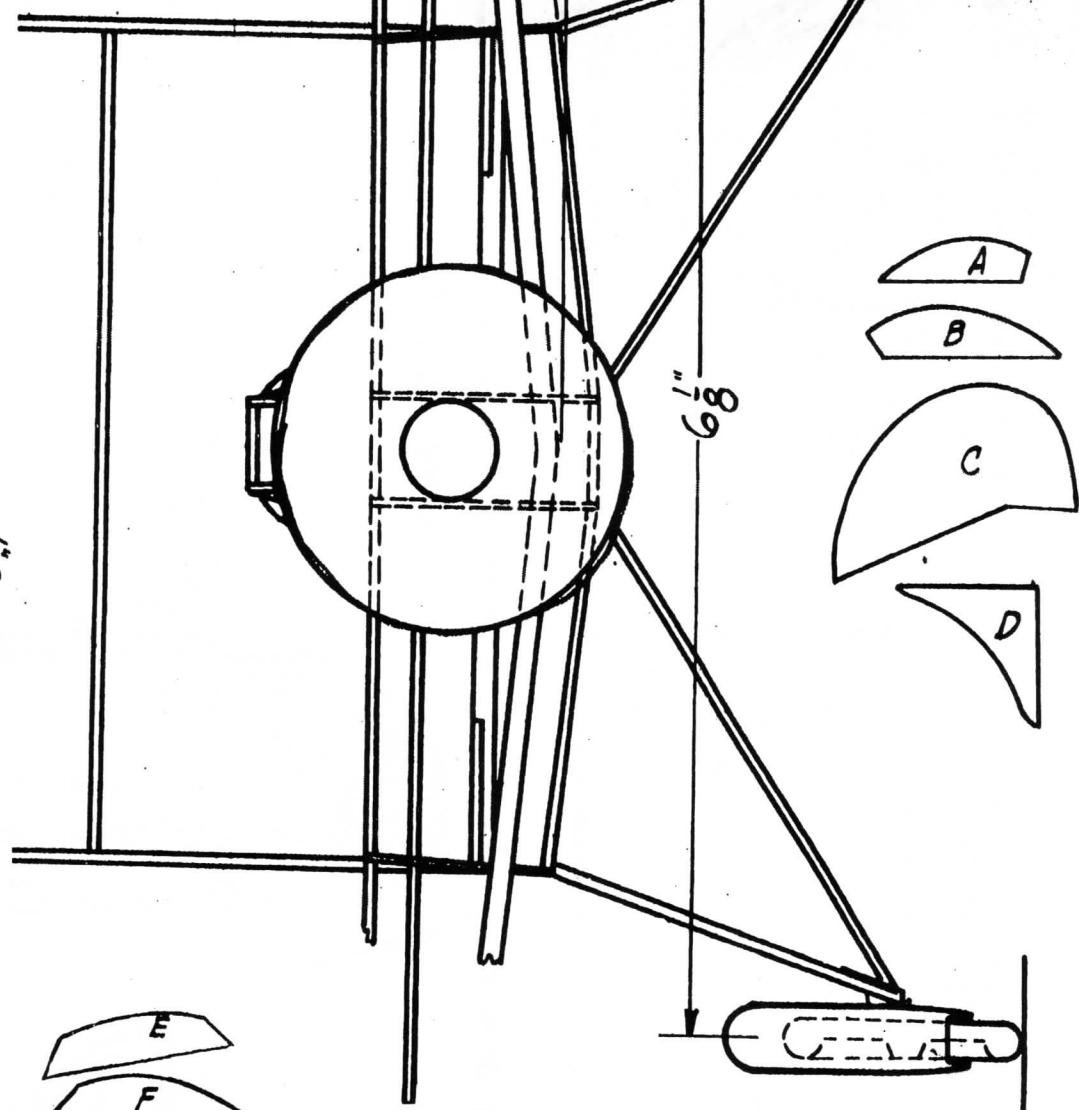
Body: Cut out bulkheads provided. Glue Bulkheads G, H, J, and K to wing. Glue in stringers and second bulkhead G. Cover carefully!

Landing Gear: Glue on landing gear struts. Bend and glue on wire axles. Carve pants as shown on plan. Insert wheels in pants and glue to vertical struts.

Propeller: The ready-made propeller supplied in kit is very efficient and durable. Sandpaper propeller smooth. Insert prop shaft in nose plug and washers, then propeller, and bend to U shape. Apply a little glue and then pull back into propeller.



Use broken razor blade as shown for cutting ribs, bulkheads, etc.

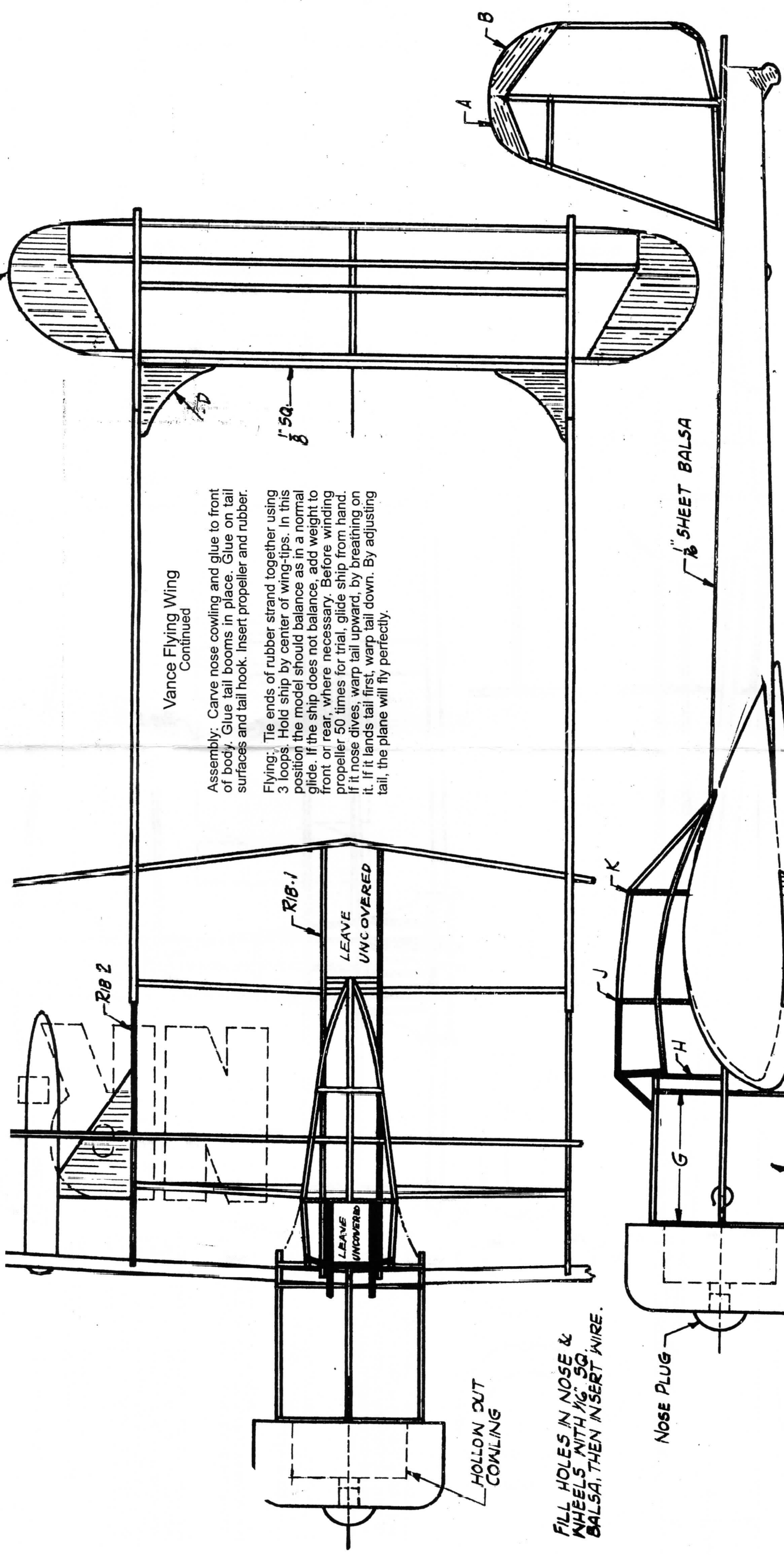


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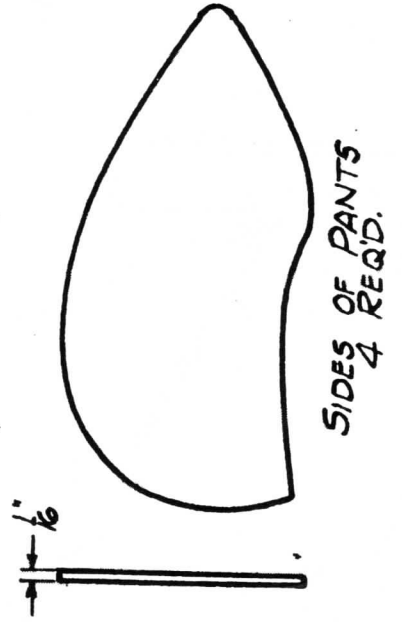
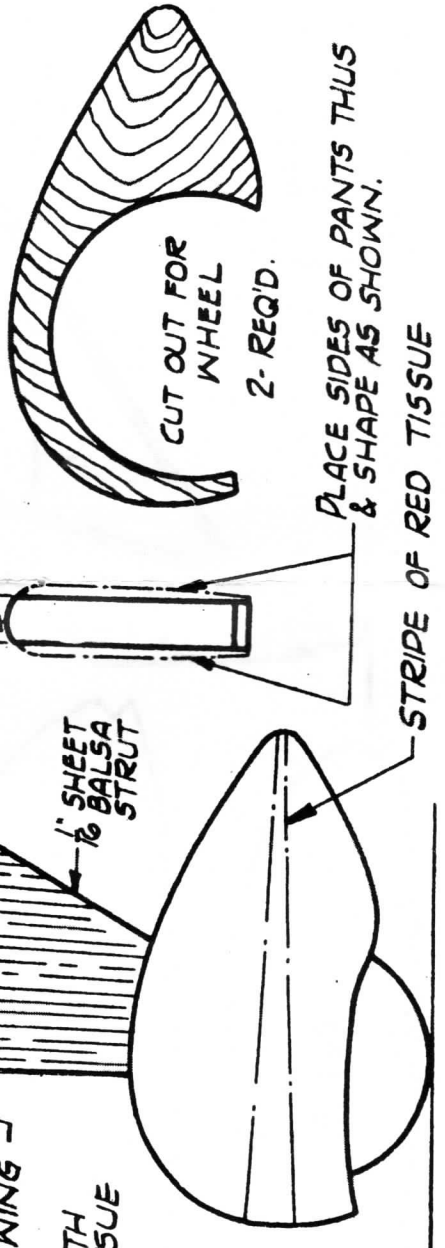
Vance Flying Wing
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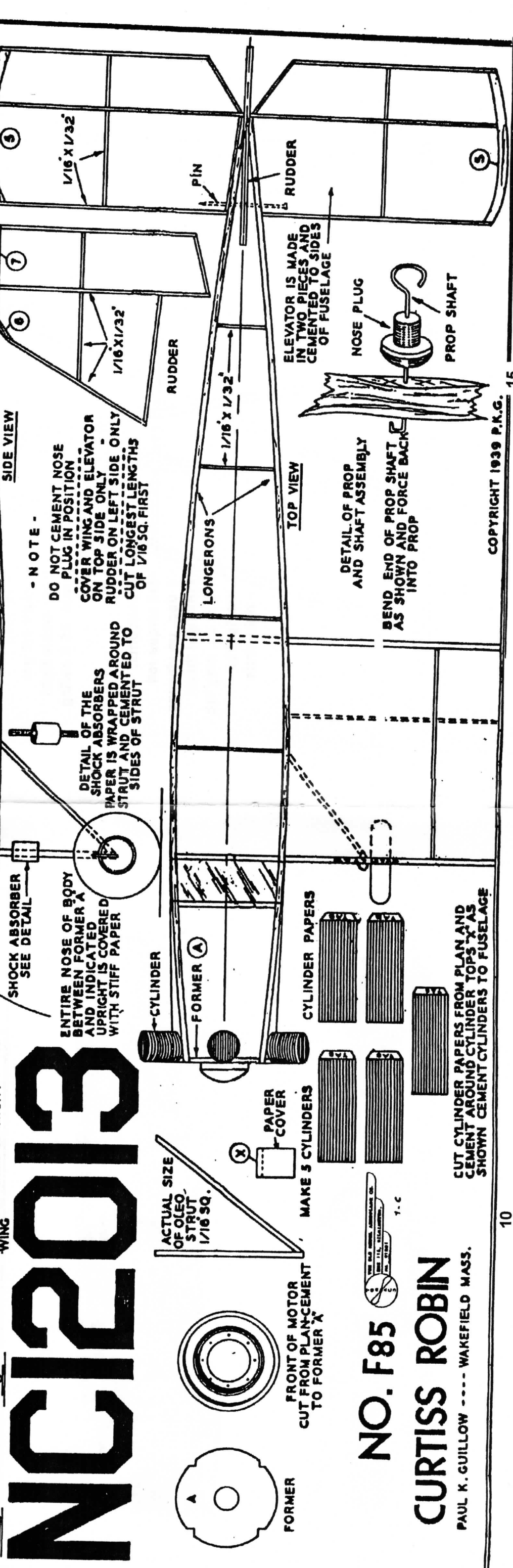
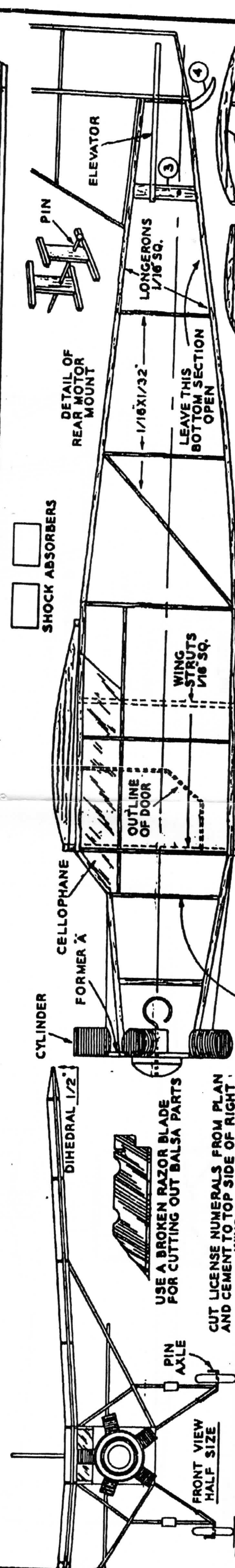
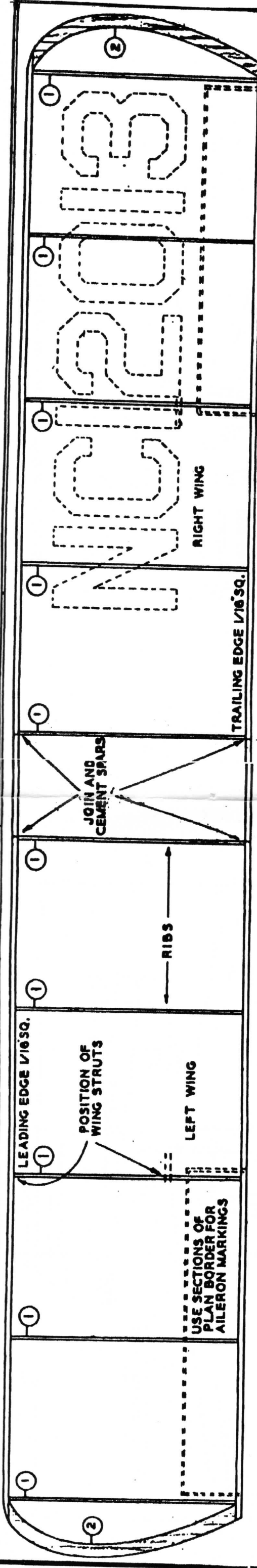
Assembly: Carve nose cowling and glue to front of body. Glue tail booms in place. Glue on tail surfaces and tail hook. Insert propeller and rubber.

Flying: Tie ends of rubber strand together using 3 loops. Hold ship by center of wing-tips. In this position the model should balance as in a normal glide. If the ship does not balance, add weight to front or rear, where necessary. Before winding propeller 50 times for trial, glide ship from hand. If it nose dives, warp tail upward, by breathing on it. If it lands tail first, warp tail down. By adjusting tail, the plane will fly perfectly.

FILL HOLES IN NOSE & WHEELS WITH 1/16" SQ. BALSAM, THEN INSERT WIRE.

VANCE FLYING WING
20" WINGSPAN
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NO. F85

NO. F85

CURTISS ROBIN

PAUL K. GUILLOW - - - - WAKEFIELD MASS.

- NOTE -
 DO NOT CEMENT NOSE PLUG IN POSITION
 COVER WING AND ELEVATOR ON TOP SIDE ONLY
 RUDDER ON LEFT SIDE ONLY
 CUT LONGEST LENGTHS OF 1/16 SQ. FIRST