

MAX FAX

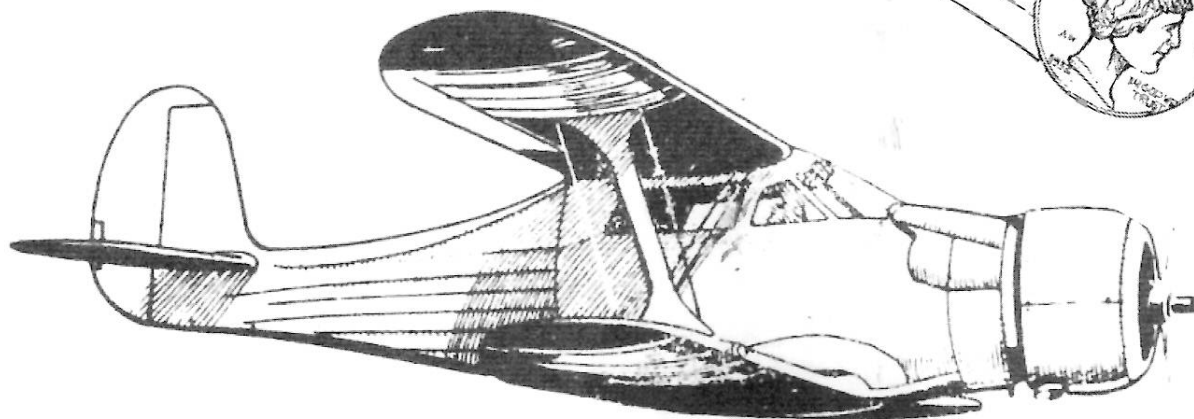
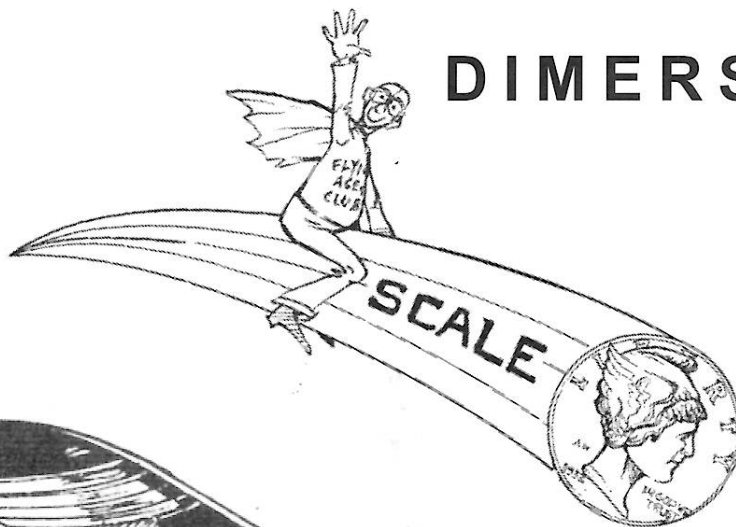
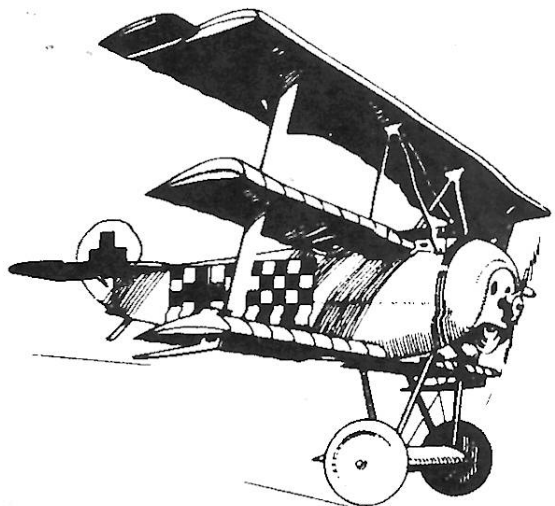


Journal of the D. C. Maxcuters

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

Editor: Stew Meyers

MAR-APR 2010



COMING ATTRACTIONS

Flying at the Nation Building Museum

March 7, 2010 12 noon to 4pm Delta Dart building session at 9am

Email Dan Driscoll (djdriscoll@cox.net) to get on email list.

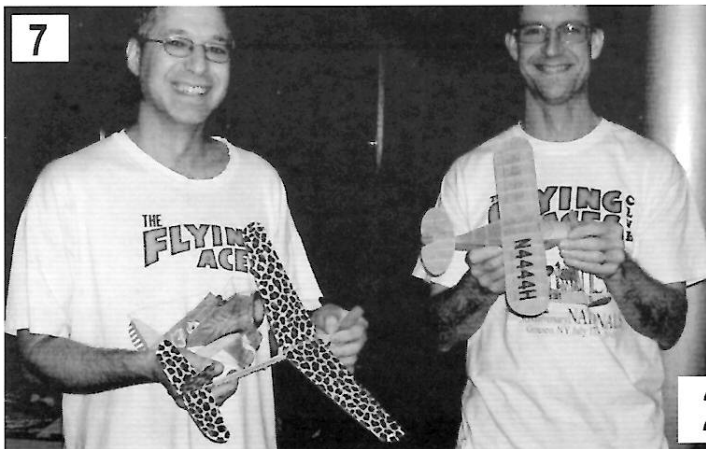
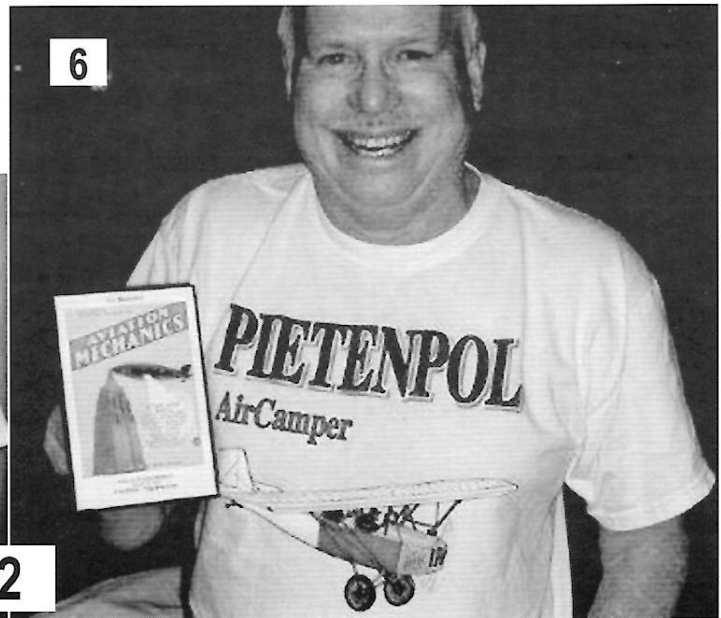
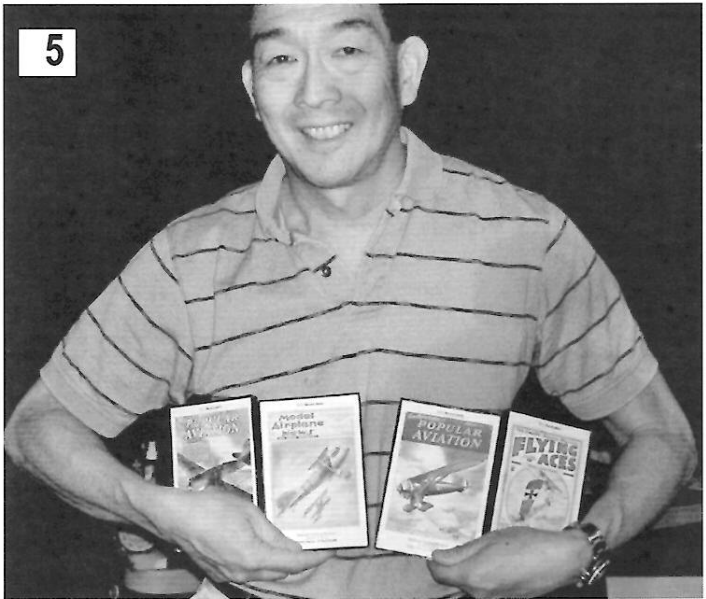
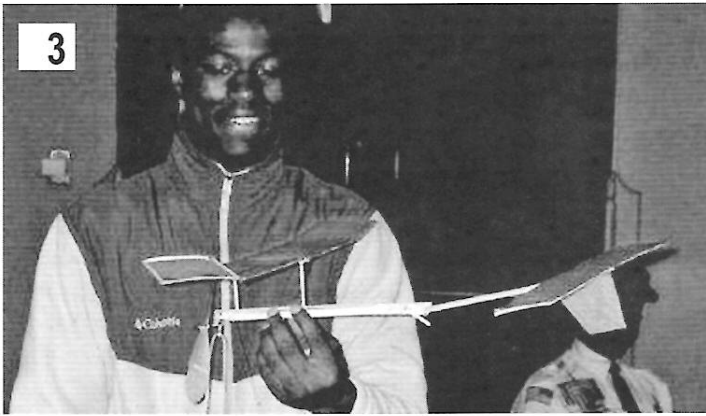
Flying in the Cole Field House!

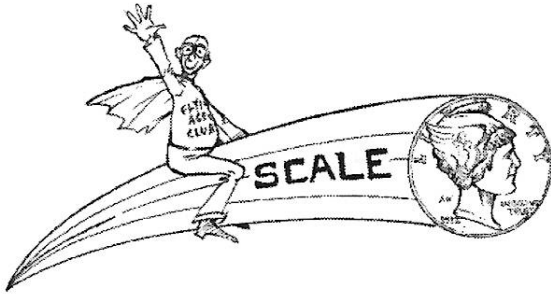
WHO KNOWS WHEN? We will negotiate for some new dates.

Email Dave Mitchell, (edgemitchell1@verizon.net) to get on the email list

Flying at the Bauer Community Center every Monday 12:30 to 2:15 pm through May.
Contact Stew Meyers for details or check the website.

KUDZU 2010 a two day meet SATURDAY & SUNDAY May 15 & 16 see details inside.





Yet Another Dimescale Issue

Stew Meyers Editor

The Beechcraft Staggerwing has always been one of my favorite aircraft. I was fortunate enough to help rebuild one and got a chance to fly it. I was delighted when Rich Weber, AKA Wing Nut, published his Neo/Pseudo Staggerwing plans. Of course I built one for the Geneseo Mass launch. Unfortunately, I was late to the launch and missed it. Well the model wasn't trimmed out anyway, however since then it has flown very well.

There were howls of protest from people who actually read the FAC rules, that real Staggerwing Dimescale plans existed and therefore it was illegal. The Dimescale apologists claimed Rich's model was a D model and this had not been published. Well that not quite true.

Two "real" dime scale models of the Beechcraft Staggerwing have been identified. Ray Rakow had the Continental model, and Dan Driscoll had the Hi-Flier model. Thanks to articles in the KAPA Collector, both model kits have been established as having been initially produced before 1942.

The Continental model is labeled as "Beechcraft B-17L", and generally resembles the "B" model with the shorter fuselage and ailerons on the lower wings. The Hi-Flier model is merely labeled as "Beechcraft".

Photos Page 2 at the NBM

1. Sharon and John Appling with their nifty Pacific Ace Bostonians.
2. John Murphy with his great looking new P-39 No-cal.
3. One of the students, a Senior, Alfred Jabatty who joined us from West Potomac HS; their next flying session is scheduled for February 20.
4. Ray Rakow with some of his models.
5. Steve Fujikawa with his three first place and Grand Champ trophies.
6. Happy Bobby Russell with his trophy after winning the Bostonian event.
7. Mike Escalante and Dave Mitchell enjoying the day.

However, the longer fuselage and the ailerons on the upper wings indicate that is a "D" model.

There is also an 16 inch Megow B-17L floating around, but it's a really a reduced 23 inch F5 and not a real Dimer.

So where does that leave us? Dan has a list of over 200 actual Dimers which fit the FAC Dimescale rules. Plenty to choose from. I happen to feel that the Dimer spirit transcends the FAC rules and there should be a class of models that reflect this for new designs.

We are simply talking about small models of simplified structure that are scale enough to be immediately recognizable as representative of the prototype. There should be no date limits. Post war models deserve Neo Dimer treatment as well.

When judging real Dimers, I feel fidelity to the original plan is paramount, whereas with the Neo Dimers this is less important and fidelity to the full scale prototype should take precedence. Both the real dimers in this issue feature the wing interplane brace wires, while Rich's Neo does not and should get dinged if these wires are omitted even if they are not on the plan. A Real Dimer can get away with the ridiculous color on the plans. A Neo Dimer needs to reflect a documented scheme which is optional for the Real Dimer. At least a Profile Pilot should be present.

Well, I have probably stirred it up enough, so I'll get off my soap box.

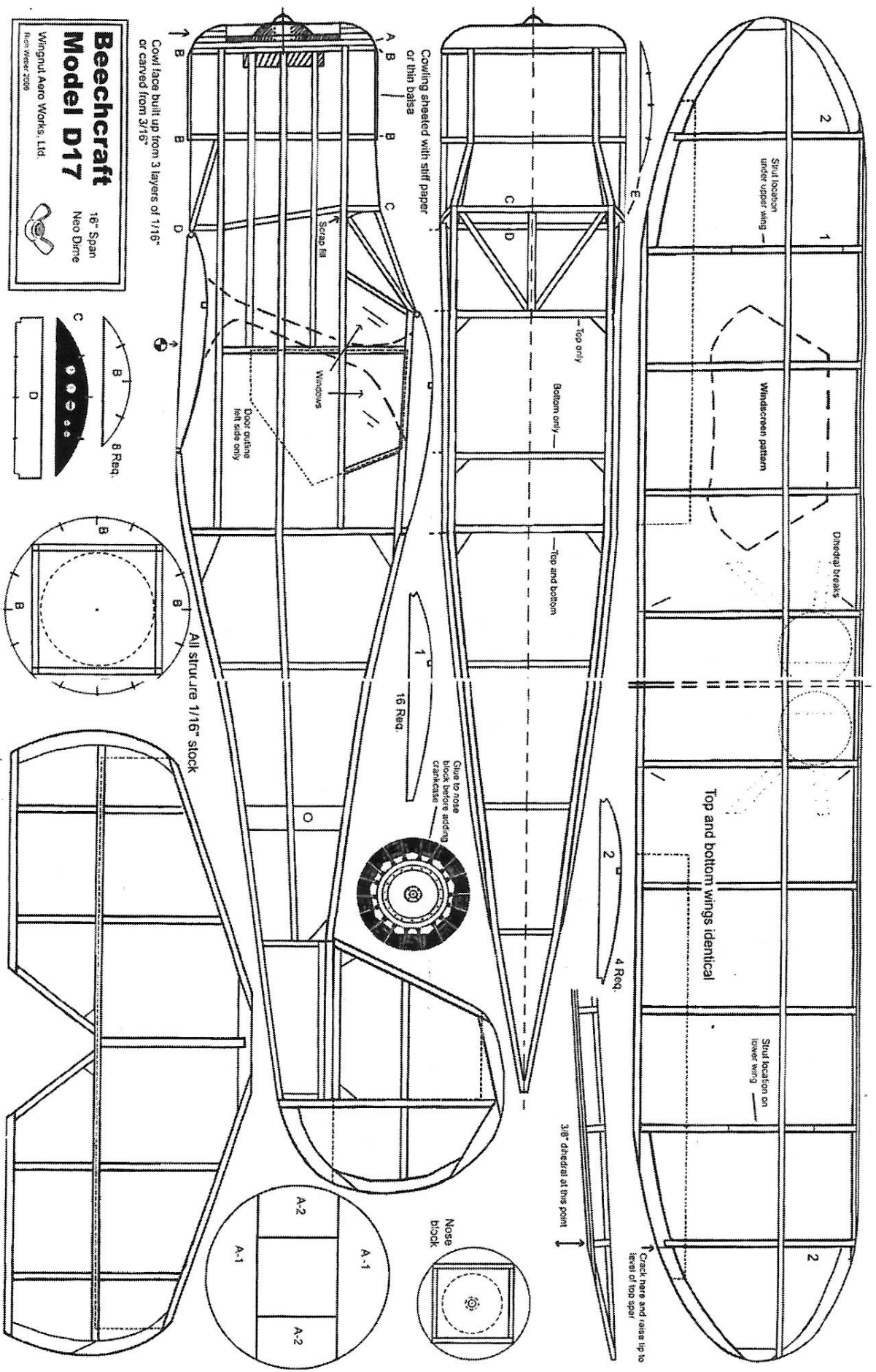
Tom Schmitt has given me his collection of *Aero Modeller* magazines to augment the few I had. Going through these has put a dent in my building program but surfaced some interesting plans and articles which will appear in this rag. To start off we have that master modeler Doug McHard on building and trimming the Megow DR-1 Dimer. I also found some diagrams that plainly show how blade angle relates to the P/D ratio. I have expanded this for the mathematically challenged.

The plans in this issue are all just a tad large to fit the 11x17 format of the plans pages. Rather than shrink them, they are presented full sized, but rearranged. I feel this is particularly important since the Staggerwing plans are rare. However the extra pages have precluded republishing a full sized plan of Rich Weber's Staggerwing and Megow's F-5. These are readily available elsewhere.

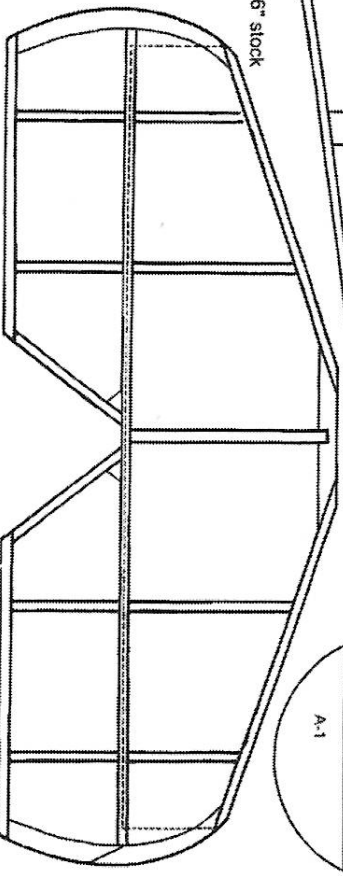
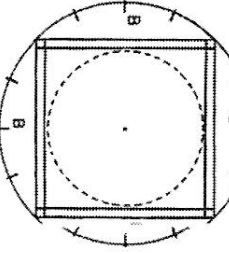
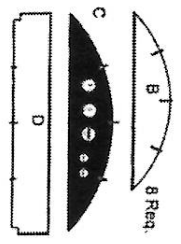
Tom did the photo pages from photos taken at the Jan NBM session and Dan provided the cleaned up Staggerwing plans. (Ray's Continental kit had suffered some smoke damage in his fire a few years back.)

Once again when I published plans, I ended up building from them. After reading McHard's article I dug out my Penn Valley kit and stared in. See page 5.

You probably noticed the last issue of MaxFax had the Cole Field House flying session for January 24 canceled. The December snow canceled a graduation ceremony, so we got bumped. We had a replacement Cole Field House session scheduled for February 7, but the blizzard of February 2010 has snowed that out.



Beechcraft Model D17
 18" Span Neo Dimer
 Virgnul Aero Works, Ltd.
 Rich Weber 2008



Rich Webers 16" Neo Dimer Beechcraft Stagewing reduced to fit on A-sized paper.

Trimming a Triplane or Taming the Stall

Doug McHard

The Fokker Triplane has a bad reputation as a freeflight model, being reputedly almost impossible to trim. One of the oldest myths in scale modeling circles is that the Fokker Triplane tailplane is mounted at a positive (lifting) angle. It certainly appears to be so in scale drawings of the machine, but look again!

The tailplane is mounted at a positive angle in relation to the datum line, but not in relation to the wings. The wings have a thick, heavily under cambered section, and the zero-lift line runs through the section at an angle to the datum greater than that of the tailplane. Thus, the tailplane actually has a slight negative aerodynamic angle of incidence in relation to the wing! Please leave it that way. If the tailplane angle is reduced, the resulting excessive down-load from the large area and long moment arm, produces a stalling trim that is generally impossible to iron out.

The design has two other features that contribute to its bad stalling reputation. The height of the top wing above the thrust line produces a lot of drag high up, and this gives a strong nose-up force. In addition, the closeness of the big propeller to the short-span wings produces a disproportionate lift increase from the slipstream when under power.

The high angle of incidence of the wings presents a lot of undersurface to the slip stream, and if any attempt is made to correct a power stall by adding down thrust, the immediate effect is to blow even more high speed air across the wings and thus counteract the intended effect of the down thrust! The greater the power needed for flight, the greater is this effect.

A Fokker Triplane must be built light to be successful. The balance point should be well forward; no more than 50% of the top wing centre-section chord. Avoid over-size propellers, and ensure that no more than 2 degrees of decalage is used (the difference between the wing zero-lift line and the tailplane). All three wings should be mounted at the same angle of incidence. Reducing the angle of the lower wing(s) increases the stalling tendency.

The little 12-inch span Megows 10c model is a perfectly practical demonstration piece. Build it exactly to the plan and notice the tailplane setting - slightly positive to the datum line. My experience is that this little model flies quite well, but I do build with 1/20 inch square (not 1/16in sq) and I do add a spar (1/20 inch square) to the wings on the top surface. If you can build and cover it without warps without the spars - so much the better.

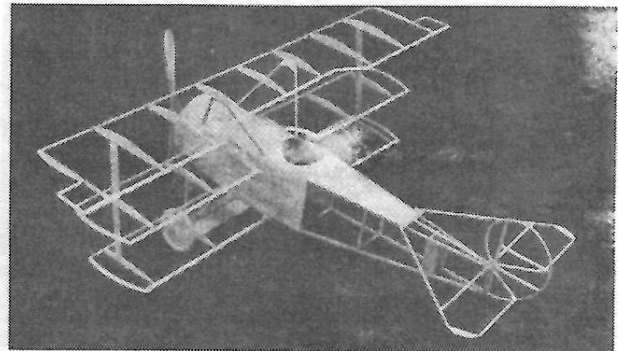
I have managed to trim out 'heavy' triplanes, but beyond a certain wing loading it becomes necessary to cross aileron, elevator and rudder controls to achieve stable power flight, and this results in zero glide! One final point — the use of minimum decalage means that you must be careful not to incorporate too tight a power turn(right), otherwise there is insufficient elevator correction to prevent the nose from dropping. Much of the above also applies to the Fokker D.VII and the Fokker D.VIII.

This article is from Alex Imrie's Vintage Corner in the June 1994 Aero Modeller

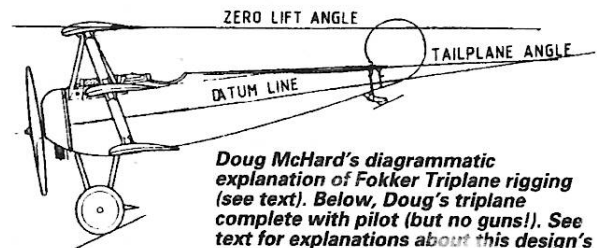
Doug used the original version of the plan with Latin crosses and no guns shown on pages 10-11. Penn Valley Hobbies has a kit with the plans modified by Scale Flight with Maltese crosses and inked in guns.

Be forewarned the span of the Penn Valley plan has increased from 12 to 12-3/8 inches. The print wood doesn't match the plan. I did not notice this while building the fuselage or tail, but it was obvious when I tried to build the wing. I ended up making print wood from the plan; quite often the best thing to do with old plans. You can do the same for the plan presented.

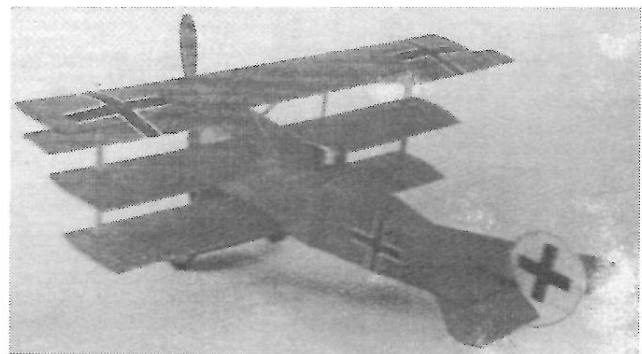
While on the subject of Megow Dimers, I mentioned to Dave Stott that the Camel and Bristol seemed identical except for the rudder. He told me it was because the Bristol was a forgery by Jack Fike of Scale Flight. I had wondered why it wasn't in the Megow Catalog. Gee-- does that make it a Neo Dimer? It obviously is a Pseudo Dimer.



Doug McHard's 12-inch span Megow's Fokker Triplane showing the basic construction from 1/20 inch square balsa before fitting spars to the upper-surfaces of all wings to prevent warping.



Doug McHard's diagrammatic explanation of Fokker Triplane rigging (see text). Below, Doug's triplane complete with pilot (but no guns!). See text for explanations about this design's aerodynamic set-up.





For years Maxcuters has sponsored two Kudzu contests with Dave Rees in Raeford, NC. Due to health problems Dave has become less active and the CAFFA has become our partner. Due to schedule conflicts last year's summer/fall contest was in November. This is too late in the year so we decided to combine the contests into a two day spring event to allow us to fly more events and have a more relaxed contest.

The CAFFA was formed to promote free-flight in the Carolinas and to help fill a gap left in southeastern contests when the Virginia Brainbusters club lost access to the Petersburg Airport. For the last several years CAFFA has sponsored a Spring Contest and several Fun-Fly's at the Carolina Sod Farm in Raeford, NC. Events have included AMA duration and FAC scale models. For many years the DC Maxcuters club has also sponsored a Fall Contest on the same field. This year the Spring Contest in Raeford will be a two-day joint venture by both CAFFA and the Maxcuters. The two-day Spring Contest format will hopefully encourage more people to make the long drive to Raeford for a contest, as well as will give us a backup day should weather be a problem for one of the scheduled days. There will still be both FAC and AMA events, and the AMA events are currently planned for Saturday with Sunday as the backup day. The scheduled dates are May 15th and 16th. We also hope to be able to use a new field that is significantly larger than the usual field! That is still being confirmed and we do have the original field available to us.

At this year's Spring Contest there will also be a fun "Kit Bays Glider Event". Kit had two hand-launched glider designs published in the era of the Flash, Bo Weevil, US Kid, and Polly. His two designs were the Zing Machine and Down Draft Dodger. A little known fact is that his Dodger glider was originally called the "Draft Dodger", but was changed by the editor to the "Down Draft Dodger" for political reasons, no doubt! We will have a trophy just for this event and the two plans are included in this mailing. You should be able to print and scale up or down for whatever wing span you desire. The rules are basically to build one of the two designs for hand-launch or catapult in any size, use the same construction and outlines (no carbon tubes, etc), and DT's are allowed. It is otherwise planned as an AMA Catapult Glider event.

TENTATIVE SCHEDULE

FAC EVENTS

| Saturday May 15 | Sunday May 16 |
|---------------------------|---------------------------|
| Mass Launch | |
| WWI | WWII |
| Navy Scale | Combined Racers |
| Modern Civil | Golden Age Civil |
| Judged and Timed | |
| Embryo | 2 Bit+1 Old Time Rubber |
| FAC Jet Catapult | Low Wing Trainer |
| Dime Scale | No-Cal |
| FAC & Pnut Scale Combined | FAC & Pnut Scale Combined |

AMA DURATION EVENTS

- Hand-Launch Glider (to include Tip-Launch Gliders)
- Catapult Glider
- P-30

(AMA events either day)

- F1H/A-1 Towline Glider
- F1G/Coupe D'Hiver
- Special Kit Bays Glider Event
(Zing Machine or Down Draft Dodger)

website: <http://www.carolinafreeflight.org>

<http://dcmxecuteur.org>

Contacts: John Diebolt <jdiebolt@mindspring.com>
John Diebolt (919) 467-1025
Carl Dowdy <carldowdy@mac.com>
contact@carolinafreeflight.org

Contacts: Dan Driscoll <djdriscoll@cox.net>
Dan Driscoll (703) 684-0908
Stew Meyers <stew.meyers@verizon.net>
Stew Meyers (301) 365-1749

Prop angle as a function of P/D

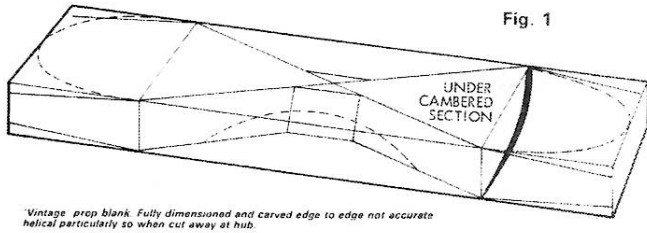
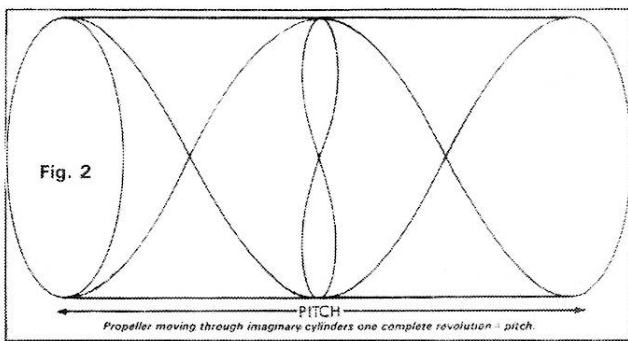


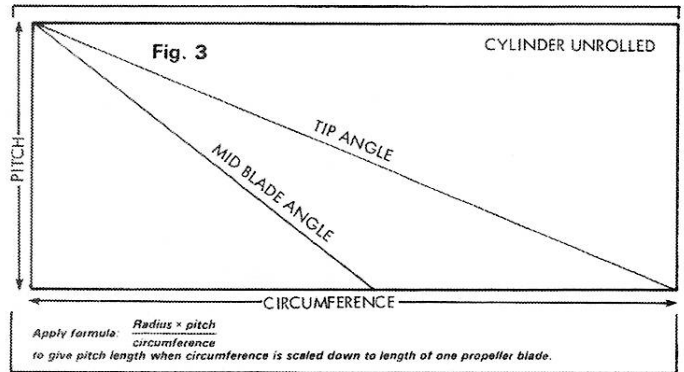
Figure 1 shows a typical free wheeler blank which involved a large, expensive block of balsa, of necessity hard, and of good corresponding density. On such a blank only two points of the helical can be said to be correct: at the widest blade cross section, and at the tip.



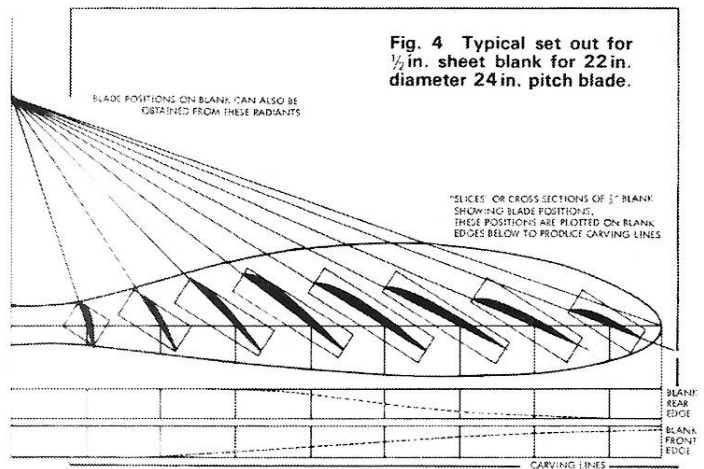
We can see this better if we now proceed to lay out a blank on the classic principle of 'unrolling the cylinder'. It will be appreciated that a propeller is rather like a pair of wings (blades), each with an infinite number of variously angled chords. The twist of the blade is such that the angle of any chord taken along its length will 'screw' its way through the air the same distance forward as any other, even though the actual distance travelled is greater or lesser. Thus the chord angle near the hub is high because it rotates slowly and must cover its short travel distance in the same time as the shallow angled, fast rotating blade tip. This can be readily seen in the diagram, (See Figure 2) in which a cylinder represents the swept volume of air in one revolution of the propeller. The two dimensions of the cylinder are made up of the diameter of the propeller and its pitch: the term used to indicate the distance travelled forward in one revolution.

Figure 3: 'Unrolling' this cylinder gives us all the information and necessary measurements for laying out our blade blanks. Looking at the rectangle revealed we have the long side equivalent to the circumference of the propeller and the smaller side the pitch length. And here we have a bit of luck, for we can scale down that rather oversize diagram so that the longer side is equal to that of one blade of the propeller, and this comes in very useful indeed. To find the equivalent of that scaling down for the pitch length on the smaller side you merely have to apply the simple formula:

$$\frac{\text{Radius} \times \text{Pitch}}{\text{Circumference}}$$



We now have a diagram (Figure 4) where the various pitch angles can be directly related at as many points as you wish to choose. This now gives you an idea what the blade angles will look like on the propeller that may be prescribed for your model, say, 22in in diameter and of 24in pitch. The trick now is to use this information to produce a helically shaped blade.



Figures 1-4 are from an February 1981 Aero Modeller article on carving props.

$$\theta = \arctan \left(\frac{P/D}{\pi \left(\frac{r}{R} \right)} \right)$$

To find the blade angle at any station. In the formula P/D is the Pitch/Diameter ratio of the propeller and r/R is the radius you are interested in divided by the propeller radius; at the tip this is obviously 1 and at the hub is zero. Forget the zero value; 20% (0.20) should be your lower limit.

Conversely to back out the P/D from the angle θ :

$$\text{Tan } \theta = \frac{(P/D)}{\pi(r/R)} \quad \text{or} \quad P/D = \text{Tan } \theta (\pi) * (r/R)$$

This equation is solved for $\theta = 30$ degrees on page 18.

(See W.F. McCombs approach to it on page 15)

| 14g. Bostonian | 9 Entrants | WWII No-Cal ML | 10 Entrants | Ready-to-Fly | 3 Entrants |
|--------------------|-------------|--|--------------|--------------------|-----------------|
| 1. Bobby Russell | B.P. | 1. Henry Guth | Volksjaeger | 1. Sharon Appling | Butterfly 3:00 |
| 2. Steve Fujikawa | T Party | 2. Steve Fujikawa | P-39 | 2. Paul Spreiregen | Junior 1:44 |
| 3. Henry Guth | Boatstonian | 3. John Appling | FW-190 | 3. Wally Farrell | Butterfly 1:15 |
| P-Nut Scale ML | 8 Entrants | Dime Scale ML | 8 Entrants | A-6 | 3 Entrants |
| 1. Steve Fujikawa | Lacey | 1. Steve Fujikawa | Brownie | 1. Wally Farrell | ? 3:02 |
| 2. Bobby Russell | Ganagobie | 2. Jim Coffin | Chester Jeep | 2. Henry Guth | ? 2:20 |
| 3. Wally Farrell | Cub | 3. Stew Meyers | Megow Camel | 3. Glen Simperts | DIA Spec. 1:45 |
| Phantom Flash | 12 Entrants | Helicopters ML | 4 Entrants | FAC No-Cal | 5 Entrants |
| 1. Steve Fujikawa | | 1. Sharon Appling | Puma | 1. Dave Mitchell | Typhoon 412 |
| 2. Henry Guth | | 2. Dan Driscoll | Seasprite | 2. Henry Guth | Blum & Voss 197 |
| 3. Paul Spreiregen | | 3. Mike Escalante | ? | 3. Jim Coffin | P-40 166 |
| Pennyplane | 2 Entrants | National Building Museum Results - January 10, 2010 | | | |
| 1. Paul Spreiregen | 3:12 | We had seventeen registered flyers for freeflight and seventeen for R/C. Again, Steve Fujikawa was our freeflight grand champ. | | | |
| 2. Henry Guth ? | 2:43 | | | | |

To Find the P/D of a Prop

$$P/D = \tan \theta (\pi) * (r/R)$$

Since 30 degree triangles are common, let's set $\theta = 30$ degrees; the $\tan \theta$ is 0.577.

Thus $P/D = 0.577 \pi (r/R) = 0.577 \times 3.1412 (r/R) = 1.81 r/R$

To find the P/D slide your 30 degree triangle along the prop until it matches the back face of the prop nicely.

Measure the distance from the hub to this point. Divide this distance by the prop radius to get the ratio r/R . Multiply this ratio by 1.81 to calculate the P/D.

(See fig. 6-16 on page 15--your r/R will not necessarily be 0.7)

Suppose this point turned out to be 75%.

At the 75% point ($r/R=0.75$) $P/D = 1.81 \times 0.75 = 1.36$

Thus a 30 degree angle at 75%. indicates a P/D of 1.36.

At $r/R = 0.7$ $P/D = 1.81 \times .70 = 1.27$

At the 2/3 point ($r/R=0.667$) $P/D = 1.81 \times 0.667 = 1.2$

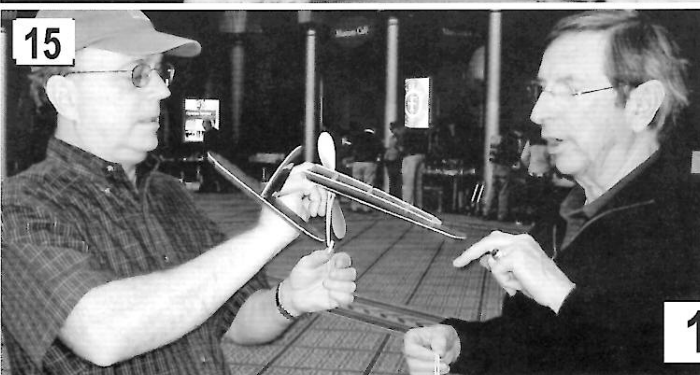
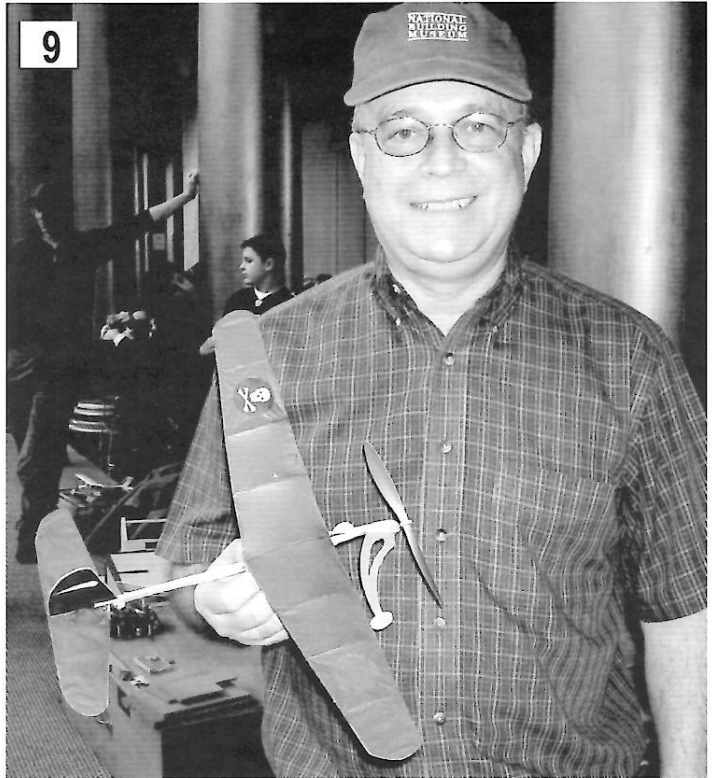
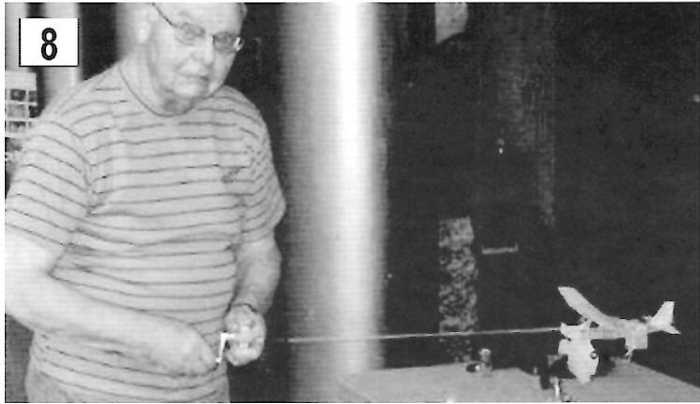
The 2/3 (0.667) to 3/4 (0.75) point is probably the point to check the pitch angle. If you can measure this angle with a protractor, just use the above formula to find the prop P/D. Your handy dandy calculator has π and a \tan function on it to make life easier.

Page 19 Photos from the NBM

8. Ross Summers winding his P-nut.
9. A happy Peter Carpenter with his Phantom Flash.
10. A Scout Delta Dart building session, Dave Mitchell and Pete demonstrating.
11. Some happy Scouts ready to test their aircraft.
12. A view of a building session table Parents and Jack Felter helping.
13. Pete assisting a Scout with the rubber motor.
14. And here is Wally Farrell, another volunteer assisting a modeler.
15. Now Pete needs some advice from Jack for his Flash with a folded wing.

Page 20

16. Test flying over -- mass lunch of Delta Darts by Scouts.
17. Pete with his latest little R/C the M.A.V. Da Vinci Ornithopter.
18. Another ParkZone Vapor at the NBM session. This lightweight R/C aircraft is very easy to fly and an ideal indoor trainer.



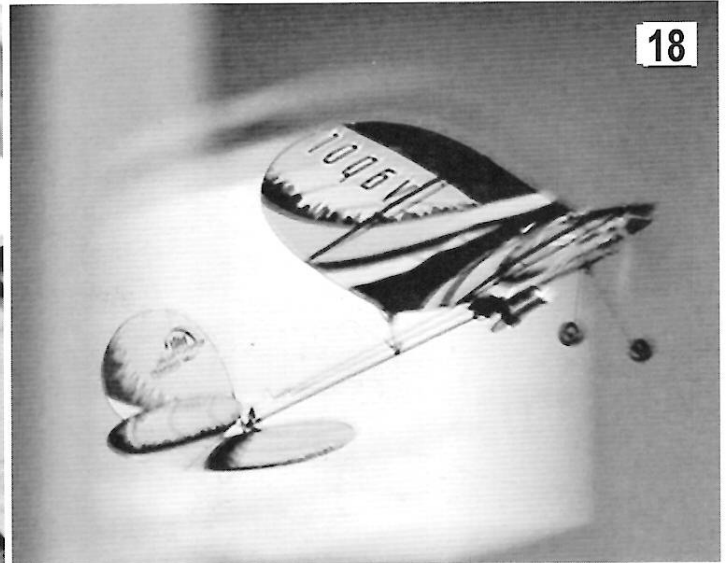
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16



17



18

CLUB OFFICERS -President: Stefan Prosky 414 11th Street SE., Washington, DC 20003
Secretary: David Mitchell 230 Walnut St. NW., Washington, DC 20012
Treasurer: Stew Meyers, 8304 Whitman Dr., Bethesda, MD 20817 ---- Note change - Stew has replaced Norm!
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 \$20 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, Stew Meyers.

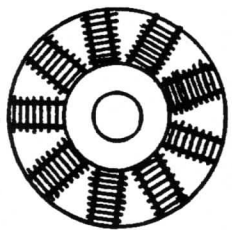
PUBLISHING DATES - Six issues of MaxFax are sent each year as close to the nominal dates as possible, but since this is a volunteer publication nothing is guaranteed except that six issues will be sent to all members.

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

Maxecuter web site: <http://www.dcmmaxecuter.org>

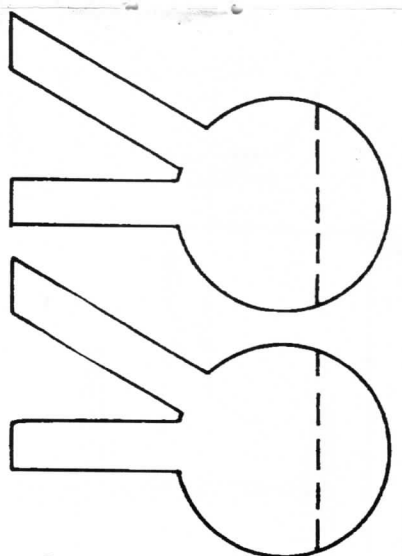
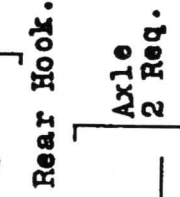
Your DUES are due





Prop Shaft. Landing Gear Fairings-Cut off plan, fold on dotted line and cement in place.

Engine-Cut off plan and cement in place.



Draw in with black ink.

INSTRUCTIONS

STUDY PLAN CAREFULLY.

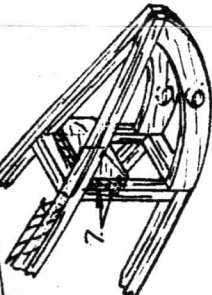
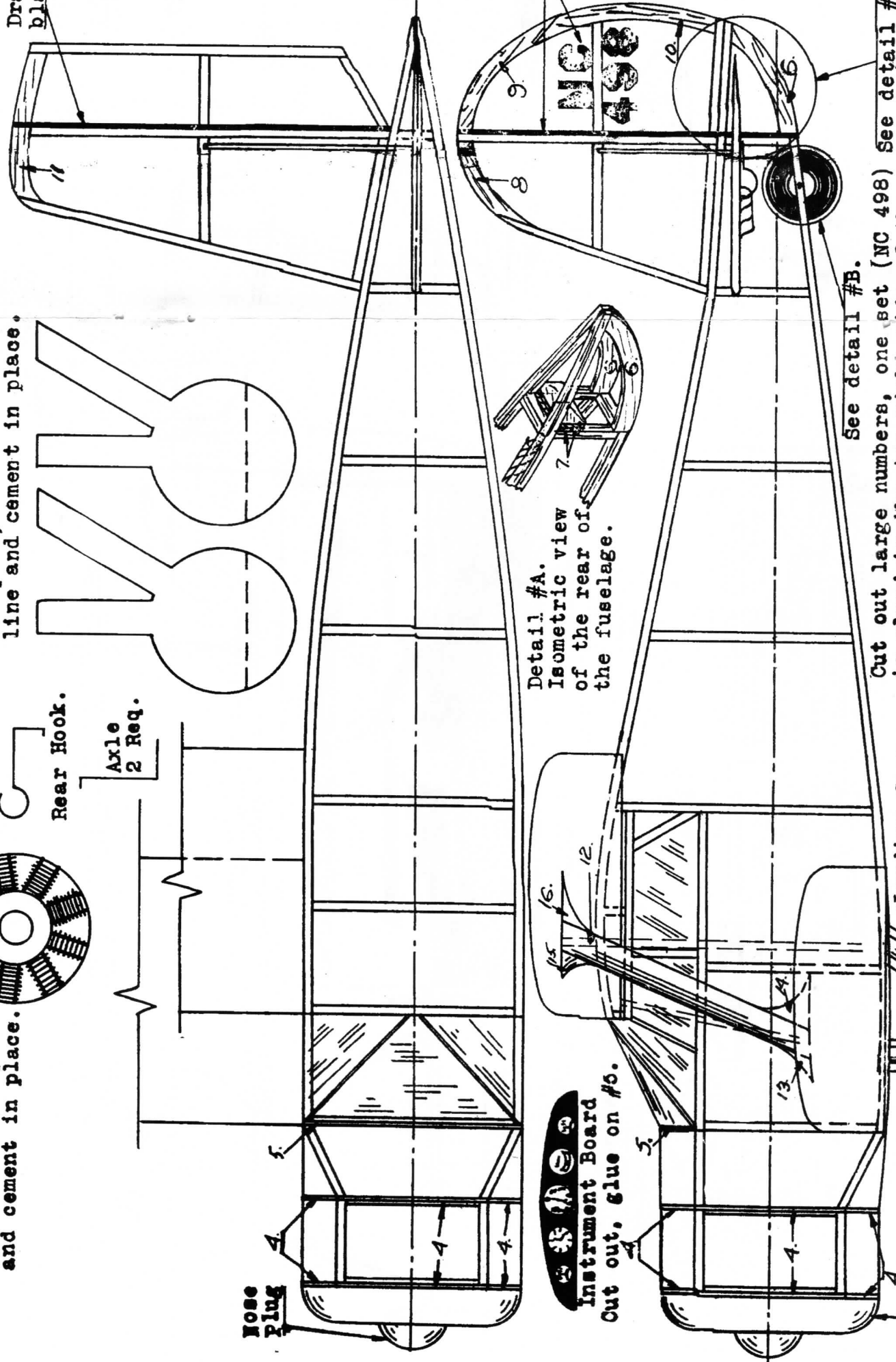
FUSELAGE-Make two sides of fuselage 1/16"sq. Cut out formers, nose block and cement in place.
WINGS-Cut out ribs and wing tips, and construct wings.

STABILIZER AND RUDDER-Cut out all tips and construct surfaces with 1/16"sq. balsa.

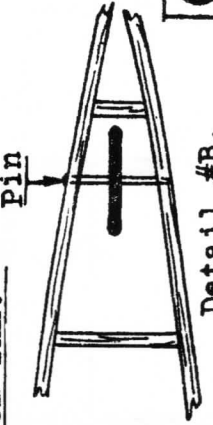
COVERING-Cover all surfaces as shown in color scheme.
ASSEMBLING-Cement top wing, stabilizer and rudder, then lower wing. Finally the landing gear.

SPRAYING-Use spraygun for spraying with water.
SUPER DETAIL CONSTRUCTION-Complete with all detail for replica model.

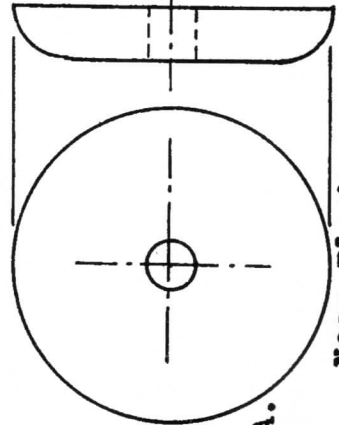
FLYING INSTRUCTIONS-Glide model. If model dives, warp elevator up. If model stalls, warp elevator down. Give 100 winds and set on ground for take off position and let model zoom to a perfect flight in the air.



Draw in with black ink.



Detail #B.



Nose Block

See detail #B.

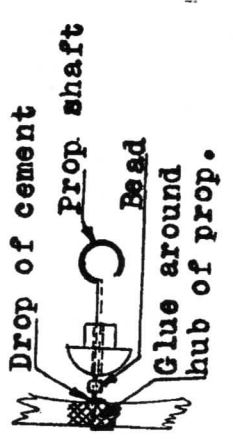
Cut out large numbers, one set (NC 498) See detail #A. is glued to the top right side of the top wing. The other set is glued to the lower left side of the bottom wing.

Landing Gear Fairing-Showing Right Wheel.

Nose Block

Color Scheme
 Red-fuselage and wing struts.
 White-wings, tail surfaces and landing gear struts.

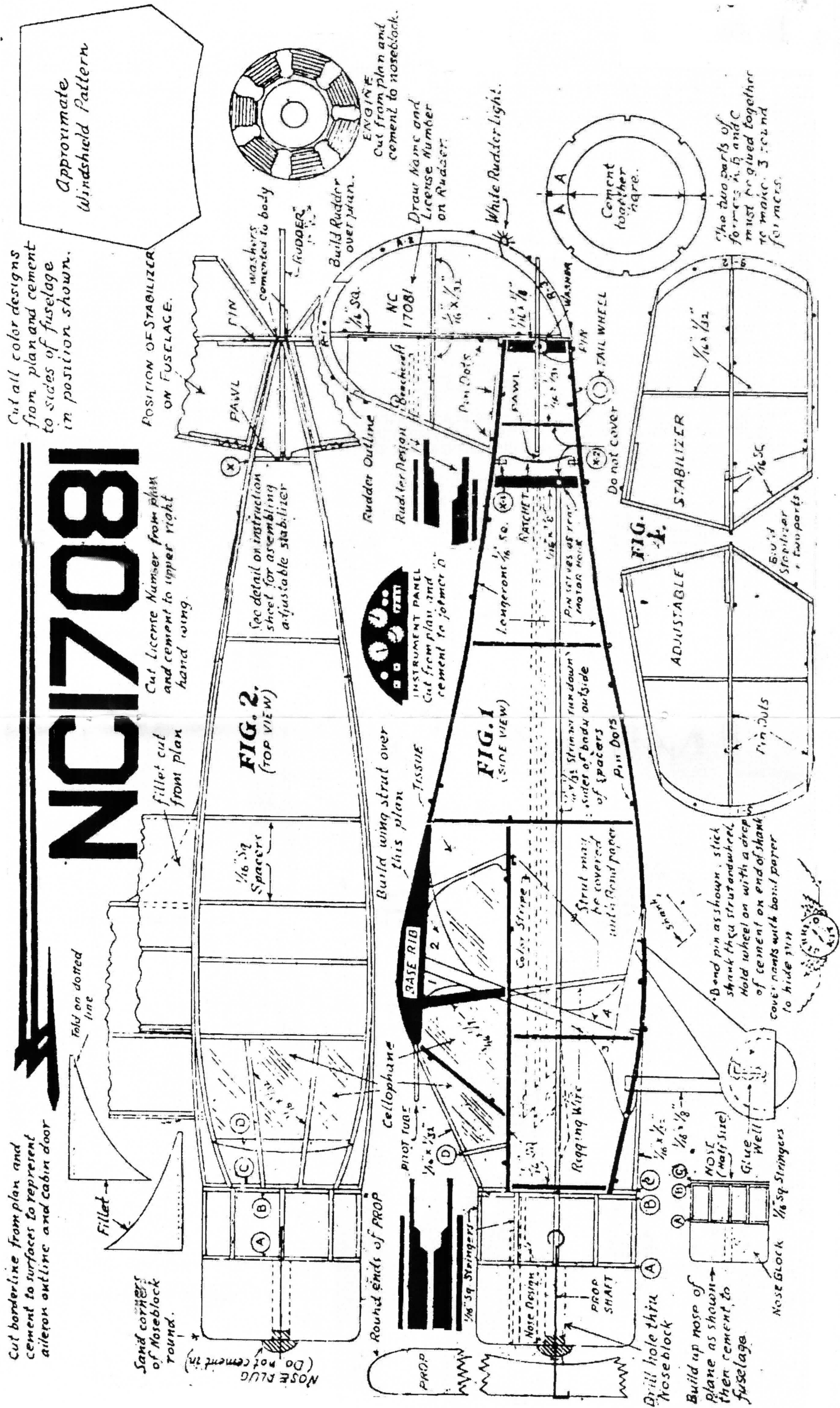
NC 498 NC 498



CONTINENTAL
 MODEL AIRPLANE CO.
 BROOKLYN.....NEW YORK
15 SUPER-DETAIL
 FLYING SCALE
-BEECHCRAFT-7-B17L
 DESIGNED & DRAWN BY GRAHAM KLEIN

HI - FLIER BEECHCRAFT KIT 106-3

ADJUSTABLE STABILIZER PATENTED MAY 7, 1935



Cut borderline from plan and cement to surfaces to represent aileron outline and cabin door

Cut all color designs from plan and cement to sides of fuselage in position shown.

NC17081

NOSE PLUG (Do not cement in)
Sand corners of Noseblock round.
Fillet

Cut license number from plan and cement to upper right hand wing.

POSITION OF STABILIZER ON FUSELAGE.

FIG. 2 (TOP VIEW)

APPROXIMATE Windshield Pattern

Round ends of PROP

Build wing strut over this plan

INSTRUMENT PANEL Cut from plan and cement to former D

ENGINE Cut from plan and cement to noseblock.

FIG. 1 (SIDE VIEW)

White Rudder Light.

Color Stripe
Strut may be covered with bond paper

Draw Name and License Number on Rudder

Build up nose of plane as shown then cement to fuselage

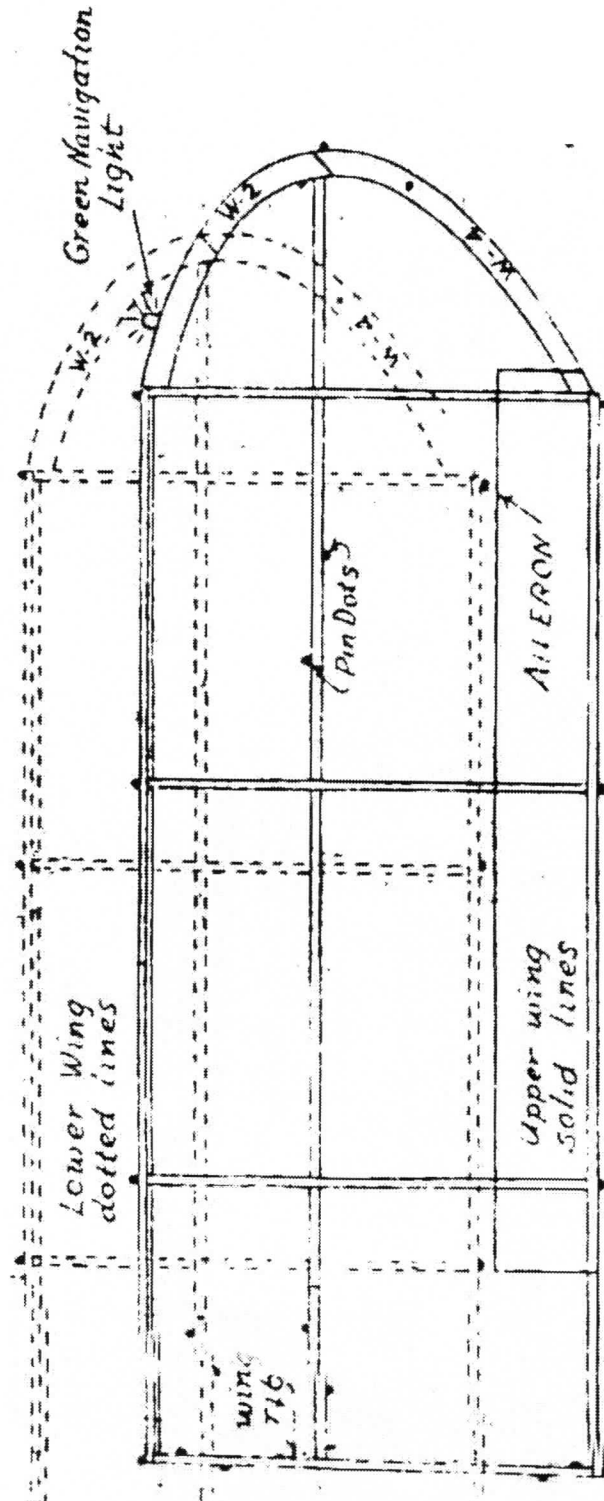
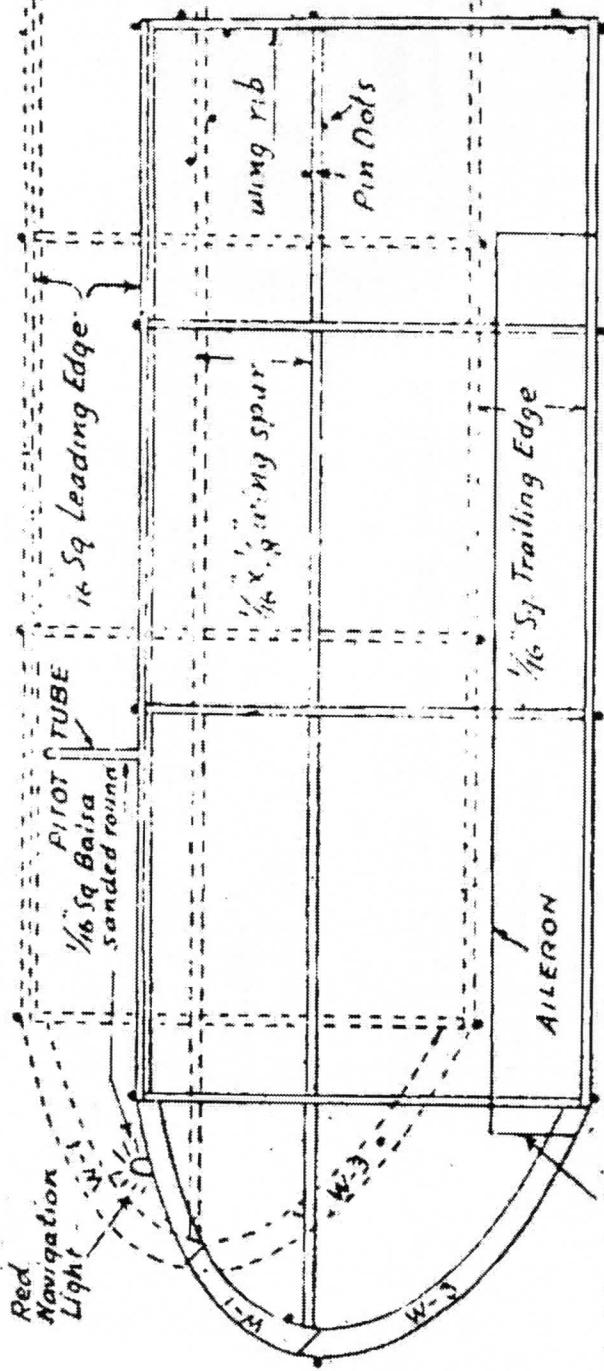
FIG. 3

The two parts of former A, B and C must be glued together to make 3 round formers.

Bend pin as shown, stick shank thru strut and wheel. Hold wheel on with a drop of cement on end of shank cover nuts with bond paper to hide pin

FIG. 4

Build Stabilizer - two parts

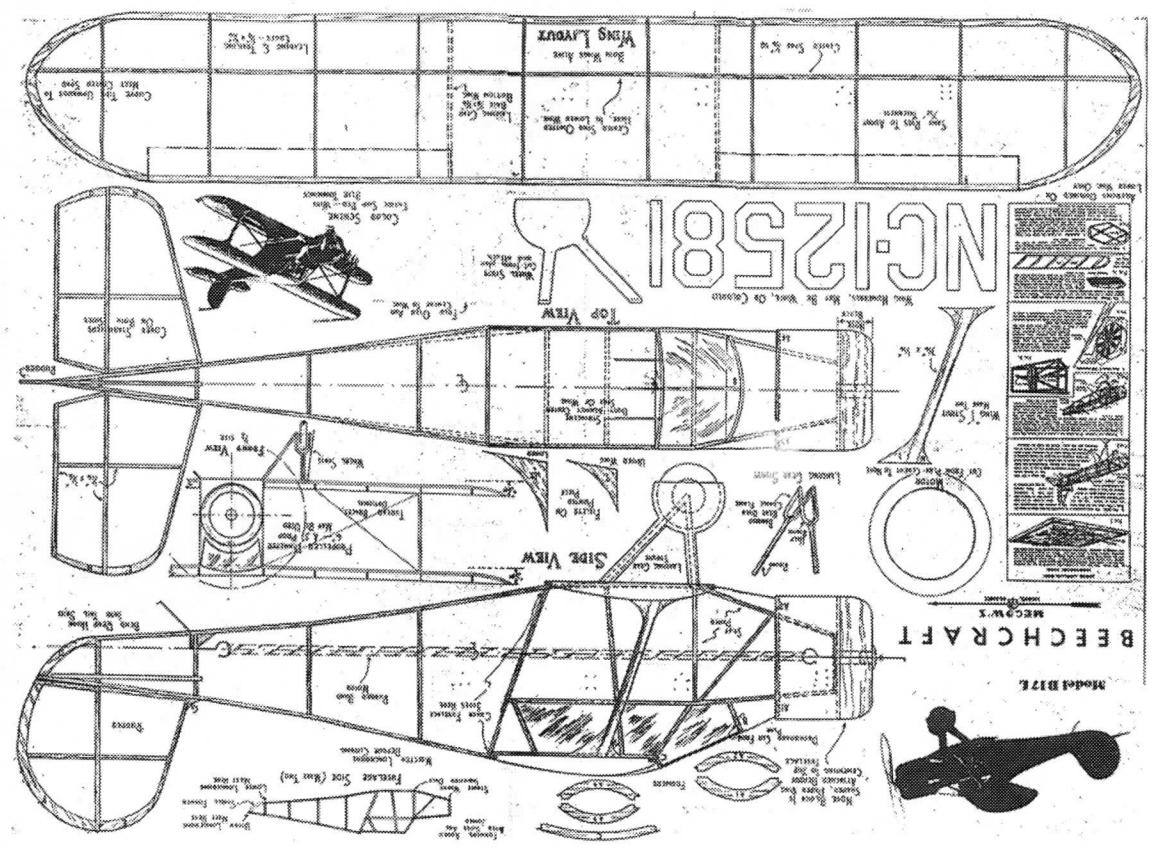


Cut borderline from plan and cement to surfaces to represent aileron outline and cabin door

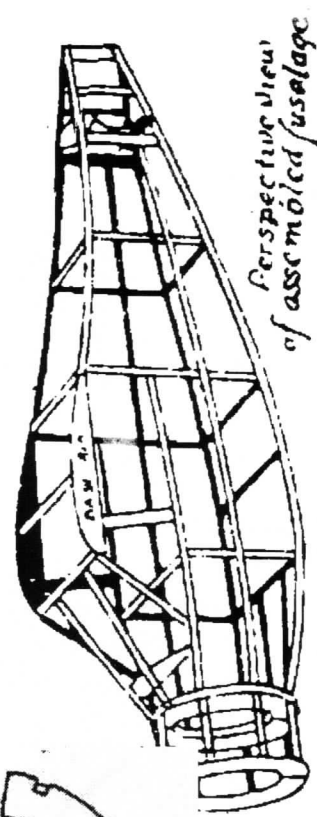
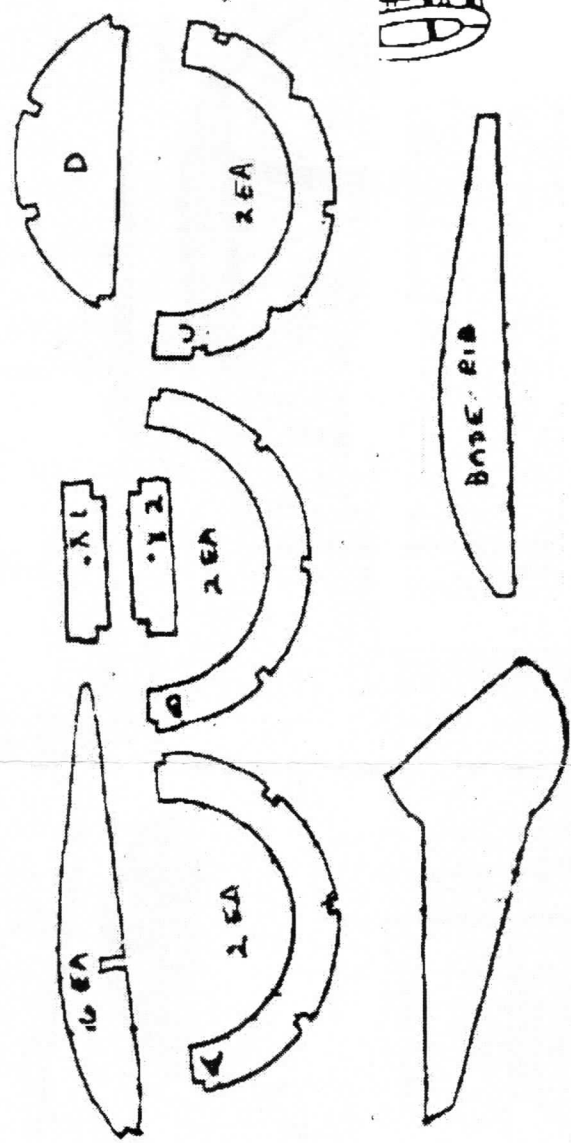
Cut all color designs from plan and cement to sides of fuselage in position shown.

COLOR SCHEME
Cover Fuselage and Rudder one color, wings and stabilizer with the other.

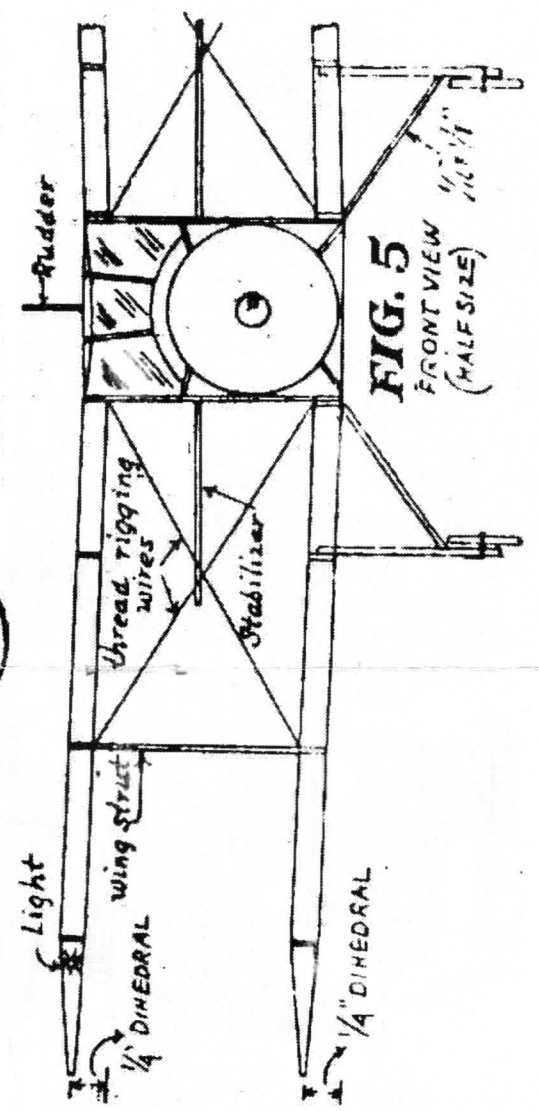
Follow INSTRUCTION SHEET Carefully



THIS IS A REDUCED COPY OF MEGOW'S F5 PLAN ORIGINALLY 23 INCH SPAN. IT HAS APPEARED AT 16 INCHES MIMICING A DIMER. NOTE IT HAS INTERPLANE WIRES. IT'S MORE SCALE THAN THE TRUE DIMERS.



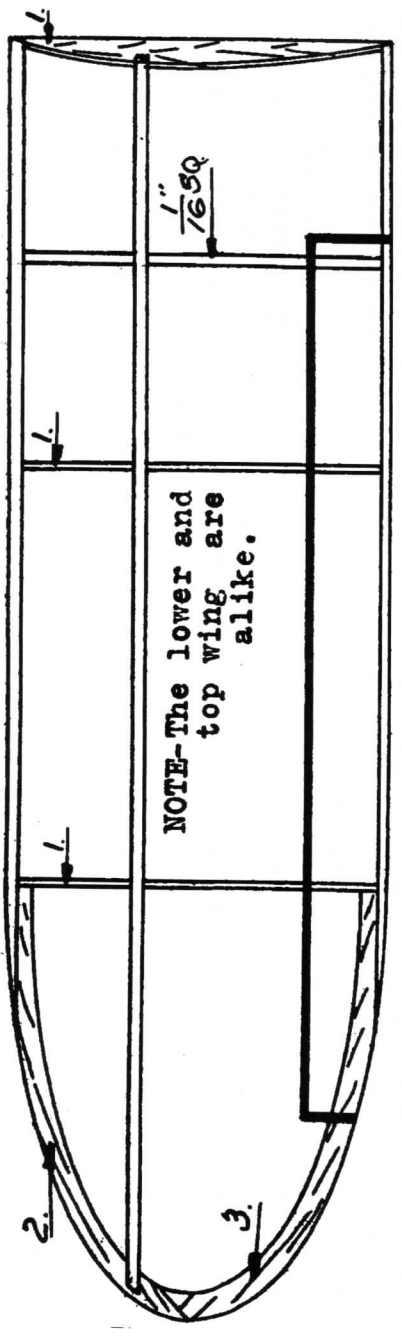
Perspective view of assembled fuselage



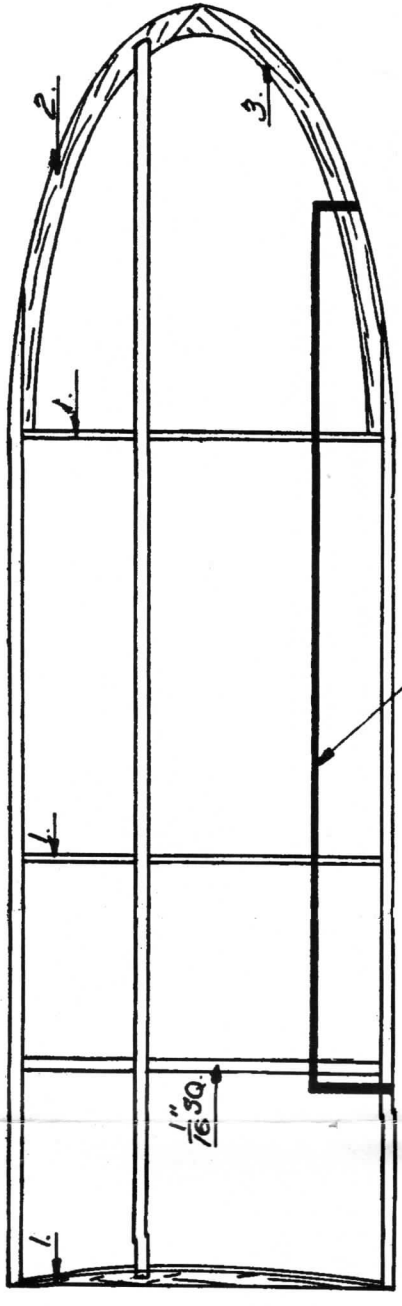
HI-FLIER
TRADE MARK

BEECHCRAFT 106-3
WING SPAN - 16 In.

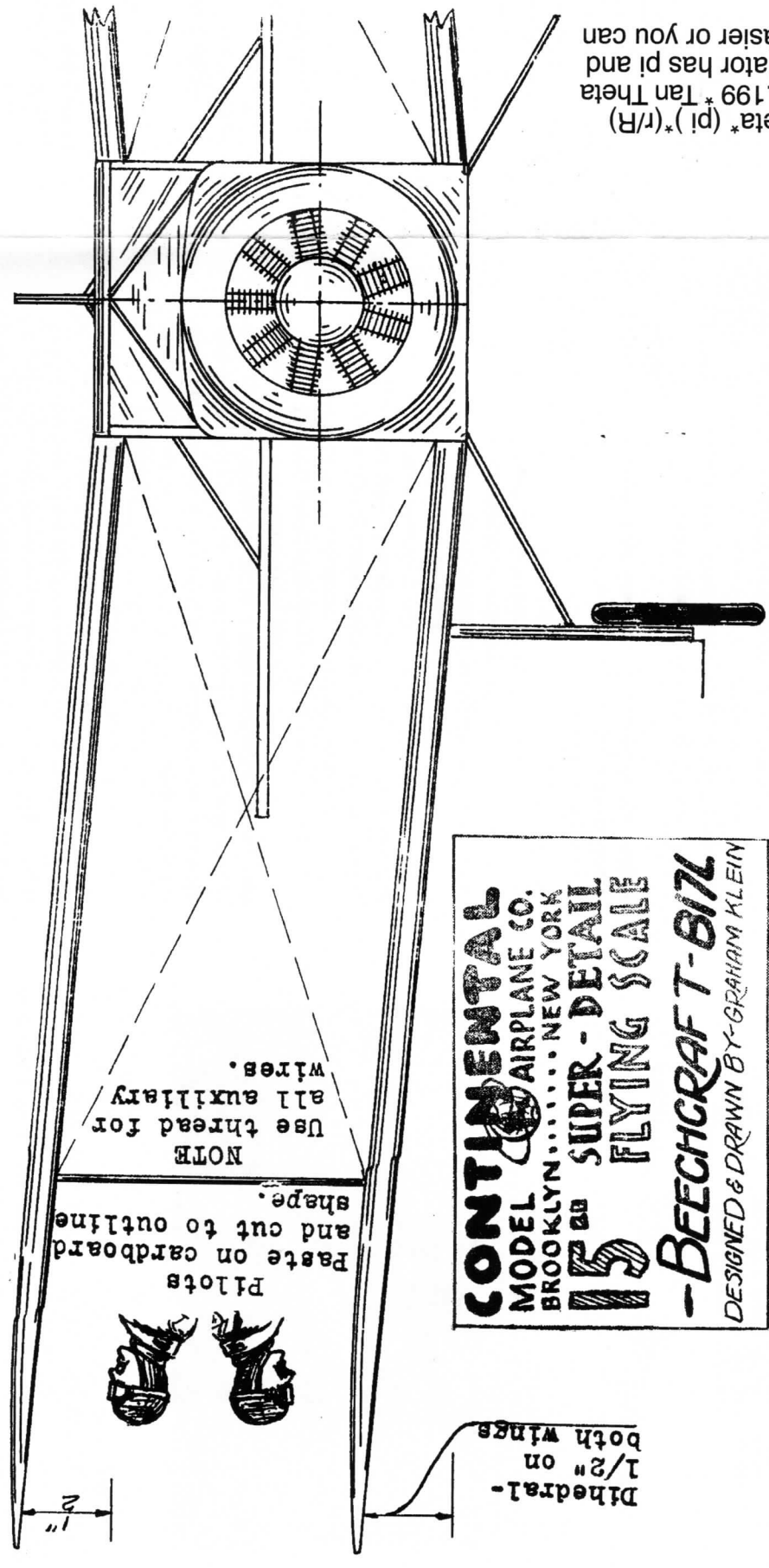
The HI-FLIER MFG. CO.
DECATUR - ILLINOIS
The World's Largest Manufacturers of Aerial Toys
EST. APRIL 1910 - U.S. PATENT OFFICE



NOTE-The lower and top wing are alike.



AILERONS-Are drawn in with black ink, on the lower wing only.



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15 SUPER-DETAIL
FLYING SCALE

-BEECHCRAFT-T-BIZ
DESIGNED & DRAWN BY-GRAHAM KLEIN

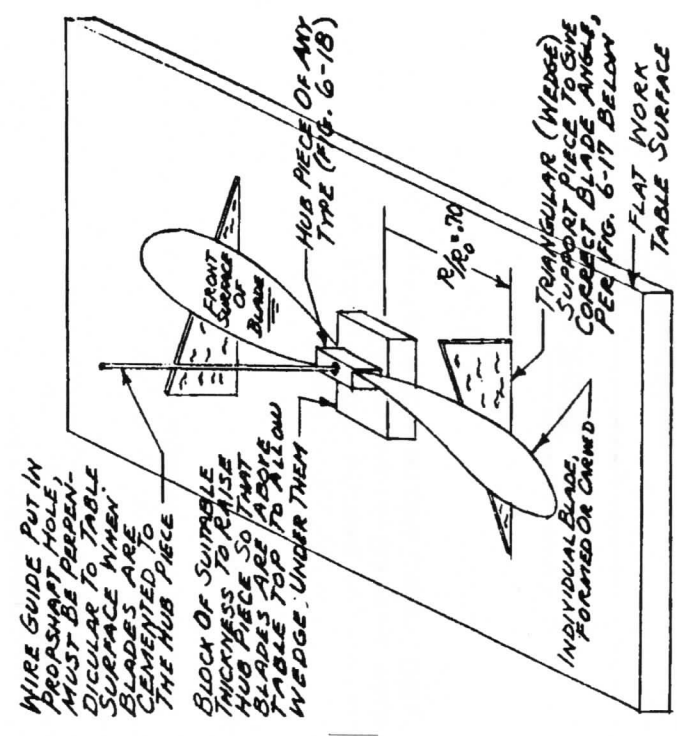


FIG. 6-16 Assembling and Cementing the Blades to the Hub Piece

Table 6-6 Blade Angle at R/R₀ = .70 For Setting Prop Blade

| Desired H/W P/D (Table 6-1) | Blade Angle @ R/R ₀ = .70 |
|-----------------------------|--------------------------------------|
| .8 | 19.8 |
| .9 | 22.3 |
| 1.0 | 24.2 |
| 1.1 | 26.6 |
| 1.2 | 28.8 |
| 1.3 | 30.6 |
| 1.4 | 32.5 |
| 1.5 | 34.2 |
| 1.6 | 36.1 |
| 1.7 | 37.6 |
| 1.8 | 39.3 |
| 1.9 | 40.7 |
| 2.0 | 42.3 |
| 2.1 | 43.5 |
| 2.2 | 45.0 |
| 2.3 | 46.4 |
| 2.4 | 47.5 |

Note: Blade angles obtained per note of Table 6-1

Balsa wedge for setting blade angle at R/R₀ = .70, as shown in Fig. 6-16 (cut from sheet balsa).

FIG. 6-17

The formula used is $P/D = \tan \theta$ (pi) * (r/R) * 3.1412 * 0.70 = 2.199 * $\tan \theta$

Your handy dandy scientific calculator has pi and a Tan function on it to make life easier or you can use the McCombs table.

CONTINENTAL FLYERS

MANUFACTURED BY CONTINENTAL MODEL AIRPLANE CO., BROOKLYN, N. Y.

Made in U.S.A.