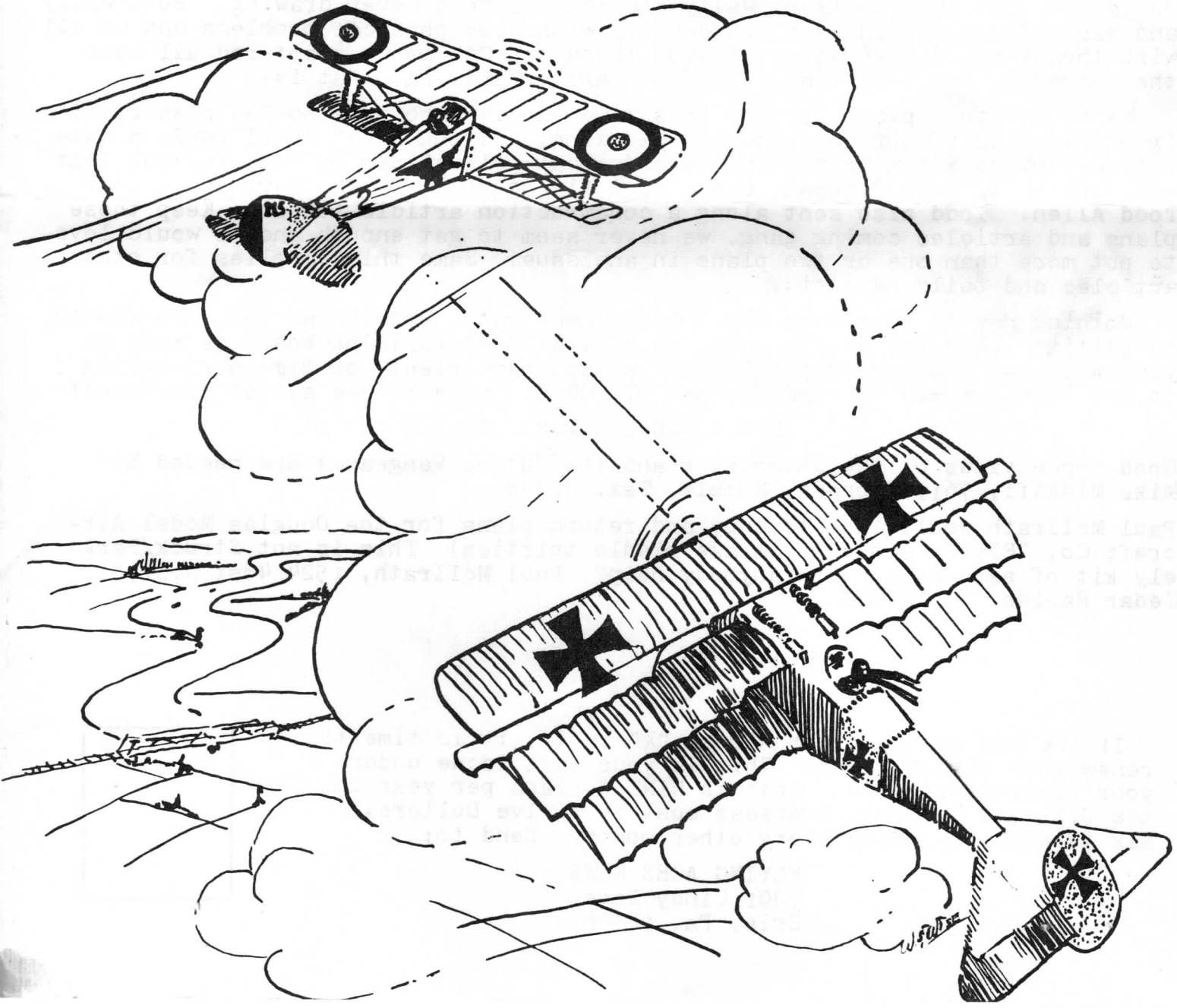
(85)

FLYING ACES

Club News

ISSUE #104-30 JULY-AUG. 1985



Here we are again FACers! Bet you didn't think you were going to get another issue so soon, did you? Well, we got a little respite from all the overtime on the job (temporarily), and we thought we better take advantage of it and get out another issue to you. I think we may have gained a couple of weeks on our tardiness. If we can gain a couple of weeks with each issue we can be back at altitude in no time at all (we hope). Stick with us.

How about that cover! Looks as though that Hun has his guns trained right on target. We want to thank Wally Stevick for this cover drawing. Both Wally and his wife have been laid up recently with some physical problems and we all wish them a speedy recovery. If you think the FAC isn't scattered all over the universe, get this, Wally is from Mars! (Mars, Pa. that is)

We've got four plans for you this time gang. There is a No-Cal plan right from the pages of our favorite old magazine, "Flying Aces" April 1942, a cute little Curtiss Robin from Steve Hales, a catapult glider by Tony Faranda that was sent in by Mark Fineman, and a nice flying model of the Japanese Zero by Todd Allen. Todd also sent along a construction article for it. Keep those plans and articles coming gang, we never seem to get enough and we would love to put more than one or two plans in an issue. Same thing applies for other articles and building hints.

Nothing new to report on the "Flying Aces Nats, Mark V" as yet. We should be getting the dates fairly soon, so stay at that building board as much as you can. Get those models built now so you have plenty of time next spring to get them trimmed in time for the"BIG ONE". Hope to see all of you there!

S.O.S.--S.O.S.--S.O.S.

Good three views of the Stormovick and the Vultee Vengeance are needed by Mike Midkiff, 7611 Cypress, Humble, Tex. 77338

Paul McIlrath would like to copy and return plans for the Douglas Model Aircraft Co. "Flying Cloud" (vintage middle thirties) This is not Struck/Berkely kit of same name. Can anybody help? Paul McIlrath, 1524 48st N.E., Cedar Rapids, Ia. 52402

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 in the U.S. and Canada. Overseas cost is Twelve Dollars. Six issues, published every other month. Send to;

FLYING ACES NEWS
3301 Cindy Lane
Erie, Pa. 16506

AN HYSTERICAL HYSTORY YARN

by Frank Scott

McCook Field Squadron, FAC
Historical Research Division

No. 492 (Zep) Capt. D. DeBris

The McCook Field Squadron's historical staff, ever anxious to produce enlighted revelations concerning the forebears of today's aircraft, constantly makes the most diligent inquiries into the backwaters of aviation history. Occasionally these findings are nothing less than astonishing. In this treatise we offer incontrovertable proof that the greatly feared airships of the "Great War" were not only used for peaceful purposes only, but were not even invented by the usurper von Zeppeling!

The success of the German von Gafier Brothers in inventing the hot-air balloon is, of course, well known and needs no repitition here. However exciting balloon travel might be, it quickly became apparent that air travel was not going to become very popular so long as the travelers had no choice in destinations. The von Gafiers, realizing this basic defientcy, fitted one of their latest balloons with a large rudder. While this novel appendage did indeed turn the craft, this fact had no effect whatever upon the path of flight--indeed, all that the rudder accomplished was to change the view a bit. What was required then, in addition to the rudder, was a means of propulsion. Accordingly various inventors tried sails,oars, paddle-wheels, and even a donkey on a rope. While this last scheme was the only one to offer at least the possibility upwind, the inherent disadvantages could not be over come.

No real progress in airship developement was made until the famous Count Zeppeling took a broken clock to the impoverished Brown Forest town of Pohrdorf, and thence to the clock shop of coo-coo specialist Wolfgang von Dirigible. Von Dirigible, an aviation enthusist, showed to von Zeppeling a small hot air balloon, to which he had fitted a propeller driven by a discarded coo-coo clock motor; this miniature craft easily sailed across the cluttered workshop.

Greatly excited, the famous Count rushed to his ship-yard on Lake Constance, instantly suspended all work on the papier-mache submarines, and began immediately the construction of a large man-carrying airship utilizing the clock-maker's important innovations. The rest is history: Zeppeling's airships carried passengers around the world, and performed many vital flights for the Imperial German Army and Navy--always utilizing clock-maker von Dirigible's important principals.

Now we must dispell, for once and for all, the myth that these giant craft were sustained by large bags of gas in their hulls; it is only neccessary to point out the difficulty a stranded motorist has in carrying a five gallon jerry-can of gas down the road---there is simply no way that gas can lift anything at all! Therefore, it becomes clear that the great airships were lifted only by balloons within the hull, these being filled with hot air. This lifting hot air was produced in streamlined stoves safely hung outside of the hull, and to which the propellers were, incidently, attached.

It is of interest to note that the large ground crews normally associated with airships were not, as is commonly supposed, required to man-handle the airships into, and out of, their sheds; No, these men were on hand simply to wind the huge clock-springs which drove the propellers! Military airships, however, often used the Grossenfadder geticken-tocken principal in that, instead of the springs, large süspended weights drove the clockwork mechanisms. Inasmuch as a mission of long duration would result in the weights hanging

many hundreds of feet beneath the craft, it was found expediant to streamline the weights and fit them with stabilizing fins to reduce drag. As these units were simply large clock weights, there is no truth to be found in slanderous propaganda reports of observers, or even bomb aimers, being carried beneath the airship. Indeed, the lifting capability of the craft was so taxed by these clock weights that there was no capability left for an offensive load at all. It is therefore only a coincidence that there were several unfortunate accidents in which Zeppeling clock-weights (filled with Amatol for necessary weight) fell over London.

The safety, comfort, and future of hotter-than-air flight seemed assured until that fateful day in 1927, when the great airship "Heidleburg" was landing, only to have its main-spring break during final approach. As can well be imagined, the destruction caused by the breaking 800 foot long main spring was enormous, the hull buckled, and as it settled stern first, was set alight by the ruined stoves.

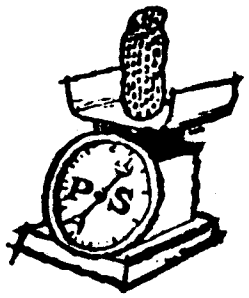
Hotter-than-air flight has never recovered from the loss of the "Heidleburg" although proposals and some developement continue to this day. The latest of these is a brilliant proposal for an all electric airship in order to eliminate the hazzards associated with tightly wound main-springs and stoves. In the electric airship of the future, electric furnaces will supply the needed hot air to the safe asbestos envelope, and each propeller will have its own electric clock motor to power it.

While it was originally intended that the proposed craft would have its own nuclear power plant (to be supplied by the Three Mile Engineering Co.) to supply the needed electicity, safety considerations now suggest that the new St, Helen's Energy Co. "cataclysm" process batteries will undoubtedly find greater acceptance.

With such promising developements in the offing, the day of large aeroplanes is surely coming to an inevitable end.

****

Peanut & No-Cal Scale Postal Meet



It's time for the Postal Meet again, Skysters! You can fly in a total of four "Wings"(or events) if you wish. The contest will start on Nov. 9,1985 and end on April 13, 1986. This contest is open to all FACers everywhere. Every time you fly, jot down your times, event you flew in, name of aircraft, and send it to GHQ where it will be recorded. The "Wings" are, Indoor Peanut, Outdoor Peanut, Indoor No-Cal, Outdoor No-Cal. Every time you better your score send it in! Winners get another mark on the "Kanone" list. If you fly in a contest during this period, those times are okay too. You may enter as many times as you want to and fly as many models as you want. There you have it Clubsters, GO FOR IT!!

BUILD...FLY...WIN...EFF-AAA-CEEEE!!!!!

****

S.O.S--S.O.S.--S.O.S.

Three-views of the Consolidated BT-9 are wanted by Jim Kaman, Box 133,Hurley, N.Y. 12443. Help him please.

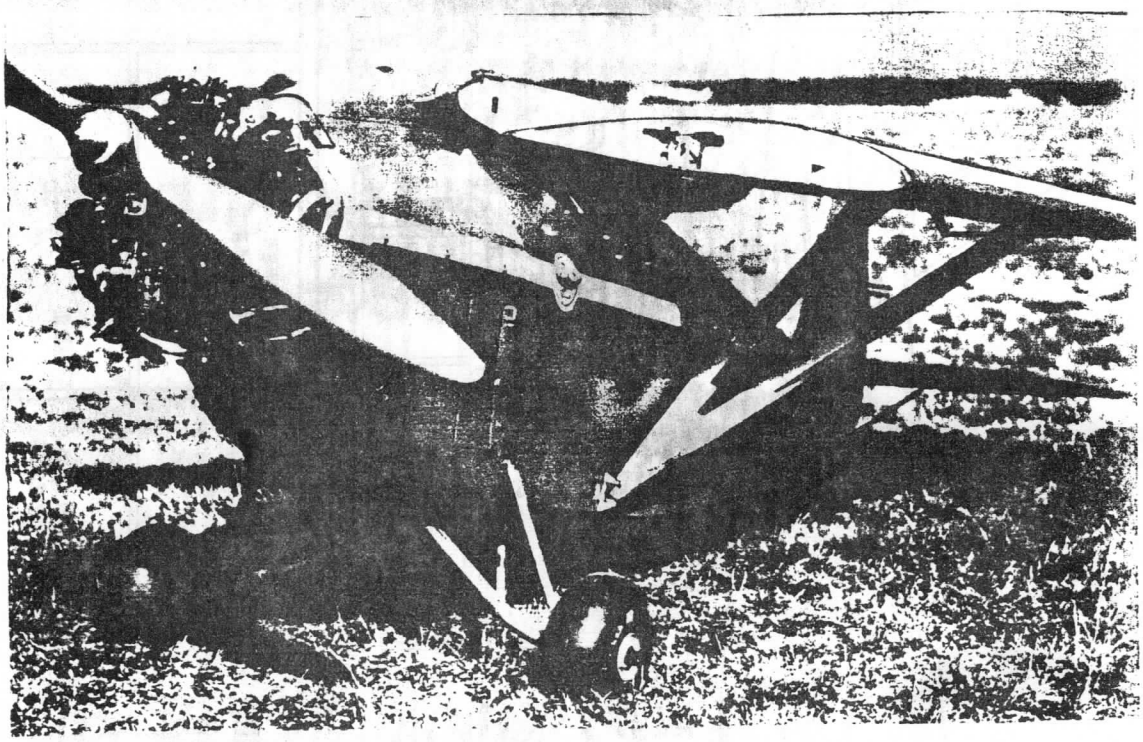
Contest documentation for the White Monoplane, circa 1917, is needed by Terry Hoover, 165 Chestnut St., Winnipeg, Manitoba, R3G1R5 Canada. Please help.

FOR SALE: 36 issues of "Air Trails" between the years 1941 and 1946. Contact Mike Repko, Box 644, Vienna, Ohio 44473

FOR SALE: A collection of Co/2 engines and parts (including 2 Herkimer engines) A stamped, self-addressed envelope will get you a list, Jon Zeisloft, Box71328, Salt Lake City, Utah 84107

LIVING IN THE EARLY DAYS OF AVIATION

By Colonel (Hon) ADRIAN COMPER



The last issue illustrated 80% of the finished metal parts for the Swift's wings made by Captain John Greenland as his first step in building a Swift from scratch with the aid of the 250 fifty year old original drawings found by chance in an attic and later restored and blueprinted by the Rolls Royce people.

The Swift's novel feature of bell cranks and push rods, replacing the chore of disconnecting aileron controls before folding the wings, increased the number of metal fittings necessary for this time-saver.

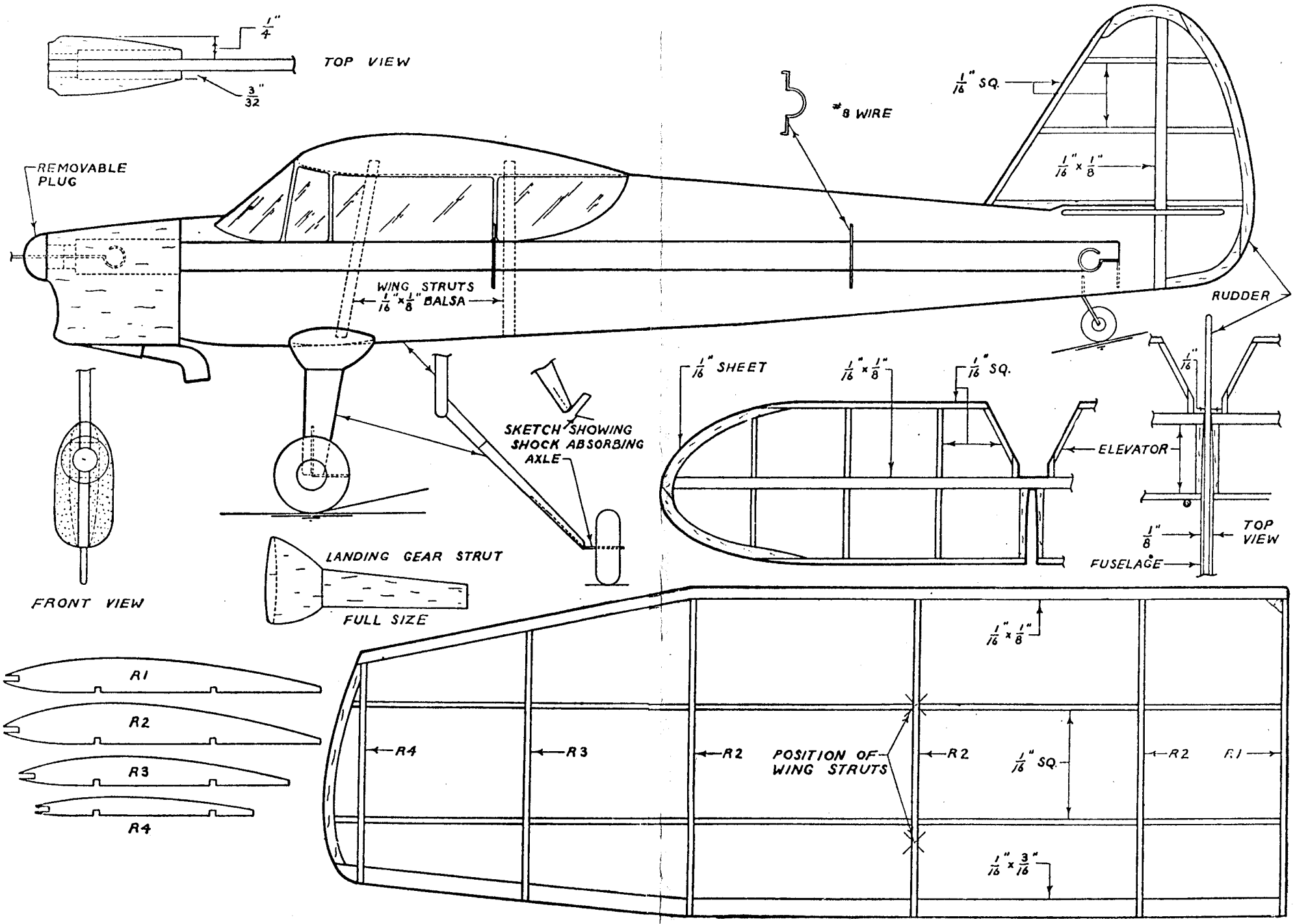
As has already been related, during War I, as a seventeen year boy, I was apprenticed to Geoffrey de Havilland the noted aircraft designer. Little did I know then that almost seventy years later in a different country I would have as a house guest someone previously unknown to me who, some 35 years ago, was an engineer apprentice at the de Havilland Aircraft Company's Technical School!

John's father, a de Havilland test pilot, often flew his young son to air shows where the tiny aerobatic Swifts captured John's imagination. He resolved one day to own one. Having learned to fly, he decided an airline pilot's carrier overshadowed just engineering. So in 1953 Southern Rhodesia Airlines as First Officer on DC3's and Vickers Vikings. Transfering as a Captain in Jersey Airlines he flew deH Rapides. In 1960 the "big time" called - a Captain in their North Atlantic jumbo-jet fleet. Although he and his wife live in Zurich, they maintain an apartment in London. After retirement in 18 months time, he returns to England to work on the woodwork, engine mounting and undercarriage. He believes a gap of maybe four years before first flight. This event will mark another 50 years to the already 50 year old Swifts. John knows just what he is getting into, and has the skills needed for success.

I know my fellow members of The Flying Aces (Erie's tri-state model aeroplane club) as builders on an infinitesimal smaller scale will join me in saying "Go to it, John".

To be cont.

BELLANCA YC-50 (FROM F.A., APRIL 42)



ERIE MODEL AIRCRAFT ASSN.
INDOOR CONTEST

Date: Nov. 3, 1985
Time: 9:00 am till 5:00 pm.

McComb Fieldhouse
Edinboro, Pa.

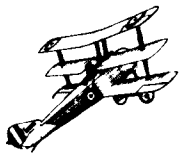
EVENTS

1. Hand Launch Glider
2. EZB

} 9:00 am till 11:00 am

3. FAC Scale
4. FAC Peanut Scale
5. WW I Peanut Scale
6. Bostonian
7. No-Cal Scale
8. Golden Age Scale

} 11:00 am till 5:00 pm



Entry fee will be $3.00 first event, $1.00 each add. event, max fee $6.00
Jr./Sr. $2.00 flies everything. Gym rental fee $1.50, Open only

WW I event will be mass launch.

Bostonian and NoCal scale models must weigh a minimum of 7 grams and no steering of No-Cal models.

Golden Age scale is for models not entered in any other event, no peanuts. Models must be of the fixed gear type.

Contest Directer: Ross Mayo 4327 Crosswinds Dr. Erie, Pa. 16506
Phone 814-838-7828

****

MORE CONTESTS

Oct. 27....FAC Kanone Fodder Meet..FAC Peanut, FAC Jumbo, WWI Dogfight, Jr/Sr ROG, FAC Scale, Embryo, WWII Combat, plus any other FAC event that there are at least three models to enter. Flying site in Fairborn, Ohio, just east of Dayton a short way. CD Frank Scott, 4283 Honey Brook Ave, Dayton, Ohio 45415 ph. 513-890-5989

Flying Aces Club Events

KING ORANGE INTERNATS

FREE FLIGHT MEET

FAC Peanut Scale
FAC Rubber SCale
*FAC Power Scale *
FAC Jumbo Scale
FAC Embryo Endurance
FAC WW-2 Combat
FAC WW-1 Combat

DECEMBER 28, 29, 30 1985

MACDILL AIR FORCE BASE

TAMPA, FLORIDA

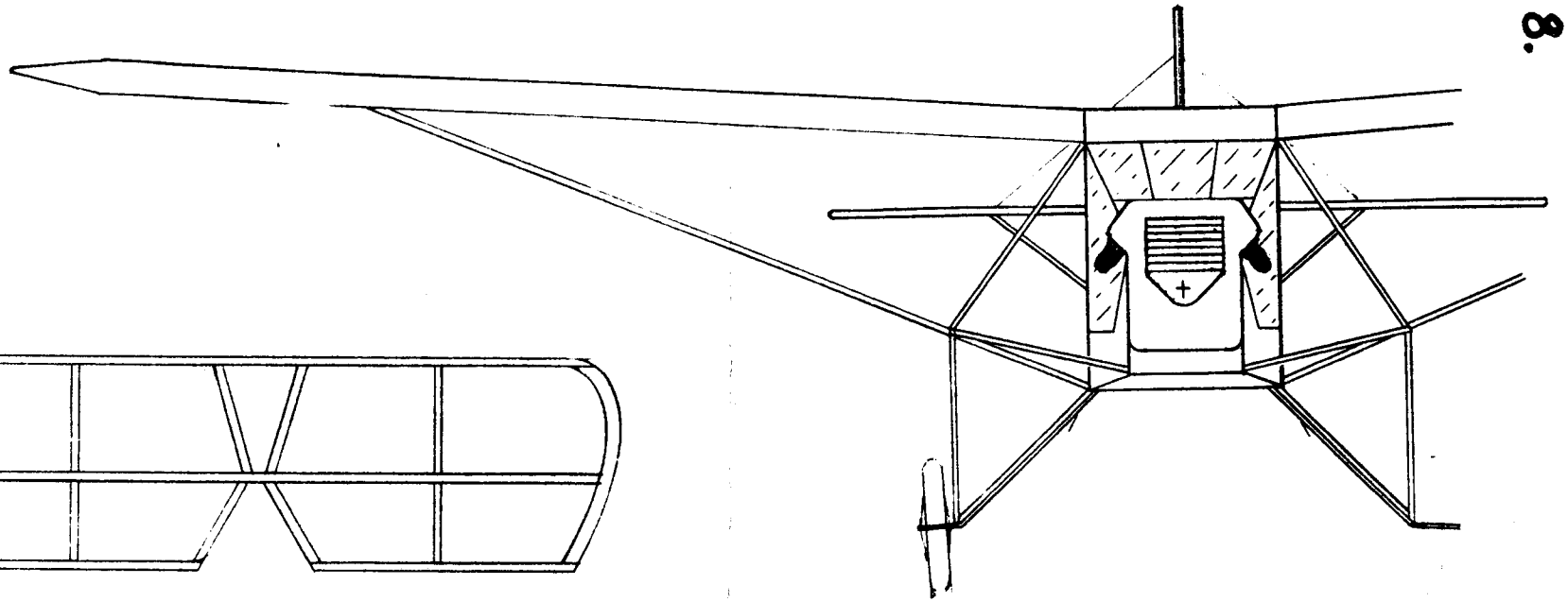
FAC Thompson/Greve Trophy Races

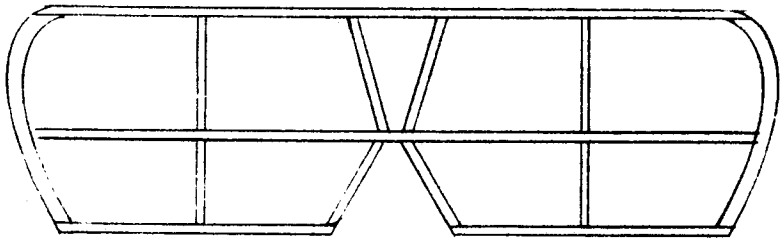
* Flight points limited to no more that static points*

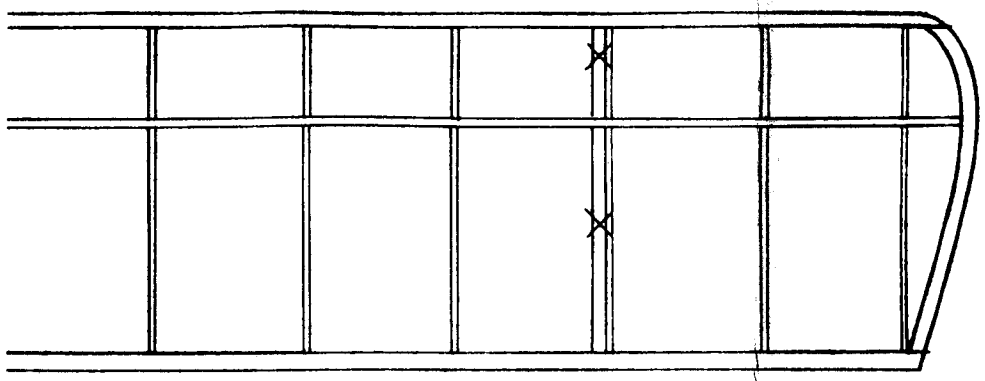
Special Note

World Famous Thompson and Greve Trophy race pilot, Mr. STEVE WITTMAN will be the "Chief Starter" for the FAC Thompson/Greve Trophy Races. Come and meet this famous aviation personality!

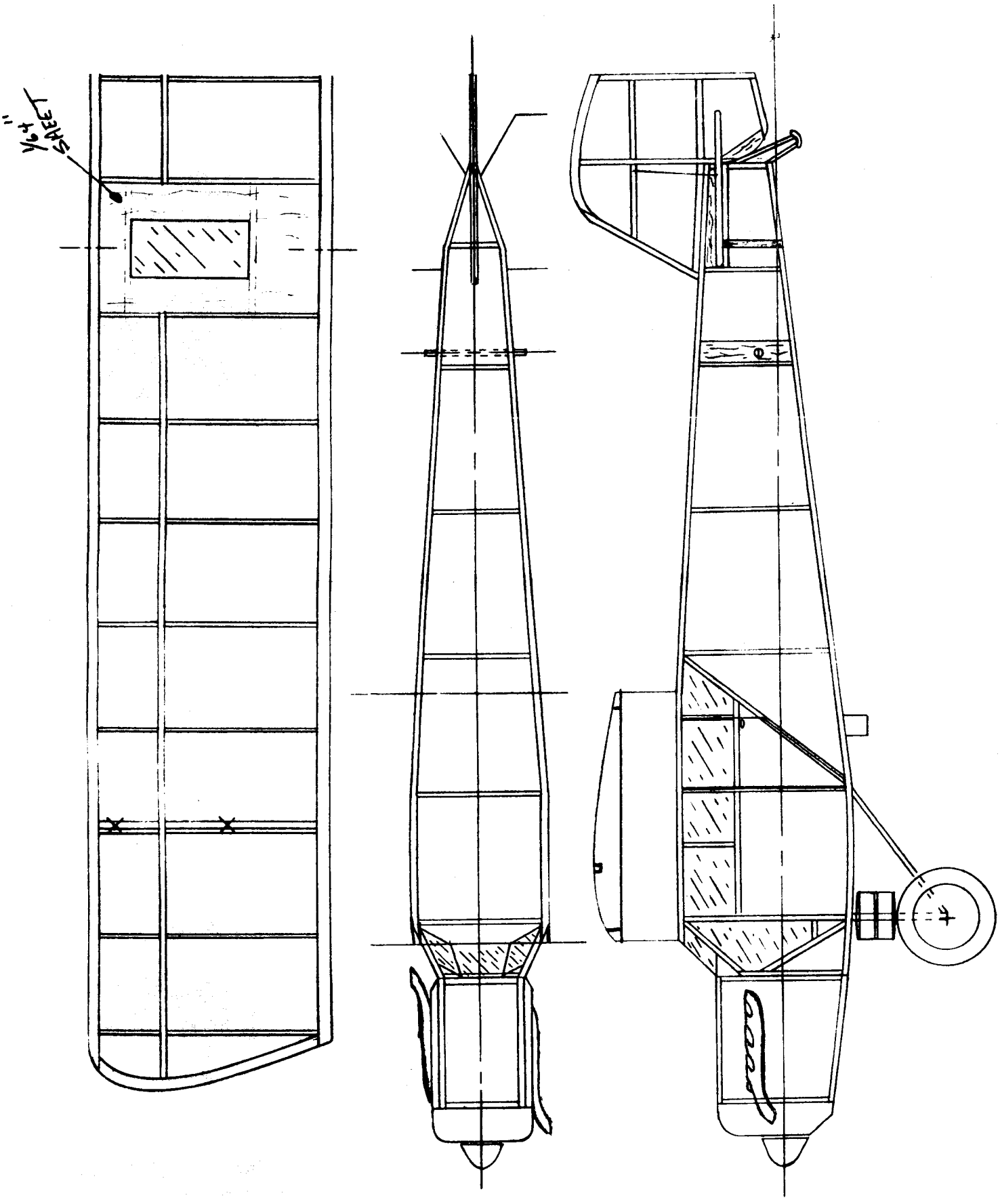
FAC Event Director
Dean McGinnes 5275 William Clark Rd. Lakeland, FL 33805
(813) 858-7579 or 665-9001







CURTISS ROBIN
PEANUT SCALE
BY STEVE HALES

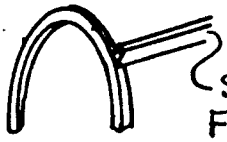

1/4" SHEET

10. * * MYLAR COVERING NITTY GRITTY * *

MUMBO JUMBO #18 FROM THE GLUE GURU (AKA LEON BENNETT)

A

Structure strong enough to take tightening pull? These are OK:

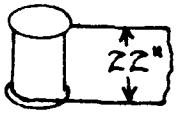


Stringers $\frac{1}{16} \times \frac{1}{8}$ Med. Former every 2 Inch.

Laminated tail or rudder outline – 3 Layers $\frac{1}{16}$ soft ($\frac{1}{32}$ will not do)

Box fuse. $\frac{1}{8}$ Sq. Med. – cross members every 3 inch or less

B



$\frac{1}{2}$ Mil Mylar comes in roll form. Sold by yard. Buy from:

(a) Commercial plastic supply
(b) Kite supply
(c) NFFS

Model supply houses do not carry.

C

You also need:

GLUE – oil based contact cement, such as Formica brand.

THINNER – dope thinner or acetone (cheaper) work equally well.

GLASS JARS (2) – large with tight caps.

BRUSH – retired paint brush that fits entirely inside glass jar.

RAZOR BLADE (new) – to cut mylar. Scissors won't work.

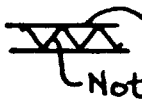
IRON. Buy one genuine heat shrink iron. Your wife's iron is too big.

D

Prepare Jars like so:

Keep brush in "thinner" jar when not actively gluing. Prevents brush bristles getting stuck together.

E

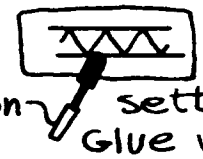


Brush thinned glue around balsa perimeter. Wait 10 minutes. Apply second coat. Wait 20 minutes. Glue should be dry with slight tack.

F

Lightly drape structure with oversize mylar. Work out wrinkles. Take your time. Ignore baggyness. Remove and replace mylar until satisfied.

G

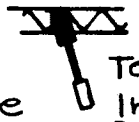


Run iron (medium setting) around perimeter. Glue will melt and grab mylar. Apply light pressure as you go. Do not tighten mylar – ignore baggyness.

H

Razor off excess mylar, just like tissue. Ignore baggyness. Finish all sides.

I



To remove baggyness, slide iron (medium setting) over all faces as a first pass. Then do a second pass more slowly and thoroughly, etc. Always balance off tightening so as to minimize distortion.

J

For stubborn wrinkles, increase temp to 3/4 max. Heat not only wrinkle, but entire local area. Except for overlaps at the glue line, any wrinkle will come out.

At max temp, you may melt mylar. Do not use max. temp.

K

OK Paints { Pactra Polyurethane, Black Baron Epoxy

MORE MYLAR NITTY GRITTY

(TV's own Mike Malice interviews GG)

MM: Say, you're not going to hit me, are you?

GG: I deeply regret striking you at our last interview. It will not happen again.

MM: That's better. OK, let's begin. You seem vague about suppliers. Where did you get your half mil mylar?

GG: Industrial Plastic Supply, 309 Canal Street, New York, New York 10013. Price about 2/3 that of good tissue.

MM: Why don't model supply houses carry it?

GG: My guess is that there are but few potential customers. Mylar is not suited for lightly built ghost ships or for those who subject their models to the "car trunk on a scorching day" treatment.

MM: Why are lightly built models precluded?

GG: Unless the construction is sturdy, tightening distortion can be serious.

MM: But doesn't this rule out all rubber scale?

GG: No. In Jumbo, only tail and rudder surfaces offer problems. By progressively pinning, tightening, flipping, pinning, tightening, etc., it is possible to do a wrinkle free job on even fairly light tails.

MM: It sounds to me as though it's easier to work with tissue.

GG: (through clenched teeth) It is easier to obtain a wrinkle free finish in Mylar than with tissue, given adequate structural stiffness.

MM: Well, that's your story. Now let's move on to the "car trunk" problem.

GG: I suggest a hatchback (no trunk) with the air conditioner on at full blast.

MM: How bad is the heat sensitivity problem? Is mylar really a practical material for summer contest work?

GG: The problem is real. One can expect to pick up a couple of wrinkles on a very hot day. Such wrinkles will automatically vanish as soon as the model cools off. I find this acceptable and certainly better than dealing with tissue on a damp day. However my experience is highly biased - most of my flying is done in cool and extremely damp conditions. Those who fly at Taft (hot and dry) may view the tissue vs. mylar trade-off differently. Reports from Southern California on mylar are frequently negative.

MM: Can you really fly in rain with mylar?

GG: Yes. The rain acts to reduce climb by a few feet, and the drumming noise is a bit startling, but aside from keeping the lube from washing away while winding, there are no other problems.

MM: Only a nut would want to fly in the rain - why do you?

GG: Mr. Malice, I would remind you that I have volunteered to answer a few simple technical questions. Human behavior is not my area of competence. Address such questions to Mr. Mark Fineperson.

MM: Why are you avoiding the question?

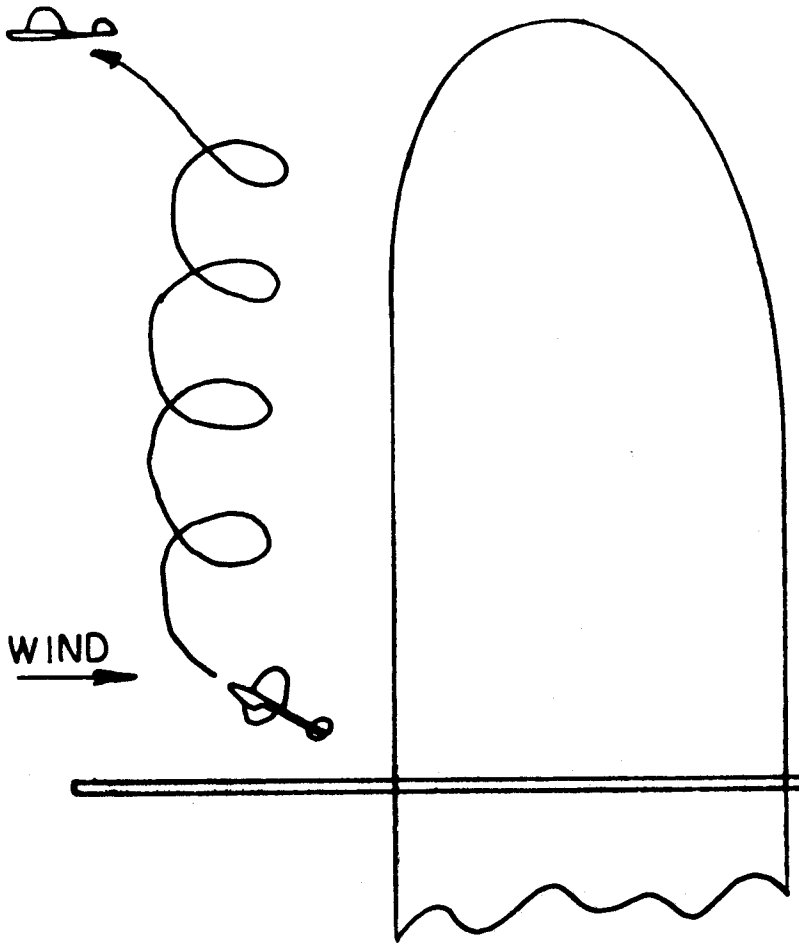
GG: (becoming excited) How would I know why it is necessary to fly in rain? Such is the manner of contests!

MM: You mean the object is to win a contest? But you never win anyway, rain or shine. If it starts to rain why don't you just leave? For that matter why do you bother to show up?

GG: Argggh. One more impudent rascal! Take this!

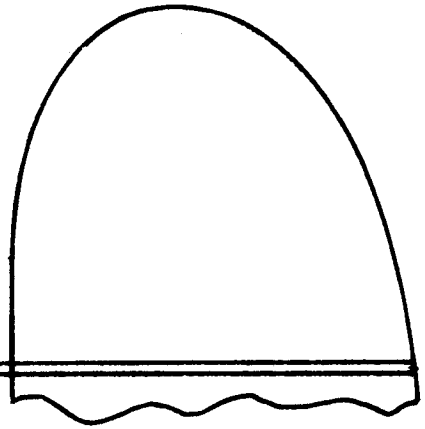
(The transcriber reports obscure bumping noises and shrill cries as the tape ends.)

HECTOR, THE THERMAL DETECTOR
CATAPULT GLIDER BY
TONY FARANDA (5/84)



MAKE IT STRONG - DOUBLE CEMENT ALL JOINTS.
MAKE IT SMOOTH!

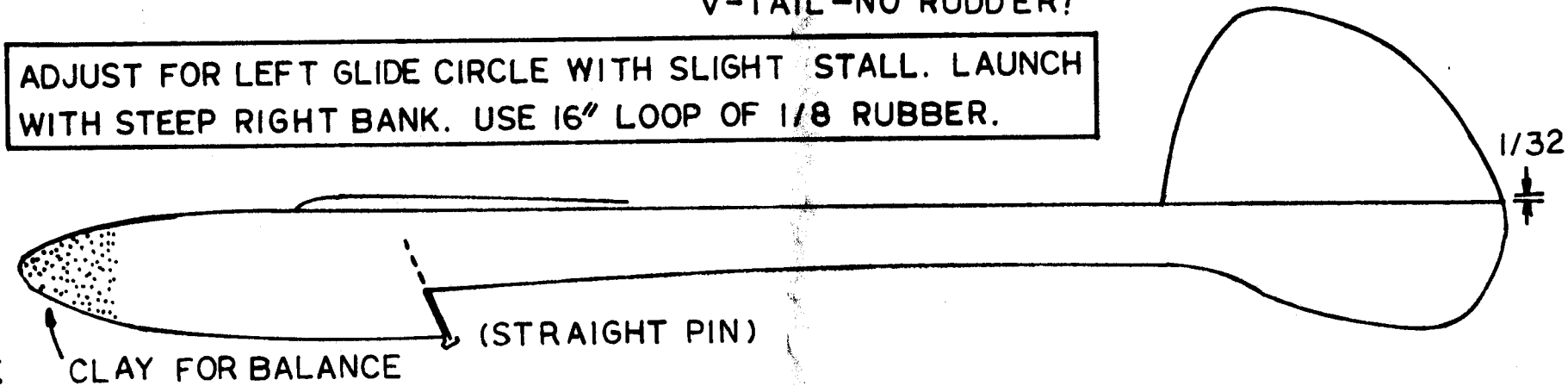
DIHEDRAL:
WING 1-1/4"
STAB 7/8"



WING, FUSELAGE - 1/16 HARD
STAB - 1/32 HARD
'V-TAIL' - NO RUDDER!

NO RUDDER!

ADJUST FOR LEFT GLIDE CIRCLE WITH SLIGHT STALL. LAUNCH WITH STEEP RIGHT BANK. USE 16" LOOP OF 1/8 RUBBER.



Plan	Plane
A1	Acme Model 21
A2	Advance Aircraft "Sport Waco"
A3	ASC Primary Trainer
A4	ASC Mercury Kitten
A5	Aeromarine Klemm Monoplane
A6	Aeronca C-3
A7	Alexander Eaglerock Bullet
A8	Alliance Argo
A9	American Airplane & Engine Pilgrim
A10	American Marchetti S-55
A11	American Marchetti S-56
A12	American Marchetti S-62
A13	American Eagle A-129 (Kinner)
A14	American Eagle A-129 (OX-5)
A15	Amphibions, Inc. Privateer P-3B
B1	Bellanca Airbus
B2	Bellance Skyrocket
B3	Boeing 40-C Mailplane
B4	Boeing 80 Transport
B5	Boeing 95 Mailplane
B6	Boeing B-1E Flying Boat
B7	Boeing F3B1
B8	Boeing F4B1
B9	Boeing XP-7 Pursuit
B10	Boeing Y1B-9A Bomber
B11	Boeing Model 247
B12	Boeing P12-F/F4B-3
B13	Boeing F4B4
B14	Boeing XF6B-1 Fighter
B15	Boeing XP-936 Pursuit (P26)
B16	B/J XFJ-2
B17	B/J OJ-2 Observation
B18	B/J Y1P-16 Pursuit
B19	Buhl CA-3C Sport Airsedan
C1	Chance Vought V-65
C2	Chance Vought O2U-4
C3	Consolidated XPY-1 Flying Boat
C4	Curtiss Fledgling (Challenger)
C5	Curtiss Fledgling N2C-1 (Wright)
C6	Curtiss Falcon Mailplane
C7	Curtiss Hawk P-3A Pursuit
C8	Curtiss XF8C-2 Fighter
C9	Curtiss XP-934 Swift
C10	Curtiss F11C-2
C11	Curtiss P6-E
C12	Curtiss F9C-2 Sparrowhawk
C13	Curtiss O-39
C14	Curtiss YO-40 Raven
C15	Curtiss YA-8 Shrike
C16	Curtiss-Wright T-32 Condor
C17	Curtiss-Wright King Bird
C18	Curtiss-Wright Osprey
C19	Curtiss-Wright Speedwing
C20	Curtiss-Wright Model 16-E
C21	Curtiss-Robertson Robin

ORDERING INFORMATION

First, please note that PLANS ARE SENT FLAT, NOT FOLDED. (Sorry we couldn't send your "free sample" plan that way, too!)

1. Price is just 50¢ per plan.
2. Minimum order: 10 plans (five bucks).
3. BREATHTAKING BONUS! Order $10 worth and pick 2 free plans ... $15 orders get 3 free plans ... any order $20 or more gets 5 free plans. Just be sure and tell me which plans you want as your free bonus.
4. Checks, money orders OK. For your own protection, don't send cash. Sorry, no credit cards. (This is a cottage industry, and the cottage cat can't stand the clatter of those imprinters.)
5. Please add 10% for First Class postage.
6. Order by PLAN NUMBER and PLANE/ENGINE NAME to be sure you get what you want.
7. Please make checks/money orders payable to "Jack Little". (Average bank teller thinks a "hangar" is something her husband never puts his coat on.)
8. Address your order (you are going to order, aren't you?) to:

THE LITTLE HANGAR
1414 Brewster Avenue
Redwood City, CA 94062

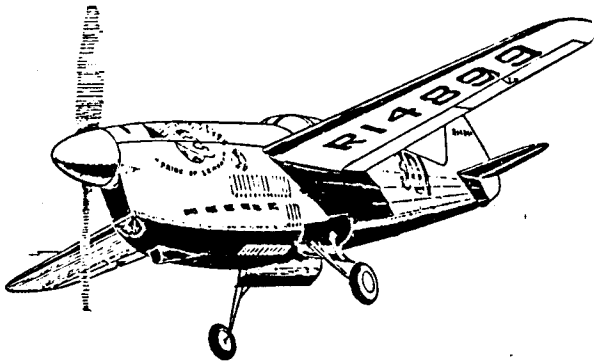
MORE TO COME ...

This first batch of plans mostly came from long out-of-print editions of Aircraft Year Book, published by the Aeronautical Chamber of Commerce of the U.S. These are, surprisingly, unfamiliar to many buffs and dog-gone hard to find. Additions to this catalog will come from that source and a number of other nooks and crannies. So ... stay tuned to this station.

the little hangar

CATALOG

SEPTEMBER 1985



Three-views of classic and rare aircraft, two-views of aircraft engines, odds and ends of aviation nostalgia and reference material for buffs and modelers from an old-timer's musty, dusty files and scrapbooks.

the little hanger
Jack Little, Proprietor
1414 Brewster Avenue
Redwood City, CA 94062
U.S.A.
(415) 365-6771

E1	Elias EC-1
E2	Elias EC-3 Airmobile
F3	Fairchild 21 (Low wing)
F4	Fairchild 41
F5	Fairchild 71
F6	Fokker "Universal" Transport
F7	Fokker "Super Universal"
F8	Fokker C-2A (Trimotor)
F9	Fokker F-7 (Trimotor)
F10	Fokker F-10 Transport (")
F11	Fokker F-11 Amphibian
G1	General Airplanes Aristocrat
G2	General Airplanes Surveyor
G3	General Aviation YO-27
G4	General Aviation Model FLB ?
G5	Great Lakes 2T-1A
G6	Great Lakes 2T-1E
G7	Great Lakes "No. 1"
H1	Hamilton "Metal Cabin"
H2	Hamilton "Metal Cabin Seaplane"
H3	Huntington Model 11
I4	Ireland Amphibian
K1	Kellett K-3 Autogiro
K2	Keystone K-78 Patrician
K3	Keystone B4-A
K4	Keystone O2L
K5	Keystone OL-9
K6	Keystone Commuter
K7	Kreider Reisner C-5
K8	Kreider-Reisner Fairchild 22
K9	Kreider-Reisner Fairchild 24
K10	Knoll KN-1
K11	Kreutzer 36-CLM Air Coach
L1	Lockheed DL-1 (Vega)
L2	Lockheed Orion
L3	Lockheed Altair
L4	Loening Air Yacht Amphibian
L5	Loening Duckling
M1	Mahoney-Ryan B-5 Brougham
M2	Martin XB-907 (B10)
M3	Mono Monocoupe (Velie)
N1	New Standard GD-24 (Hisso)
N2	New Standard GD-24 (Wsight)
P1	Pitcairn Mailwing
P2	Pitcairn Super Mailwing
P3	Pitcairn Fleetwing II
P4	Pitcairn PA-8
P5	Pitcairn PA-19 Autogiro
P6	Pitcairn PA-18 Autogiro
P7	Pitcairn PCA-2/3 Autogiro
S1	Sikorsky S-38
S2	Sikorsky S-40
S3	Sikorsky Amphibian
S4	Spartan C-3
S5	Stearman Speed Mail (Cyclone)
S6	Stearman Speedmail (Wasp)
S7	Stinson Detroiter
S8	Stinson Junior
S9	Stinson Model U
S10	Stinson Model R
S11	Swallow Model TP
S12	Swift Biplane
S13	Szekelt Flying Dutchman
T1	Thaden T-1
T2	Thaden T-2
T3	Travel Air 4000
T4	Travel Air 6000
T5	Travel Air A-600-A
V1	Vought 024-2
V2	Vought Corsair (Biplane)
V3	Vought XF2U-1 Fighter
V4	Vought FU-1
W1	Waco Model A
W2	Waco Model C
W3	Waco Model F
W4	Waco Model F2

Plane	Engine
A1	Aeronca E-113A
A2	Alliance Hess Warrior
A3	Axelson (7-cylinder)
B1	Bliss Jupiter
B2	Bliss Jupiter (geared)
B3	Bliss Jupiter (supercharged)
B4	Bliss Titan
B5	Bliss Neptune
C1	Continental R-690
C2	Curtiss R-600 Challenger
C3	Curtiss Chieftain
C4	Curtiss Conqueror
C5	Curtiss Conqueror (geared)
C6	Curtiss D-12
P7	Packard 2A-1500
P8	Packard 2A-1500 (ligter version)
P9	Packard 2A-1500 (geared)
P10	Packard 2A-2500
P11	Packard 2A-2500 (geared)
P12	Packard 1A-2775
K1	Kinner B-5
K2	Kinner C-5
K3	Kinner K-5
K4	Kinner R-5
L1	Lycoming R-680
L2	Lycoming R-680-BA
P13	Packard DR-980
P14	Packard 2500
P15	Pratt & Whitney Wasp
P16	P&W Hornet
P17	P&W Hornet (geared)
P18	P&W Hornet B1
P19	P&W Hornet B1 (geared)
P20	P&W Hornet C
P21	P&W Wasp Jr.
P22	P&W Wasp (geared 5:4)
P23	P&W Wasp (420-550 HP)
P24	P&W Twin Wasp Junior
P25	P&W Twin Wasp
P26	P&W Twin Wasp Junior (geared)
P27	P&W Twin Wasp (geared)
S1	Siemens & Halske Type SH-12
S2	S&H Type SH-13
S3	S&H Type SH-14
W1	Warner Scarab
W2	Warner Scarab Jr.
W3	Wright Whirlwind (5 cyl.)
W4	Wright Whirlwind (7 cyl.)
W5	Wright Whirlwind (9 cyl.)
W6	Wright Whirlwind J-5
W7	Wright Cyclone R-1750
W8	Wright Curtiss Challenger
W9	Wright Curtiss Conqueror
W10	Wright Curtiss Conqueror (geared)
W11	Wright Curtiss Super-Conqueror
W12	Wright Cyclone E
W13	Wright Cyclone F
W14	Wright Gypsy
W15	Wright Whirlwind (5 cyl.)*
W16	Wright Whirlwind (7 cyl.)*
W17	Wright Whirlwind (9 cyl.)*
W18	Wright Two Row Whirlwind

* Later models than W3-4-5

THE "ZERO-SUM SOLUTION"

By Todd Allen

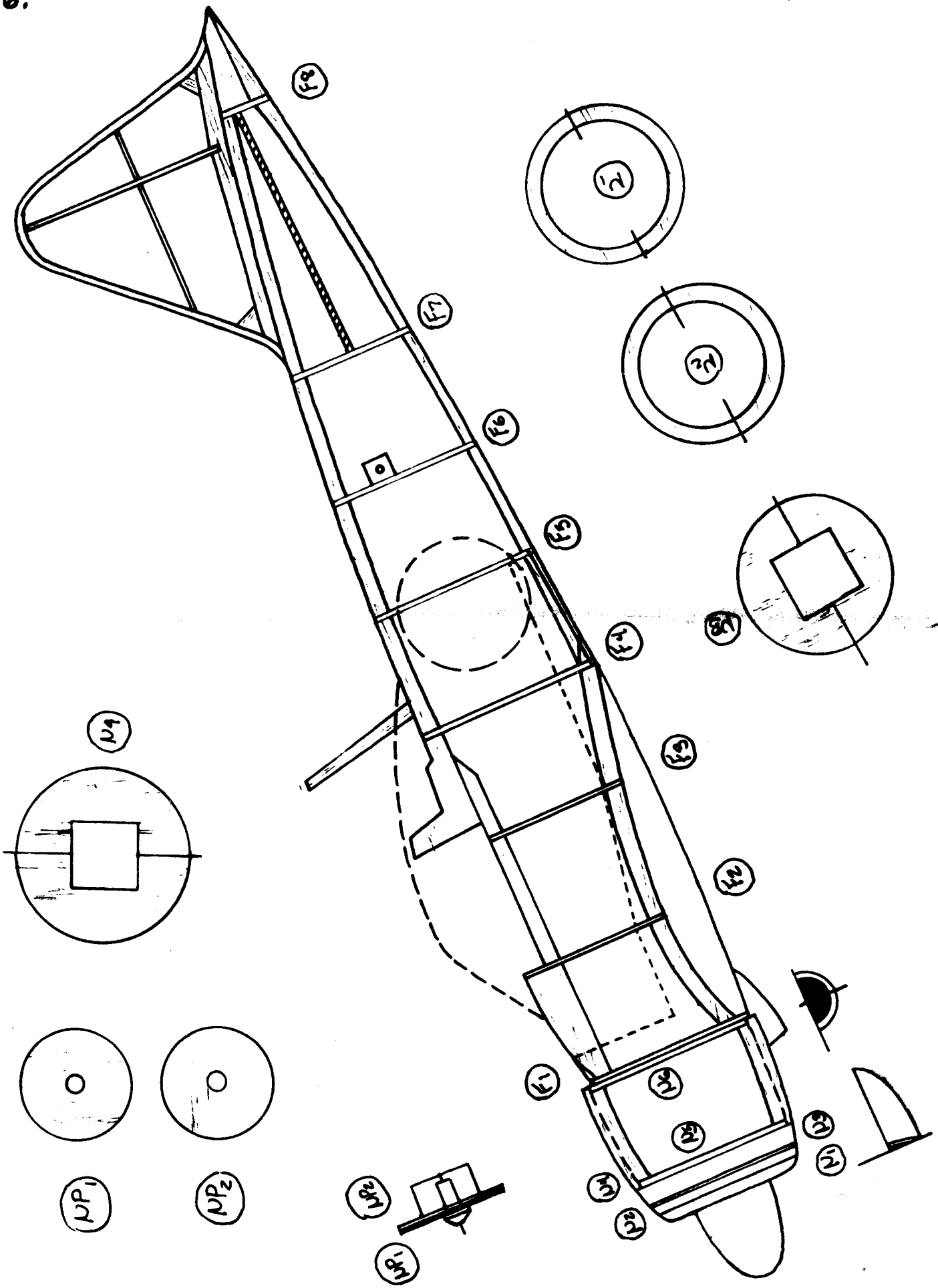
The desire to model a Zero had been previously satisfied: in 1978 a ½" A6M2 from Bob Peck's Model Builder plan had been flight tested. The ship flew well but, like the original, proved to be unsuited to punishing combat conditions. Blown engines and the resulting loss of bulkheads made for a crunchy rice plane and the "coup-de-grace" was delivered when a neighborhood kid, impersonating either a chinese nationalist or a 500 lb. bomb, proceeded to disengage the plane's port wing. Rehabilitation was impossible and plane was written off a year later. However, the lessons learned were well taken: The next Zero-Sen would be stronger, with bulkheads better placed and wings made inseperable from the fuselage.

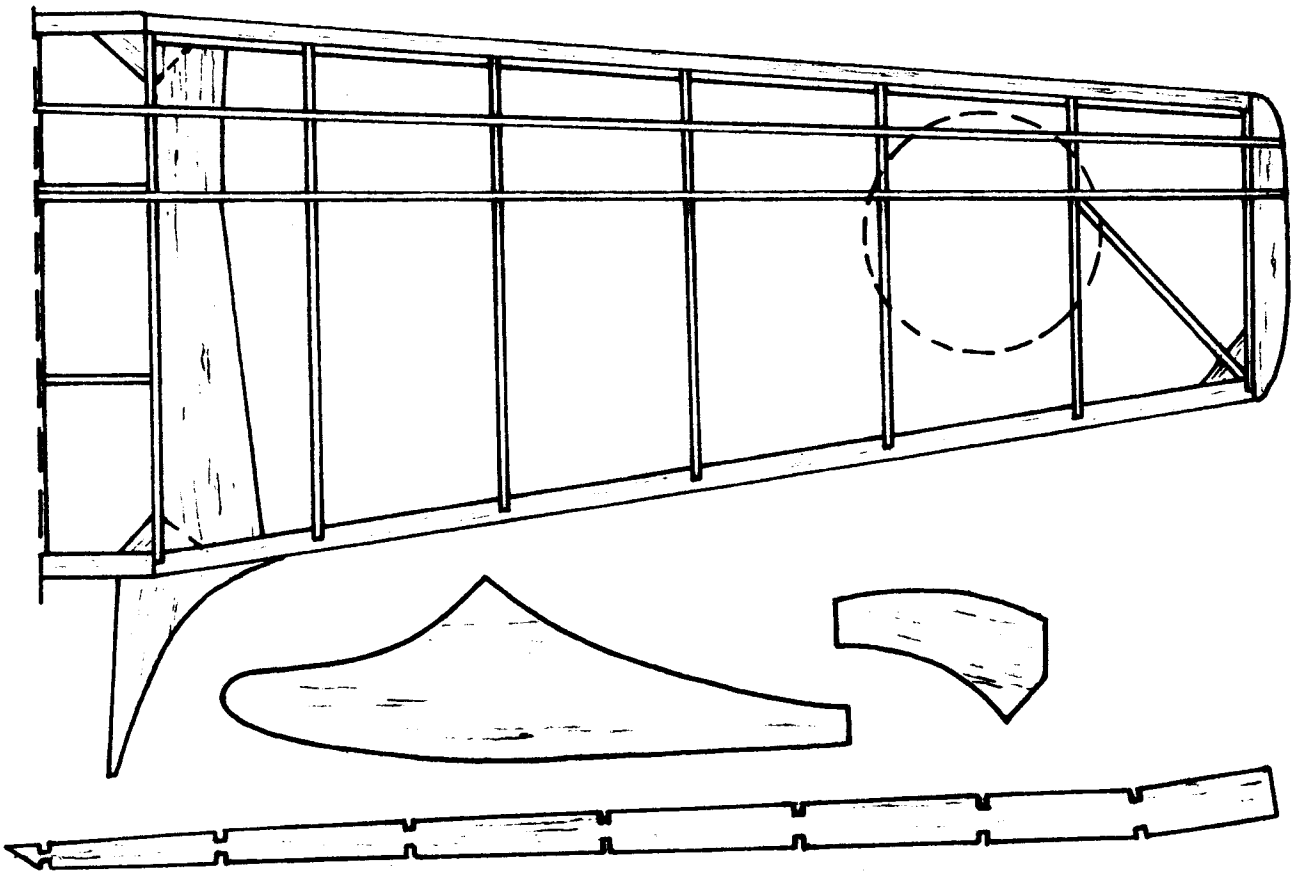
The next Zero would also have to be more accurate as well. Over time, humble builder came to see that Peck's plans were inaccurate. The Zero, as most know, was produced in three major varients: the A6M2, A6M3, and A6M5. The A6M2 and A6M3, model 22, fighters had a wingspan of 39.3 feet. The A6M3, model 32, and the A6M5 Zeros featured a shortened span to 36.1 feet. The fuselage lengths were not altered. This fact was overlooked by Peck: his A6M2 was, upon measurement, really an A6M2 body mated with A6M5 wings. Such treachery displeased both Emporer and yours truly. Efforts to model an authentic Mitsubishi were now given new impetus!

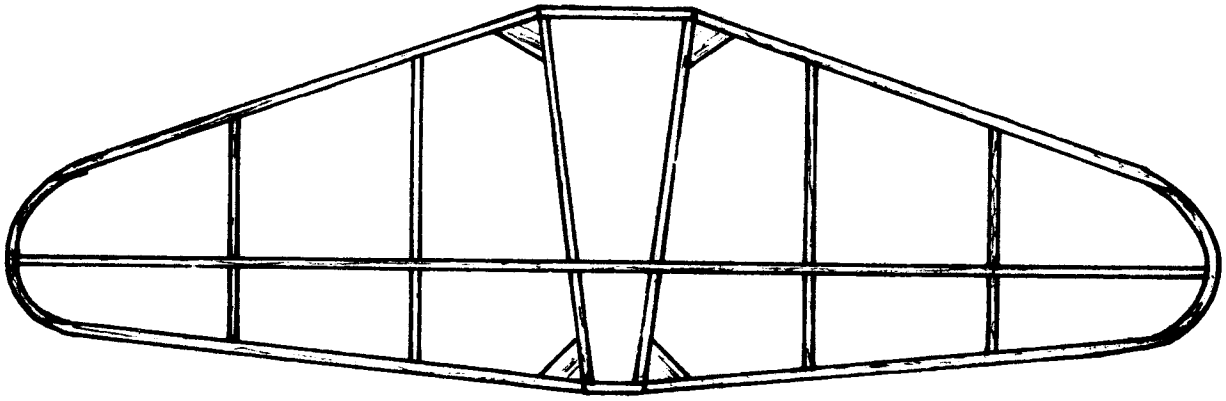
During Christmas, 1982, humble shinto devotee sat down and meditated over both Peck peanut Zero drawings and Profile Publications. The shorter span Zeros were best suited to peanut catagory but A6M5 rounded tips, like loose lips, sank many an airship! I turned my thoughts toward the A6M3, model 32.

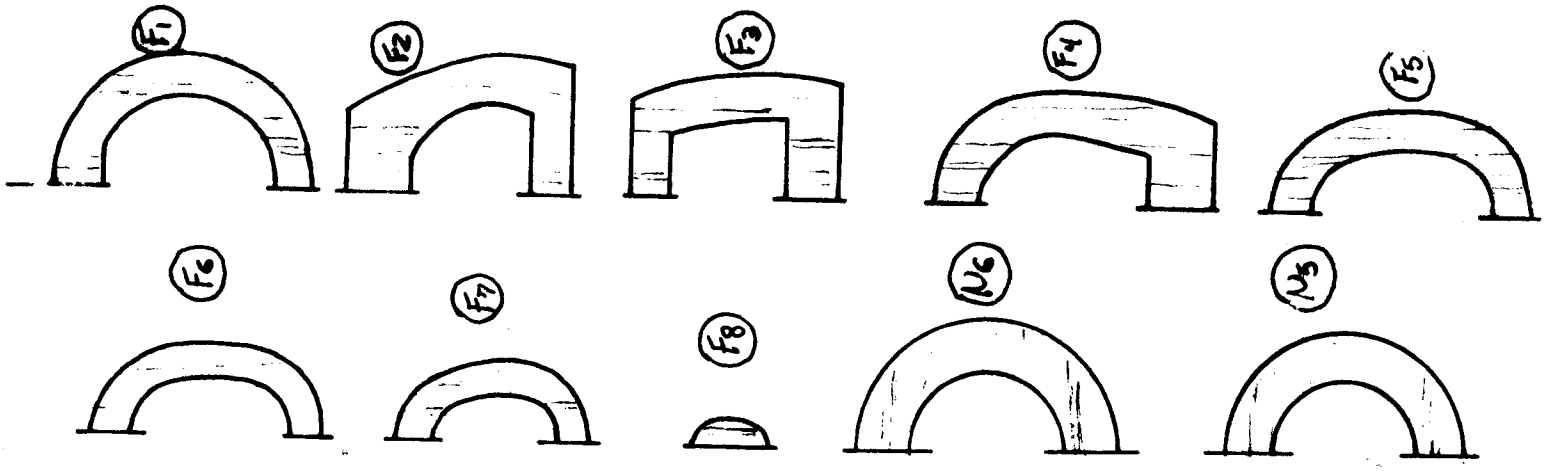
Here was the "Zero-Sum Solution": a Mitsubishi with A6M5 wingspan but square wingtips. Truly, truly this was eastern embodiment of Adam Smith's comparative advantage--the best version that could be built of noble Zero-Sen in chosen size. Brainstorm soon followed. Using the lines of the model 32 provided in the Profile, humble builder set about altering Peck plans. Fuselage was lengthened by nearly ½ inch---a subtle, but important, alteration. Fuselage was also made deeper and wider. Cowl was, at last, given proper bulb shape and rudder given accurate shape. Internal alterations were made as well.

First A6M lost bulkheads too easily aft of wing. This was due to fact that only one bulkhead existed between trailing edge of wing and leading edge of stabilizer to give strength and shape to plane. This was changed: another bulkhead was inserted in this area, moving up rear motor peg in hopes of preventing "falling leaf" flight quality as an added bonus. Wings were accuratly clipped and airfoil made thinner to decrease drag. Lift, however, was increased with drop in dihedral and increase in tip wash-out. "Cracked-rib" technique was utilized. A diagonal cross piece was inserted, along with gusset, in tip area to increase strength and improve effectiveness of washout to wingtip. Eight other gussets went into wing to give strength. An unplanned strong point was discovered when mainspar of wing neatly fit underneath corresponding bulkhead. A cross grained sandwich was made with addition of front plate to this area. A center line wing rib was created with insertion of 1/16" sheet to spaces left by joining wing to body. 1/32" sheet was used to create a base for wing fillet and, in the fuselage itself, 1/16" sheet was utilized in areas bordered by the dotted line on the plan. Bulkheads past wing were cut from very light, but stiff, 1/20" Micro-X wood. Keel was from Micro-X 1/16" sheet as were Bulkheads that went from trailing edge of wing to nose. The nose was built seperatly using two wrappings of 1/32" "A" grain balsa to give nose bulb shape. The thickness of remaining nose rings were 1/16" sheet with one piece from 3/16" sheet that was joined directly in front by a 1/32" plywood former. Two 1/16" rings completed nose forward. A 1/32" plywood backing was also put to the noseplug to make it stronger. A strip of 1/64" plywood was secured to rear motor peg area forward of peg hole. Gussetts and laminated outlines gave strength to rear tail surfaces. All strip stock was carefully selected Micro-X 1/20" wood, save for wing leading edge of 3/32" with trailing edge of stiff 1/8X1/16" strip. The main


VP1
VP2






F1
F2
F3
F4
F5
F6
F7
F8
W6
W5

spar was cut from 1/20" sheet. Wherever possible, wood was joined in "notch" fashion, using only titebond glue. Fuselage bulkheads were given an extra joint of gap-filling Jet, to augment titebond "hold".

Throughout the construction of the model the watchword was lightness with strength. It cannot be said enough that good wood, intelligently utilized, makes, or literally, breaks a model. Great care was taken to keep all constructed surfaces flat and true. This was especially important in the application of washout to the wings. 1/4" blocks were put to both wingtips with the trailing edge kept straight with supports under most of it's length. Each fuselage stringer was fit carefully in place with any gaps in corresponding former filled in to insure a good joint. The care exercised in this last operation has been vindicated in action: I've had two explosions in the body and no damage to formers or stringers. All too often it is a sloppy joint that causes bulkheads to splinter or fall out of the plane entirely. I did not design the model with box construction lines as do so many modelers like Midkiff and Brown. Half-shell is not the strongest, or the lightest, method of making a fuselage, but if properly constructed, it seems most strong. This strength is greatest obviously, with smaller size models like peanut scale.

Without the nose, the Zero was but 6 grams in weight and was by far and away stronger than any aircraft I had previously made. The finished model weighs 15 grams. According to calculations derived from the "GlueGuru" that leaves me with a wing loading of 15/27 or .56 grams/square inch of wing.

The plane was covered using reversed silver tissue. One coat of 50/50 clear dope and thinner was applied to skin for added strength. The cowl was filled with talc and covered with dope 4 times and then given a coat of acrylic paint.

All told, the A6M5 peanut Zero has been a good, stable, performer. Best flight has been a two minute plus battle with a thermal over L.C.C.C. several weeks ago. Calm air flights average around 30 to 40 seconds. I fly my Zero on a loop of 1/8" rubber, 17" long. A 5½" prop, cut down from a 7" North Pacific works best. The only change I'd recommend would be giving the wing a tad more positive incidence. My stab is as negative as it can get to fly my plane.

****

PHOTO PAGE

On the left, top to bottom;
Guillow kit--Albatross DII built by Dick Howard
J-1 Savage built by Dick Howard, flies over a minute!
Tigercat F7F-1 built from plans by Dennis Norman by Dick Howard, also does over a minute! These photos also by Dick Howard.

On the right, top to bottom;
Mike Midkiff's Aichi B7A "Grace", flies like a Wakefield!
Reverand Bill Anderson's great flying Bellanca Aircruiser, pic by Ross Mayo.
Another of Midkiff's axis fighters, the Macchi 202 "Folgore", Mike sent the photos of his two models.

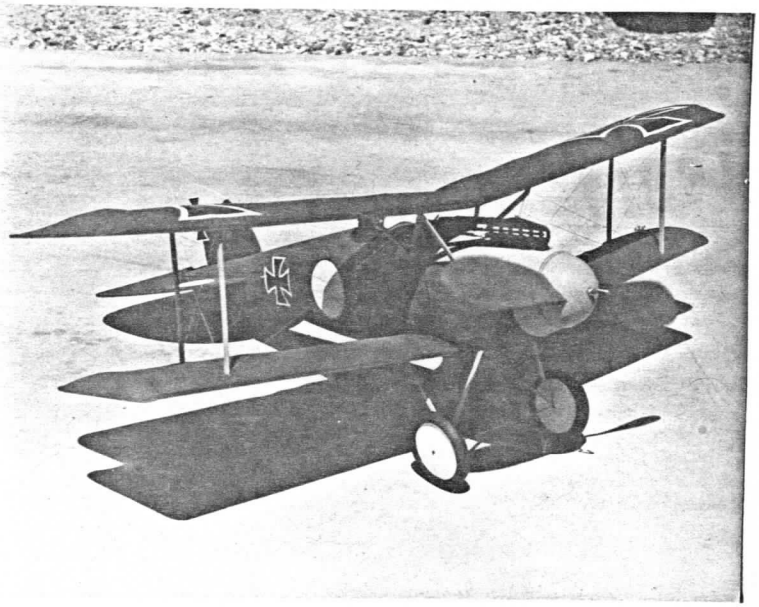
****

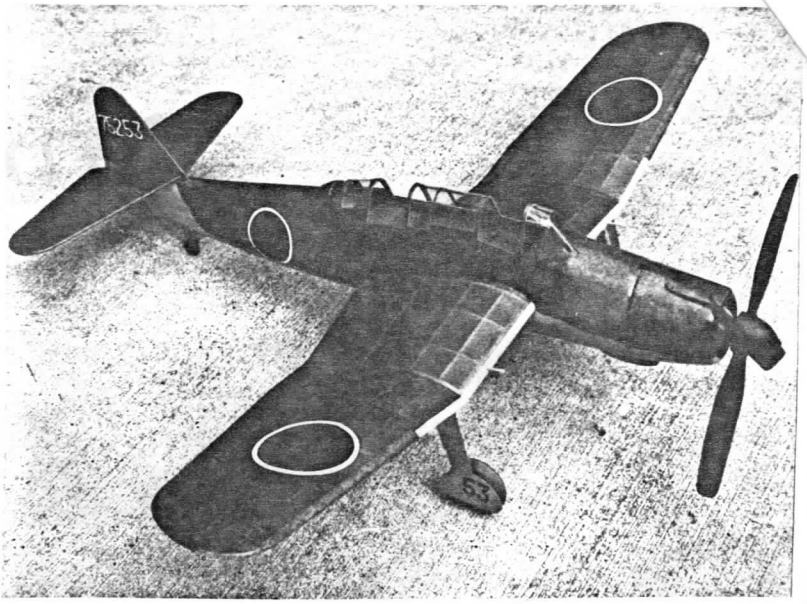
HELP BEAT THE POSTAGE INCREASE

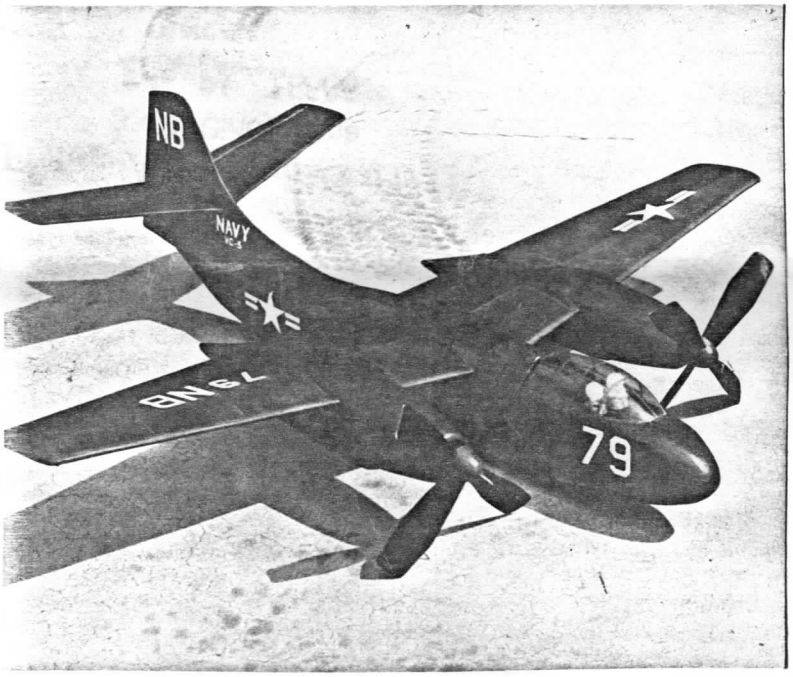
You can help defray the increase in postal rates by ordering one of the souviner plans that we have left over from the FAC Nats Mark IV. The plan is of the Northrop "Gama", it has a wingspan of 36inches and was drawn by none other than our own Pres Bruning. Which means that it is really a top notch plan and you can get one for just four bucks and that includes postage. Send your money to GHQ right away, be the first kid on your block to get one! Haww!

****

****




T253
53


NB
NAVY
BN 6L
79