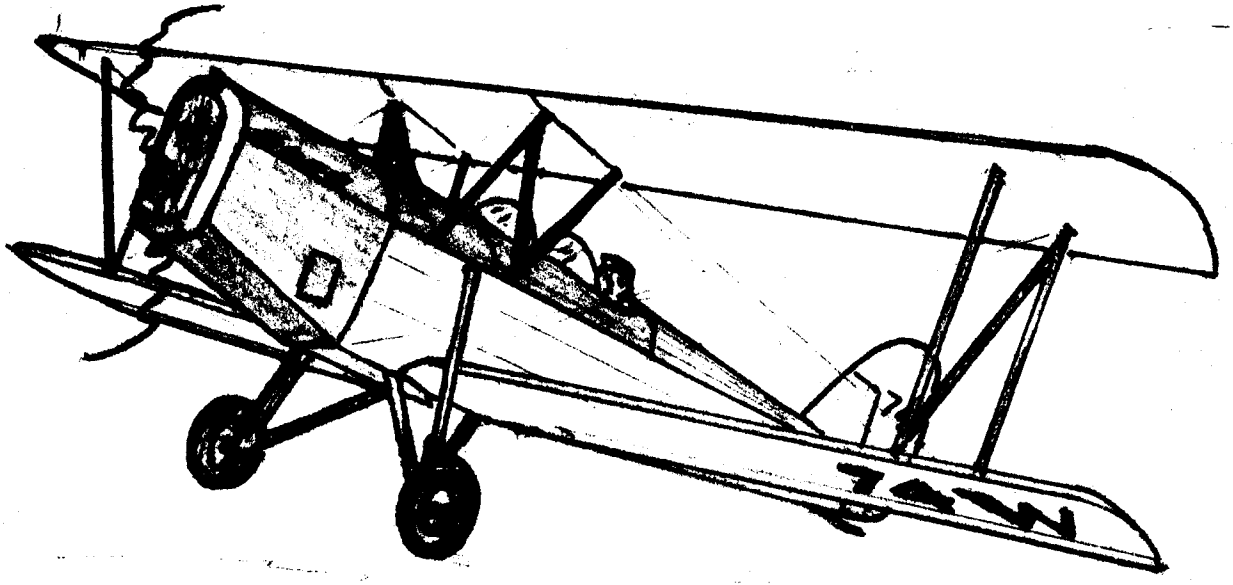
FLYING ACES

Club News

ISSUE #[redacted] MAY-JUNE 1983



FLYING ACES NATS--MARK IV

Yes gang, the FAC Nats Mark IV has already been set up. Thanks to Ralph Kuenz, alias Von Rottensocks, the contest is just about ready to go! This early notice will give everyone the required time to get your models built and trimmed for the BIG BASH! It will also give you plenty of time to plan your vacation for 1984. We will continue to give updates on the meet as they come in to GHQ. Read on, see what Ralph has to say at this point.

Sox says;

RE: 1984 FAC Nats-Mark IV

At the invitation of our respected leader I have been pursuing the possibility of conducting the 1984 FAC Nats here in the Midwestern Sector, home of the feared Detroiten Geschwader.

The famous Cloudbuster Model Airplane Club who have graciously allowed me membership for many patient years, responded enthusiastically to the idea of conducting this prestigious event.

Further, to add some muscle and even more class, we have the support and co-sponsorship of the Michigan Exchange Clubs Council.

Ford Motor Co. looks with favor on the Exchange and offers the use of the Ford Test Track facility in Utica, Mich. for model activities. So, the prime ingredients for cooking up a super nats for 1984 are ready.

Date--July 14-15, 1984
Place--Utica, Michigan (20 miles north of Detroit)
Ford Motor Co. Test Track

The site itself is good, maybe not excellent, an oval track one mile N-S and ½ mile E-W, clear and grassy on the entire infield. The site is used every year for the Michigan State Outdoor Model Championships and is adequate for all free flight events with the possible exception of unlimited rubber.

As for events, count on all those we had in '82, it is always tempting to add new events like the talked about "scale towline". Both days are however fairly jam-packed with events.

I would like to see an Earl Stahl Trophy awarded at the Nats banquet. A bi-annual award for a model selected by the judges (or Earl) on Saturday.

For the record, it should be stated up front, that all events and awards at the FAC-Nats will be approved and recommended by GHQ., Before I officially announce them.

Plan on having fun! The combat events will be spaced at 9am, 1pm, 4pm. This pudgy, half century old body couldn't hack those back to back marathon runs thru the tall grass, hawwwww.

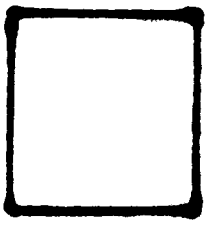
More details to follow.

Schtiks und tizzu uber alles!

Sox

If the box on the right has an "X" in it, it is time to renew your subscription. This is your last issue under your old subscription. Cost is NINE DOLLARS per year. Six issues, published every other month.

Send your money to;Flying Aces News
3301 Cindy Lane
Erie, Pa. 16506



**********PERFORMANCE**********
Mumbo Jumbo #5 from the Glue Guru

Salutations, disciples! Today we shall meditate on flight performance. A means of calculating the flight duration of any rubber-powered model will be presented. By performing a few computations you will be able to sift out the hopeless cases and mad dreams before construction.

Do I sense resistance? Do you equate your next project with your next romance and fear that too assiduous an accounting of your intended's charms may destroy the very atmosphere necessary for affection? There is something to this concern. Compulsive counting and recounting of a dowry does smack of something less than true love. Yet, in this valley of tears, a certain amount of rational assesment is a necessary thing. If your intended has already buried seventeen husbands, it will pay to check the contents of the soup very carefully.

It is in this spirit that we shall do performance analysis. Not to squeeze out every possible second of duration, for that is best left to the Wakefield crowd, but rather to make sure that the soup does not taste of bitter almonds.

A further advantage of these calculations is the ability to test planned modifications to an existing favorite before resorting to surgery. Is it really useful to move the rear peg backwards so as to employ additional rubber, at the expense of more ballast up front? Is it worthwhile to extend the wing of that clipped Piper Cub, Hughes Racer, or whatever?

Finally, familiarity with these numbers may change the manner in which you view configurations in general. The cosiness of side-by-side seating and the resulting fat fuselages are things I have come to disdain. Give me that isolated tandem seating arrangement in a skinny fuselage and I've gained a few seconds; a few seconds that I will gladly pay out for spats or whatever moves me.

The actual analysis comes in two versions--Short Form and Federal Case. They differ primarily in the complexity of the information they can digest. If you have something reasonably conventional in mind, use the short form; if you are breaking fresh ground, go to Federal Case.

Short Form

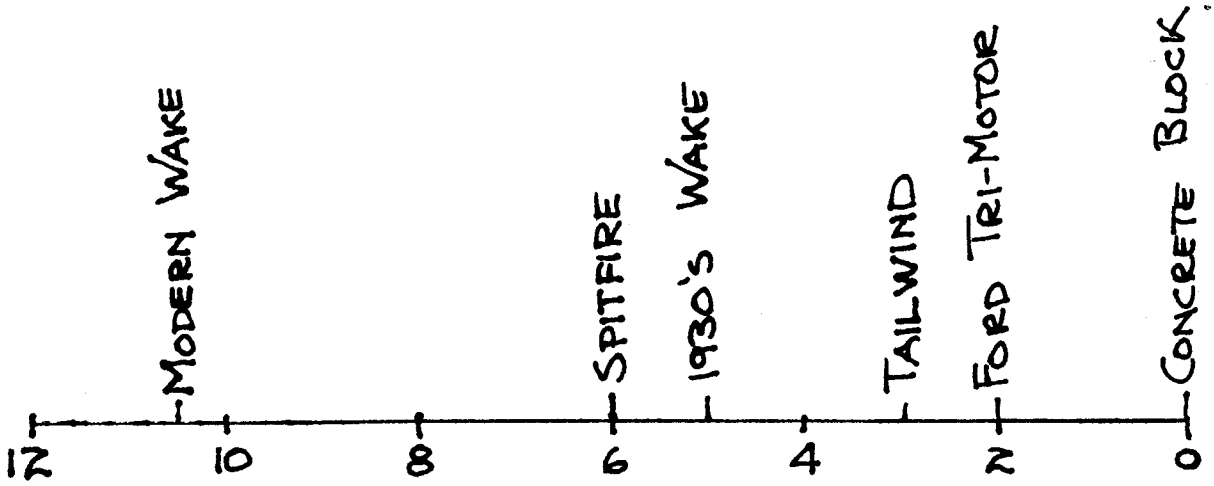
The following information is required:

1. The wing area in square inches, S
2. The flying weight (including rubber) in grams, W
3. The weight of rubber in grams, R
4. The glide ratio, in pure number form, G

Of these four items, the first three are straightforward. To convert square feet to square inches, multiply by 144. To convert ounces to grams, multiply by 29.

The last item, glide ratio, takes careful judgement. At issue is the distance the model will travel forward for every foot of drop. Imagine that you are gliding the model and that your launch is perfect. From a typical launch height of six feet, how far from your feet will the model land? If the distance is, say, eighteen feet, then the glide ratio is three, or 18/6.

To help make a judgement, check the scale below. Listed are known and computed glide ratios of models in the Jumbo size category. The Spitfire is in the "retracted gear" form. The Tailwind has a particularly large and boxy fuselage cross-section. The Ford Tri-Motor was fully detailed and flaunted every detail known to man. Those 1930's Wakes had a generous fuselage cross-section and a full, although spindly, landing gear with no wing struts.



GLIDE RATIO - JUMBO SIZE

Still in doubt? If the configuration seems really clean you might go with 5; if of average drag go with 4; if fairly draggy--big fuse cross-section and lots of struts--go with 3. If none of the above seems to fit, go directly to Federal Case.

Now the actual computation. There are five steps.

Step 1. Compute forward velocity, V

$$V\,(FT/SEC) = 16.4\sqrt{\frac{W}{S}}$$

Step 2. Compute net energy, E

$$E\,(FT\text{-}LBS) = 1.85\,R$$

Step 3. Compute drag factor, D

$$D\,(LBS) = \frac{W}{454\,G}$$

Step 4. Compute cruising distance, C

$$C\,(FT) = \frac{E}{D}$$

Step 5. Compute duration, T

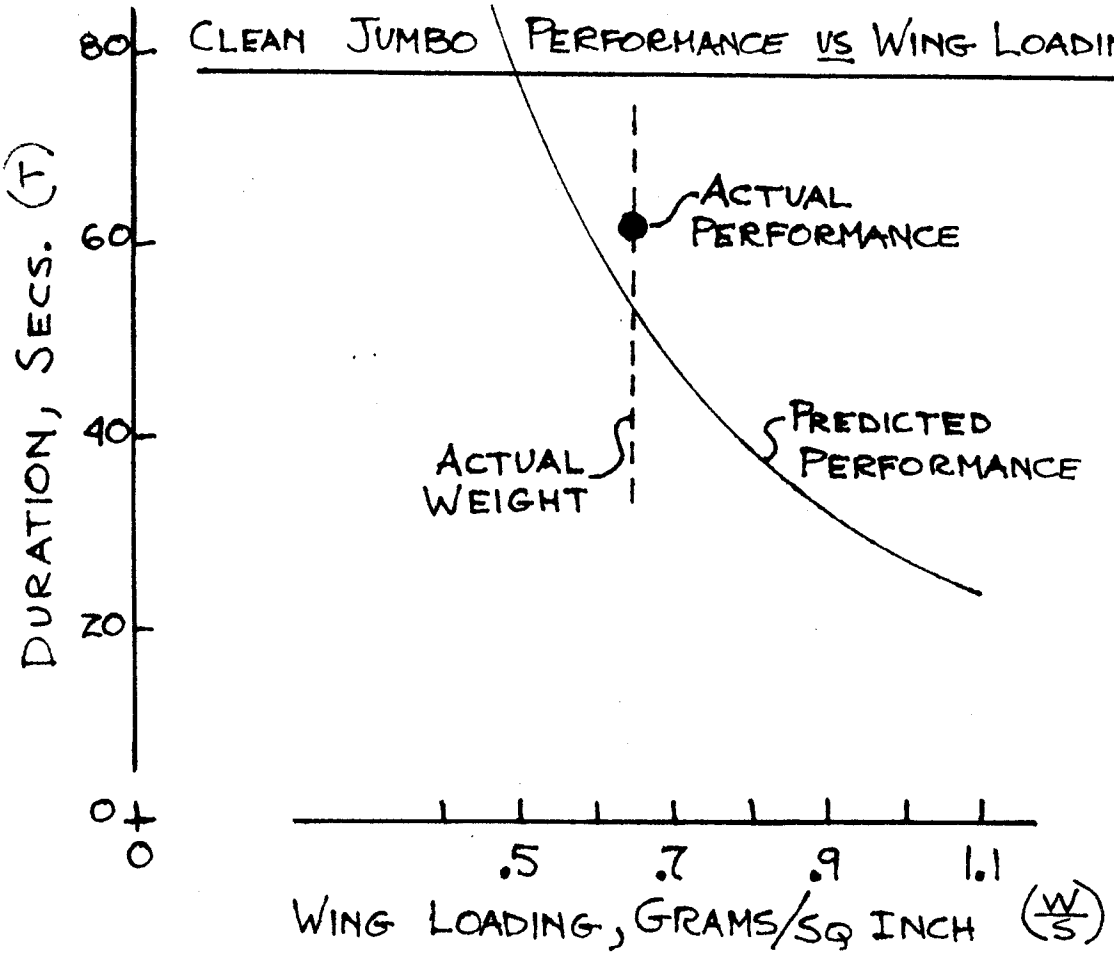
$$T\,(SEC) = \frac{C}{V}$$

There you have it, disciples! Five easy steps and out comes your duration! Is the process really any good? Will future contests consist of simply turning in your calculations to headquarters?

Fear not...the process does have merit and is accurate to about plus or minus ten seconds. However, there are serious weaknesses in the form of built-in uncertainties concerning prop efficiency and drag estimation. See Federal Case for nitty gritty. Perhaps the best use of this approach is to serve as an early warning if the design is hopeless. If the calculated duration is in the twenty-second ballpark, there's something funny in the soup.

Supplying a sense of how all the design factors interact is another important application of this technique. For example, below is a plot of what happens to a particular clean Jumbo as the wing loading, and only the wing loading, is varied (the solid line). The single circled point represents the performance (dead air) of the real model. In this case the actual performance was better than anticipated--my guess on glide ratio was probably too pessimistic, or maybe the air wasn't as dead as it seemed. But the real value of this exercise is not one of putting the experimental point on the curve, but in obtaining a sense of how wing loading influences the outcome. Build it light or that soup will get you!

How come those Wakefield guys get away with high wing loading? This too comes out of the computations. They have a drag factor that is tiny as compared to the usual Jumbo design and they push the net energy term much higher than we dare by going right up to the bursting point of the motor. In this fashion (see Federal Case) the performance prediction for a typical Wake yields 162 seconds.



Federal Case

To go beyond typical Jumbo design parameters, it is necessary to manipulate the basic formulas to fit your case. In turn this requires an understanding of the formulas are derived.

The essential concept employed here is that it makes little difference, in terms of duration, as to whether the flight mode uses lots of climb or lots of cruise or something in between. Proof was offered in the 1975 NFFS Symposium. As the computation process is simpler for the no-climb, all-cruise conditions, we shall employ same exclusively.

Step 1. The forward velocity expression employs the classic formula $V = \sqrt{\frac{2W}{C_L S \rho}}$ where C_L is the lift coefficient and ρ is the mass density of air. We have used $C_L = 1.0$ on the basis that the airfoil is a Clark Y operating at 20% less than $C_{L\,MAX}$. A $C_{L\,MAX}$ of 1.25 has been chosen as proper for the Re range greater than 100,000 from data tabulated by A. Zier (Aerodynamics for Model Aircraft; Dodd, Mead, and Co.; 1942). If you are using an airfoil that is either undercambered or has an unusual amount of topside camber (Gottingen) you may wish to plug in a larger value of C_L. Conversely, if you are using a symmetrical airfoil, you should employ a smaller C_L. As for ρ (taken as .0024 slugs per cubic foot) don't fool with unless you fly off Mt. Everest.

Step 2. The net energy **E**, is based on rubber possessing 2800 ft-lbs/lb of work capacity wound to 75% max turns and therefore delivering only 60% of its potential energy to a prop that, in turn, is only 50% efficient. A great deal of energy is untapped by not winding to 100% turns and if you have more guts than I you may choose to go all the way. As concerns the prop efficiency, the 50% factor is equal to the lower end of Wakefield effectiveness and that is where we live. If you have reason to believe that your prop differs from the average--either way--modify the net energy term accordingly.

Step 3. The drag factor **D** is simply the estimated total drag of the model. The reason for working backwards from the anticipated glide ratio is that the process of working forwards is difficult and uncertain. Of all the five steps, this one is the shakiest--and yet, one of the most important. To work forwards,

break the total drag coefficient C_{D_T} into the profile drag coefficient C_{D_p}, the induced drag coefficient C_{D_i} and the frictional drag coefficient C_{D_f}

Thus $C_{D_T} = C_{D_p} + C_{D_i} + C_{D_f}$

For values of C_{D_p} we will use wind tunnel results for that assumed Clark Y wing, courtesy of NACA and rule of thumb formulas (Boundary Layer Theory--Schlichting; McGraw Hill, 1960) for fuselage components.

For the wing we will simply accept $C_{D_p} = .06$. Induced drag may be obtained from the classic expression:

$$C_{D_i} = \frac{C_L^2}{\pi (\text{ASPECT RATIO})}$$

Simply plug in your value of C_L and aspect ratio. For a C_L of 1.0 and an aspect ratio of 6 (which suits many Jumbo designs) we have $C_{D_i} = .053$.

To get C_{D_f} we will make use of the Blasius value

$$C_f = \frac{1.328}{\sqrt{R_E}}$$

With the Reynolds number in the 100,000 ballpark we have $C_f = .0042$.

If we assume the total wetted area (wing+fuse+tail+etc.) to equal four times the projected wing area, we have

$$C_{D_f} = 4\,C_f = .017 \approx .02$$

For the fuselage we will use the following rule of thumb $C_{D_p} = (.4 \rightarrow .7)\frac{X}{S}$ where X is the maximum crossectional area of the fuselage or strut or spat or whatever. The sliding coefficient in the parenthesis is used to account for the "bluffness" of the body in question. If really blunt, go with 0.7. If streamlined, go with 0.4. If in between, interpolate. In using this rule we are assuming that the airflow separates at the point of maximum crossection, i.e., there is no streamlined flow in proximity to the backside of any object. While seemingly pessimistic, I think this fits the facts of life. As an example, this means that a spatted wheel offers more drag than a bare wheel (bigger cross-section for the spat and no credit for streamlining on the backside).

Let's do a sample drag calculation using the Mister Mulligan (The National Air Racers in 3-Views, 1929-1949; Charles A. Mendenhall; Diane Publishing Co) as a subject. Working from the 3-view, we note that the wing area is 137 ft^2 and compute the maximum fuselage cross-section area to be 22.6 ft^2. There are four main struts and landing gear members that appear to offer about 7ft^2 of crossectional area. Finally there are spats of 4ft^2 area.

For the wing we will simply list C_{D_p} and C_{D_i} values already obtained. Noting that the fuselage entry is blunt we have

Fuse $C_{D_p} = (.7)\,22.6/137 = .115$
Strut $C_{D_p} = (.4)\,7/137 = .02$
Spat $C_{D_p} = (.4)\,4/137 = .01$
Total Fuse $C_{D_p} = .145 \approx .15$

A final summary would consist of

Wing $C_{D_p} = .06$
Wing $C_{D_i} = .05$
Total Fuse $C_{D_p} = .15$
$C_{D_f} = .02$
$C_{D_T} = .28$

As we have taken C_L to be 1.0, the glide ratio is

$$G = C_L / C_{D_T} = 1/.28 = 3.6$$

Perhaps the greatest value in going through this sort of thing is not the final number, which is not really solid, but to be forcibly reminded of how all the numbers add up. If that fuselage was arranged in tandem fashion without all those struts we might hope to knock, say one-third off the total drag value. In turn we would have one-third more duration. Defiant, anyone?

Step 4 and Step 5 are unchanged in the Federal Case procedure from that given in Short Form.

That's it! You are now in a position (via Federal Case) to determine endurance for far-out configurations!

The following pearls of wisdom may give you a sense of what there is to be learned from this sort of computational effort:

1. Go with the biggest wing and the smallest fuselage cross-section.

2. Go with more rubber weight, especially if it can be employed in the form of a longer motor. While it is true that any additional weight costs something in the way of duration, there is still a huge profit to be gained from more rubber. This is especially true if you are operating down in the 10% region. Yes, too much rubber can be a loser, but we are far from that point.

3. Go with low wing loading. I would draw the line at 0.75 grams per square inch. See Figure. The guy who can build down to 0.5 grams per square inch will win every time.

4. Drag counts heavily. If you can paint on detail, fine. But if the detail consists of lumps, humps, and bumps, go easy.

5. The case for the "retracted" landing gear is a good one. The eliminatiom of even small amounts of weightand drag can be critical if your goals are competitive. (In Jumbo the weight saving is usually more important than the reduction in drag.) Perhaps the decision ultimately rests on the nature of your home field. If strewn with rocks and broken glass, a gears-up downwind landing on a windy day can be memorable. On the other hand, if you really have long grass--...

6. If your problem is one of practical configuration choice, be guided by 1 and 4 above. For example, in WW II the Stormovik is much better than the P-47, and in lightplanes the Piper Cub is superior to the Taylorcraft. The extended wing version of anything is better than the clipped wing version.

7. Seemingly hopeless configurations can be made competitive by (a)superlight construction (b)extended and very powerful motors (c)ignoring detail. Going down this road is clearly dangerous; yet many strange things are done in the name of romance.

****

And so we come to the end of this meditation. A means of analyzing the soup before ingestion has been presented. Perhaps your intended is truly loving and a great soup chef as well; in this event calculations are not required. On the other hand, a lifetime of bitter experience has taught me that it is better to do some calculations now than to employ a stomach pump later. Think upon it!

Glue Guru's Golden Groupies

Dave Strutt--Biplane builder of reknown.

Bob Thumbsome--CD known for throwing out contestants who disagree with his rulings

Russ Braun--Despite claims, unrelated to Rommel, the grey fox. Instead believed undeclared son of Eva Braun and a certain historical figure.

Press Pruning--Designer of tiny plans, suited for publication in minimal space.

Early Stall--Pioneer rubber scale designer. Did not believe in downthrust.

Sydney Strudle--30's developer of multi-layered construction.

Mike Midcalf--Short pants WW II buff.

Don Skole--Designer of Heinekin fighter.

Gordon Romeo--Indefatigable pursuer of Defiant Chambermaids.

George Goring (aka Meyer)--Name change rumored after Berlin was bombed.

Dick and Leon Benttab--One draws, one calculates; neither wins much. Genuine Wrong Brothers.

Prof Ted Langley--Still trying to make the aerodrome fly. Has learned something-tends to avoid the Potomac.

Dennis Borman--Nerveless 109 pilot;not easy when on the run from Israel's Massad.

LIVING IN THE EARLY DAYS OF AVIATION

By Colonel (Hon) Adrian Comper

As previously reported, the Comper "Mouse" made its maiden flight in September 1933. The accompaning plan, side and front elevations not only showed the then (50 years ago) novel space saving method of wing folding but the clean lines and overall design of a small private aircraft that could well come off the drawing board today.

Nick Comper's objective was to squeeze maximum speed from whatever the engines available hp while maintaining a low landing speed and short run to a full stop, plus only a short run for take-off. Flying fields and their facilities were scarce in England; so, in visiting friends, reasonably sized fields would suffice. These performance qualifications also minimised the risk of damage to crops or property in the event of a forced landing when the reliability of aeroengines was not as it is today.

In keeping with these ideals the Mouse powered with the 130 hp de Havilland Gipsy Major engine had a crusing speed of some 130 mph. The landing speed was 40 mph with a very short run after touchdown - the low-slung undercarriage placed the wing so close to the ground that the turbulence created thereby effectively slowed the aircraft down.

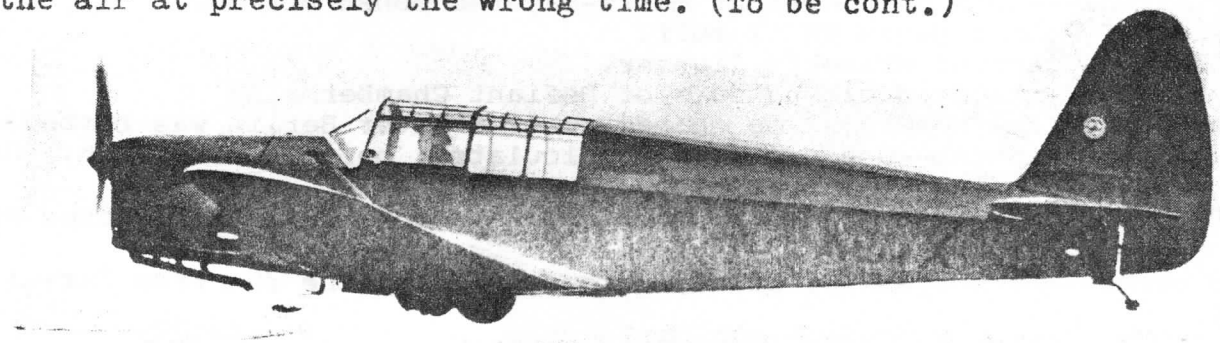
Another of Nick's philosophies was to provide owners with obvious travel conveniencies - the Swift's custom suitcase and locker, and storage for golf clubs had been well received. The Mouse went further: the luggage locker held three ample sized suit cases supplied with the machine and two lockers in the wing roots for tools and log-book etc. The two front seats were each slidable for leg room (the Mouse could be flown from either side). The rear seat, upholstered right across the fuselage gave room for a child as third passenger besides the pilot; behind it was a rack for light packages, hats and so on.

The sliding cabin top, designed strong enough to be opened during flight, gave the pilot the option of putting his head outside for take-offs and landing when visibility was poor.

Apparently only three of this advanced aeroplane were built. A fully cantilevered and tapered wing where no two ribs were alike in length and depth plus tapered front and rear spars involved two different jigs for the right and left hand wings, and different sized jigs for each rib. Unless a pre-estimated sales volume was assured sufficient to amortize the cost of jigs and tools, the construction cost of cantilevered and tapered wings would be prohibitive.

Aside from this, the sales price of the Mouse would have to be in the high brackets in the private-owner category reflecting, as it must do, the manufacturing cost of folding the wings, the sliding canopy and retractible undercarriage. It was therefore likely to be priced out of the depressed market existing in England at that time (the early 'thirties). Further, in the scramble for business, the Mouse, setting a new standard, was bound to invite the large and well established companies to rear their ugly heads when economic conditions improved.

Unfortunately for the Comper Aircraft Company, the Mouse took to the air at precisely the wrong time. (To be cont.)



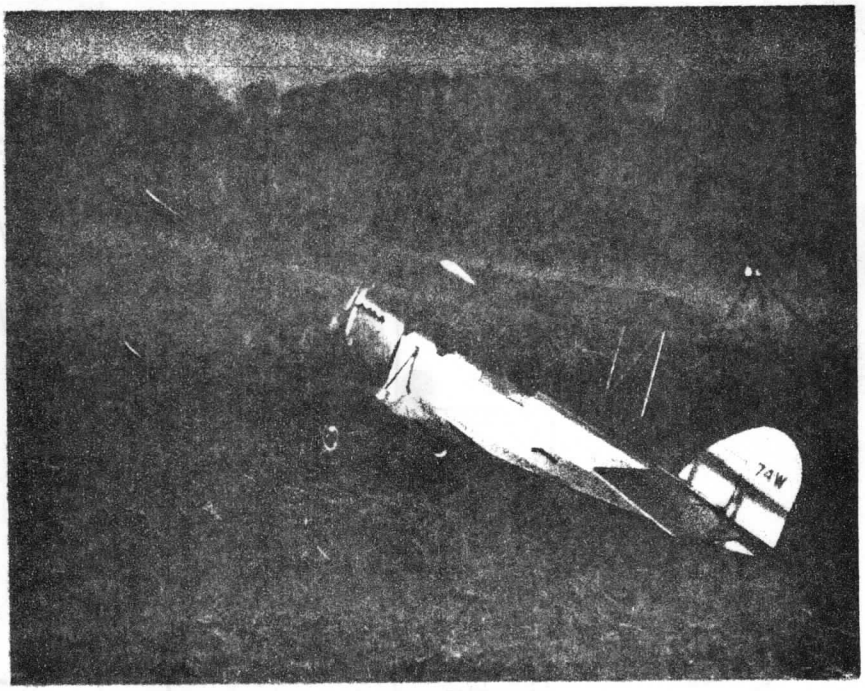
THE EPPS BIPLANE

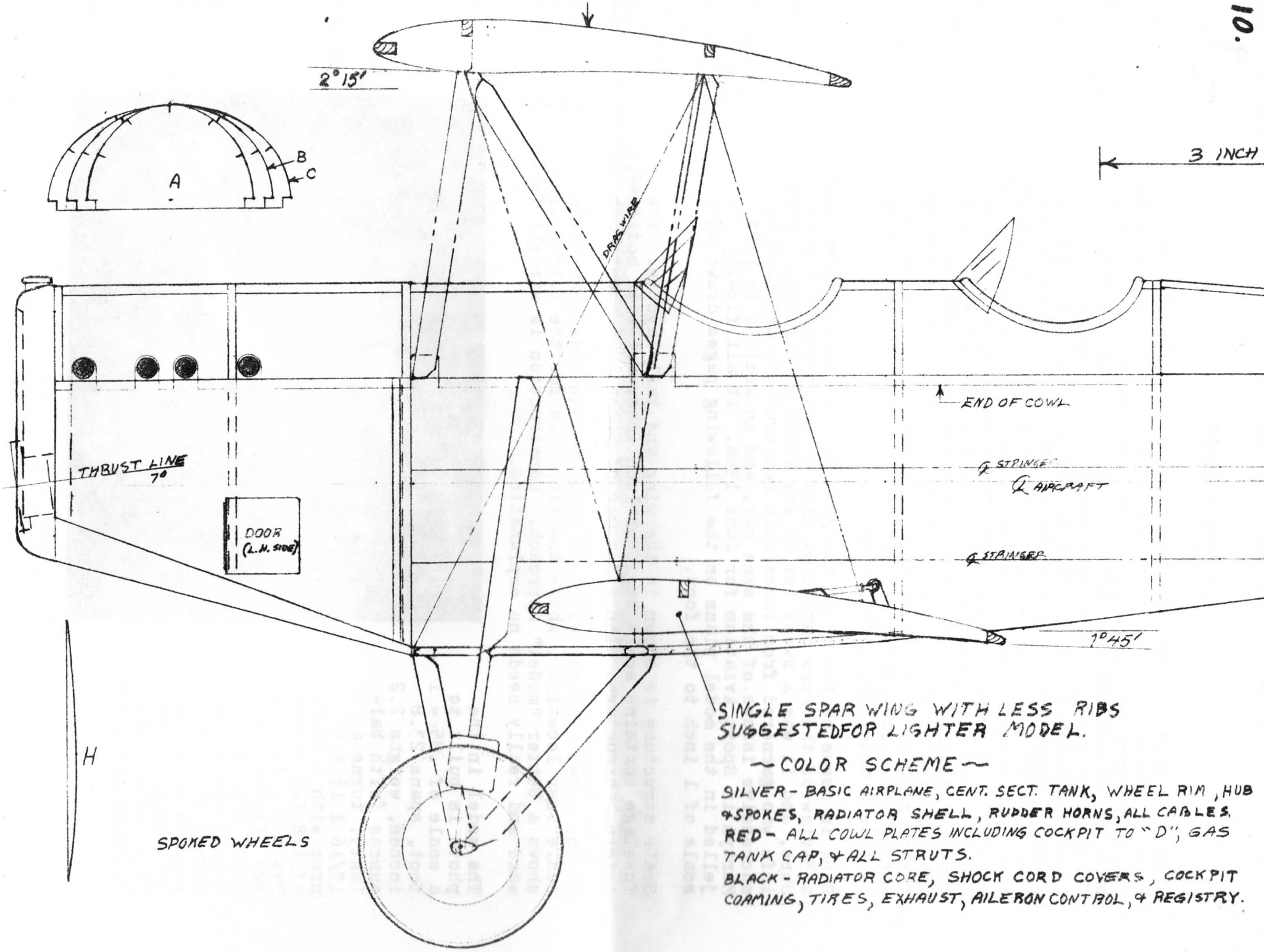
This Ford model A powered homebuilt was conceived by Ben T. Epps of Athens, Georgia where she first took to the ozone on the fourteenth of March, 1930. Ben had learned to fly 'way back in '06 and had been building his own ships of original design ever since. Later on a Wright Gypsy was put on up front in place of the ol' Ford so the ship could be used for training flyers at Ben's airport in Athens. A training accident in 1936 put an end to Ben and the pleasent looking bipe that had served so well. But Ben's spirit of the skies lives on through the lives of no less than five sons, all of whom are aviators! We are indebted to Ford W. Martyn who took the time to research far beyond the drawings that inspired him in the issues of Popular Aviation back in 1934 to build his own flying replica of the Epps bipe. It was Mr. Martyn who unearthed the above facts and also on fact further that is so dear to a modeller....the color scheme!

Back in issue number 65 of the good ol' FAC News we presented a 3-view of the Epps purloined from a 1934 issue of Pop Av. Sure, and it was a sweet bus to any lover of biplanes. More info was garnered from incomplete construction articles in successive issues of the same mag, and an article by Ford Martyn in Sport Aviation for June 1968. It all finally jelled in the model plans on the following pages drawn at a scale of 1 inch to the foot.

Scale structure is shown in the wing and tail layouts. The fuselage contains scale stringer locations, but with modified internal structure. The sides are of light 1/16 sheet from nose to motor peg. A solid block is used as the bottom cowl on the nose. The top wing rib shown in the side view gives scale spar locations, while the rib shown for the bottom wing shows a better "model" approach. Construction is stright forward and really needs no explanation.

The model in the photo is built to a scale of .85 = 1 foot, spans 23.8 inches, weighs 2.2 ounces (with ballast), turns a 13/16 X 1½ X 9 prop with 8 strds. of 1/8 FAI rubber. Has had a few dozzen flights, and shows promise. Wheels are vacuum formed of clear plastic to simulate spokes. Has flown with 9 inch Palowina prop, too.





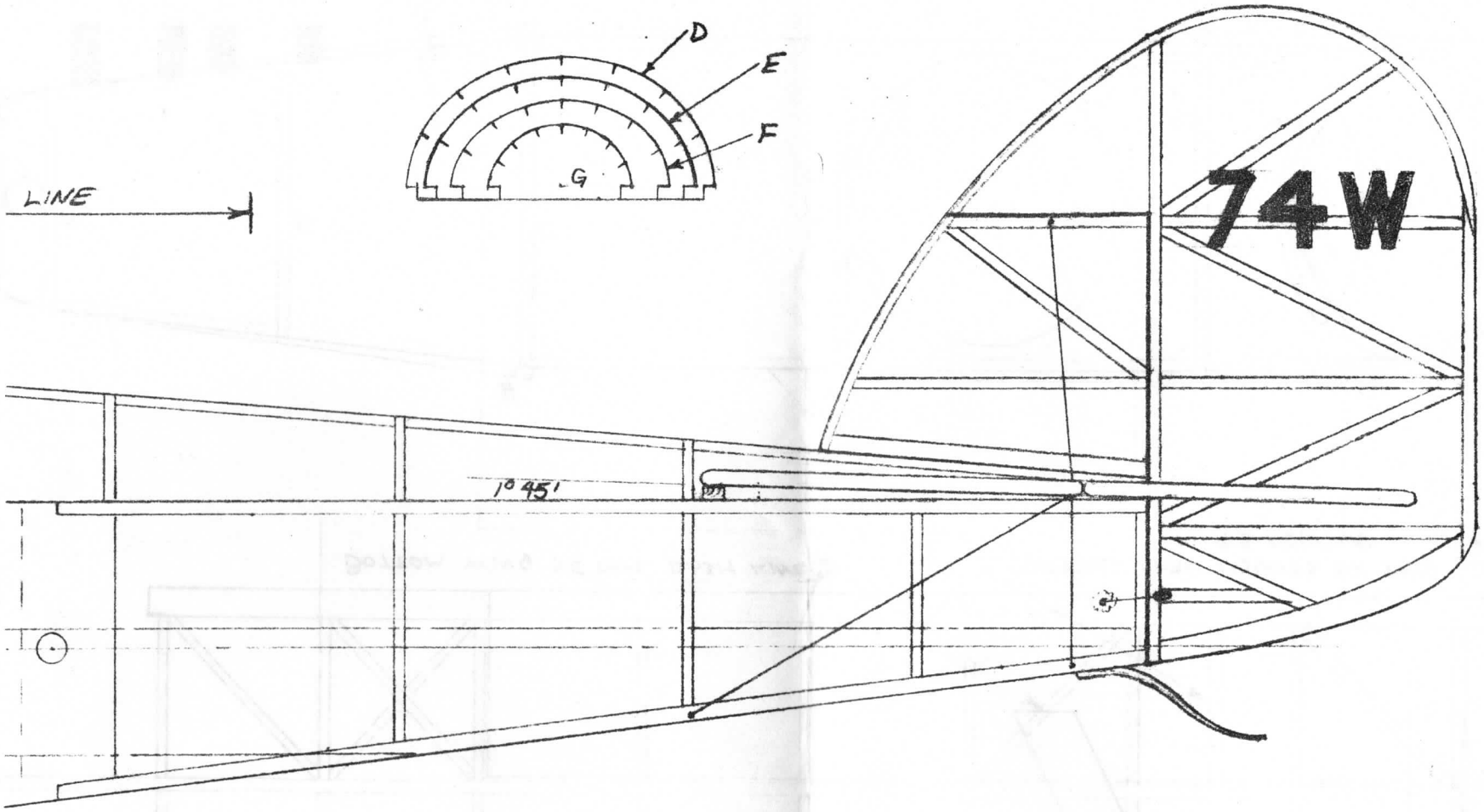
SINGLE SPAR WING WITH LESS RIBS SUGGESTED FOR LIGHTER MODEL.

~COLOR SCHEME~

SILVER - BASIC AIRPLANE, CENT. SECT. TANK, WHEEL RIM, HUB & SPOKES, RADIATOR SHELL, RUDDER HORNS, ALL CABLES.

RED - ALL COWL PLATES INCLUDING COCKPIT TO "D", GAS TANK CAP, & ALL STRUTS.

BLACK - RADIATOR CORE, SHOCK CORD COVERS, COCKPIT COAMING, TIRES, EXHAUST, AILERON CONTROL, & REGISTRY.

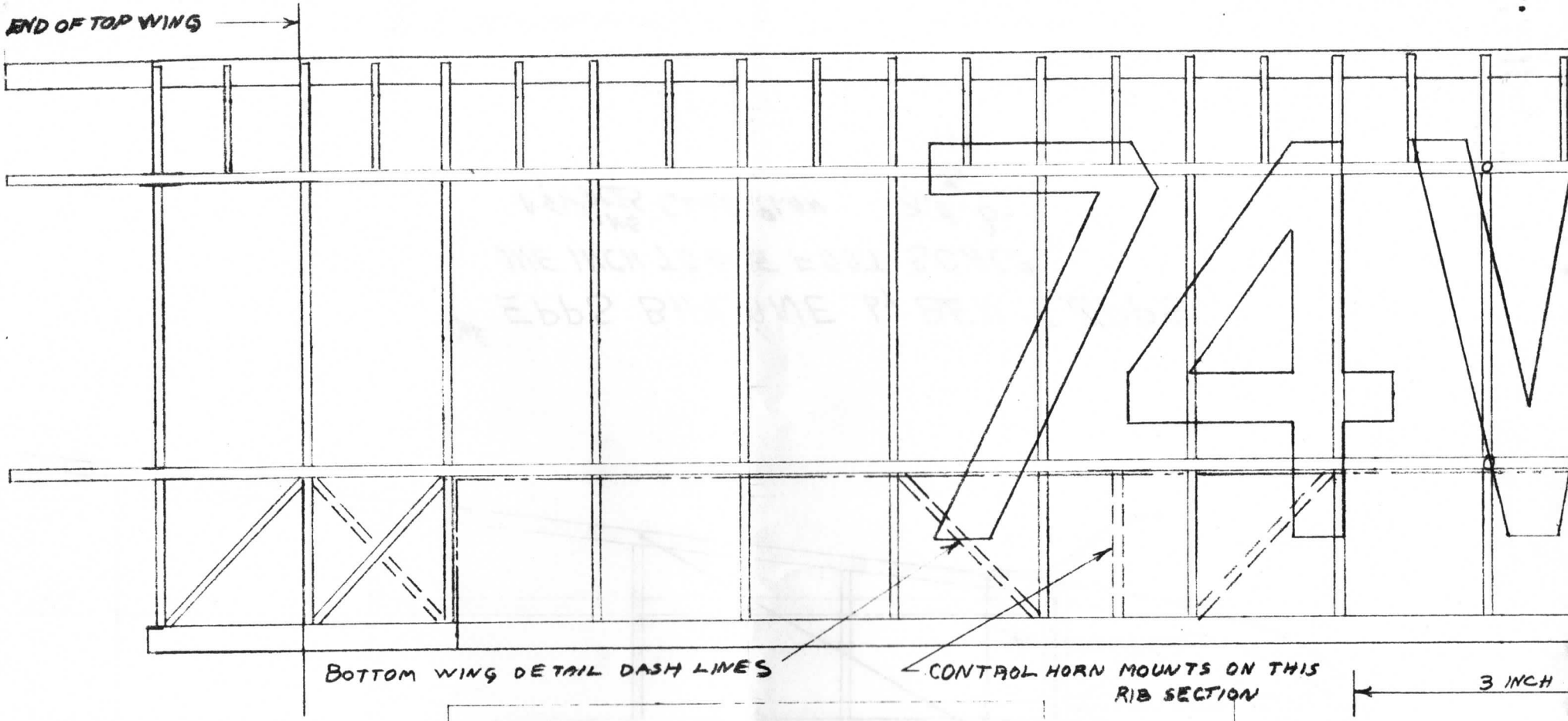


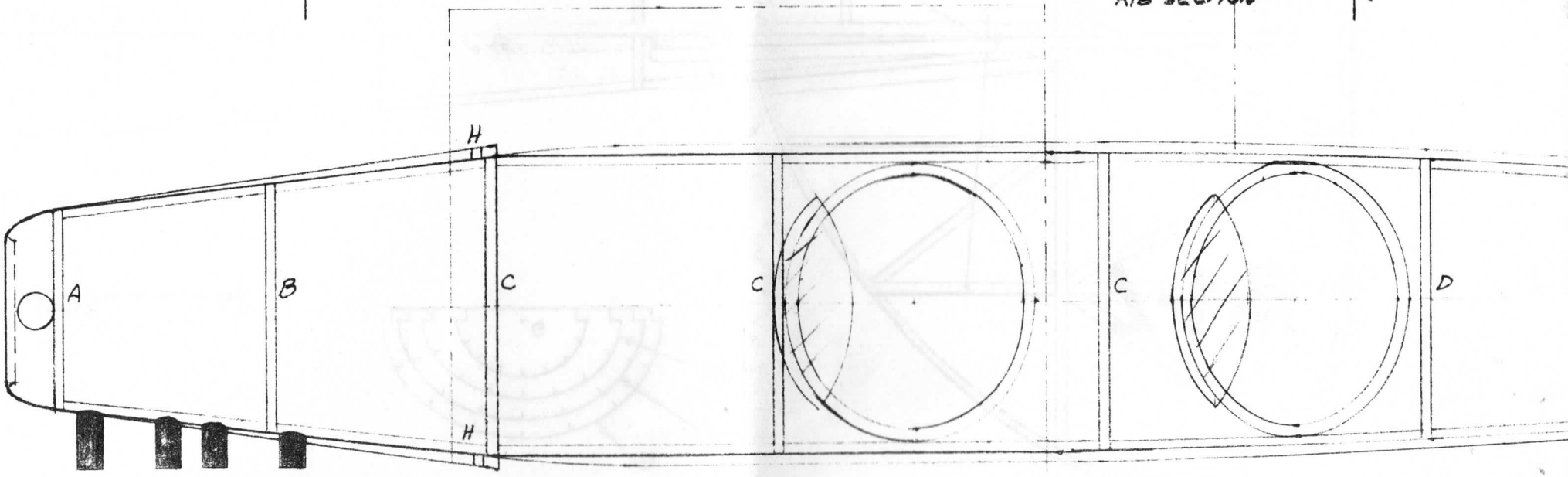
THE EPPS BIPLANE by BEN T. EPPS

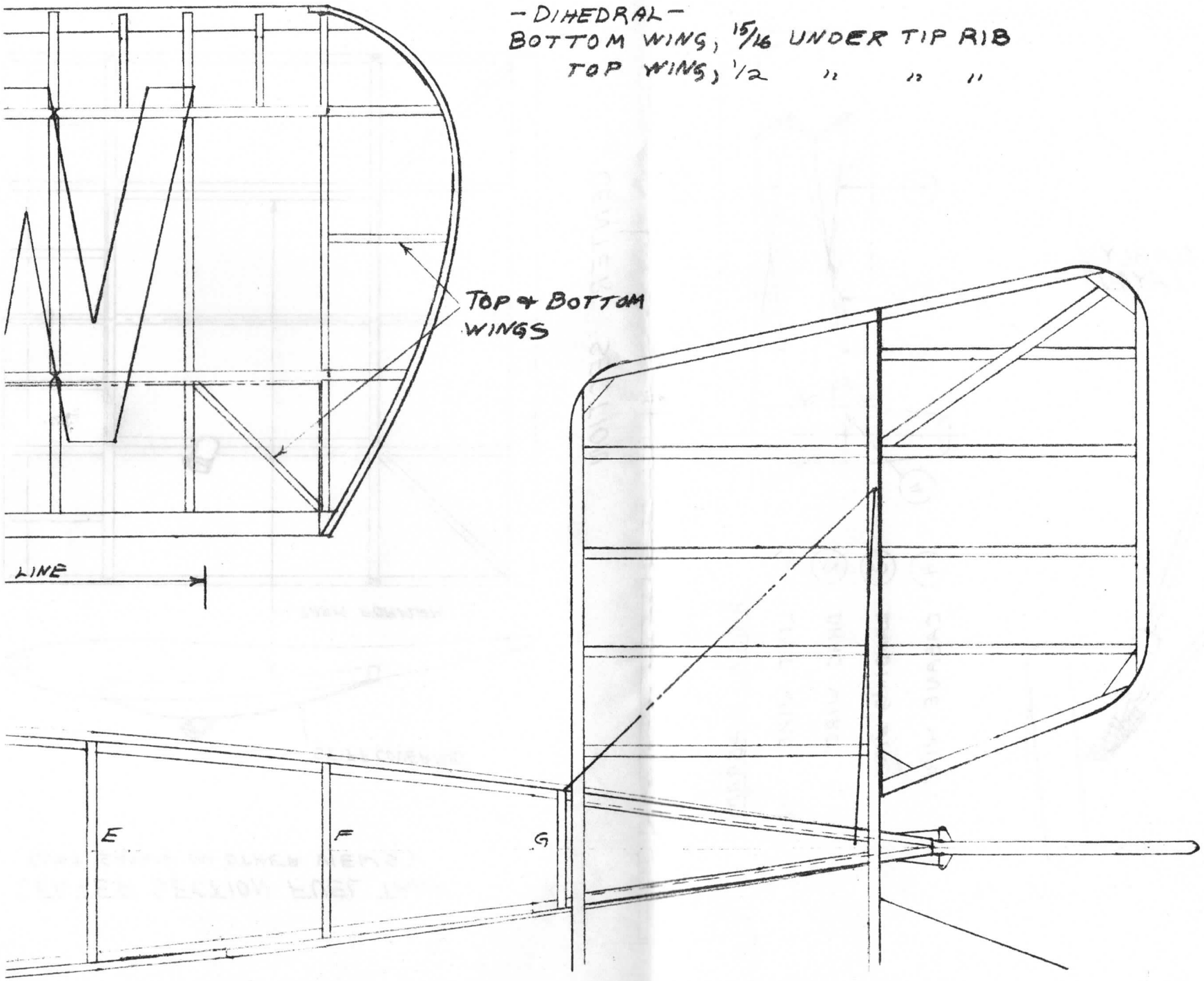
ONE INCH TO ONE FOOT SCALE

A FLYING ACES CLUB PLAN

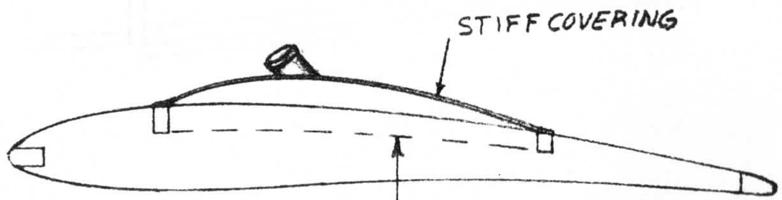
1982

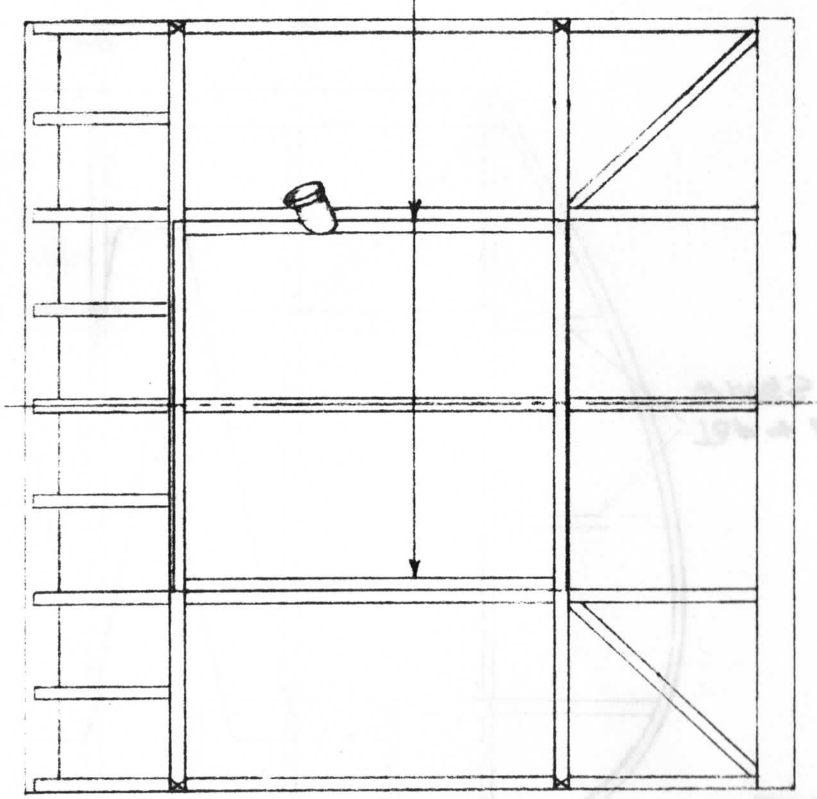

END OF TOP WING
BOTTOM WING DETAIL DASH LINES
CONTROL HORN MOUNTS ON THIS RIB SECTION
3 INCH


H
A
B
C
C
C
D
H


-DIHEDRAL-
BOTTOM WING, 15/16 UNDER TIP RIB
TOP WING, 1/2 " " "
TOP & BOTTOM WINGS
LINE
E
F
G

CENTER SECTION FUEL TANK
(NOT SHOWN IN OTHER VIEWS)

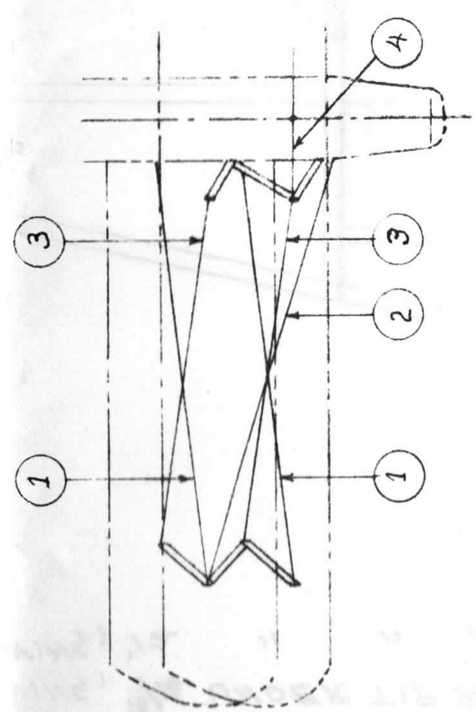


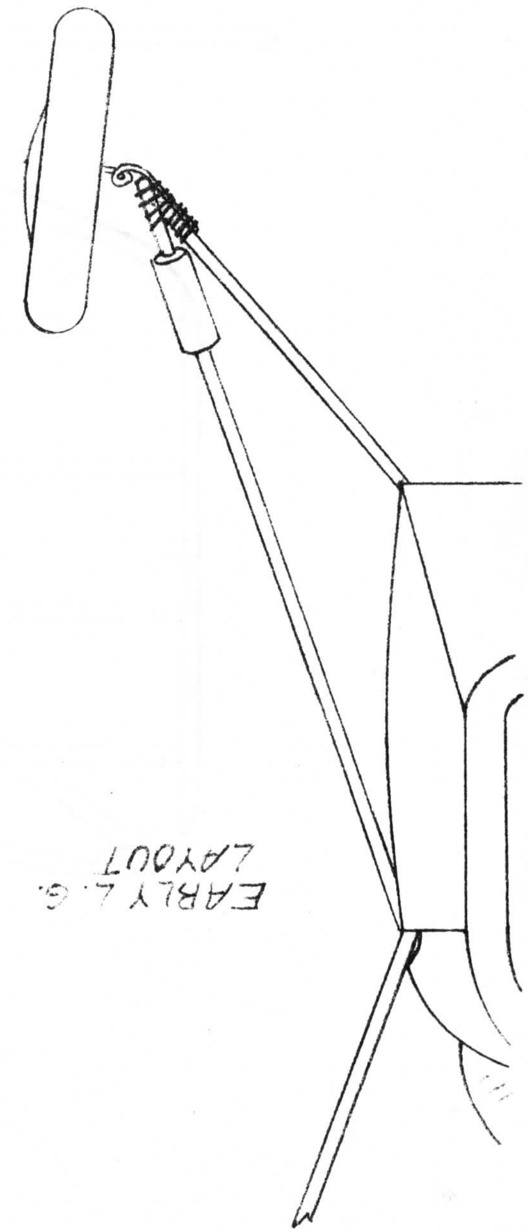


CENTER SECTION

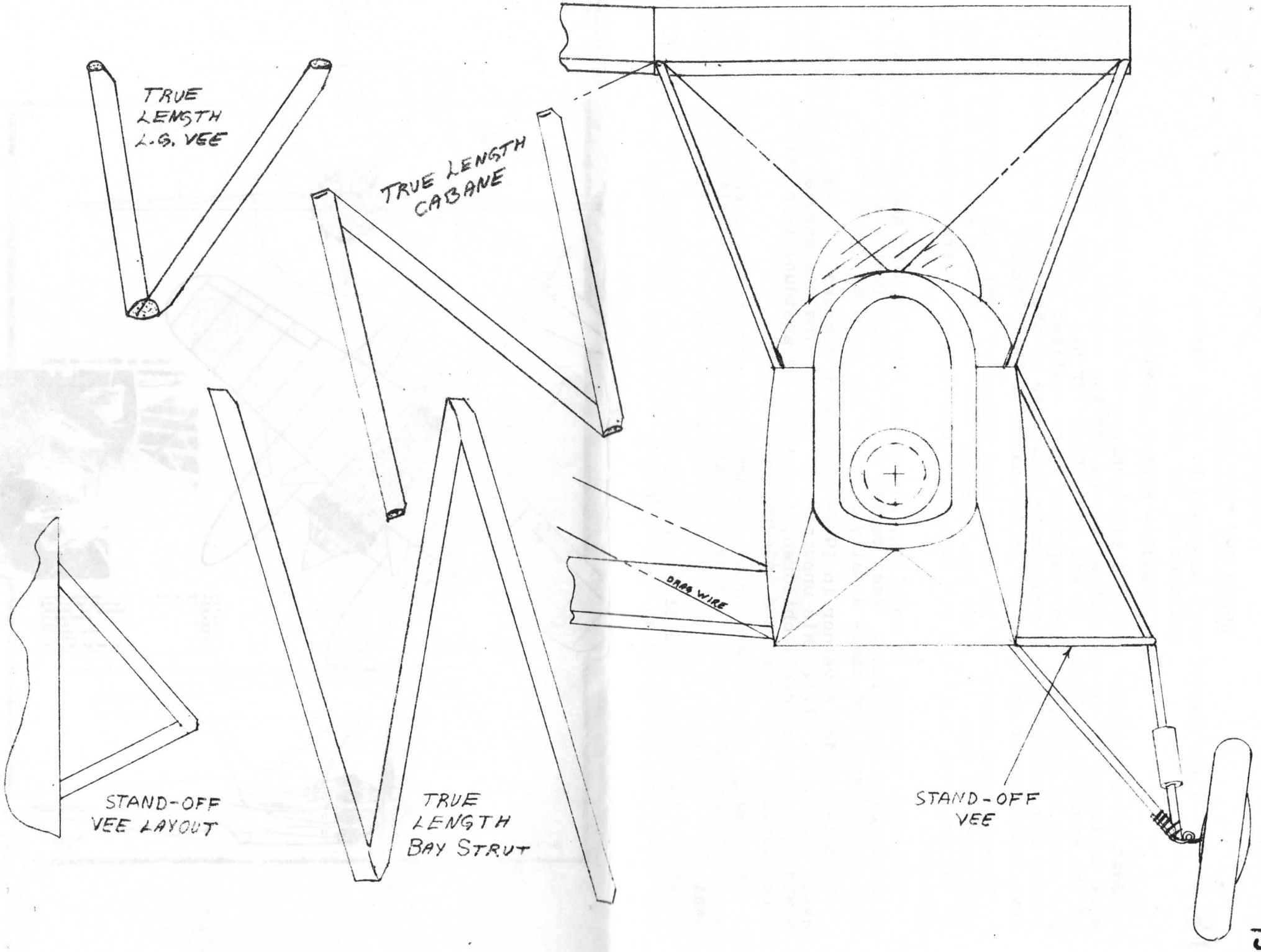
RIGGING DIAGRAM

1. LIFT WIRE
2. DRAG WIRE
3. LANDING WIRE
4. CABANE WIRE





EARLY L.G. LAYOUT


TRUE LENGTH L.G. VEE
TRUE LENGTH CABANE
DRAG WIRE
STAND-OFF VEE LAYOUT
TRUE LENGTH BAY STRUT
STAND-OFF VEE

WHERE ARE THEY NOW?

Vignettes of what happened to those famous model builders of the 1930's

Swat Twaddle- Rubber Speed King

Swat never achieved national prominence even when his rubber speed designs were published in the magazines, but he was the scourge of rubber speed south of the Mason-Dixon Line. He was best known for his devious contest strategy and surly disposition. His competion never realized Swat's expertise with rubber was derived from a consummate knowledge of the sling shot, a weapon of devastating power and accuracy in the hands of Swat Twaddle.

Premeditated misuse of the sling shot prevented Swat from attending the 1933 and 1934 Nats. His two year absence from the contest circuit was spent in the Oklahoma Institute for Boys, not generally considered a Boys Town experience.

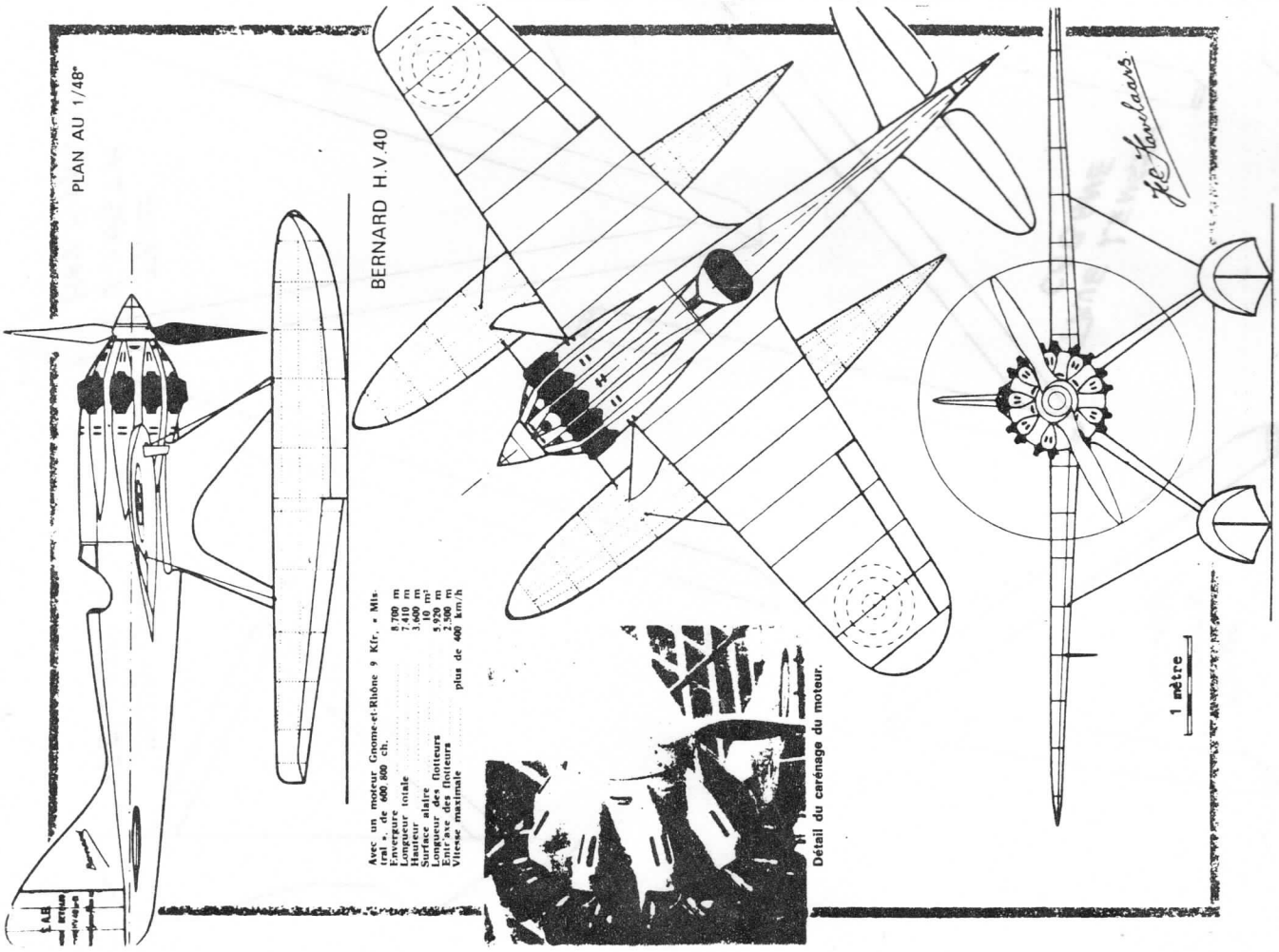
When Swat returned to modeling, gas models were popular and he joined in with singular enthusiasm. Swat became noted for his fuel additives, simple mixtures of salt and sand- usually found in his opponents fuel tanks.

Twaddle ran for governor in 1942- there were rumours this was a ploy to avoid the draft. After his unsuccessful bid for the statehouse, Swat married a widow with seven small children, a practice he assiduously continued throughout several later wars and international crises.

After WW II Swat made a brief appearance on the contest scene, perfecting a method for rubber assist launching (RAL) based on his old slingshot methods. Swat's models became less and less three-dimensional as he refined this method.

When a local CD disqualified Swat he refined his techniques even further and today they are known as Gordon Roberts Rules for Jet Catapult Scale!

By Summersuit Vaughn



Contest Calendar

June 26, CFFS Jr. Birdmen Calm Air FF 1pm-9pm. at LCCC, Lorain, Ohio, Peanut scale GHQ, Embryo, WWI biplane dogfight, WWII peanut combat, WWII FAC combat, Jet cat. scale glider, HLG, All fly-no gas. CD Jim Hyka 1604 West Royalton #6, Broadview Hts., Ohio 44147 Ph. 216-582-0257

July 3, CFFS Becalm Hydro FF 1pm-9pm at LCCC Lorain, Ohio. Peanut FAC scale, FAC scale, No-cal & 3/4 Scneider, Embryo, Oldtimer kit +5 ROW, Co/2 OT Replica +5 ROW, Jet cat. scale glider, HLG. CD Russ Brown, 4909 N. Sedgewick, Lyndhurst, Ohio 44124 Ph. 216-692-5460

July 10, Rain date for Spring FAC Meet at Prangmore Aerodrome, Erie, Pa.

July 29, FAC Meet at AMA Nats site, FAC scale, GHQ peanut, No-Cal scale, Scale towline, WWII combat, Thompson/Greve races, CD Bob Thompson Box 90 South St. Roxbury, Ct. 06783

Aug. 6, E.M.A.A. Picnic meet at Prangmore Aerodrome,Erie, Pa. FAC scale, FAC peanut, Embryo, FAC Power scale, Thompson/Greve race, WWI Dogfight, HLG, 020 OT Replica, OT rubber, OT scale kit/plan, CD Lin Reichel 3301 Cindy Lane, Erie,Pa. 16506 Ph. 814-833-0314

Aug. 14 CFFS Scale Races Scramble at LCCC, Lorain, Ohio. 10am-5pm. FAC Peanut FAC Rubber scale, OT kit/plan scale, Co/2 OT Replica, Post War Race, Greve/Thompson Race, All fly (no gas), CD Tom Majestic, 3273 W. 129 St. Cleveland, Ohio 44111 Ph. 216-251-4176

Aug. 28 Cloudbusters 16th Annual FF Scale Meet. 11 Mile & Franklin RD. Southfield, Mich. CD Ralph Kuenz 14645 Stahelin, Detroit, Mich. 48223

SPRING FAC MEET

JULY 10, [redacted], 1983

Prangmore Aerodrome

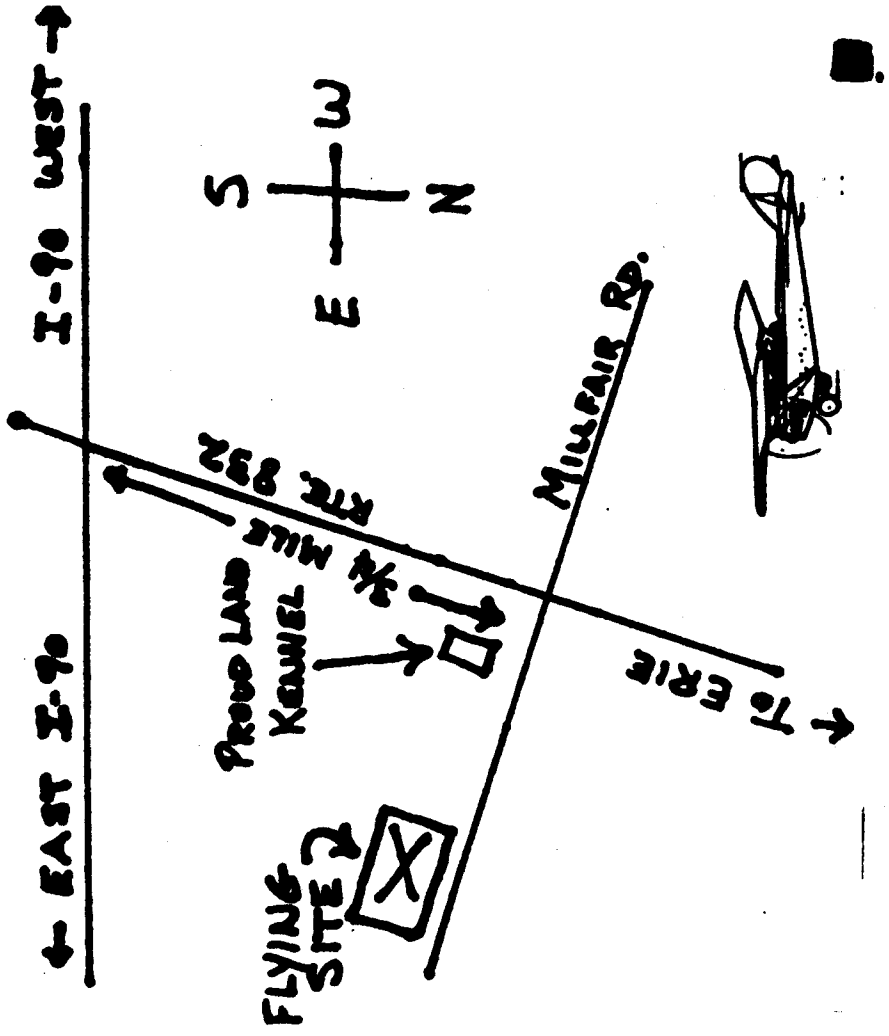
AMA Sanction applied for. Time; 10:am till 5:pm.

Events;

1. FAC Scale
2. Peanut Scale FAC
3. Embryo Endurance
4. Thompson/Greve Race
5. WW I Combat
6. Hand Launch Glider
7. Old-Time Scale--kit or plan.

Prizes to be kits/merchandise.
Entry fee; $3.00 first event, $1:00 each add.
max fee $6.00 Jr/Sr. $2.00 flies all.

Contest Director, Joe Barna 1428 West 32 St, Erie, Pa. 16508 ph. 814-864-6932



SWAP SHOP

Wanted; Kit plans for the Northrop A-17 fighter (24" span ½" scale) from Miniature Aircraft Corp. circa 1940, which can be copied and retuned. Dave Rees, 1205 Bancroft Drive, Raleigh, N.C. 27612

****

FOR SALE; Plans by Mike Midkiff, 3/4 scale Douglas Dauntless, 3/4 Vought Vindicator, 3/4 Curtiss P-40 and 5/8 Curtiss SB2C Helldiver. $5.00 each. Mike Midkiff, 7611 Cypress St., Humble, Tex. 77338.

****

Wanted; Beechcraft Staggerwing plans in 20 to 24 inch span range. If you have an extra set or can copy your set, please send to Joe Barna, 1428 West 32 St. Erie, Pa. 16508

****

NEW KITS; Golden Age Reproductions has announced the addition of two new kits to their line of quality products. They are the Albatross D-5 and the Boeing F4B-4. Both are in the 24 inch span area and feature molded parts and fine decals as well as choice balsa wood. Both kits sell for $8.50 ea. plus $1.50 postage for each kit. Golden Age Reproductions, Box 13, Braintree, Mass.02184

****

PLANS BY DIELS; SAE for plan list, many fine peanut and ½ inch scale plans. latest plans are; Swedish F. F. V.S. J22B and Fairchild XC-31 at $2.50 each postpaid. David Diels, Box 101, Woodville, Ohio 43469

****

ENLARGING; Want your favorite peanut plan (or Other) enlarged? Send to David Diels for information. Same address as Plans By Diels (see Above).

****

FOR SALE; Ignition model airplane engine parts. Send SASE for list to Vic Didelot, 4410 Lorna Lane, Erie, Pa. 16506

****

RACE PLANS; 21" span Laird Super Solution and 24" span Travel Air "Mystery Ship" Texaco 13. Plans and patterns $3.00 the set + postage. Both sets for $5.00 + postage. Rolled +$2.00 Postage $.75 the set. Gulf Coast Model Engineering, Ltd. #251, 9901 Club Creek Drive, Houston, Tex. 77036

****

FLYING ACES PATCHES; Large patch 4x8 inches, small patch FAC Nats 2½x4 inches. Each patch $2.00, specify size when ordering. Flying Aces GHQ, 3301 Cindy Lane, Erie, Pa. 16506

****

RIGGING THREAD; Butch Hadland (from England) has sent his supply of elastic rigging thread to GHQ. It was just not economically possible to send orders directly from overseas so Butch has sent it to GHQ. Profits will go into the General Fund at GHQ. Cost is $1.00 for 100 feet,postpaid, a real bargain. Send your order to; GHQ, same address as for patches--see above.

****

PHOTO PAGE

Top left--Russ Brown holding Gordon Roberts fantastic flying Boulton-Paul Defiant. Looks like Gordon is on the other end of the rubber, about twenty feet away.

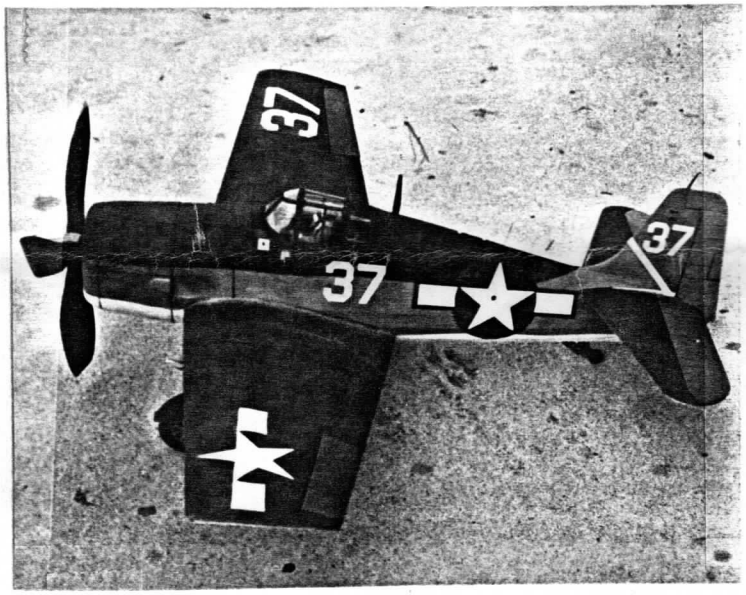
Top right--Emerson Elwell and his Peck-Polymers Prairie Bird.

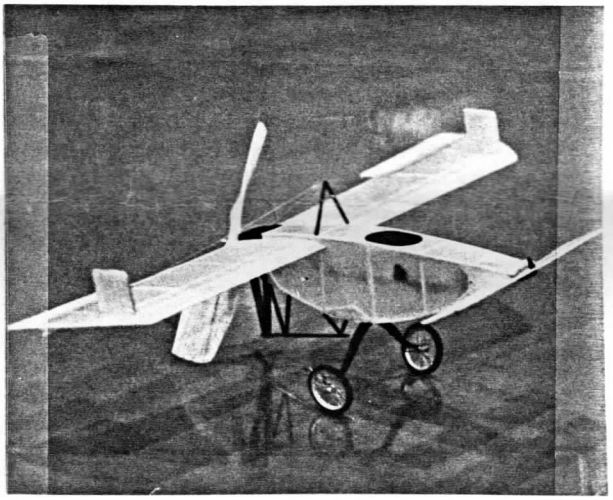
Center left--3/4 scale Grumman Hellcat by Mike Midkiff, beautiful model.

Center right--Bleriot Canard, built by Dean McInnes, our man in Florida.

Bottom--Bill Caldwell enlarged a peanut plan to ½" scale of the Vought Vindicator. Let us know how she goes Bill.

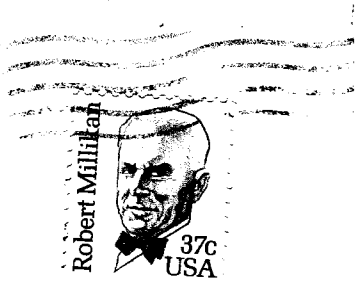

AFA·270


37
37
37



Flying Aces Club
3301 Cindy Lane
Erie, PA 16506

PM
10 JUN
1983



Claude Powell
P. O. Box 454
Ridge, MD 20680

76

FIRST CLASS