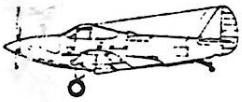
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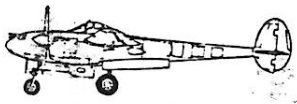
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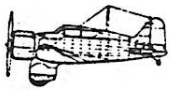
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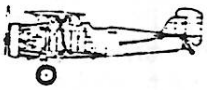
Boeing FB-5


Boeing XF7B-1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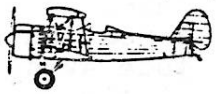
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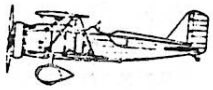
Douglas XFD-1


Curtiss XF10C-1

MAX-FAX

THE NEWSLETTER OF THE D.C. MAXECUTERS

MARCH/APRIL 1982

MEMBERSHIP

Dues for membership in the D.C. Maxecuters is $9.00 per year for residents of the U.S.A. Your mailing label indicates the year and month of the last issue of MAX—FAX for your current membership. A red mark in the box below is a reminder that your current membership is nearing its end. Send a check, payable to D.C. Maxecuters, to the Treasurer.

DUES REMINDER ☐

MEETINGS

The D.C. Maxecuters hold meetings on the first Wednesday of every month at the College Park Airport, the oldest continuously operating airport in the world.

PRESIDENT

DUDLEY PRISEL
5118 Alfred Drive
Waldorf, MD 20601

SECRETARY

GLEN SIMPERS
RT 1, Box 367
White Plains, MD 20695

TREASURER

ALLAN SCHANZLE
8311 Exodus Drive
Gaithersburg, MD 20760

UPCOMING EVENTS

MARCH 20, 21: MAXECUTER'S indoor contest at Andrews A.F.B. See Flyer in this issue.

APRIL 25: Plans are underway to have a flying session (indoor or outdoor, depending on the weather) in Charlottesville VA., compliments of Paul Gaertner. This will be held in conjunction with a garden tour for the lady of your choice. Contact Allan Schanzle (301 840-9883) for details.

MAY 1: Indoor contest at Annacostia Naval Air Station, Washington D.C. Peanut Scale(Mooney rules), three mass launch events (Navy Scale, Golden Age, and WW I) plus EZ-B, paper stick, penny plane, microfilm, H.L. glider, and Manhatten. Contact Dan Belieff (office: 468-0255, home: 589-6294) for details.

JUNE 5 MAXECUTER outdoor contest at Comsat to commemorate the 40th anniversary of the battle of Midway and the Coral Sea. See Flyer in this issue

JULY 17, 18: FAC NATS at Johnsville PA.

SEPT 11 : MAXECUTER Summer Fun Fly. See Flyer in this issue.

APRIL ? : We begin our friday evening fun flies at COMSAT as soon as the weather and clock permit. Join us for these informal fun sessions and a sandwich at the Roy Rogers in Gaithersburg afterward.

CLUB NEWS

ALLAN SCHANZLE

Say, folks, how 'bout that contest schedule on page 1. Sure oughta keep everyone off the streets for the next few months.

THIS MONTH we have a whole slug of goodies for you to digest. First of all, this month's scale plan is a MAX-FAX origional of a Nieuport 17 from local member Ned Kragness, whose involvement in aviation reads like a who's who. After WW I, Ned flew several of the old combat birds, then turned barnstormer, and ultimately became a test pilot for the U.S. Army Air Corp during the second big fuss. One glance at those "17" plans and you can't help but think of a CO_2. Also, we have the first three pages (of a total of five) for a most unusual Embryo by local member Harold Howard. This model won the altitude event at last years Summer Fun Fly, so there is no question that this little gum-banded hummer will get up to the domain of no return of HUNG, god of thermals. The last two pages of this plan will appear in the next issue of MAX-FAX.

Then, for your night time beddy-by reading, we have part 2 of Prof. Carson's lecture in model aerodynamics, and that ought to open a few eyes, and leave you sleepless for a few nights. And for you nostalgia buffs, check out the copy of an advertisement for model supplies taken from a 1937 issue of FLYING ACES. How 'bout 100 sticks of 1/16"x1/16"x18" of balsa for the outrageous price of, are you ready for this, 5¢. That's right, one nickle. And a 15" diameter balsa prop blank for 6¢, and you can't even get these little suckers now-a-days. Maybe those were the good old days. But then, they didn't have Hot Stuff.

Rolf Gregory spins another yarn of the Golden Age of aviation, and Tom Schmitt has supplied us with two more pages of first class photos. Finally, Allan Schanzle offers some suggestions on how to keep your pants on. (Did I get your attention with that one?)

WE HAD an unexpected surprise after mailing the last newsletter. A small part of the cover page was returned, and the remainder of the newslet was given the "special delivery" treatment by the Post Office. So, if you fail to get part or all of your copy of MAX-FAX, (and assuming you paid your dues on time) the P.O. probably selected you for the dastardly deed. Return the butchered copy to me, and we'll try to remedy the situation.

SEVERAL OF YOU have inquired about plans in past issues. If you recall, some time ago we ran a complete list of such items. I've tried to fit an update to that list in recent issues, but we just have too much other good stuff (at least in my opinion, and I'm the friggin editor, so there!) that keeps filling the 18 pages. Soooo....., if you would like a list of previous contents, send me 37¢ IN POSTAGE STAMPS and you'll receive a complete history of MAX-FAX contents. Remember..... no stamps, no response.

THIS YEARS SUMMER Fun Fly will have a special commemorative event. The intention here is to give some recognition to those individuals who have contributed to the development of Rubber Scale. This year, we will begin with Earl Stahl, who published over 40 rubber scale models. A list of these appeared in the MAY/JUNE '81 issue of MAX-FAX. One thing for sure - you can bet the house morgage that an Earl Stahl design will fly like a homesick eagle. I've built three so far, and all have flown over one minute in dead evening air.

The rules for the commemorative event are simple and offer an equal chance for any of his designs.

1. The model must be an Earl Stahl design and built to the size intended in the published plan, although changes in structure are permitted to facilitate contemporary materials and knowledge(different prop, nose plug, motor peg location, laminated outlines, sliced ribs, etc.)
2. All planes must have landing gear if one was shown on the published plan (and all of them did)
3. All flights will be made with landing gear in place, but you can make it detatchable if you wish to fly the same plane in another

event where "gear up" is permitted.

4. Static and flight points will be awarded by FAC scale rules, but, and please note this, THE ONLY BONUS POINTS WILL BE PLUS 10 FOR BIPLANES. We don't want to see 15 Curtiss Ascenders (sorry, Fred E., nothing personal). So bring your high wingers, and fly them in either Golden Age or the Speed and Navigation Race.

Now, you say, I'm a new subscriber to MAX-FAX and don't have the MAY/JUNE '81 issue. Relax. Just send me a self addressed and stamped envelope and I'll mail you the list. "Swell", I hear you cry, "but once I select a plane, how do I get the plan?" Simple. Just follow the directions included with the list. Now really. Isn't that about as simple as finding 15 lb/ft^3 balsa? And better yet, why not select one of the FLYLINE kits? (You're welcome, Herb).

HEY, GUYS, WE have a new (at least to me) line of rubber scale kits available. Seaglen Models, Box 123, Plympton MA 02367, has re-kitted the old Megow 30 inch span Fairchild 24, Monocoupe, and Cessna C 34 and the Peerless Rearwin Speedster. I've got the Fairchild kit, and it's scheduled for the building board sometime this year. If you yen for something a little bigger than the usual 22 to 24 inch models, and you're still scared of Jumbo, give these a try. The price is $11.00, postage paid.

I GOT A NOTE from Hal Howard which reads as follows. "Anyone buying a master airscrew balsa stripper, check it for warps before leaving the store. I picked one that was warped in both the longitudinal and verticle planes. Fiber filled plastic can have a bad day in the molds". Thanks for the warning, Hal.

WE OVERLOOKED a great source of color information for the Fokker G-1 which appeared as the feature plan in the last newsletter. Check the Profile Publication No. 134.

AS A FINAL note, and with a smile from ear-to-ear, I think you folks might like to know that this newsletter is now big-time. Perhaps we ought to call it "The International Newsletter Of The DC Maxecuters", because we now have members in Mexico, Canada, Japan, Germany, France, and Sweden. That's quite a list, and thanks go to all of you who have helped to make this a real success story.

PHOTO PAGE
TOM SCHMITT
MOSTLY ROWLAND HOOTS "SWAP FLY" AT CHESTER, PA, 17 JAN 1982

1. Pat Daily, the happy conqueror of the skies in WW I with a Fokker D-7.
2. George Meyers with his very pretty SOC-3.
3. Rowland Hoot, our genial host with a jewel of an AVRO CO_2.
4. Our scale plan in this issue, a Nieuport 17 by Ned Kragness.
5. Allan Schanzle's ROG stumbles on takeoff.
6. Mike Escalante's CO_2 Sperry Monoplane in flight-Flew right off the bench.
7. Rowland's AVRO flies as good as it looks.
8. Mike and his Sperry.
9. Another exquisite stick and wire model by Dave Rees. This time it's a 1910 Caudron.
10. Second in WW I, Don Srull, and his venerable DH-6. Dudley Prisel holds.
11. Scott Paisley and his pretty Earl Stahl Albatross. Dad Jerry holds.
12. Pat's good looking Fokker D-7
13. Another very attractive airplane with character; Allan Schanzle's CO_2 Arrow Sport. See the discussion about wheel pants in this issue.
14. Rowland's AVRO - No words are needed.
15. Glen Simpers Penny Plane drifts overhead at the "SwapFly".
16. Dudley Prisel's hopeful for spring flying. A super detailed Cessna.
17. Another look at George Meyers' neat SOC-3.

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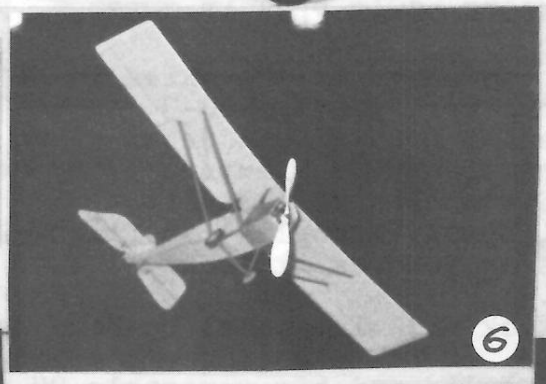

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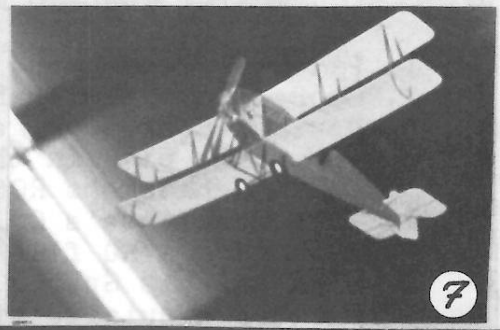

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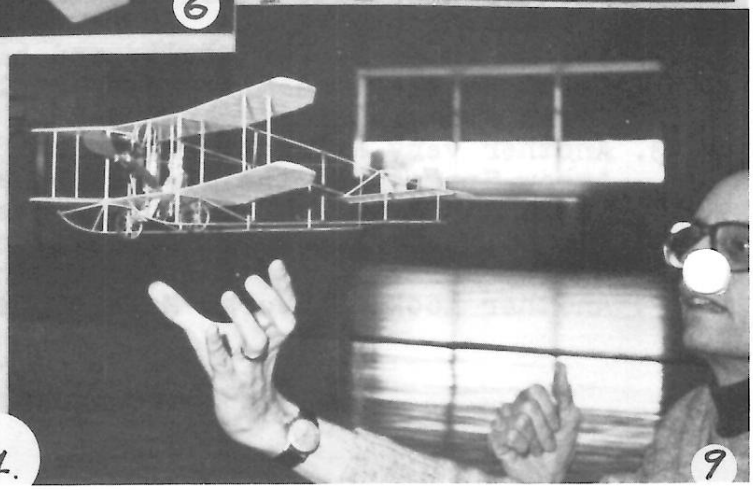

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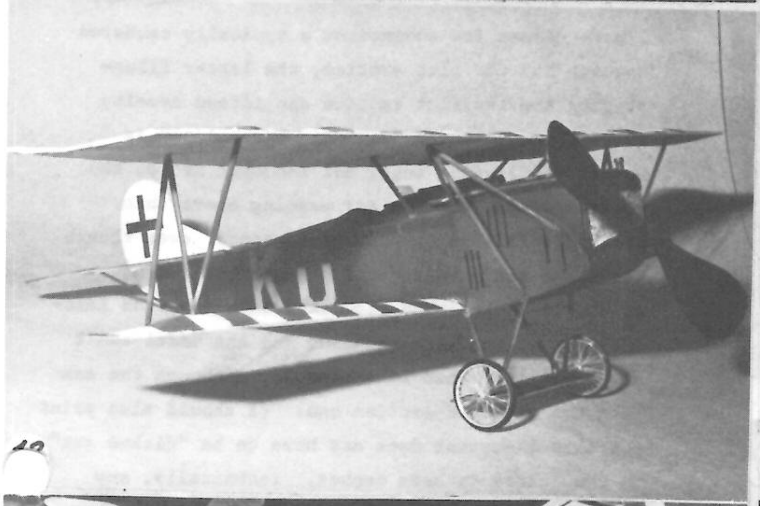

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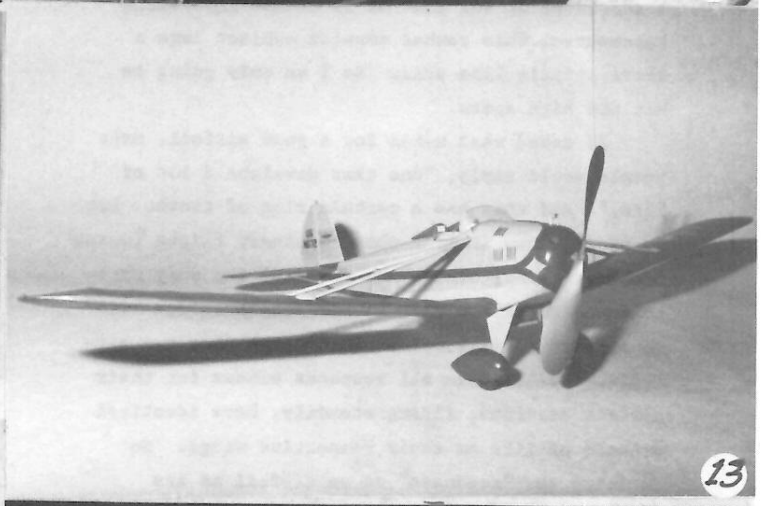

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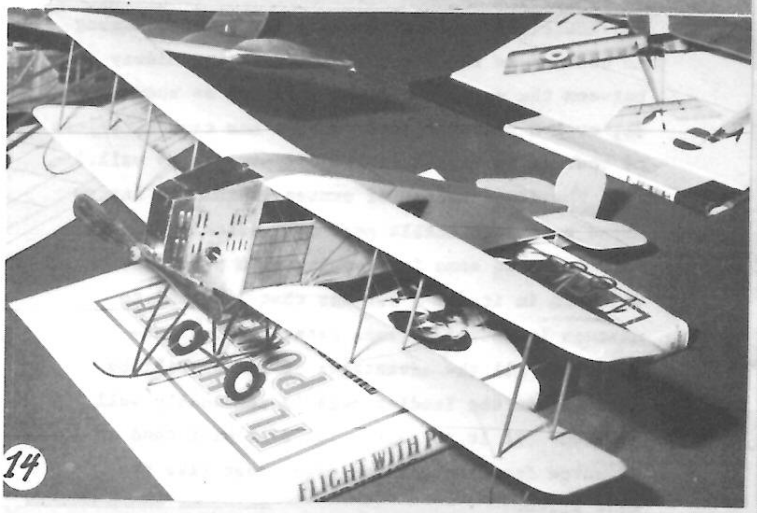

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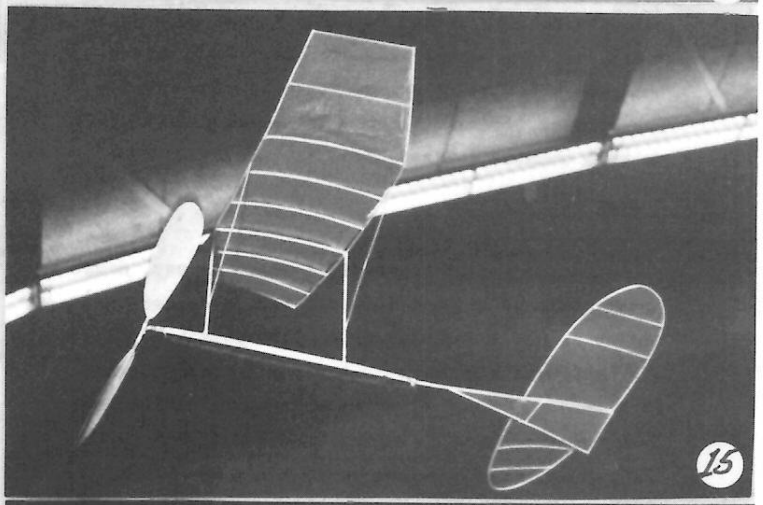

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PROF'S CORNER

Bud Carson

WINGS 'N THINGS - PART II

In the previous article I introduced the notion of induced drag to make the reader aware of the fact that a great deal of aircraft performance depends on factors that really have nothing to do with the actual shape of the wing's airfoil. In this article we are going to examine airfoils as a separate matter. Before beginning, however, I should point out that it is almost impossible to compress this rather complex subject into a short article like this. So I am only going to hit the high spots.

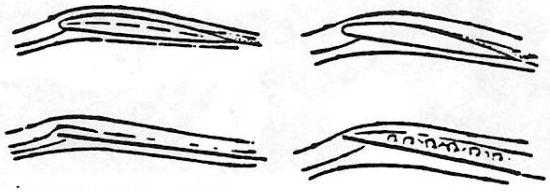
If asked what makes for a good airfoil, most people would reply, "One that develops a lot of lift." And this has a certain ring of truth. But we should keep in mind that in steady flight (which includes climb, cruise and descent) the only thing being asked of the wing is to develop enough lift to support the aircraft. This means that two aircraft, identical in all respects except for their airfoil sections, flying steadily, have identical amounts of lift on their respective wings. So defining the "goodness" of an airfoil as its relative ability to develop lift is not very practical, or even technically correct. It is clear that the relative merits of airfoils must involve a number of factors. In the following paragraphs, we will examine these factors in turn.

Camber

This is as good a place to start as any, since generations of science teachers have preached that camber is the thing that makes lift possible ("The air must move farther over the top surface because it's curved," etc.) blissfully unaware, as the most inexperienced modeler knows, that a perfectly good (not great, mind you, but good) model can fly with dead-flat, sheet balsa wings. And so it is not surprising to find many people believing that (a) camber is essential in the production of lift, and (b) the more, the merrier. Nothing could be farther from the truth.

In the low Reynolds Number range that a typical scale model operates, the only real advantage of camber is to delay the onset of stall with angle of attack. Previously, I pointed out that best endurance is achieved when three-fourths of the drag is induced. This requires slow, high angle of attack flight, and little airplanes simply can't achieve the optimum mix, because the wing stalls. This means that the section that is still developing lift after all the rest have stalled is, for modeling purposes, the "best." This is shown below.

Low Angle of Attack High Angle of Attack



I have chosen for comparison a typically cambered section and the flat section, the latter illustrating how the flat section can indeed develop lift. Note that the "dividing streamline" is not at the leading edge, but somewhat aft on the lower surface. So the air passing above this section still has to "travel farther," even though the upper surface is not the least bit curved. At higher angles, the flow separates from the leading edge of the flat section, and the model can't fly any slower when this happens, although the one with the cambered section can. (I should also point out that a section does not have to be "dished out" on the bottom to have camber. Technically, any unsymmetrical section is cambered, because camber is defined as the locus of points lying midway between the upper and lower surfaces as shown. And so, even a flat-bottomed section has camber, unless of course, it happens to be flat-topped as well.)

The disadvantage of camber is that it introduces an objectionable nose-down pitching moment that leads to some interesting trim problems, which is in itself a subject that I intend to discuss in detail at some later date. Incidentally, all the advantages of camber will be lost unless the leading edge is reasonably well rounded. If it is sharp, the flow will tend to separate from the leading edge, just like the flat plate.

Thickness

At full scale, both airfoil theory and experiment show that, within reason, thickness has almost no effect on airfoil properties. In full scale design, the wing thickness is usually dictated by the requirement to carry internal fuel, and other structural considerations. But at low Reynolds numbers, sections thicker than about 12% tend to perform poorly because the flow does not stay attached aft of the maximum thickness point, especially at high angles of attack.

L/D Ratio

I have saved this for last since it's the one thing about airfoils that everyone agrees to disagree on, and I wouldn't be surprised if this has even been grounds for divorce or maybe a murder or two. I hope my discourse will be as oil to troubled waters, and not as gasoline to a flame. So here goes.

Using the classical approach of teaching by example, I am going to illustrate my major points by considering the full-scale Beech Bonanza that I fly. I have chosen this as a subject partly because I know its "numbers" intimately, and also because I don't freely identify with ounces and grams. Later, I will show how these results "scale down" to model size.

At max endurance, the Bonanza flies at about 85 mph, and has an L/D of about 10. As the airspeed increases, L/D improves to about 12.5 at 110 mph, and then falls off to a value of 10 again at 150 mph. (Note that airplanes trimmed for max endurance do not fly at their best L/D*.) Let us see what is happening at the two limiting airspeeds.

Since the aircraft weighs 3000 lb, its total drag is 300 lb at 85 mph, and again at 150 mph. But at 85, the induced drag is three-fourths of the total, leaving 75 lb in parasite drag. About one third, or 25 lb of this is the parasite drag of the wing. Thus, the L/D ratio of the wing, based on its parasite drag, is 3000/25, or 120. This number is in fact confirmed by NACA section data.

At the high end, (150 mph) the mix has done a flipflop. Here, only one-fourth of the total, or 75 lb is induced, and the rest is parasite. It is left as an exercise to show that the wing L/D is now 40.

There are three lessons to be learned from this example. The first is that there is no such thing as a fixed L/D for a section: it can be a little or a lot, so beware of false prophets who extol the virtues of this or that airfoil on the basis of its L/D. The second is that knowing a section L/D does you no good at all unless you also know the induced-parasite drag mixture. The third is that even though a wing may have an L/D of 100 or so, by the time all the rest of the drag is included, the airplane ends up with a rather miserable 10 (Bo Derek, take note) and this happens just where you would like it not to--at the airspeed for max endurance.

The way to get high L/D for the complete airplane is to go up in aspect ratio. Sailplanes have L/D's of 40-50, but, unfortunately, these do not make good subjects for rubber scale events.

Now, on the scale effects. The Bonanza has an aspect ratio of six. I have run out a few numbers for some airplanes that should be familiar to us all, to illustrate the effects of scale. All have about the same aspect ratio.

	Weight, gms.	L/D, wing	L/D, a/c
Penny plane	3	20	7
Typical 24" scale monoplane	30	40	8.5
Beech Bonanza	1,500,000	120	10
Boeing 747	350,000,000	210	14.5

(note: all figures estimated, at max endurance)

I think it is apparent that while scale effects certainly influence the numbers, the conclusions reached earlier are still qualitatively valid. It is hard, if not impossible, to make any meaningful statement about the relative merits of airfoils based on their L/D's alone.

Well, that about wraps up this session. There is a lot more to the subject than this, and I will welcome questions. But before the bell rings, I would like to say that most modelers who have been around for a while know these things instinctively and far be it from me to tell them how they should build their airplanes. All I have tried to do is to explain the "why," so we can stop fretting about airfoils and get on with the job of building and flying. Next time we will look at planforms and biplanes. Please pass in your homework.

*This fact always seems to come as a surprise, even to engineering students. The airspeed for max L/D gives best range, i.e., minimum energy spent per unit distance, while the maximum endurance airspeed insures maximum time aloft, i.e., minimum energy spent per unit time. The two airspeeds are not the same.

In case you've already broken those New Year's resolutions regarding your building program, remember you can try again on the following dates:
Jan 25 - Chinese New Year.
March 21 - Persian New Year.
Sept 18 - Jewish New Year.
Oct 18 - Moslem New Year.
(Adapted from Quote Magazine)

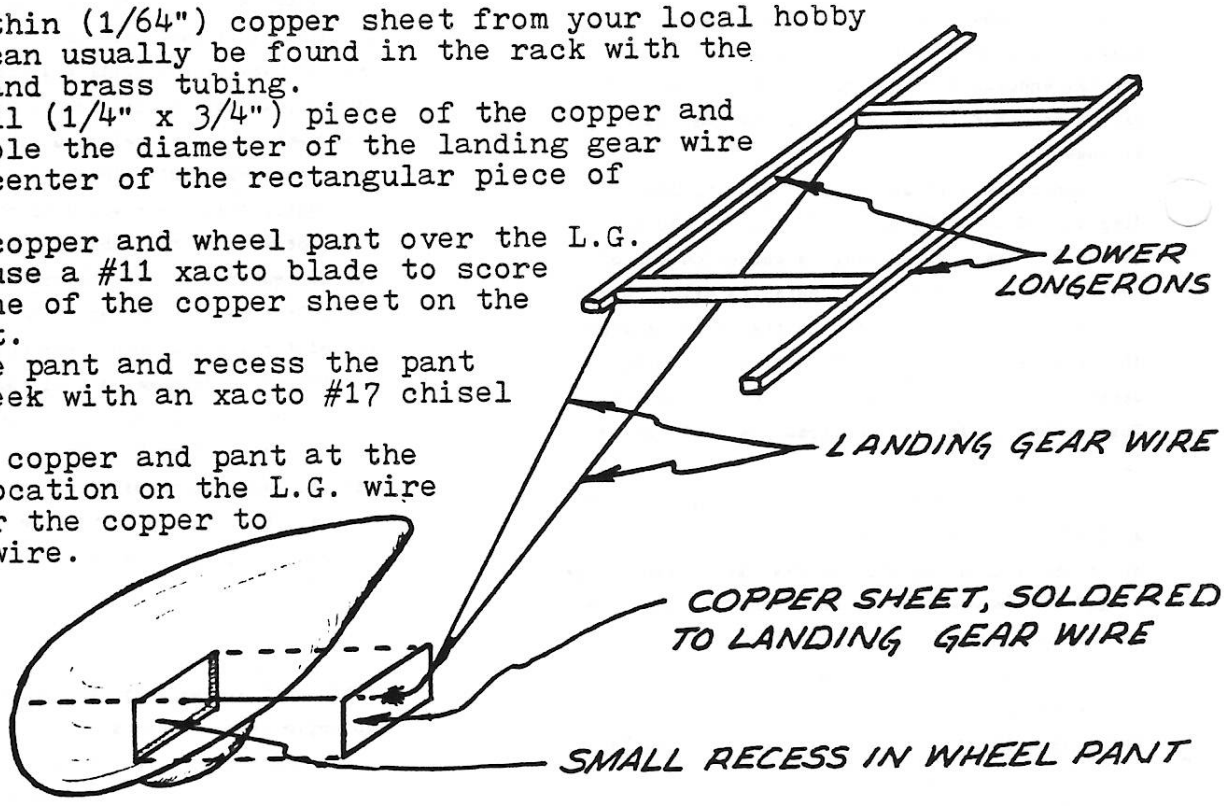
HOW NOT TO DROP YOUR PANTS IN PUBLIC
(Wheel Pants, That Is)

ALLAN SCHANZLE

Wheel pants sure look good. They are relatively easy to build, add only a marginal amount of weight, and maybe even reduce drag a tweek. But every time you have a landing that borders on disaster, these little suckers seem to break off with incredible consistency - particularly when flying indoors where the landing surface is very unforgiving (... like walls, and basketball backboards) I've tried at least ten different ways to hold these little devils on, with an amazingly consistent failure rate. The only technique that seems to have worked is when I've used aluminum tubing for landing gear structure (see MAX-FAX, Nov/Dec 1980). So it was time to use a small tidbit of philosophy from the good ole college days - "Diligence will ultimately overcome all problems". I prefer a more contempory version - "Life is like a sewer...what you get out of it depends on what you put into it". Obviously, a mind that functions in this manner can only see success.

A recent project, the Arrow Sport shown somewhere on the photo pages of this issue, did not adapt itself to the use of aluminum tubing, and the proof of scale I had chosen showed wheel pants,...naturally. After playing around with several new (and unsuccessful) techniques, I fell into the following process. I'll assume you have the landing gear and wheel pants completed, including the hole in the pants for the landing gear wire.

1. Get some thin (1/64") copper sheet from your local hobby shop. It can usually be found in the rack with the aluminum and brass tubing.
2. Cut a small (1/4" x 3/4") piece of the copper and drill a hole the diameter of the landing gear wire near the center of the rectangular piece of copper.
3. Slip the copper and wheel pant over the L.G. wire and use a #11 xacto blade to score the outline of the copper sheet on the wheel pant.
4. Remove the pant and recess the pant just a tweek with an xacto #17 chisel blade.
5. Place the copper and pant at the desired location on the L.G. wire and solder the copper to the L.G. wire.



6. When the model is completed, assemble the wheel and wheel pant over the L.G. wire and glue the pant to the copper with Hot Stuff. Simple, hey-what?

AN OPPORTUNITY

CLAUDE POWELL

Would you be willing to invest one or two hours per week to promote our hobby? Doug Moran, of Doug's Hobby Shop in Waldorf, MD (301-843-1229) is willing to provide area to teach basic rubber powered modeling. An indoor flying site is also possible. I have accepted a similar offer in Lexington Park MD., compliments of Doug's other shop in that area. He has been very supportive in ordering the type of kits and supplies which I requested. I will gladly share a basic training plan which has worked well for me. Do I hear any volunteers?

C. A. V. U.

By Rolfe Gregory

Bill Winters' nostalgic article in the Sept./Oct. 1981 issue of Max-Fax took me back through the years to my first model. It was a catastrophe! I was very young, had never seen either an airplane or another model. The frame was split-up wood from an orange crate - the same stuff I used for kites - nailed and tied with string. The propeller was carved (hacked) from a block of pine with shaft made from a bicycle spoke. The thrust bearing? An empty wooden spool from my Mother's sewing box with one flange carved away. The wheels were the greatest feature of this masterpiece: two round,gray rubber erasers from those typewriter kind with the little black brush on the end. The rubber motor was cut from auto innertubes, the same way Bill did it, and the tissue paper was glued on with flour paste. The model never flew, but it certainly did taxi fast.

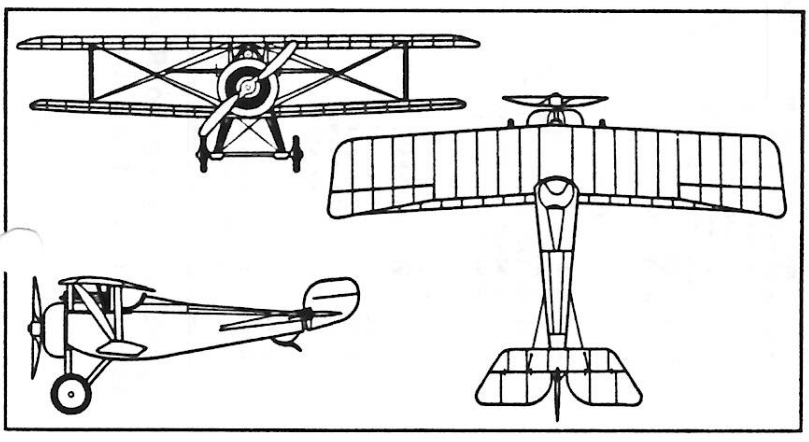
A few years later, a friend came over to my house to show me something he had built- the first model airplane I had ever seen, and it flew! I was hooked forever! It was a "baby R.O.G.", (Rise-Off-Ground), and he had made it from a kit sold by the "American Boy" magazine. The model was made from something I had never heard of, but which would become a household word - BALSA WOOD!

Shortly after Lindbergh made his famous flight in 1927, a gentleman by the name of Merrill Hamburg organized the A.M.L.A.,the Airplane Model League of America, sponsored by the "American Boy". Each month, Mr. Hamburg wrote an article on model building, and he included plans for a flying model beginning with the baby R. O. G. As Bill Winter mentioned, we had no communications in those days, no model publications, no hobby shops, (except for a few relatively unknowns, such as Ideal and Wading River). So, Merrill Hamburg solved the problem for thousands of us.

For a small amount of money, usually less than a dollar, (the R.O.G. was 65¢), you could order a complete kit from the"American Boy", which included wonderful balsa, bamboo, music wire, Japanese tissue, a propeller shaft, a thrust bearing, rubber strip, and two vials with cork stoppers: one containing Ambroid, the other "banana oil", (try finding that today) for gluing the tissue - and for doping.

My old friend, Woodrow,and I ordered the featured kit each month (it took a lot of grass cutting to earn the money), and we just couldn't wait for the next issue. Mr. Hamburg did it right. He started with the simplest of all models and carried us, step by step, each successive model being more complicated and demanding than the previous one, until we reached the "scale" model. At that point, Merrill Hamburg seems to have stepped aside and A.M.L.A. may have, I think, evolved into our present A.M.A. Anyway, from then on, we were off to the races building those glorious scale models, published by the likes of Joe Ott, Howard McEntee, and our own great Bill Winter.

Many of us owe a debt of gratitude to Merrill Hamburg. I believe he probably got more kids started in the building of flying models than any other single individual. Oh, the boy who showed me the first model? He never built any more. He became a dentist in my hometown!



COLOR SCHEME FOR NIEUPORT 17.

Check Profile Publication #49 for a large selection of colors. The cover drawing reproduces that of Lt Nungesser. Plane is all silver. Roundels are blue(center), white, red. Heart is black and white. Rudder is blue(front), white, red. Wing cheverons are red (inboard), white, blue.

D.C. MAXECUTER'S EARLY SUMMER FUN FLY

JUNE 5 9:00 to 6:00

AND 40th ANNIVERSARY

COMMEMORATIVE OF THE

BATTLE OF MIDWAY AND

CORAL SEA

CONTEST DIRECTOR

DUDLEY PRISEL
5118 Alfred Dr.
Waldorf MD. 20601

843-1999

EVENTS

FAC SCALE:
Judging starts at 12:00. Qualifying flight must be made by this time.

FAC CO_2 SCALE:
An FAC scale event for CO_2 only. Flight points determined by subtracting one point for each second away from a 70 point target time. For example, a 50, or 90, second flight gets 50 points. Highest score of three offical flights. NO TANK OR ENGINE LIMITATIONS. Same qualifying time as above.

MASS LAUNCH: 2:00 PM
A mass launch event for all scale aircraft, both rubber and CO_2.

MODERN EVENT: 3:00 PM
Mass launch for any aircraft whose prototype flew on July 1 1945 or later. Lacys, Fikes, Cougars, Tailwinds, and similar slab sided---- excluded. I think you get the intent. Eligibility is at the discretion of the CD.

H.L. GLIDER
As per AMA

MIDWAY AND CORAL SEA COMMEMORATIVE EVENTS

MASS LAUNCH: 4:00 PM
A mass launch for all eligible aircraft. See below.

CARRIER LANDING: 5:00 PM
Similar to the Trans-Comsat Navigation race. A single mass launch for all (rubber and CO_2) eligible aircraft.

ELIGIBLE AIRCRAFT

	U.S. AIRCRAFT	JAPANESE AIRCRAFT
P-26	Wildcat	Zero
P-35	Avenger	Kate
P-36	Dauntless	Val
P-38	Devastator	Claude
P-39	B-17	Betty
P-40		

NOTE: Other aircraft may be eligible, but proof that they saw combat in the Pacific prior to Jan 1 1943 is left to the contestant.

Special thanks to Rowland Hoot for sponsoring one super contest up in Philly. The winners were:

PEANUT SCALE: Dave Rees, Cougar

PENNY PLANE: Doug Barber, Original

"A" ROG: Walt Eggert Sr., Original

H.L. GLIDER: Dan Domina

FAC SCALE: Don Srull, Santos Dumont

CO_2 SCALE: Pat Daily, Nieuport 17

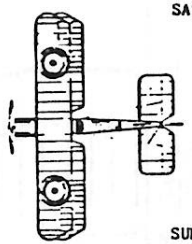
WW-I COMBAT: Pat Daily, Fokker D-7

ANNOUNCE

THE 8TH ANNUAL CAPITAL INDOOR SCALE AIRCRAFT CONTEST

MARCH 20 & 21, 1980
ANDREWS A.F.B. - NAVY RESERVE HANGAR

EVENTS



SATURDAY MARCH 20, 9:00 AM to 5:00 PM

P.A.C. SCALE	Judging starts at 1:00 PM.
PEANUT SCALE	Judging starts at 2:00 PM. Mooney rules 10 second bonus for ROG.
WW-I	Mass launch, biplanes only.
GOLDEN AGE	Mass launch, any plane built between 1920 and 1935, and any non-military aircraft built between 1935 and 1939.
NAVY SCALE	Mass launch, any Navy plane, any Navy, but must be in Navy colors.

SUNDAY MARCH 21, 10:00 AM to 2:00 PM

NO-CAL	F.A.C. rules
NOVICE PENNY	AMA rules
BOSTONIAN	14 gm minimum, max wing span 16 in., max wing area 48 sq in., max length 14 in. (excluding prop), max prop 6 in., cabin box 3x2.5x1.5 in., windshield or cabin windows required, R.O.G., charisma points 0 to 10.

ENTRY FEE: $2.00 per event, $5.00 maximum. Juniors (under 16) $0.50 per event, $1.00 maximum.

CD: PAT DAILY
14908 Rocking Spring Dr.
Rockville MD. 20853
301 460-1298

D.C. MAXECUTER'S '82 SUMMER FUN FLY

Sept 11
9:00 to 6:00

AMA SANCTION
165

CONTEST DIRECTOR
ALLAN SCHANZLE
8311 Exodus Dr.
Gaithersburg MD. 20760

301 840-9883

EVENTS

FAC SCALE:
Judging starts at 11:00 AM. Qualifying flight must be made by this time.

EARL STAHL COMMEMORATIVE:
For Earl Stahl designs. See Club News for details. Qualifying time as above.

FAC CO_2 SCALE:
An FAC scale event for CO_2 power only. Flight points determined by subtracting one point for each second away from a 70 second target time. For example, a 50, or 90, second flight gets 50 points. Highest score of three offical flights. NO TANK OR ENGINE LIMITATIONS. Same qualifying time as above.

MASS LAUNCH:
THE RACES - 1:00 PM. A single launch for all racers.
WW-I 2:00 PM Biplanes only.
WW-II 3:00 PM Maxecuter rules.
GOLDEN AGE 4:00 PM Maxecuter rules.

EMBRYO:
FAC rules.

TRANS-COMSAT SPEED AND NAVIGATION RACE:
A repeat of last years coup de grace of the contest. Everybody enters something that will get 40 FAC scale points.

H.L. GLIDER:
As per AMA

CATAPULT GLIDER:
Must use Maxecuter launching pole. AMA H.L. scoring.

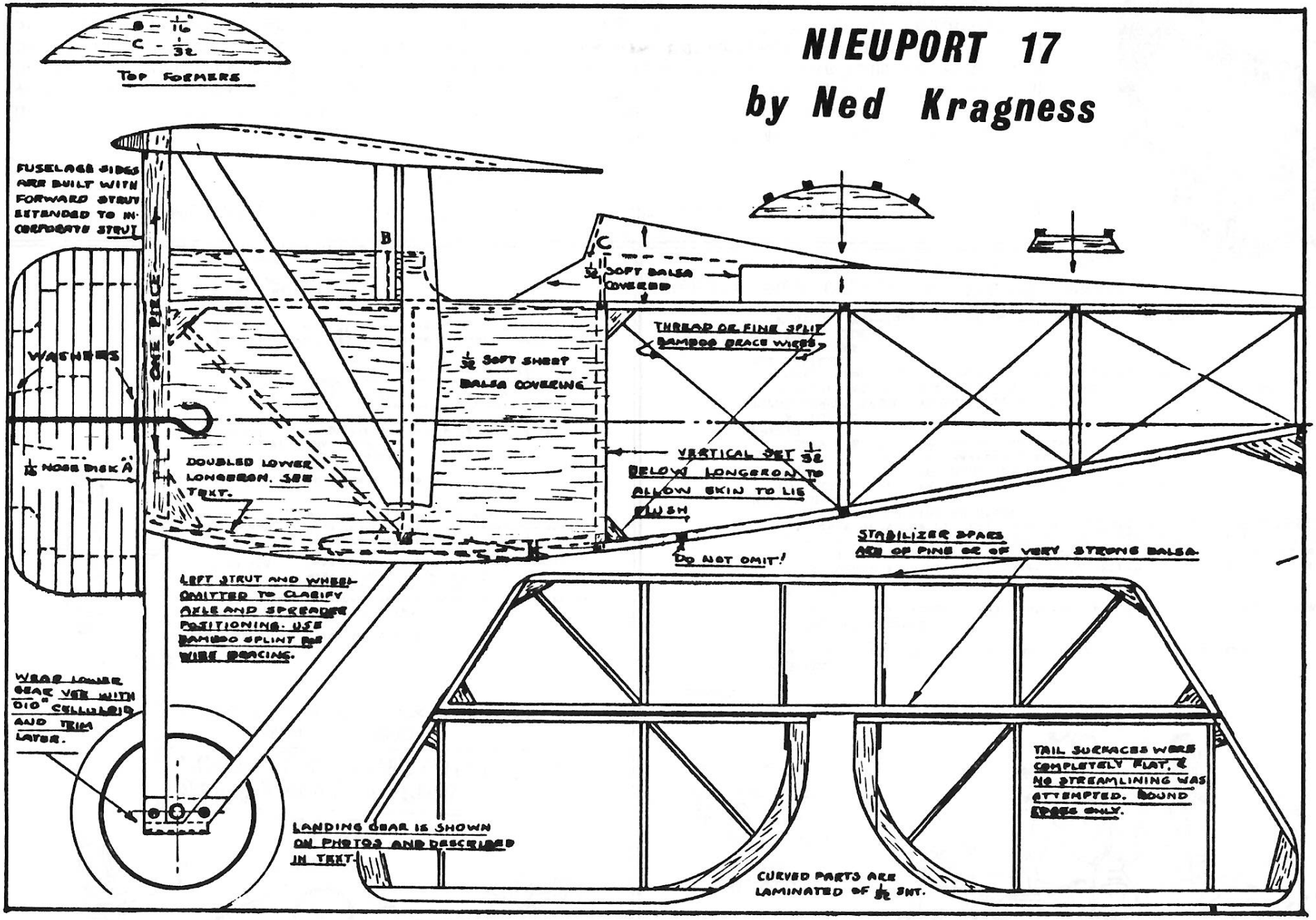
Here's your typical MAXECUTER, ready to take on all challengers!!

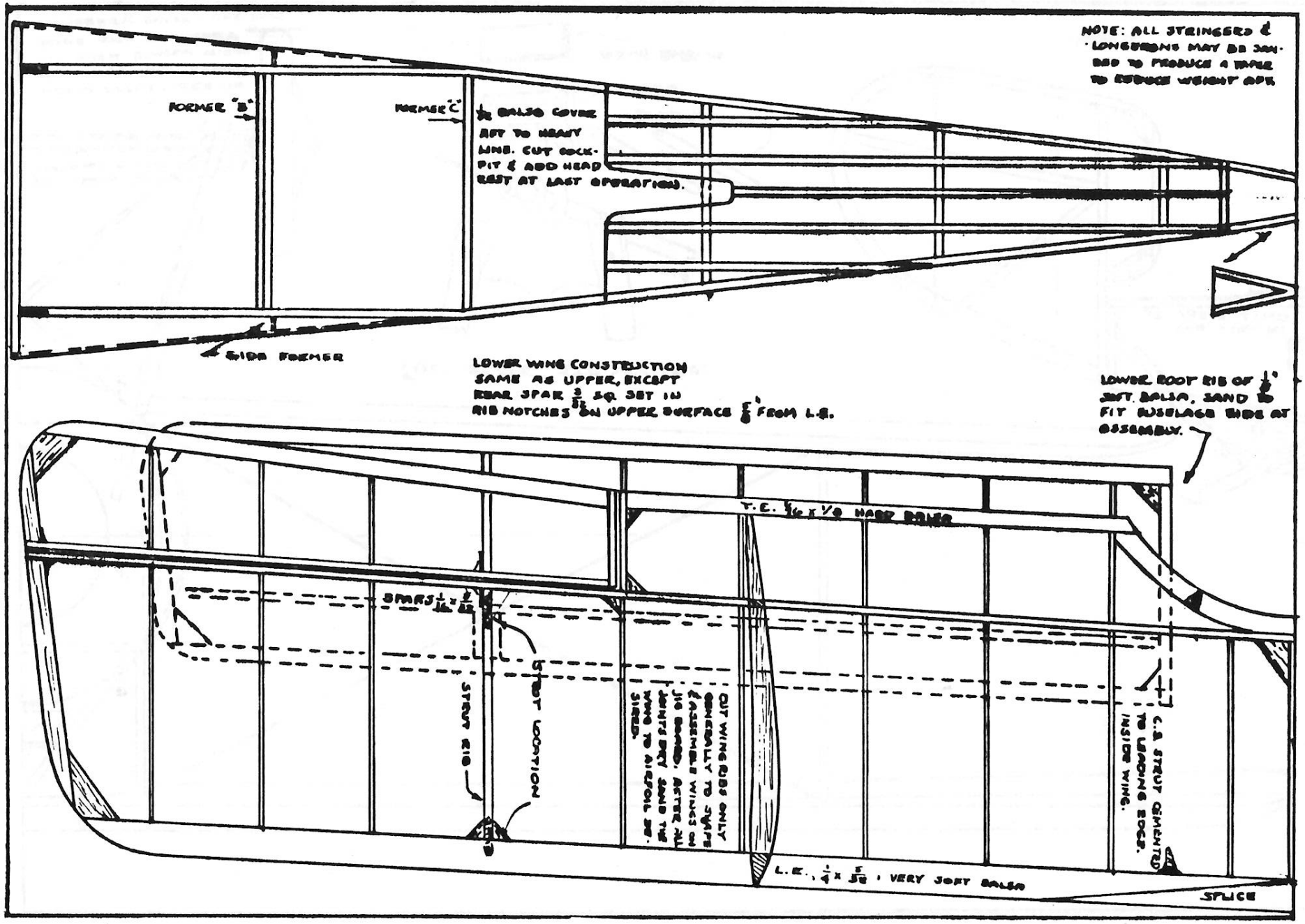
Monkey Worts.

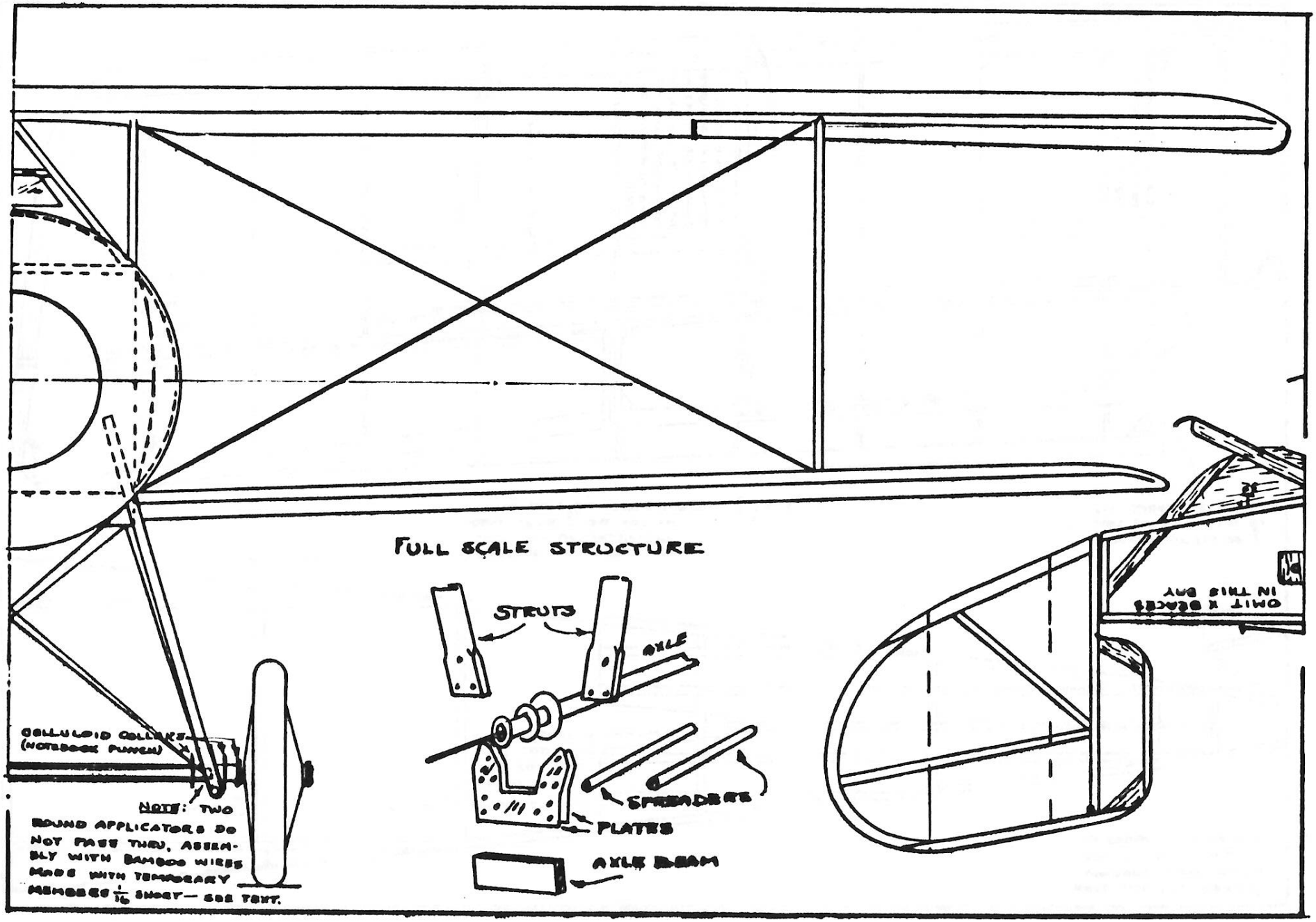
SOME NOTES ABOUT THE EMBRYO MODEL, MISS FLIM FLAM

HAL HOWARD

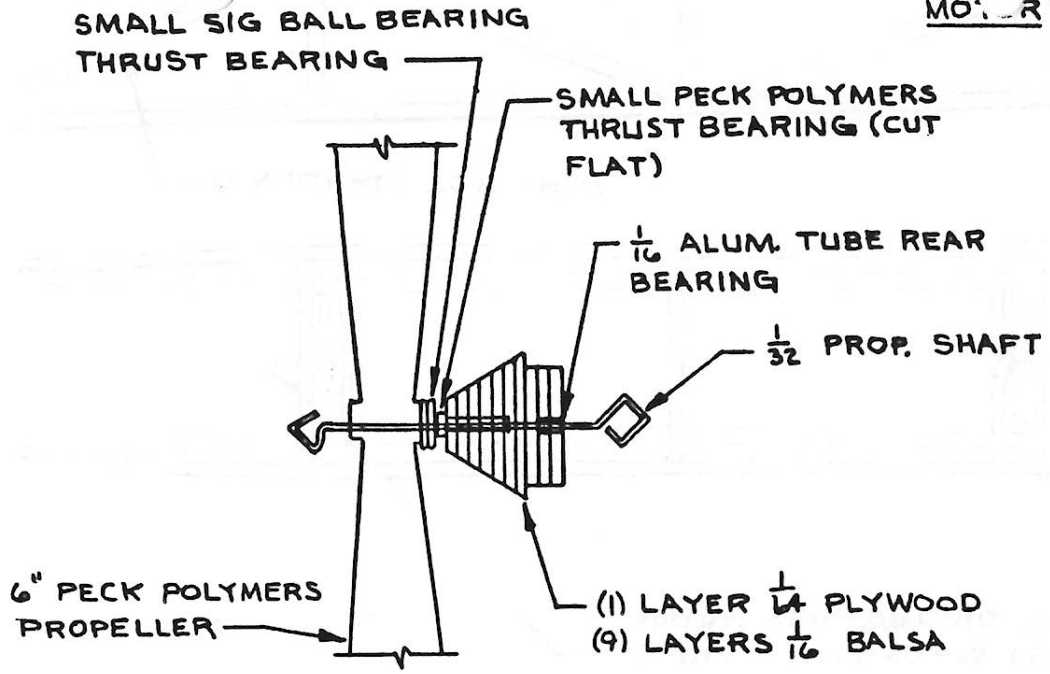
Contrary to all appearances, the configuration of MISS FLIM FLAM was chosen to experiment with several aerodynamic ideas, rather than to shock the eyes. The long "mantis" fuselage provides a long motor run and pitch stability. The low aspect ratio wing was an attempt to maximize the renolds number within the 50 square inch rule. The Whitcomb winglets are advertised to provide some forward thrust while effectively increasing the aspect ratio by reducing wing tip induced drag, and they provide outstanding roll and yaw stability. The idea behind the airfoil is to provide for minimum drag at low angles of attack (climb in rubber) as well as providing good L/D at high angles of attack and low airspeeds (glide with a freewheeling prop).


NIEUPORT 17
by Ned Kragness
B = 1/16
C = 1/32
TOP FORMERS
FUSELAGE SIDES ARE BUILT WITH FORWARD STRUT EXTENDED TO INCORPORATE STRUT
WASHERS
ONE PIECE
1/16 NOSE BLOCK
DOUBLED LOWER LONGERON. SEE TEXT.
1/32 SOFT SHEET BALSA COVERING
1/32 SOFT BALSA COVERED
THREAD OR FINE SPLIT BAMBOO BRACE WIRES
VERTICAL SET 1/32 BELOW LONGERON TO ALLOW SKIN TO LIE FLUSH
DO NOT OMIT!
STABILIZER SPARS ASH OR PINE OR OF VERY STRONG BALSA
LEFT STRUT AND WHEEL OMITTED TO CLARIFY AXLE AND SPREADER POSITIONING. USE BAMBOO SPLINT FOR WIRE BRACING.
WRAP LOWER GEAR VEE WITH .010" CELLULOID AND TRIM LATER.
LANDING GEAR IS SHOWN ON PHOTOS AND DESCRIBED IN TEXT
CURVED PARTS ARE LAMINATED OF 1/32 SHT.
TAIL SURFACES WERE COMPLETELY FLAT, & NO STREAMLINING WAS ATTEMPTED. ROUND EDGES ONLY.


NOTE: ALL STRINGERS & LONGERONS MAY BE SANDED TO PRODUCE A TAPER TO REDUCE WEIGHT AFT.
FORMER "B"
FORMER "C"
1/32 BALSA COVER AFT TO HEAVY LINE. CUT COCKPIT & ADD HEAD REST AT LAST OPERATIONS.
SIDE FRAMER
LOWER WING CONSTRUCTION SAME AS UPPER, EXCEPT REAR SPAR 3/16 SQ. SET IN RIB NOTCHES 5/8" ON UPPER SURFACE 5/8" FROM L.E.
LOWER ROOT RIB OF 1" SOFT BALSA, SAND TO FIT FUSELAGE SIDE AT ASSEMBLY.
T.E. 1/16 x 1/8 HARD BALSA
SPARS 1/16 x 3/16
STRUT RIB
STRUT LOCATION
CUT WING RIBS ONLY GENERALLY TO SHAPE & ASSEMBLE WINGS ON JIG BOARD. AFTER ALL JOINTS DRY SAND THE WING TO AIRFOIL SECTIONS.
C.A. STRUT CEMENTED TO LEADING EDGE INSIDE WING.
L.E. 1/4 x 5/16 VERY SOFT BALSA
SPLICE


FULL SCALE STRUCTURE
STRUTS
AXLE
SPREADERS
PLATES
AXLE BEAM
CELLULOID COLLARS (NOTEBOOK PUNCH)
NOTE: TWO ROUND APPLICATORS DO NOT PASS THRU. ASSEMBLY WITH BAMBOO WIRES MADE WITH TEMPORARY MEMBERS 1/16 SHORT — SEE TEXT.
OMIT 2 BRACES IN THIS BAY

MOTOR = (2) LOOPS $\frac{1}{8}$ F.A.I., $1\frac{1}{2}$ - 2 x PEG TO PROP. LENGTH



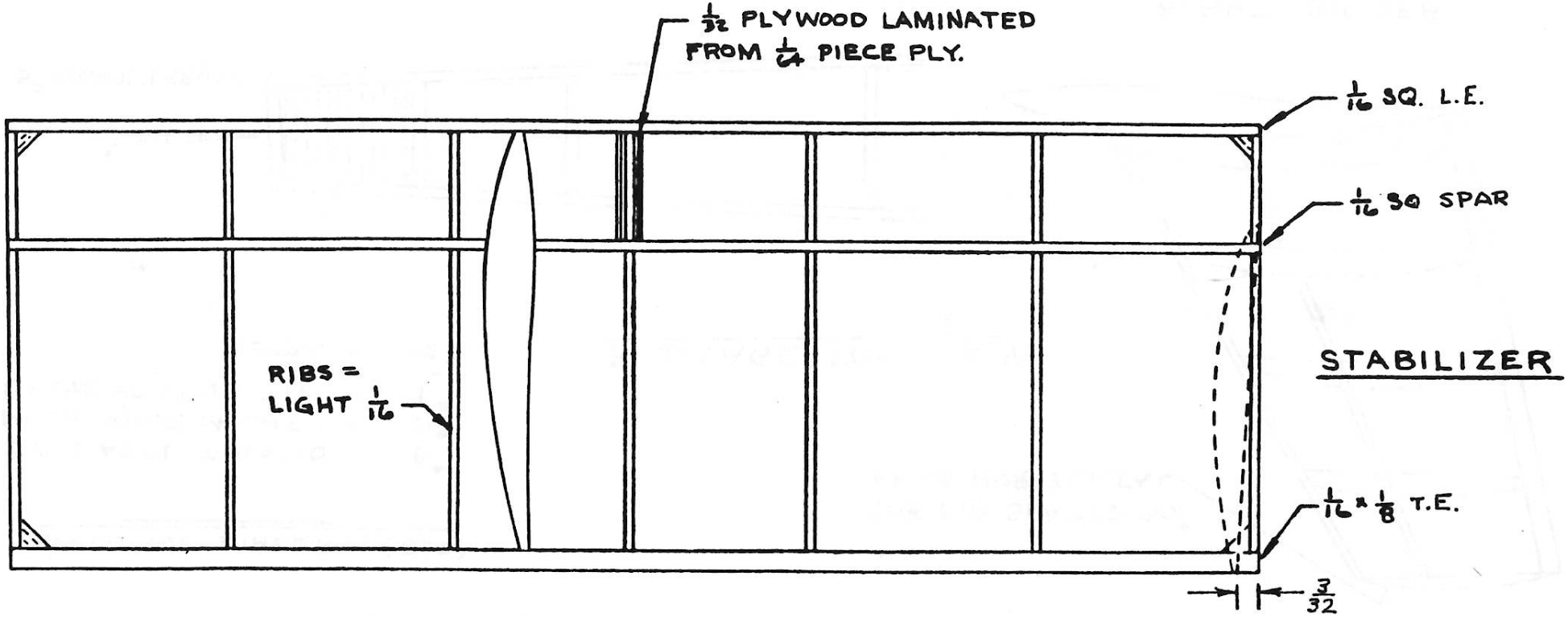
"MISS FLIM-FLAM"

EMBRYO ENDURANCE CLASS

50 IN^2 WING AREA 25 IN^2 STAB AREA

DESIGNER: HAROLD H. HOWARD

DRAWN: G.L.WATTS DATE: 10/24/81

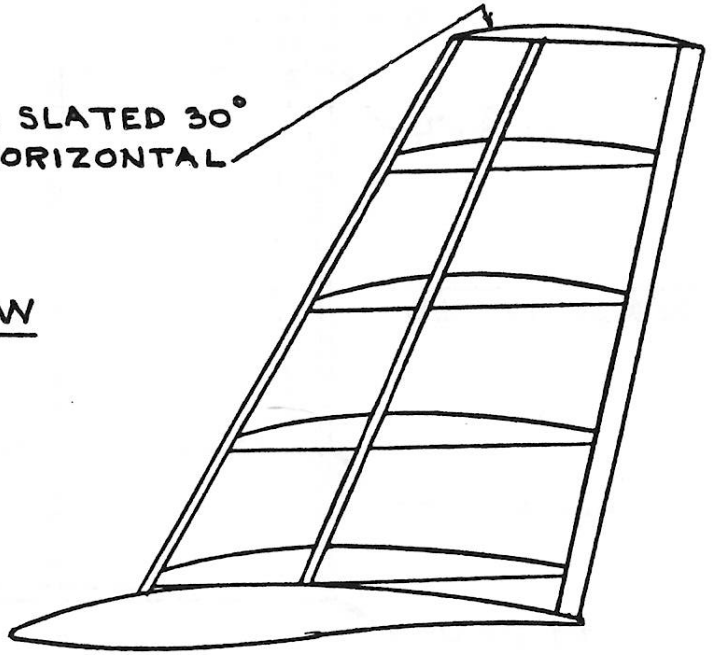


STABILIZER

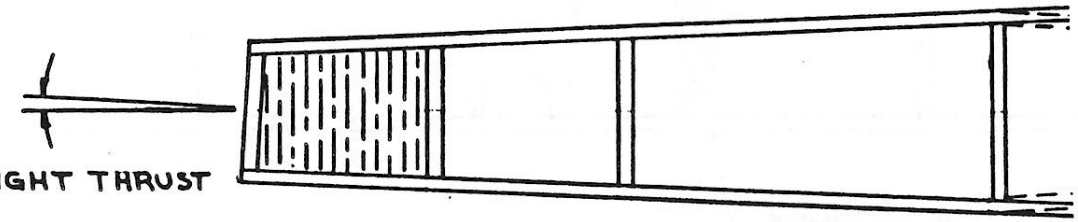
EFFECTIVE DIHEDRAL (EST.)

3 TO 1 ASPECT RATIO =	8°
HIGH WING MOUNT =	3°
UPSWEPT WING TIP =	1°
TOTAL =	12°

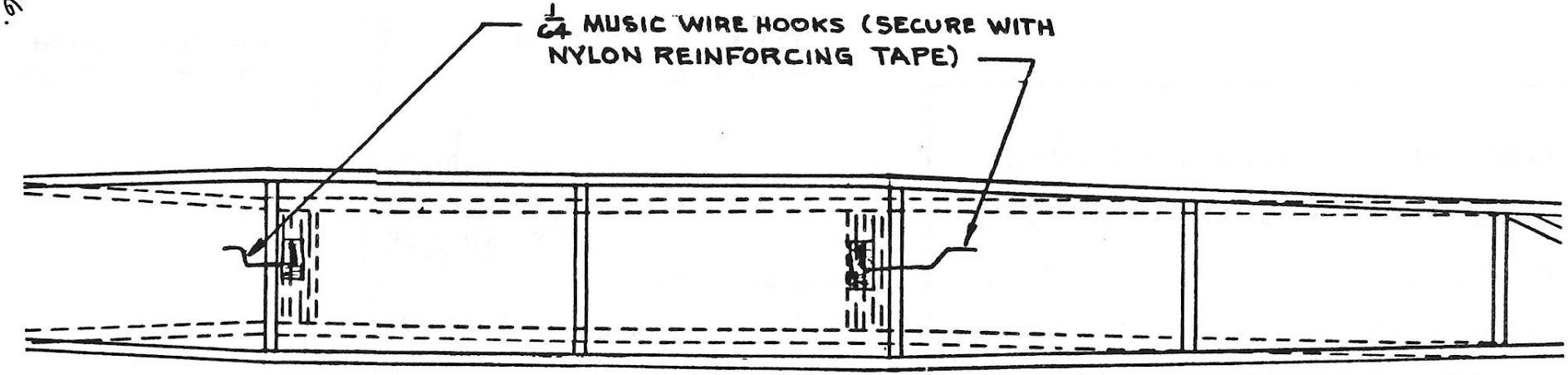
TOP RIB SLATED 30°
FROM HORIZONTAL

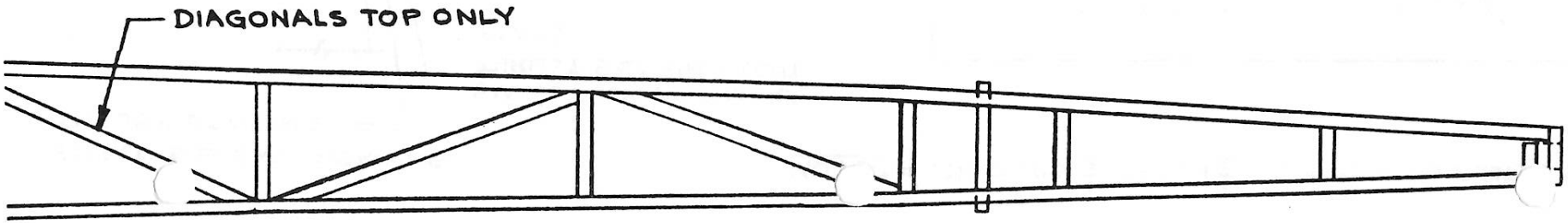


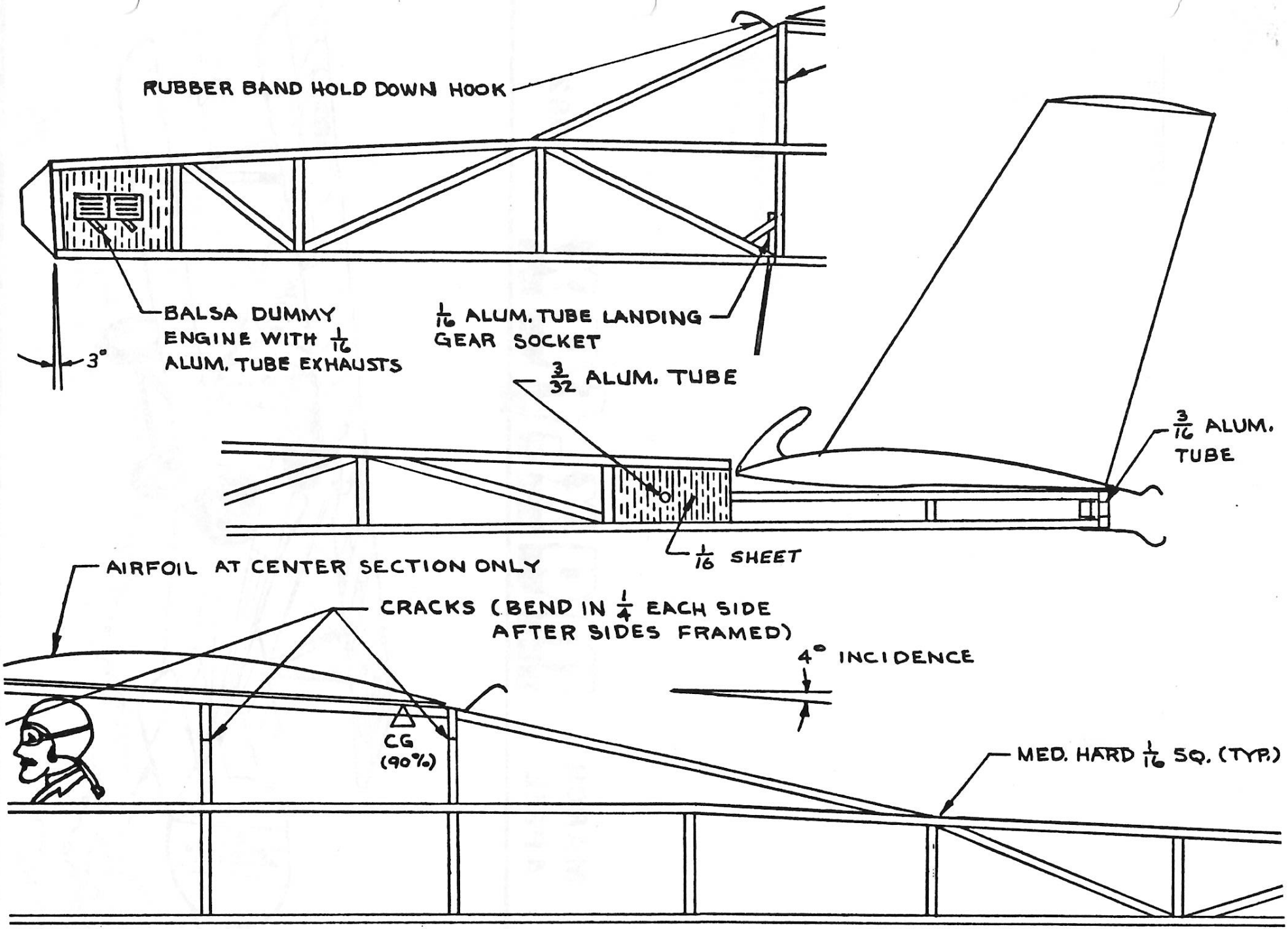
FUSELAGE TOP VIEW



RIGHT RUDDER







FUSELAGE SIDE VIEW

FIRST CLASS

MAX-FAX
8311 Exodus Dr.
Gaithersburg MD 20879

MARCH
APRIL

max-fax

1982