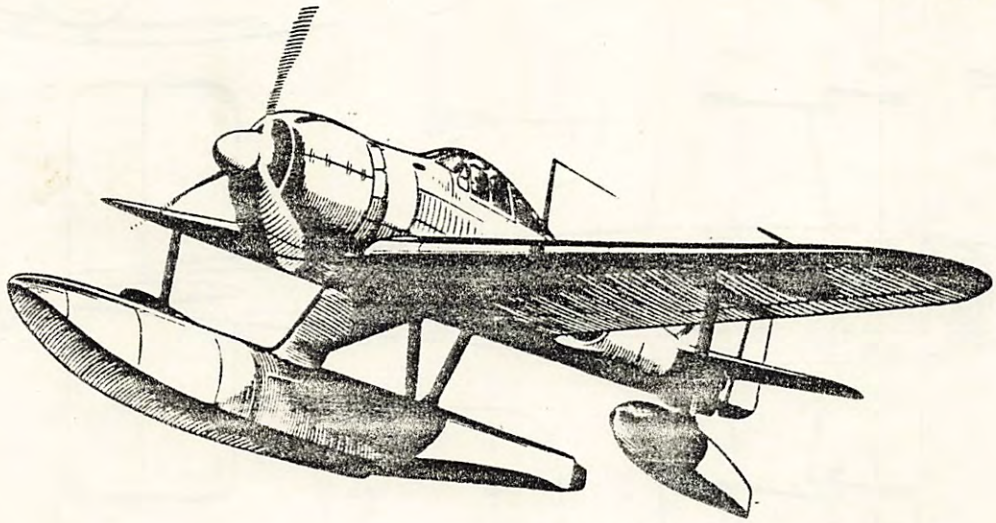
CROSSWINDS

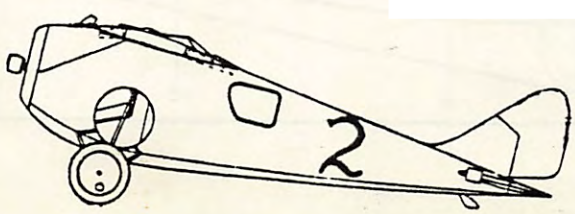
NO. 66 3Q-'82

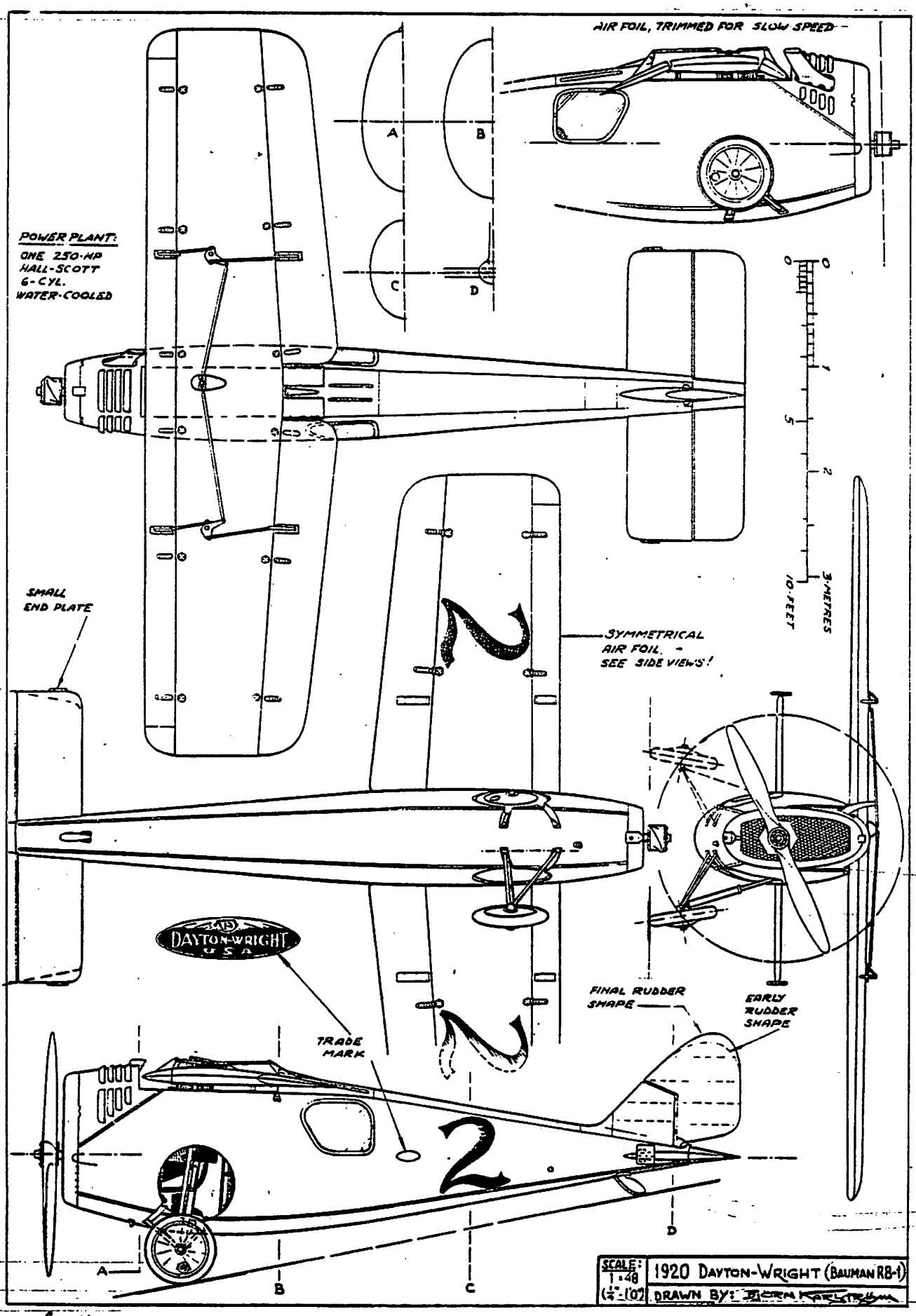


NAKAJIMA A6M2-N RUFE

TRW INC. R M. 2465B
23555 EUCLID AVENUE • CLEVELAND, OHIO 44117







Courtesy
July 1971 AAM

CROSSWINDS QUARTERLY

THE JOURNAL OF THE CLEVELAND FREE FLIGHT SOCIETY

VOL. 9, NO. 3
ISSUE NO. 66
JULY, AUGUST,
SEPTEMBER 1982

EDITOR: MICHAEL C. ZAND
7055 Seven Hills Blvd.
Seven Hills, Ohio 44131
TEL. 216-524-3480

EDITORIAL COMMENT

On February 20, 1983, CFFS will hold an indoor contest at the Estabrook Recreation Center. This is a new site and the location is most convenient. The center is just south of the Fulton Road exit of I-71, very near the Metroparks Zoo.

This issue of Crosswinds will contain information relavant to this contest. Hopefully, the President's Day weekend will enable some out-of-towners to make the trip, the weather will co-operate and this new flying site will be well received. By the way, we will offer fine prizes from first through third place in all events.

For the NO-CAL event I have drawn up the Dayton-Wright Racer. I based the plan on the 3-view in the July 1971 AAM. I believe it makes an excellent subject and I hope that our readers find it suitable for the February 20 contest. I have no proto-type of the model, so good luck!

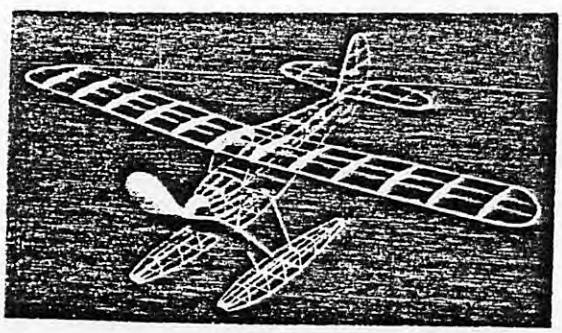
The other plan featured this issue is the Mitsubishi C-00. Here is an interesting subject if CFFS has another hydro activity. Of course use current state of the art construction techniques to improve performance. Speaking of R.O.W. last summer's hydro events at the September 5th contest were great fun. My old Comet Aeronca K hopped right off Lake Hutchan and proved that there there is at least one R.O.W. subject easily available.(K MART)

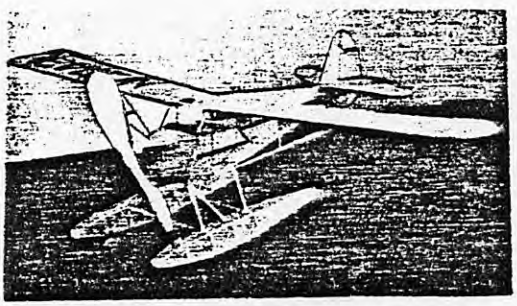
In closing, I pass on to you the following from the CFFS archives:

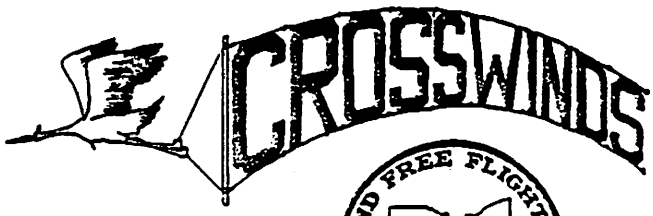
The Cleveland Free Flight Society (CFFS) is an organization of modelers dedicated to the expansion and enjoyment of free flight modeling. Free Flight is the grandaddy of all airplane modeling, and still has a strong following of die-hard enthusiasts. When we fly, it's our plane up there, against the air. No wires, no fancy radio equipment. The quality of our workmanship, plus patience through trail and error make our planes fly.

This last paragraph was written for a flyer that announced an indoor contest seven years ago. It was part of a statement about our club. It went on to say that we have no qualms about driving long distances to fly and that sometimes we would have more out-of-towners at a contest than local flyers. I am hoping for a good crowd at this February meet. Please try and come.

Anyone needing a plan for Scraps or JETCO R.O.G. send a SASE (business size)







66; 3Q, '82

CROSSWINDS
4909 N. Sedgewick
Lyndhurst, Ohio 44124

Russ Brown

Dec 7, 1941+41



FLAT HATIN'

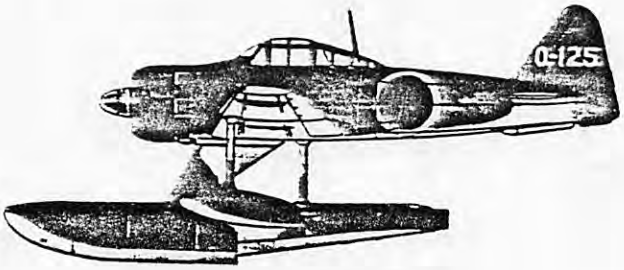
December 7, and by Zanddo we are floating another Newsletter! Coincidentally to this date, Editor Mike Zand offers the FACisinating, if not famous, Nakajima Zero. Not so well known as the Goodrich Blimp, but ever so real in WW II service of Koku tai Imperial Navy. Mike whets our fondness for harpings (bow boards) under the A6M2-N with equal percussion to the musical lure of Harpies on old salts! Light and dry indoor fliers will be tone deaf to this Odyssey on the rocks. We have something for the indoor competitors to work over too.

Editor Mike Zand bravely responds to the task with his first ever drafting study of the 1920 Dayton Wright Racer as a No. Cal Profile Scale model. As you can appreciate with a glance at the plan, Mike has indeed captured the knack on first try! Congratulations Mike, you are now a pro of Pentel Pursuits(Pentel Drafting Pencils). Inspiration for the Dayton Wright Racer Subject is credited to Ross Mayo, who does so well with his Peanut of same. As this Issue firms up for a Jan '83 printing, we got a boot drop from Erie Hellcat Squadron that the Dayton Wright would also be in FLYING ACES CLUB NEWS. Swell! That confirms the subject choice, and gives the builder some ideas to consider. Scale marking detail and some optional tail shapes are over laid on Mikes' construction so the builder won't have to project the scale views. Ink line markings will add much to your representation;Nes Paw? Silver tissue would look right for 1920. The original D.W. RB-1 now hangs around in Detroit -enville, which gives a rotten tint to varnish.

Despite the enthusiasm author Joseph H. Wheery held in July, 1948 M.A.N. for his scale view of a float Zero, Blue Fox Base here is compelled to draft another lcok at the Nakajima A6M2-N. Like Nakajima was directed to rework the Mitsubishi A6M2 for floats, We direct the wet set to Bob Pecks' A6M2 Peanut Scale Kit and/or his WW II 1/2 inch scale MODEL BUILDER PLAN BOOK Zero as visually credible frames to work from. The Peck Poly' Peanut A6M2 kit has a Three view that matches these construction plans. CROSSWINDS will get ZERO comission for kit sales, but hopes for another try for small thrust buttons on the next order.

Squadron Shop is publishing a Zero In Action , due out in 1983. The In Action series has good color profiles, so we will look for this and hope Rufe makes the centerfold. Both PROFILE PUBLICATIONS 129 (out of print) and two SCALE MODELER magazines (U.S.A.) sent in by friend Rex Kay of Alb. NM show Nakajima A6M2-N 3-views. We worked with the Profile 129 to use the bottom view of the float and to reshape the lower fuselage and rudder.

Butchsan Kluiber put floats on the 3/4 inch/ft. kit Zero, and flew it on calm days with a Cox .020 glow motor. Just out by Bob Kress is the reduction gear drive GP-020 to fit on Cox Pee Wee .020 1/4 A motors (Sob! not the Tee Dee front intake type). $19.50 from Kress Technology Inc. at 27 Mill Rd. Lloyd Harber N.Y. 11743. See FLYING MODELS January 1983 for a description by Earl VanGorder. If you fly gas scale, the gear drive offers diesel like or better torque (big 7 or 8 inch dia. props on an .020!) without the dual adjustments of compression screw and needle valve common to hotter running diesels. While you are in FLYING MODELS Jan. '83 issue , gaze fondly at Hurst Bowers 32" span R.W.D.-6 .
Butch finds his gas RUFE hard to fly in rough air. With more prop bite from a geared drive, and heavier nose and prop C.G. move trim, this Gas Zero may fly more aggressively. More Dihedral and a thicker or larger tail plane may be real good aids too. Lobby GHQ for more than the plus 5 second bonus for floats if you want to see more flying in FAC action.

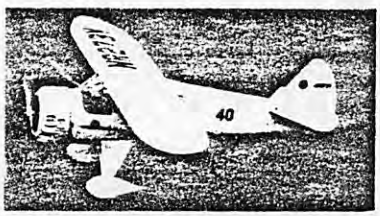


RUFE, TOKO NAG, 1942-1943

Tom Houle sees big red sun spots up in Mequon, Wisconsin as he scales up an A6M to 1"/12", 39.4 inch span Jumbo Scale size. The ice and snow never melts North of Rockford, so Tom won't need floats. Haw-aw-aw-w-w-w.

Another cheery phone call from Humble Texas to Blue Fox Base hooked up the earphone to General Mike Midkiff. The good words from Iron Mike say there is lots of flying space. Active as ever, Mike likes to impress the four letter type fliers with his variety of challenging subjects. The B-25 really blasts 'em! Another Mitsubishi A6M , this one in 3/4 inch (1/16) scale is on the bench. Could we see a second one on floats Mike? Use it to spot Seagulls and Harpies from Vegas. Mikes' big big Curtiss Seagull just may fly East to see(the)New Jersy shipped out and return in an issue of FLYING MODELS.

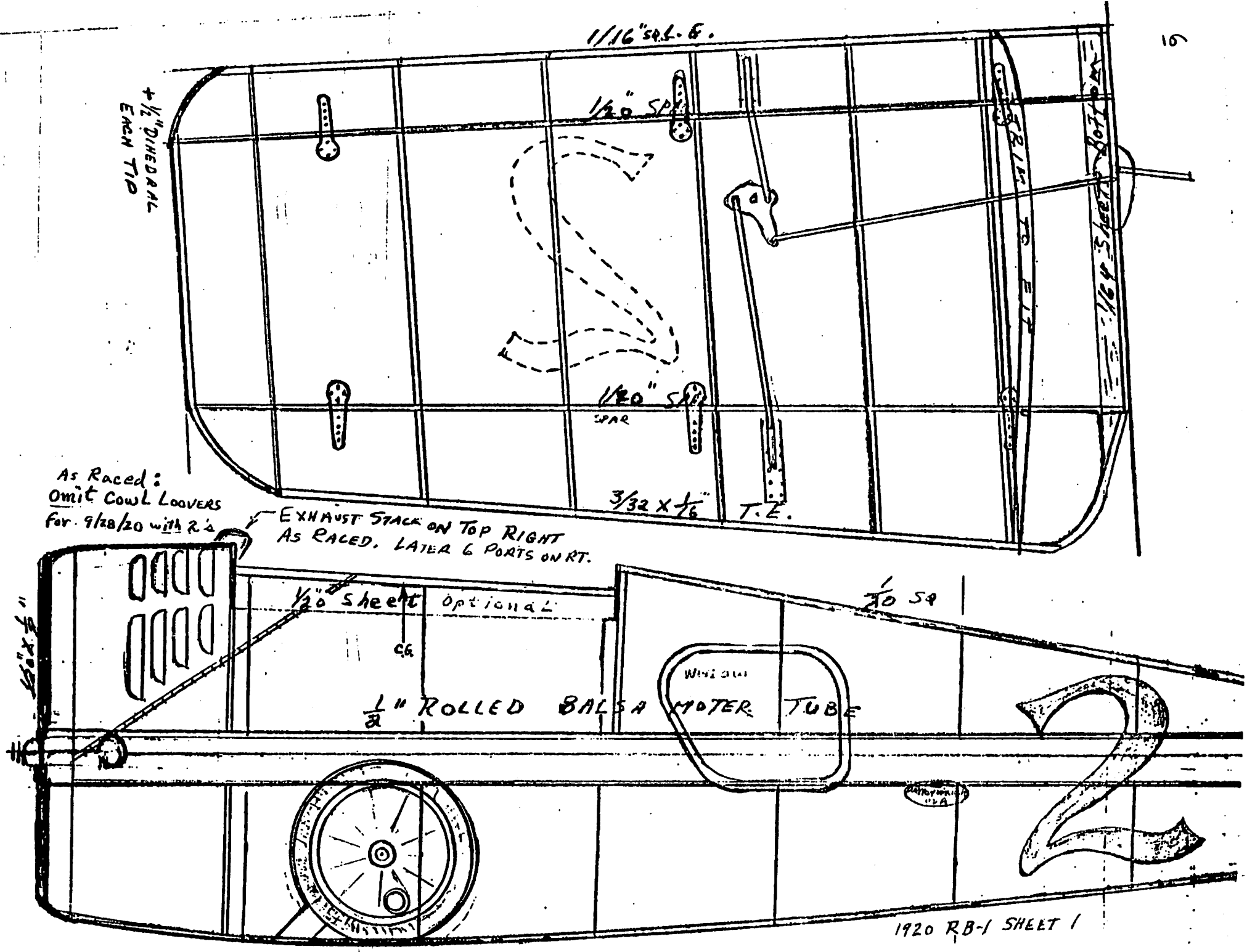
Jumbo growing pains bring us to Glue Gurus' Gila Gild. The opening article ran in Sept.-Oct. '82 FLYING ACES CLUB NEWS, still only $9 from GHQ at 3301 Cindy Lane, Erie PA. 16506. Oh that crafty G G ! Stringing us along in article Two on Punk vs. Rock throws us into a work problem. Gee Gees' gigantomachy gauntlet challenges us with a negative answer. Ah so. He has our attention by the ploy of selecting a DGA class airplane (which probably really pleased him) and running it through his box slip stick. With a wag of our wings, we dive into the lower den to find October 1975 MODEL BUILDER. Leafing through the issue, we marvel at the entertaining stuff that gets stacked away. Mister Mulligan here is a class looker. See the color cover photo of the new Younkin replica on EAAs' Dec. '82 VINTAGE AIRPLANE to fix your affection. Gives me cowl bumps just lookin' at it. Think of it flying!



FRONT COVER . . . From out of the past comes the mighty "Mr. Mulligan" replica built by Jim and Bob Younkin of Springdale, Arkansas. For details on this fabulous racer of the thirties, see story on page 6.
EAA VA.12/82 (Photo by Ted Koston)

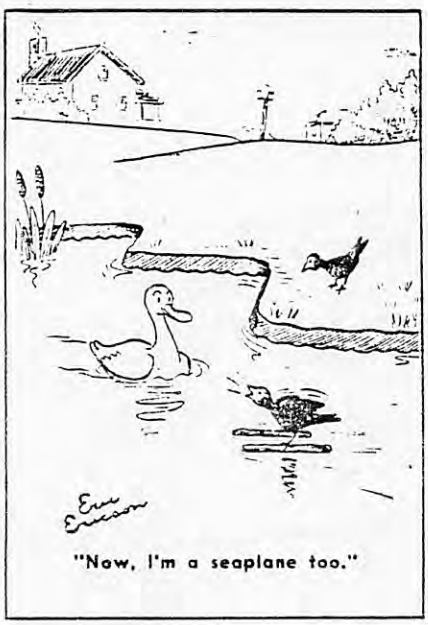
Even as Tom Houle humbly protests dated construction weight, the laminated curves and cowl bumps are greatest lines since Petty Girl Calendars. Oh the legs! Like Petty, maybe the legs are a bit much on the Mr. Mulligan Jumbo. Landing is the last thing we point for, so lets start thinking weight reduction there. The gear can barely support at rest, as with the giant rubber scale Moth Minor to the East with shakey legs in air. A smaller dia. wire with U bend end plug in gear (like a Debut Embryo Endurance model) in a Ply box slot may save lots. And One pound foam is lighter than 8 lb balsa if you can stand to use it. Think on that for non stressed wheels, pants, and under wing strut fairings. Use of foam may require dust paint -ing or water base Poly S type paint. With 1/32" sheet window panel fill in place of 1/8" sheet, and 1/32" sheet verticle wing spar webs out to the wing struts, we get a lighter frame. The 1/16" plywood spar comes out with balsa verticles.

Sorry if you don't have the plan to follow this chop by chop. With complete wing tip shape laminations, and lightening holes or cracked rib construction, we just may get in under Toms' 10 oz. design weight. Run that through Glues' specifications: 280 grams plus 80 gm rubber, or 360 gm per 492 squares (3175 cm sq.) is .73g/in sq. (.113 g/cm sq.) Voila! That can break the 20 sec. barrier. Now possibly the same motor weight as 12 strands by 40 inches will fly the 56" Mr Mulligan, for a longer prop run. Able designer Tom Houle agrees with Glues' weighty analysis goals , but observes there is more to Mr. Mulligan than density theory. Tom sez " There are plenty of FF scale afficionados who fly solely for their own amazement. I happen to be one ot those. I typically select a FF subject because I like it, its a challenge to recreate in stick and tissue and hpoefully it will be flyable.
I do not select my projects strictly on their contest records and wing loading. If I did, all I'd build would be Fikes and Lanzo Puss Moths. I like to think I have progressed beyond the elementary building and flying skills required for such. For me the challenge lies in building and flying more esoteric stuff like the OV-10, F4U, A6M, FW-190, etc.



1920 RB-1 SHEET 1

1920 DAYTON WRIGHT NO. CAL.
16" NO. CAL. PROFILE SCALE:
CROSSWINDS
1920 DAYTON WRIGHT RB-1 LPM.
BY MIKE ZAND 11/82
BALSA OUTLINE
RACED 9/28/20 WITH HIGH TIP RUDDER
1/32 X 1/8" WIDE SLOT
SUPPORT FOR STAB.
1/32 SHEET
1/32 SHEET
FACED 9/28/20 WITH BLACK 24 OZ ALL SILVER FABRIC OVER WOOD.
1920 RB-1 SHEET 2





RUSS BROWN
BLUE FOX BASE
4909 NO. SEDGEWICK
LYNDHURST, OHIO 44124

Even a Mr. Mulligan has much more appeal than a Fike!

And if they don't do that well initially, wel isn't that impetus to lighten, try a new motor/prop combination, or maybe even build a whole new and lighter counterpart? I can remember when no one built twins because they didn't fly, much less compete. Not true today." Well said! A thousand words is worth a Mulligan. Nes Paw? By now fanciers of Great white Jumbos may be scrambling to double up their Sig Kits to 40 inches or even want to go all the way To Mulligan Heaven (in California). Ask Anita and her friends at MODEL BUILDER Plans Service, 621 West 19th St. Box 10335 Costa Mesa, CA 92627-0132 to send you the 56" Mr. Mulligan Plan 10752. $4.50 and add .50 for the list.

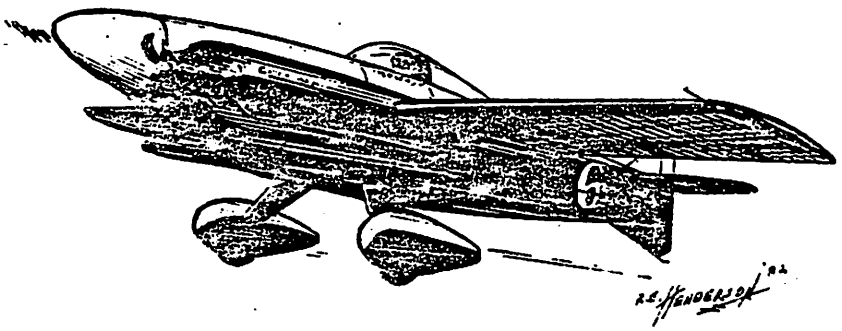
In Mini-so-so Iceland, where the Bong Eagles nest, we have FF scale enthusiasts but not much word of FAC event flying to earn promotions on the Kanone list. No wonder no winders! Yet another Mr. Mulligan (Mike) in California has consumed (et up) all the contest rubber for Milwaukee sector! Took the tissue and plans too; but didn't get Tom Thumbs' tracings. Toms' Schoolyard scale plans are timbered up for gas, but otherwise offer usefull Jumbo size outlines for the over 30" biplanes or 36" monoplanes. We leave it to the builder to add (carve) lightness (.75 gm/ in. sq.) to the shape of his or her choice.

Lets investigate up North. Sparing no expense, we have ordered Regia Aeronautica Squadron 362ª under the command of Tenente Ricardo Bennetto (agent # 2005) to the Mid West Theater. Now #2005 will occupy Rocka-Forda, Il. between the Chi mob, and South of the frosty mugers, where there may well be enough intrest for mass launch and Jumbo FAC action. Bon volante amigo #2005. Is Jumbo too much for the Chicago Mob Charlie? Lets see what goes up at Bong and the Canada Nat's in 1983.



INDOOR ADO

The high end of the loading beam is inside the hangar. Lets ease inside with Larry Loucka and see what's up. Strangely, many admire the majestic dignity of man made spiders flying on webs, but are timid of the bite. "I can't hack it that fine" is the feeble peep of the chicks. Even big jet drivers like Erv Rodemsky fly light , long, and slow; so can the home study graduates of the brick and tissue scale kit school! Adobe and stick builders will do well to adsorb Larrys' expose by selective page placement on the workbench chair. Think of all the liquid adhesive left over when you stick covering on with micro dots of Strohs Beer. We're frothing at the mouth, so let's pick out some light balsa and see if Loucka is right about a lot less to building Indoor than meets the eye. Aye, have at it hackers. Indoor at West Baden is SOON, June 12-19, for perhaps the last chance to be there at Northwood Inst. The site is a historic treasure of Indiana; nice place for a model airplane Hall Of Fame?



Miss Cosmic Wind

CROSSWINDS Miss Cosmic Wind plan was shy on size and light of line on the wing sheets. Not at all what we expect. Even as the issue went out, a dash for the drawing board replaced the missing ribs. With a double 2% enlargement on a Panasonic copier. we can offer a 15½ inch #4 & 13 inch #6 plan free on request at Blue Fox Base.

Black tissue from Japan for A6M cowlings or Miss Cosmic Wind may be available at $.40 per sheet from the previously confused Mr. Mulligan location at Oldtimer Models P.O. Box 913 Westminster CA. 92683. YES MIKE is in California with all of Milwaukees' rubber strip.

CROSSWINDS '82 fourth quarter will end with issue #67 out next . We remain pleased to hear from you and accept material and $10 type contributions. NOW is the time to test addresses on the extensive distribution. A new mailing list will be set for 1983. If you want on it, please do check in if we haven't heard from you in '82 (name tag code 64-67). Thank you. RSVP to Russ Brown, 4909 N. Sedgewick , Lyndhurst OH 44124 U.S.A.

Most regretfully we observe the loss of model friends George "Toot" Meyer and Ohio Old Timer John Peck, along with race plane fliers Gordon Israel and Rod Nimmo.

AIRCRAFT SPOTTER

AMAs' MODEL AVIATION Jan. 1983 lifts the lid off Count Pisannas' one holer Lee-Richards No. 3 flying electric washer. Plan No. 396 is $3.50. Much, Much more. MODEL AVIATION has so much good material,we just don't even mention it here. As the AMA magazine, most of the active fliers already get it. Overseas subscriptions are $24 per year from MODEL AVIATION 815 Fifteenth St. N.W. WASHINGTON D.C. 20005 U.S.A.

MODEL BUILDER is of course consistently good with FF and FF Scale coverage. The Weak Signals Trade show is a good time to subscribe and maybe get the FLYING SCALE WW II book.

FLYING MODELS Feb. '83 Back in with another good FF coverage issue. Alternating feeds from Larry, Curly and Moe share the spotlight. No kidding these guys have their act together. This month Don Srull offers the nifty pale blue and tan Gloster Gannet in 21" span rubber scale. So neat, even the builder makes a good prop. Order plan CF-622,$4.00 under the CO_2 FF list! Maybe they saw the exposed cylinder heads. or do know what is good for CO_2 power? Carstens Publications, Inc. is at P.O. Box 700, Newton New Jersey 07860. In the same Feb. issue. Dave Rees installs windows and Earl VanGorder flies about for Fledgelings.

SPORT AVIATION Dec.'82 from EAA shows war birds, text on the Kelly D bipe, and the polished metal low wing Hummel Bird powered by 1/2 cut VW built by CROSSWINDS reader J. Morry Hummel by reworking a Windwagon design. Hums along at 105 mph for 3 hours on auto gas at 25 hp. The 1/2 VW and Don Srulls' Gloster Gannet above full size would be a good pair Too Morry. Visions of replica Bristol Cherub aircraft powered by a 1/2 VW flash by : The many Lympne Trials light racers, 1925 Powell racer, and Heath Babby Bullet. Easier said than done!

AIR CLASSICS Feb. '83 splashes Dago Red all over the cover. This slick Mustang winner at the '82 Reno Races is clipped and chopped like Sumptin' else, and has it for pizzaz! Ron Hevle flew this no. 4 winner. Color photos also for the silver & blue with red 1 and Bud Light lettering F4U to F2G rework Corsair, and Mustangs 19, 28, 81, and 96 . More Wow!

WINGS Dec. '82 Sasha and the P-47 features Alexander Kartveli designs P-35, P-47, with views of yellow wing and tail on metallic blue Y81X Seversky SEV 1XP (raced) and SEV-3 amphibian (raced). Also Sthurmovik IL-2 stuff (nice Yak-4 twin) and lots on Hughes HK-1.

10

STAB TIP PLATES 9/28/1920 AS RACED WITH ANGLE TIPS. R.A. Brown 11/1/83.

LEADING EDGE RB-1 STAB. 1/20"th x 1/8" TIP

1/32" SHEET RIBS

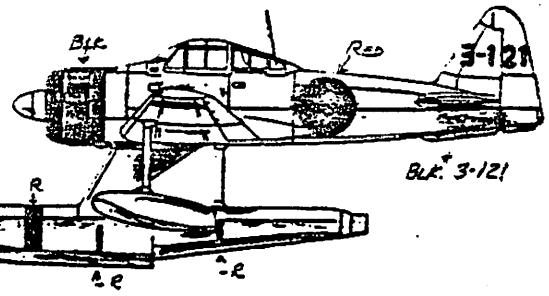
1/16" SQ. SPAR

OPTIONAL SCALE STAB SHAPE

ORIGINAL ANGLE TIP STAB RETAINED AT LEAST THRU 9/28/20. 1920 RB-1 SHEET 3

LT. GREY

RUFE, YOKOSUKA NAG, 1943



452nd KOKUTAI AT KISKA ISLAND, ALASKA MARCH 1943

COLORS:

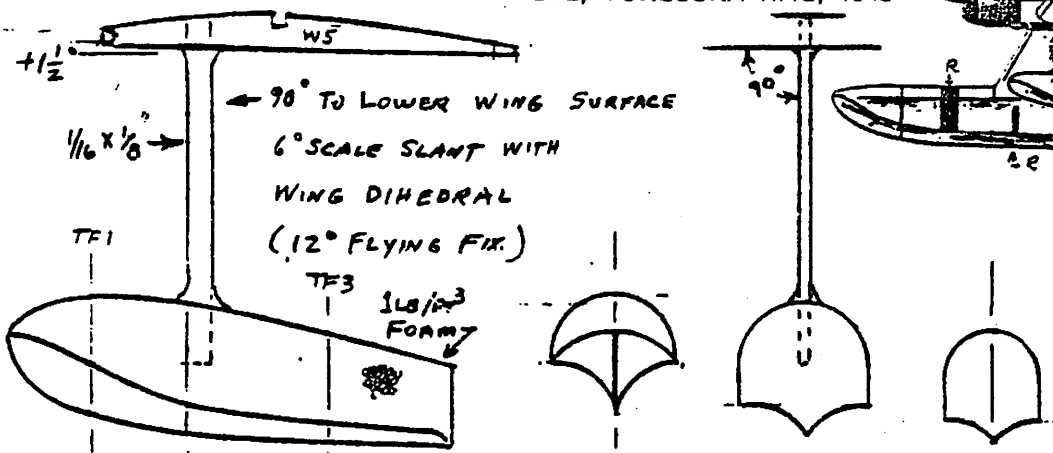
PURPLE TOP & SPINNER

LT. GREY U/S.

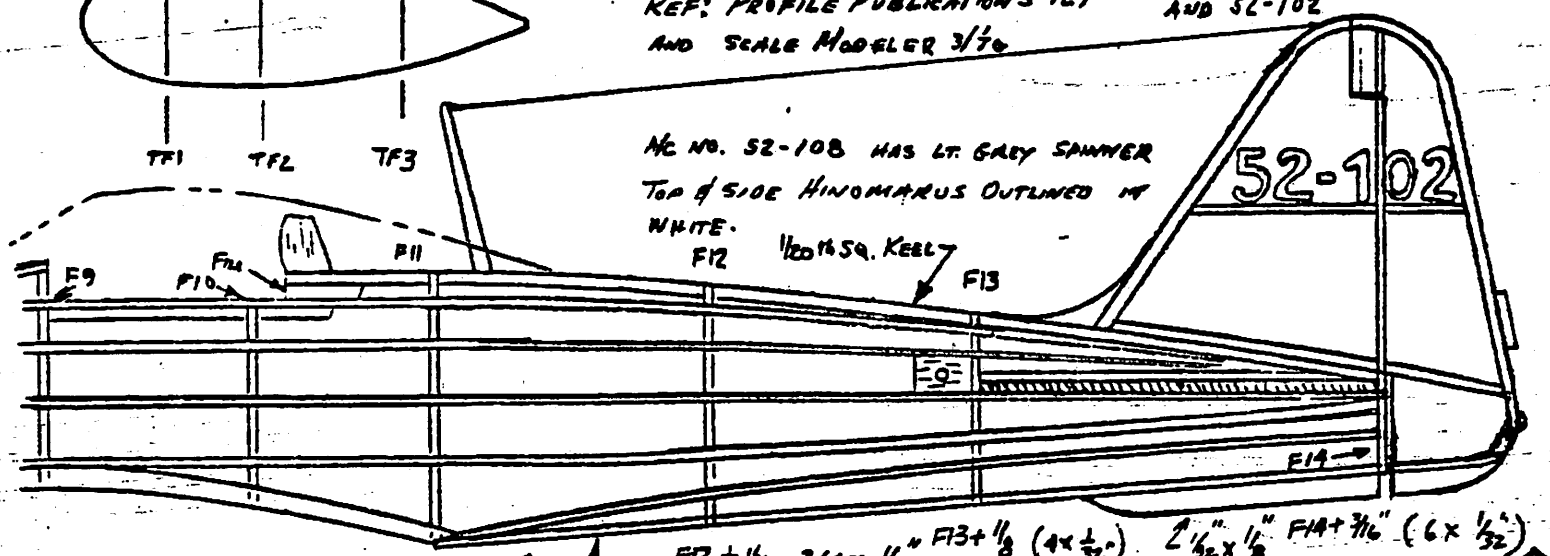
BLACK COWL, RED DISCS,

RED FLOAT STRIPE AT PROP.

WHITE FLOAT LIFT LINES, RINGS AND 52-102



REF: PROFILE PUBLICATIONS 129 AND SCALE MODELER 3/76



A/C NO. 52-108 HAS LT. GREY SPINNER TOP & SIDE HINOMARUS OUTLINED IN WHITE.

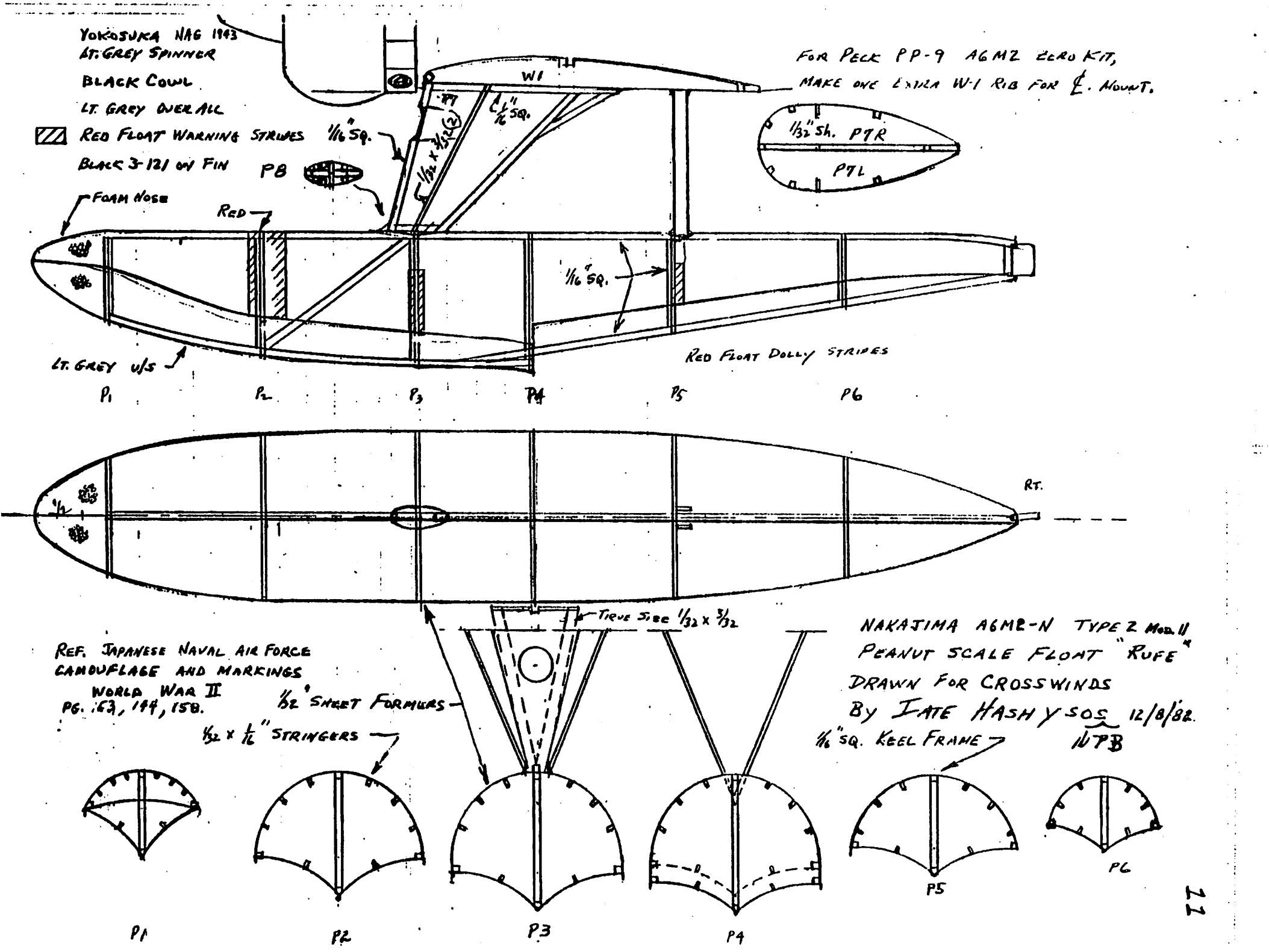
1 1/4" DIHEDRAL

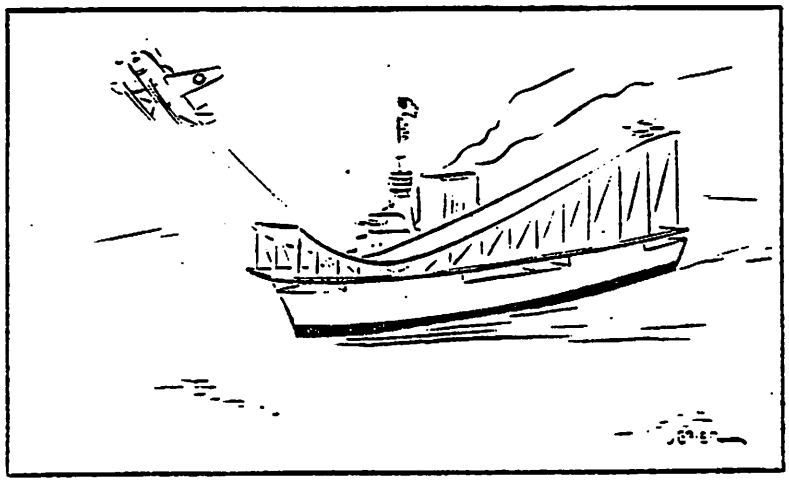
1/20" SQ. KEEL

F12 + 1/16, 2 LAM 1/32" F13 + 1/8 (4 x 1/32") 2 1/32" x 1/8" F14 + 3/16" (6 x 1/32")

PEANUT SCALE A6M2-N TAIL ASS'Y

DRAWN FOR CROSSWINDS BY IATE HASHY SOS 12/8/82


YOKOSUKA NAG 1943
LT. GREY SPINNER
BLACK COWL
LT. GREY OVER ALL
RED FLOAT WARNING STRIPES 1/16" SQ.
BLACK 3-121 ON FIN
P8
FOAM NOSE
RED
LT. GREY U/S
W1
1/16" SQ.
1/32 x 3/32 (2)
1/16" SQ.
FOR PECK PP-9 A6M2 ZERO KIT,
MAKE ONE EXTRA W-1 RIB FOR ℄ MOUNT.
1/32" Sh. P7R
P7L
1/16" SQ.
RED FLOAT DOLLY STRIPES
P1
P2
P3
P4
P5
P6
RT.
TRUE SIZE 1/32 x 3/32
REF. JAPANESE NAVAL AIR FORCE
CAMOUFLAGE AND MARKINGS
WORLD WAR II
PG. 63, 199, 158.
1/32" SHEET FORMERS
1/32 x 1/16" STRINGERS
NAKAJIMA A6M2-N TYPE 2 Mod. II
PEANUT SCALE FLOAT "RUFE"
DRAWN FOR CROSSWINDS
BY IATE HASHYSOS 12/8/82.
1/16" SQ. KEEL FRAME
NPB
P1
P2
P3
P4
P5
P6



AIRCRAFT SPOTTER CONT'D:

CIA INFORMER 12/'82 details a Tomy Toy timer by Gil Morris, a 3-V of Norm Potis' FAI (F1C) Niblet 4, a balsa density table , '83 Nostalgia rules, and always good(or bad) news. CIA fights poverty with a price CUT to $3 to Dick Covalt. 2716 Catalina Dr. Anderson, IN 46012. Dedicated Editors provide historic and local free flight text of merit far over $ for the active flier.

AIR ENTHUSIAST Nineteen. Oh my this really grabs me! EXCEPTIONAL Mitsubishi A5M (CRAUDE) views and bright color, including four A5M4 red tails Bar-U-nek will find are absoôolutely irresistible! This may be the start of another CROSSWINDS Far East feature by Del Balunek. Avro Vulcan on the cover and more inside.Red Parasite fighters, P-84 and DC-2 color.Plus. Mark up to U.S. is £7.50 overseas ($12 at 1.60 to Pound) or $16.50 from AIR EN. P.O. BOX 353, WHITESTONE, N.Y. 11357. CANADA $19.50. Or UK £7.00 and Overseas £7.5 from FINESCROLL LIMITED, DE WORDE HOUSE, 283 LONSDALE ROAD, LONDON SW13 9QW. Best exchange may be to have a pal in England or send Canada postal orders payable in Pounds. Go have a tea party Boston. But don't put any Tomahawk holes in Claude.

See TV Tales of the Gold Monkey for Terry and the Pirates pop corn with aero props. Hurry! Hot Goose fliers' flash back of P-40N beating up AT-6 "Zeros" hit an F4U aft of splice. The White, red and black Goose at least laid no golden eggs. The females, well they were-.

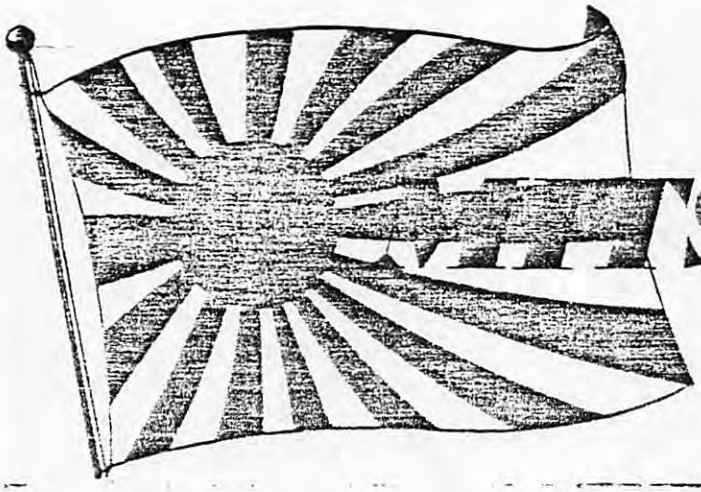
SCALE AIRCRAFT MODELLING Nov. '82 ran Spitfire '38-'40 markings and the Meteor T-7 twin. Dec. '82 has a deep study of Harriers and A/C markings over Fa lklands plus twin Pucará markings over Malvinas. Everybody lost in that war. Dec. also has 825 Naval Air Sq. and Federal Express Jets. A new reduced rate is £11.4 in UK, but no fix to U.S. and Canada to correct "Distribution difficulties" $38.00 to USA for a $18.25 equivalent in UK is considered over double trouble . Another cup of tea; one lump or two? I'll have Dago red.

AERO MODELLER Dec. '82 reviews geared rubber drives by Trevor Faulkner plus vintage text and views of the 1.3cc Mills diesel powered 45" cabin Bowden Meteorite and the Oct.'50 34" President cabin by Albert Hatfull, which looks cleaner than a Sniffer. The 14" indoor stick Club Trainer looks easy to go ceiling walking with in small halls. Look for a CO_2 Gloster Gladiator and CO_2 ducted fan MIG-15 due out in Feb. '83 Aero Modeller. Overseas rate is £12.20 or $28 from MAP P.O. BOX 35 Wolsey Hse, Wolsey Rd. Hemel Hempstead, Herts HP2 4SS UK. Aero Modeller continues to be an exceptionally good modellers magazine now, as it was in the 1950s when this kids' collection started. The yearly index is handy when we need to research a subject (not that we don't enjoy a few nights of going through stacks of musty treasures). We recently located a batch in new condition from the mid-1950s on at Lundy Goeslings' at 2870 E.117th st. Cleveland, Ohio 44120. The price is right too at about $ two plus 10% shipping per issue. Check Lundy for the back issues you don't have.

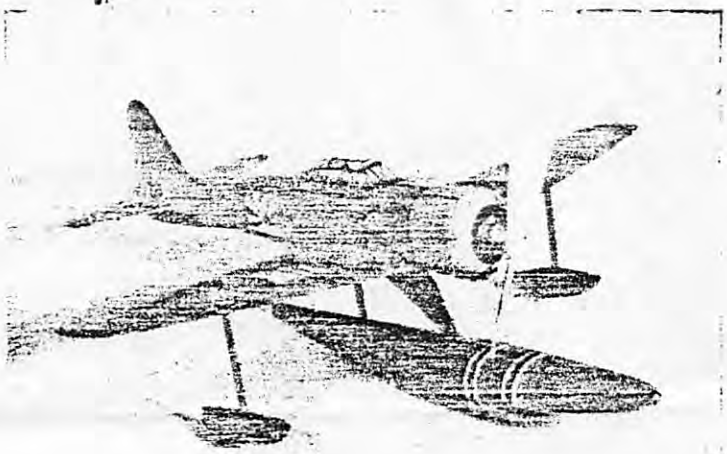
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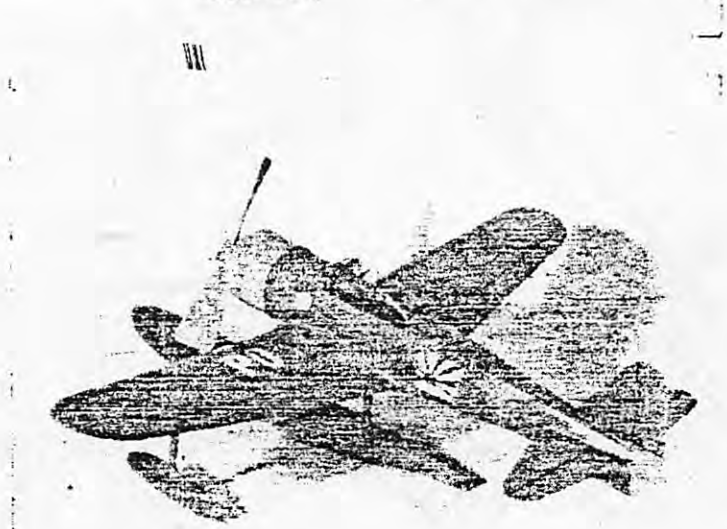
1983 CALENDAR

Sat. Jan 15	Sam 39 Meeting at Jack Ross, 308 Shawnee Place Huron OH.
Sun. Jan 16	CFFS Pot Luck Dinner & Scraps fly 6:30pm at Gordon Roberts Party 661-5210.
Jan 22-23	1st AMA Dist III Seminar/ Workshop 11-6 at Salt Fork, Cambridge Oh. $5 Or $8 both days. R/C basics, Mono, foam, engines, etc. Marge & Butch to attend for FF and Walt VanGorder too for Ind. FF. Bob Button(216)343-7906.
Wed. Jan. 26	CFFS Jr. Delta Dart class 7:00pm at Erieside Church E 320th & Lk. Sr. Willo--wick, east of Vine St.
APR 8-10	Toledo W/S 29th Annual Trade Show at Toledo Sports Arena.



MITSUBISHI S-00





by Joseph H. Wherry

THE NOTORIOUS "FLOAT ZERO" IS ACCURATELY MODELLED HERE— IT'S BOTH AN INTERESTING SHIP AND A GOOD FLIER

ONE of the very few expressly designed-for-the-purpose float fighters of World War II was this Japanese aircraft which made itself somewhat of a nuisance during the first two years of Pacific warfare. Its speed was not far from the 300 mph mark; maneuverability was excellent; and its 2 and usually 4 guns made it a menace during the days when island airstrips were rare. Those were the days when the Nips had things pretty much their own way: Allied fighter opposition was weak, and this seaplane made fighter plane logistics a fairly simple matter indeed.

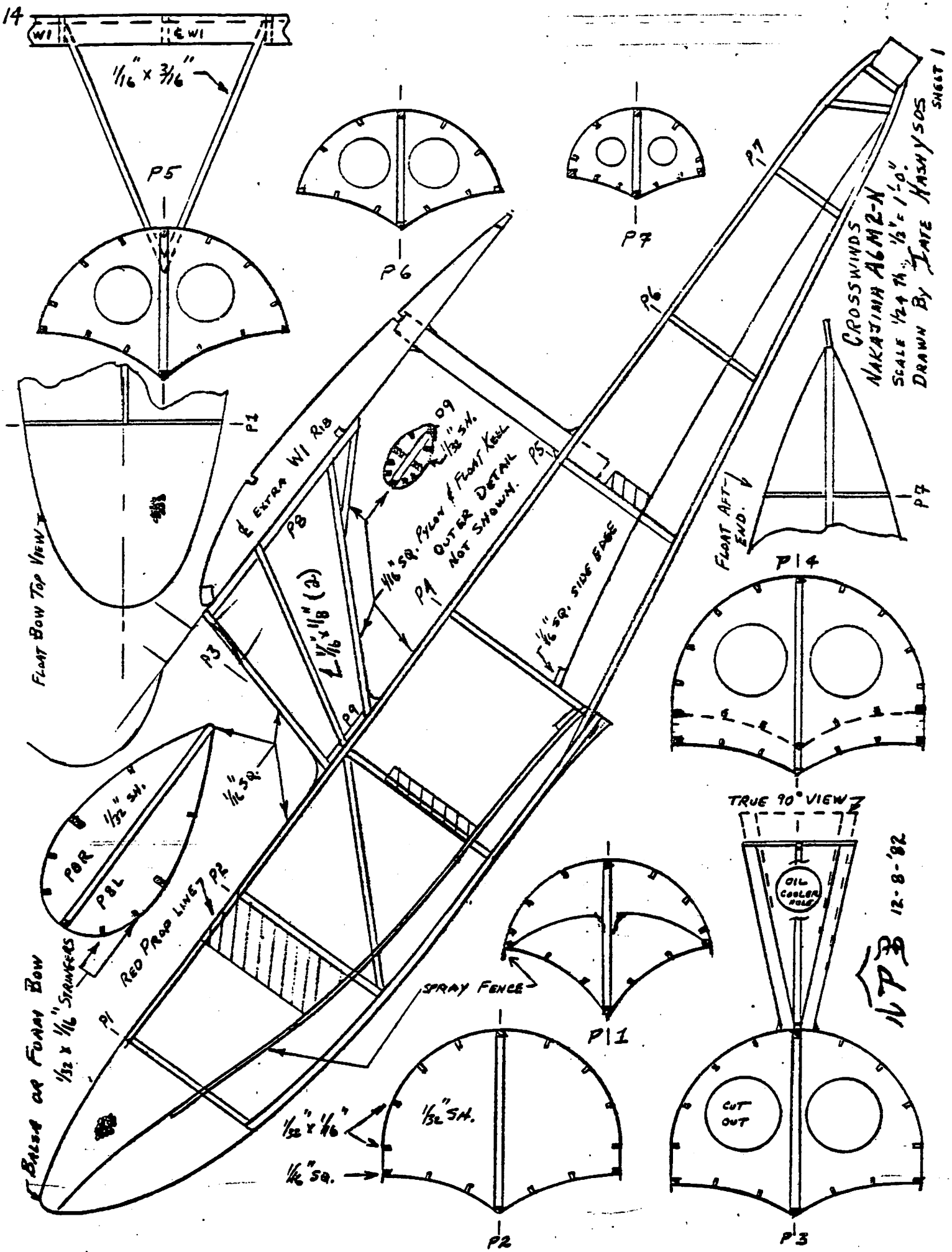
This little model is exceptionally rugged, and in spite of a total of 4 coats of dope (2 clear and 2 colored) it tips the scales ready to fly at a shade under 1½ oz. Moment arm factors and the general layout of the big ship make changes unnecessary other than lengthening the prop and lowering the floats. The latter concession to accurate scale was deemed wise in order to employ a prop of sufficient length.

Right now the author desires to insert a "note" to builders who may want to *alter* the accompanying design *to accurate scale* in *all* points. Only 3 alterations are necessary: (1) employ a *spinner* as shown on the plans (Plate 2); (2) build a 3-blade scale propeller as indicated; (3) shorten the main float struts so that the top of the float is exactly 1¼" below the bottom of the fuselage. Of course, shorten sponson struts, too.

If you have never tried a rubber powered scale model seaplane, by all means try this Mitsubishi fighter; flights are a thrill, and the extra work necessitated by the floats has been cut to a minimum through use of timesaving and weight-reducing float construction methods. The square tipped prop, now coming into vogue on full scale aircraft, was employed with excellent results, and this item is recommended as worthwhile. Such a prop provides powerful thrust even though it is shorter than is usually required on such a model.

FUSELAGE—Top and bottom keel pieces of 1/16" x 1/8" balsa are pinned in place over the plans. Note that an addition to the top keel must be used in order to carry out the contour just aft of the cockpit. Bulkheads 2 through 7 are cut (in halves) from 1/16" sheet. Cement left halves in place and add the side keel. Bulkhead 1 is cut from 1/8" sheet to the same pattern as No. 2. After thoroughly dry, this half-fuselage is removed from workbench and the remaining half-bulkheads and the other side keel is cemented in place. All stringers are 1/32" x 1/8" stock. Cement these in place, using care on bottoms of Nos. 3 and 4 bulkheads where the stringers actually form the base of the fairing that fillets into the wing root. The 2 root ribs (see side view, Plate 2) are now cut from 1/16" sheet and cemented in place. Cement the 2 small fairing pieces (see top view, Plates 2 & 3, where the plates join) of 1/32" sheet in place between wing roots and stringer.

Small bits of soft balsa scrap may be used to fair in the leading edge of the wing root. A small model-making blade is handy for carving these fairing pieces to correct shape after they are installed. Cement the elevator rests (1/16" x 1/8") in place along each side keel. Also the holder for rear motor hook dowel may


W1
℄ W1
1/16" x 3/16"
P5
P6
P7
P1
P3
P4
P8
P9
P7
P6
CROSSWINDS
NAKAJIMA A6M2-N
SCALE 1/24 M. 1/2" = 1'-0"
DRAWN BY KATE HASHISOS
SHEET 1
℄ EXTRA W1 RIB
1/16" SQ. PYLON & FLOAT KEEL OUTER DETAIL P1 NOT SHOWN.
1/16" SQ. SIDE EDGE
FLOAT AFT END.
FLOAT BOW TOP VIEW
1/16" x 1/8" (2)
1/32" SH.
1/16" SQ.
P8R
P8L
1/32" SH.
RED PROP LINE
P2
P1
BALSA OR FOAM BOW
1/32 x 1/16" STRINGERS
SPRAY FENCE
P1
P4
TRUE 90° VIEW
OIL COOLER HOLE
1/32" SH.
1/32" x 1/16"
1/16" SQ.
CUT OUT
P2
P3
12-8-'82

Mitsubishi S-00

(*Continued from page 15*)

be fitted, drilled, and the dowel may be put in position.

The fuselage is completed by building up the cowl front of 1/8" sheet half circles which have an inside diameter of 1-1/4". An imitation crankcase is also built up of 1/8" sheet. Drill a 1/4" diameter hole through the exact center of nose.

Lower rudder, air scoops, etc., are left until later.

EMPENNAGE—You will have to trace the elevator shown, reverse tracing, and re-trace; join the two plans (yours and the one shown on Plate 3) and build directly over plan. Both rudder and elevators are built up of 1/16" flat balsa. Because lightness was a goal, a plain flat section was used.

MAIN FLOAT STRUTS—These members are of the utmost importance. Make a template out of cardboard of the large front main strut. Trace around your template so that you have one layer of 1/16" sheet with the grain running horizontally for the center portion. Two outside layers are cut with a vertical grain. Cement these together, clamp, and allow to thoroughly dry. Then carve and sand strut to a streamline shape. Note the dotted line which indicates the bottom of the *bottom keel piece*. The center lamination of the strut should be cut out along this line. Now the finished strut is cemented in place to the lower keel piece. The strut is cut in like manner with a notch at the bottom to allow for attachment to float. Also attach rear strut, taking care that both struts line up as shown in side view as well as vertically.

WINGS—Two of each rib pattern shown are cut from 1/16" sheet. Pin spar in place over plans and cement ribs in position. Note that the root rib is tilted toward the tip 3/32" to allow for a dihedral angle of 1" beneath each tip. The leading and trailing edges are cemented in place and allowed to dry. Carve and sand leading and trailing edges to conform with the airfoil. Lastly, cement the small gussets in place at the root and go over all joints with an additional spot of cement. Give wings a final light sanding.

SPONSON STRUTS—Build these 2 struts up with layers of 1/16" sheet. Note the small sectional view on Plate 1. When finished, carve and sand to streamline crossection and cement in place at the designated spot on the bottom of each wing panel. They should fit nicely over the fourth rib from tip, and they must hang exactly vertical from both side and front view.

FLOATS—First we carve the tip floats, or sponsons, from firm but lightweight balsa. Split these down the center and hollow to a thickness of 3/32". Cement halves together again and give a thorough sanding. One coat of wood filler well rubbed in will form the base, with additional sanding, for a good color doping. These floats may now be firmly cemented to the tip float struts. Fair the point of attachment between struts and floats with cement.

Built up floats were at first used on the model illustrated. These, however, are a bit difficult to build. In addition, solid floats were found to be much stronger, better appearing, and *no* increase in weight is caused by the hollowed all-balsa floats.

The main float is built up in the same manner as was the fuselage except that no side keel pieces are used. The construction used, and much preferred by the writer, for such modern vee-bottom floats omits the side keels. The float is very light and strong, and no difficulty should be encountered by any builder who has finished the conventionally constructed fuselage. Briefly, pin the top and bottom float keels in place and cement half-bulkheads in position. When dry, remove from bench and cement all remaining bulkhead halves in place. The 1/32" x 1/8" stringers are next; add 2 at a time using ones corresponding on each side. Do not fail to include the important bulkhead F-D as this member forms the step.

The float bottom is covered with 1/32" sheet balsa. Cut to outside shape with reference to the top view (refer to all Plates for a full view of float). You will be amazed at the sturdiness of such a light float construction. Do not dope the bottom of float yet.

COVERING—A light grade of sky-blue tissue was used on the author's model. Tissue of the color intended is recommended because color doping is thus facilitated. The principal thing to remember in covering is always to have the tissue grain running the length of the part being covered. Wingtips are best handled with a small piece of tissue to each side. The remaining portion of each wing panel can be covered with one piece to each side. Mark and cut a small hole where the struts are attached to wing. Use clear dope for best results. This adhesive need only be applied on the outside edges of part being covered. The only exception to this generality is in the case of concave surfaces (the fairing of the wing roots, for example). Actually, covering is one item of model airplane building that can be mastered only by practice; some think it difficult, but patience and the desire to do a neat job brings good results. Small pieces are best used on round surfaces like the fuselage. Where 2 pieces overlap, as will be the case on the fuselage, it is *not* necessary to spread adhesive on the joining ends of tissue. In fact, better results will be obtained if an overlap of 3/16" is allowed. Tail surfaces are covered with a single piece to each side.

Spray all covered surfaces with water; watch all parts for signs of warping. The main float requires a bit different procedure from the other parts: cover top of float with tissue, but do *not* spray with water until you have rubbed in (with fingertips) one coat of dope. Rubbing in this coat will prevent warping. Then spray tissue-covered float top.

After the water spray has tightened all tissue and is thoroughly dry, you can brush on a coat of thin clear dope. Again watch for warping. In the case of the wing panels it is advisable to dope only the space between 2 ribs; then invert the panel and dope other side in corresponding place. This method, followed through, will produce excellent results. A second coat of clear dope will produce a surface that is ready for color dope; this, however, comes after assembly.

ASSEMBLY—The elevators are cemented in place between the first stringer above the side keel piece and the sheet balsa support cemented in place earlier. Small bits of tissue may be used to fair in the elevators. The rudder is cemented directly to the top keel piece. This rudder must be exactly aligned or bad results will follow. Cut the lower rudder from 1/16" sheet, sand smooth, and rub in 2 or 3 coats of clear dope. Give a final sanding and cement in place.

The nose should be covered with bond paper between bulkheads 1 and 2 if an authentic appearance is desired. The small raised portions over the guns (see dash lines on side view, Plate 2) are duplicated with soft balsa which is sanded to streamline shape after it is cemented in place.

Carve the 2 airscoops from soft balsa, sand smooth, and attach.

The wing panels are cemented carefully in position. Note that a small amount of positive incidence is provided for on the plans. If your building has been accurate you will have no trouble achieving the correct incidence. Block up the fuselage and wingtips so that 1" dihedral will result.

The main float is attached by cutting away a very small portion of tissue where the struts are cemented to the top keel piece. Fair the joints with cement.

FINISHING AND DETAILS—Two coats of light blue colored dope were used on the model in the accompanying photo. This was brushed on, after slightly thinning the dope, with a good quality art brush. Gray, gray-green, or a combination of gray, green and blue may be used. Friends have told me of tangling with all-white *Float Zeros* during winter months of Aleutian Island fighting. Therefore the choice of a suitable color scheme is variable.

The flying prop is, of necessity, a bit on the short side, so a square tipped version was tried by the author with fine results. Carve in the usual manner from hard balsa to the dimensions and outline shown on Plate 1. Give this prop a good "dish" on the back side; sand fairly thin but leave the tips blunt. Brush on several coats of clear dope, sanding between each coat. Fit the prop with the usual nose plug and shaft and washers. Fit the prop in place after threading 4 (5 if your model weighs over 1-1/2 oz.) loops (8 strands) of well lubricated brown rubber 1/8" flat through the fuselage. A small piece of rubber tubing over the shaft hook will prolong the life of the motor. Anchor the rubber motor in place at the rear with the motor dowel.

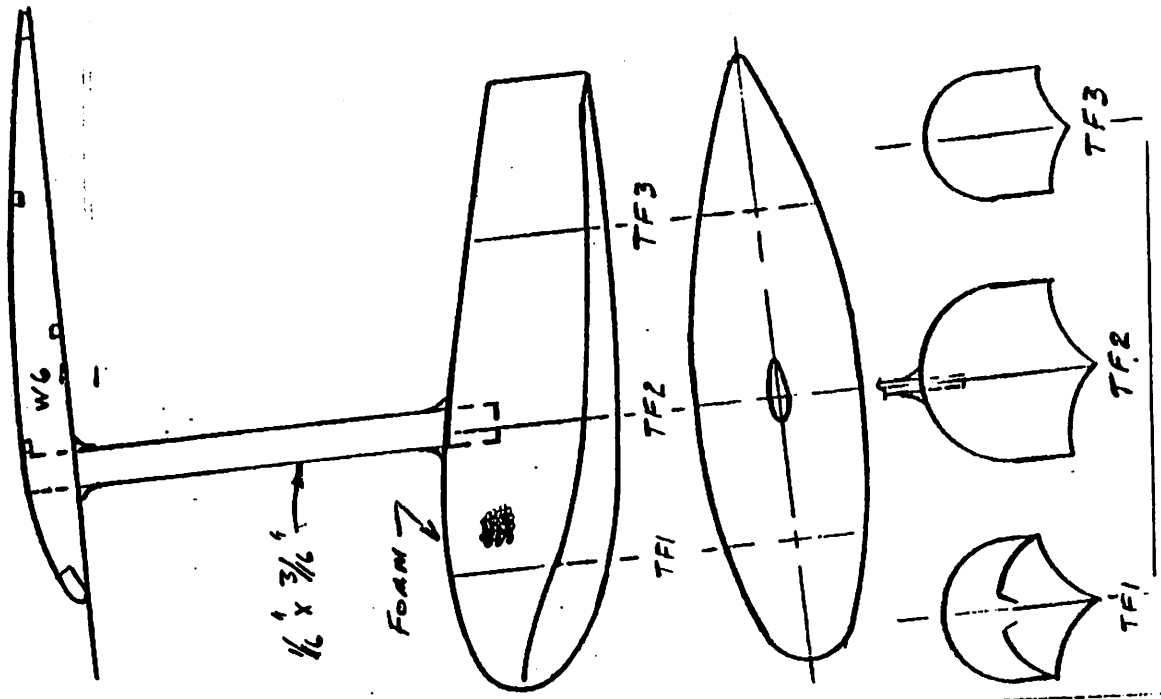
No, we haven't forgotten the cockpit canopy. This is best made by carving from balsa a dummy canopy to shape. Then mold the plastic canopy to shape by following the directions given on the instructions coming with any one of several molding liquids now on the market.

Or, if you desire, the canopy can be built up of small pieces of celluloid. A molded canopy, though, is neater and really a much simpler matter.

Insignia will complete the model. The red wing circles of the defunct "Rising Sun" did not show up well against the color scheme. The sunburst design shown on the original model was *sometimes* seen on Japanese aircraft. The "PU" was an afterthought of the author.

FLYING — CONT'D. P. 16

COURTESY



Mitsubishi S-00

(Continued from page 15)

FLYING—It is strongly suggested that testing be carried out in a field covered by tall grass. Glide Mitsubishi S-00 from the shoulder. Correct diving or stalling tendencies with molding clay attached to the nose if model stalls, or to the tail if model dives.

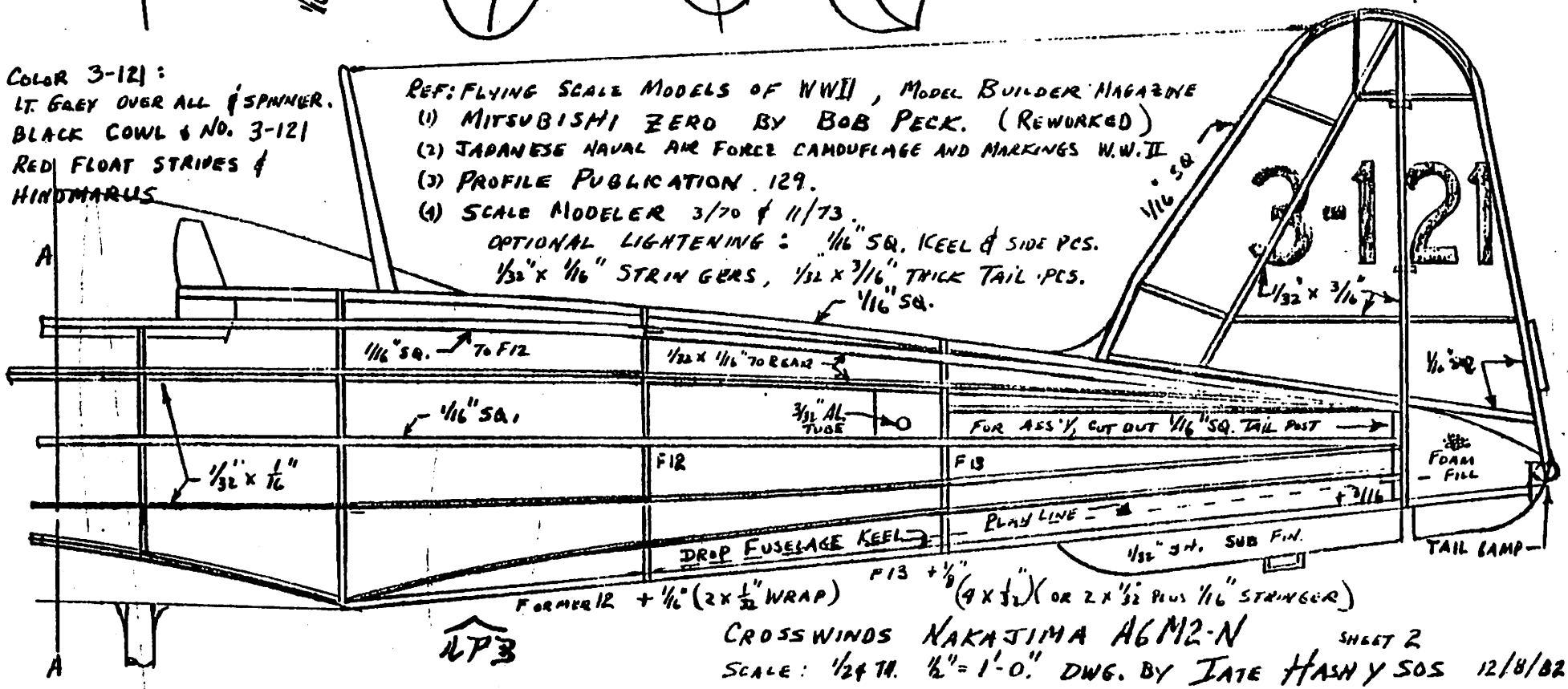
When correct balance is achieved, try a short powered flight over this tall grass. Once the ship is trimmed for flight it is well to weigh out an amount of lead solder equal to the clay. The solder occupies less space and can be concealed. It is likely that your model will be a bit tail heavy; the author's model was. If so, the weight may be concealed by cutting away a bit of the float tip covering (on top); cement the weight within, and replace the covering and the clear and colored dope. Total model equaled 1-1/2 oz.

R.O.W. flights are well within the capabilities of this model. Use a winder and pack in the turns. Correctly balanced, your little "Mitsu" will get off the water with a good burst of speed. Not a duration model by any means, she'll still make a couple of hundred feet. This job glides nicely and is very stable.

You're on your own now, and don't forget to send in a photo of your model. This model is a beauty, so Good Luck!

COLOR 3-121:
LT. GREY OVER ALL & SPINNER.
BLACK COWL & NO. 3-121
RED FLOAT STRIPES &
HINOMARUS

REF: FLYING SCALE MODELS OF WWII, MODEL BUILDER MAGAZINE
(1) MITSUBISHI ZERO BY BOB PECK. (REWORKED)
(2) JAPANESE NAVAL AIR FORCE CAMOUFLAGE AND MARKINGS W.W.II
(3) PROFILE PUBLICATION 129.
(4) SCALE MODELER 3/70 & 11/73.
OPTIONAL LIGHTENING: 1/16" SQ. KEEL & SIDE PCS.
1/32" x 1/16" STRINGERS, 1/32 x 3/16" THICK TAIL PCS.



CROSSWINDS NAKAJIMA A6M2-N SHEET 2
SCALE: 1/24 TH. 1/2" = 1'-0" DWG. BY JATE HASNY SOS 12/8/82

INDOOR STUFF By Larry Loucka

Now with the cool Autumn weather upon us, it's time to move inside with our toys. Some people, like myself, very seldom fly their models outside. This is because we specialise in Indoor Duration models. Most of which are much too fragile. I do keep threatening to take a Pennyplane out on a calm evening, however.

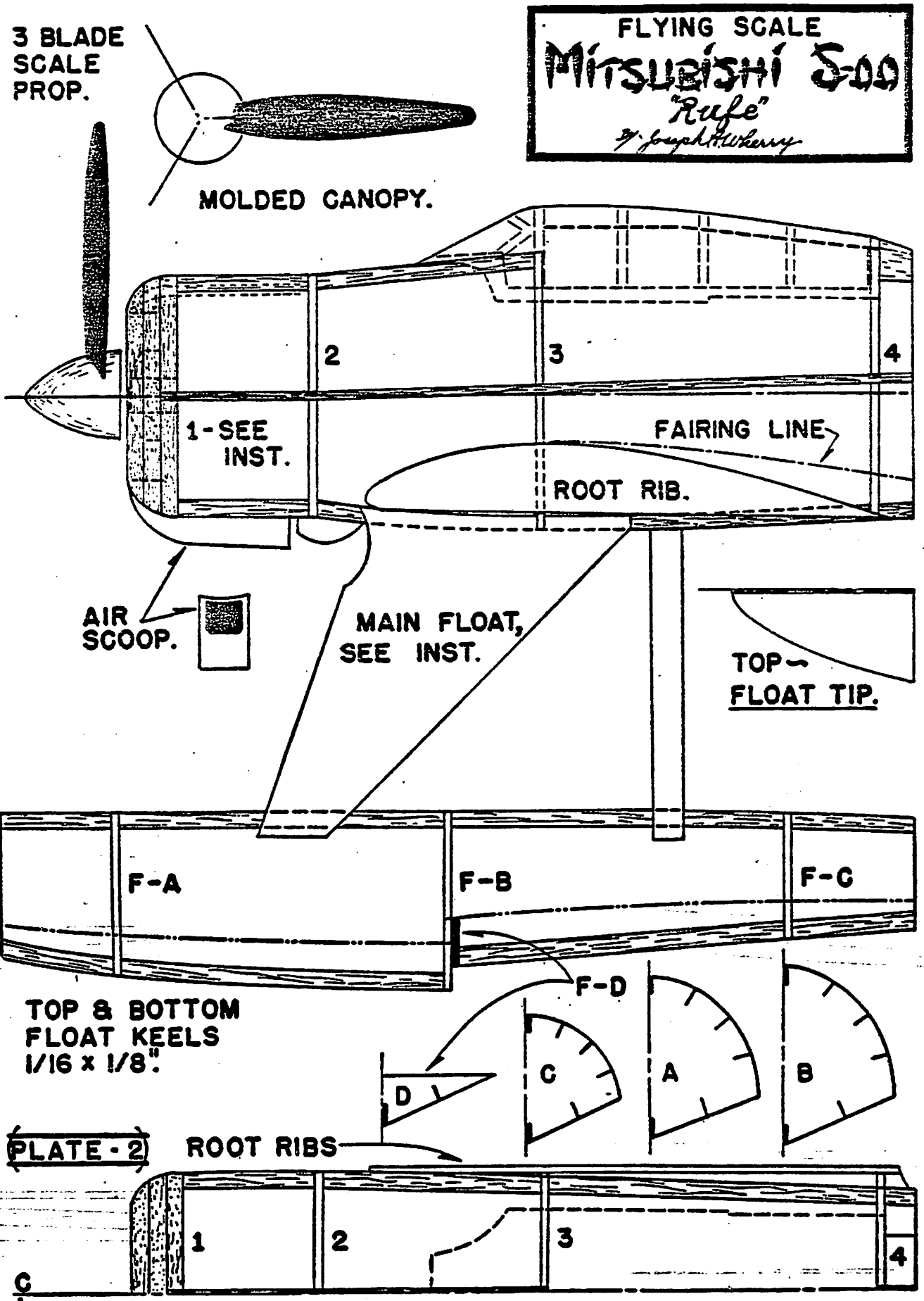
Indoor flying seems to be surrounded with a mystique which I feel is undeserved. When you get right down to it models of this type use nothing but the simplest outlines for their flying surfaces. There is no intricate painting and decorating to do. In the case of a microfilm job there is plenty of color already in it from the prismatic effect of the microfilm covering!

In this series of articles, I will explain some of the techniques that I use to build my duration models. Before I start though, I would like to give Ron William's book. Building and Flying Indoor Model Airplanes, a plug. It covers allphases of Indoor, including Scale. Never before has so much information on Indoor been put between two covers of a book.

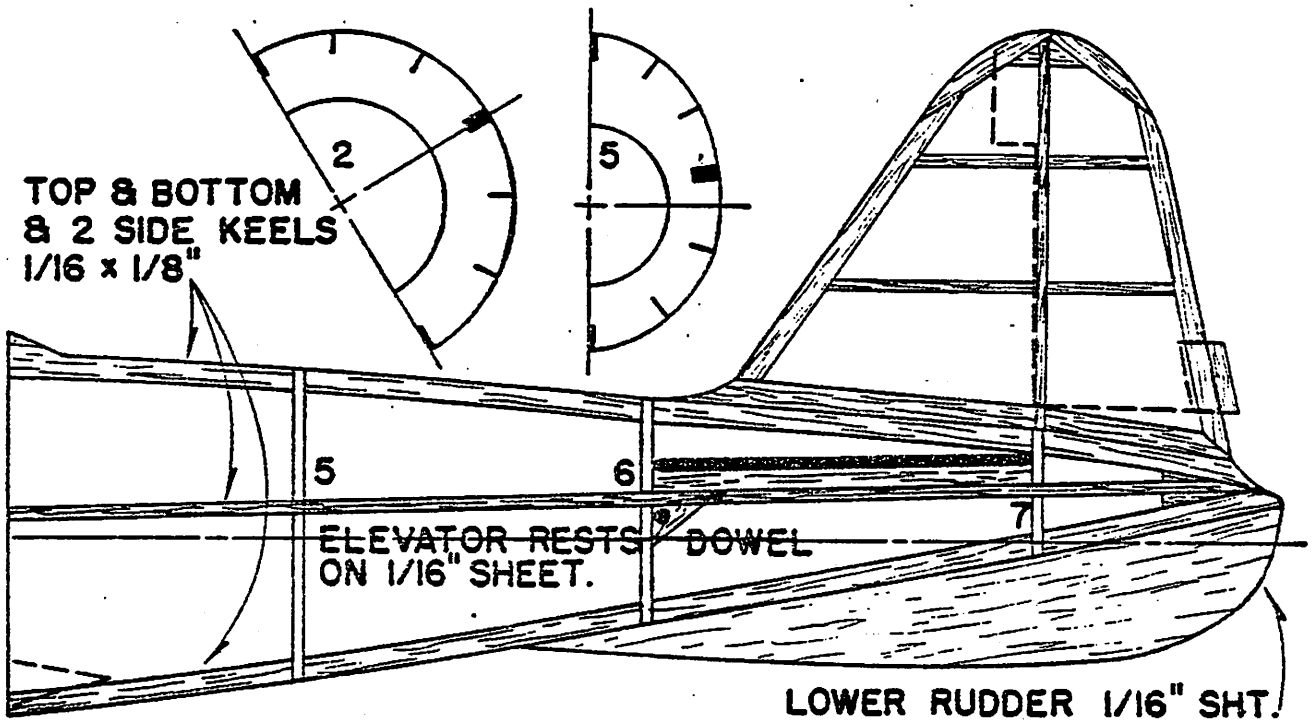
First off, lets talk about glue. For most construction I use thinned out Duco Household Cement. Some people use acetone as a thinner which gives a very rapid dry. I prefer to use Sig Dope Thinner as it has a slower drying time. This gives one more time to get that part just where you want it. I mix my glue in a small bottle, adding thinner until the glue is about the consistancy of unthinned dope. It should "slosh" quite readily when the bottle is tilted. Periodically more thinner will have to be added to maintain the desired consistancy. I apply the glue with a sharpened, round tooth pick. Some people use hypodermics. Others use the glue guns sold by Micro-X and Indoor Model Supply (IMS). The main reason for using such thin glue is weight. Just enough glue to hold the parts togeather is the goal, and a thin, penetrating mix is the best way to obtain this. A good thing to remember is that even model cement is about twenty-five times heavier than the wood going into your models. No cheating with the glue to fill the gap between that too short rib and the spar!

The gap filling forms of Hot Stuff, Super Jet, etc. are excellent for installing thrust bearings and rear hooks, on motor sticks. When installing the thrust bearing, I spot cement it on with Duco so that I can get it positioned properly. Usually the bearing will be installed with two to three degrees left thrust and no down thrust. A one to one and a quarter inch long piece of music wire through the front and rear holes of the bearing(you are using a dual bearing, are'nt you?)will help with the alignment chore. After it's dry, put a drop or two of the instant glue on a non-porous surface such as a jar lid. Using a sharp pointed toothpick, apply the instant glue as a fillet around the contact

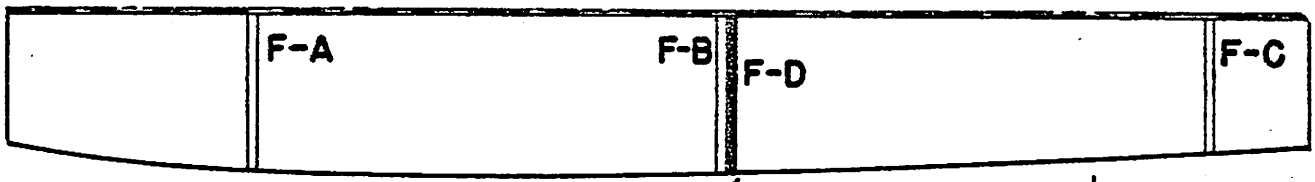
FLYING SCALE
MITSUBISHI S-00
"Rufe"
By Joseph Hickey



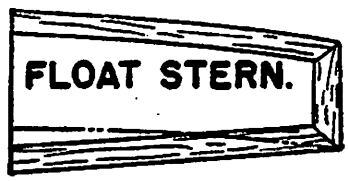
COURTESY MODEL AIRPLANE NEWS • July, 1948



STRINGERS 1/32 x 1/8".



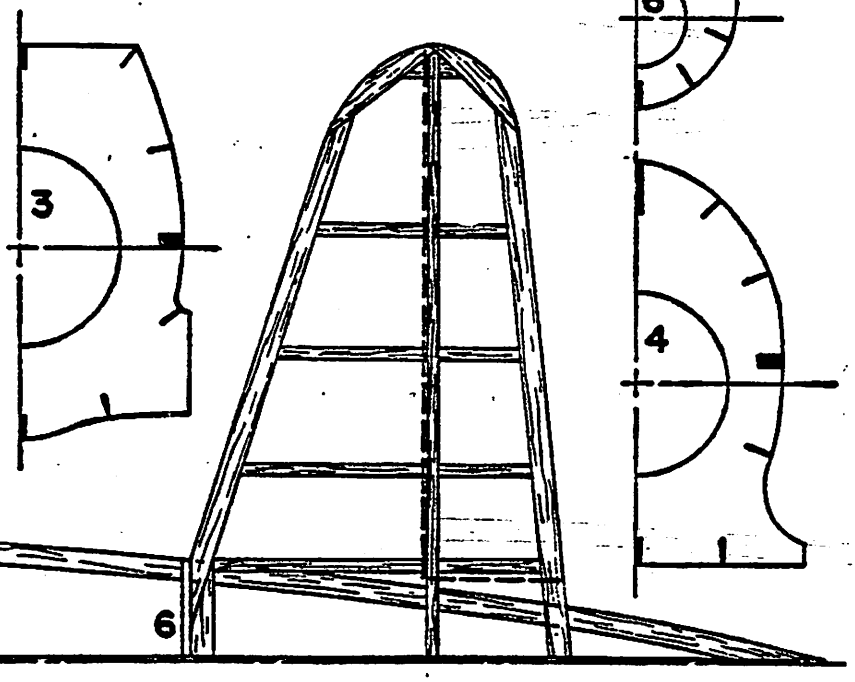
LEFT 1/2 TOP OF FLOAT.



BULKHEADS
1/16" SHT.

PLATE - 3
MITSU-3-00





COURTESY

area of the bearing and the motor stick. Trying to use the instant glue right out of the bottle will usually result in a drowned part. As always, enough glue is just right, too much is too heavy.

It has been my experiance that the white glues and epoxies are not suitable for this type of construction.

Probably one of the first surprises to the newcomer is that "Indoor Wood" is sold only in sheets, usually one to one and one quarter inches wide and eighteen to twenty-four inches long. The reason for the high price is that one is buying the "Cream of the Balsa Crop". This wood has a much higher strength to weight ratio than the commercial variaties. Even though the price per sheet of this wood is high, the cost of a completed model is only about two to five Dollars.

There are several ways of stripping the wood to desired size. First there is the old faithfull straight edge and razor blade method. The problem with this is that it's difficult to cut two strips exactly the same size. Some people use an"edge stripper" of the type which Gene Dubois sells. I prefer a vertical blade type made from one inch square balsa. The advantage of this type is that they can be squeezed in a vise to reduce the size of cut slightly. For those who want to go "whole hog", Ray Harlan sells a stripper that has two micrometer dials and can cut tapered strips. Incidentally, Gillete sells a double edge blade under the name "THIN" which will snap clean when broken in half. Stainless steel blades may be better for shaving, but they dull quickly when used to cut balsa wood and won't snap clean when broken as the carbon steel blades. A good source for single edge blades is a paint or wallpaper store. They sell them in boxes of one hundred for about $5.00.

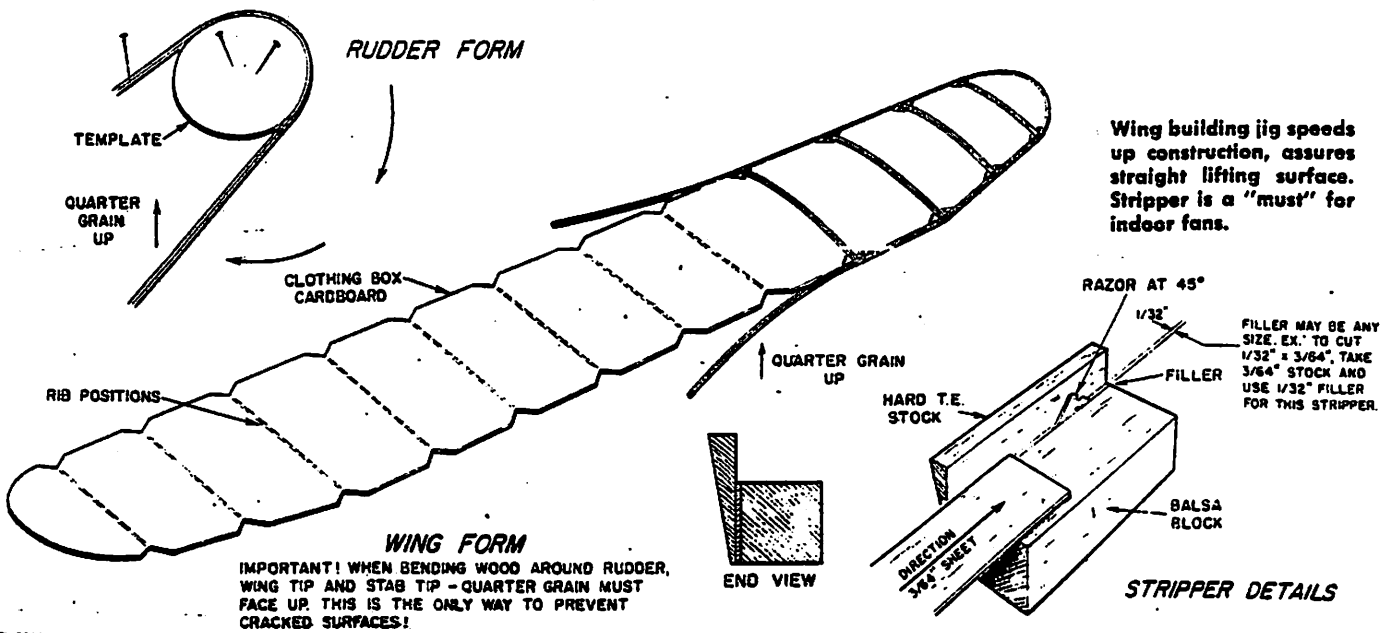
Carefull control of wood sizes is the secret of making consistent components. I write down the dimentions of the wood going into a component or model on the back of an IBM card. This gives a ready reference if a part turns out to be too weak or to heavy. All the parts of my models are numbered which helps to corresspond to the card information and with assembly for flying. A cheap zero to one inch micrometer is the simplest tool to check for size. Reading dimentions off of a ruler just won't do. For some interesting comparasons, try micrometer checking your supply of outdoor wood sometime!

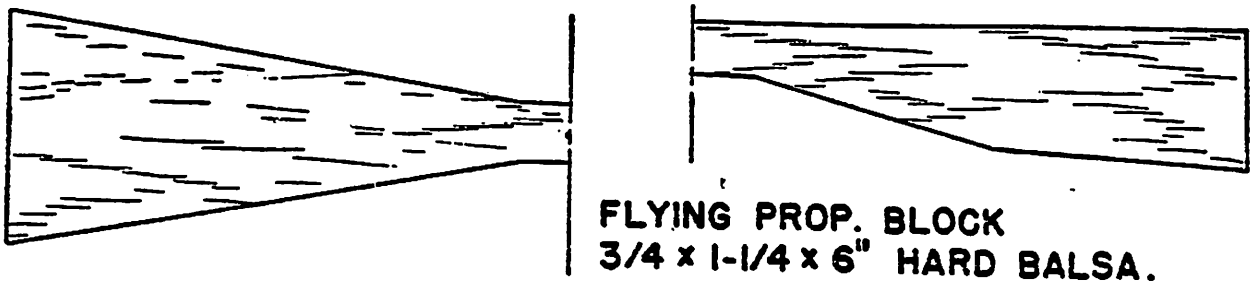
Most duration models are not built off of printed plans. Wings and tails are usually built using cardboard templates. material about .030 (1/32") thick is very suitable. Cut the template undersize to allow for the width of the leading and trailing edges. Lines are drawn at each rib location for visual alignment during construction. Vee shaped notches cut out at the rib stations from the edges inward allow the ribs to be glued to the outline.

Probably the best place to start Indoor is with a Novice Pennyplane. The required weight of three and one-tenth grams(the weight of a U.S. Penny.) allows for a rugged model. Wood selection is not too critical, tho ideally they should be built somewhat under weight so that the necessary ballast can be used for fine trim adjustment by moving the balance point. It's also a lot easier to put a small wad of clay to get the minimum weight than it is to reduce the weight of a too heavy plane! Personally, I don't feel that EZB is the best place to start. The relativly small wing area and no bracing makes wood selection quite critical.

My son Paul and I have had good results with Cezar Banks Novice Pennyplane design. The one shown in the drawing is like fine wine, it just keeps flying longer and longer. It currently holds both Junior Category III PENNYPLANE Records. Paul built it when he was six years old so I tend to disagree when people say that Indoor Models are tough to build!

I would recommend that after installing the thrust bearing and its spacer(you did remember to get I/4" between the shaft and the bottom of the body dident you?) the area be wrapped with either silk or thread soaked in glue. Due to the relativly large chunks of rubber that these planes fly on, there is a tremendous strain on the bearing and rear hook, and the small additional weight is no sweat on a plane this heavy. Tune in next time and I will cover the more exotic Pennyplanes and EZB.





FLYING PROP. BLOCK
3/4 x 1-1/4 x 6" HARD BALSA.

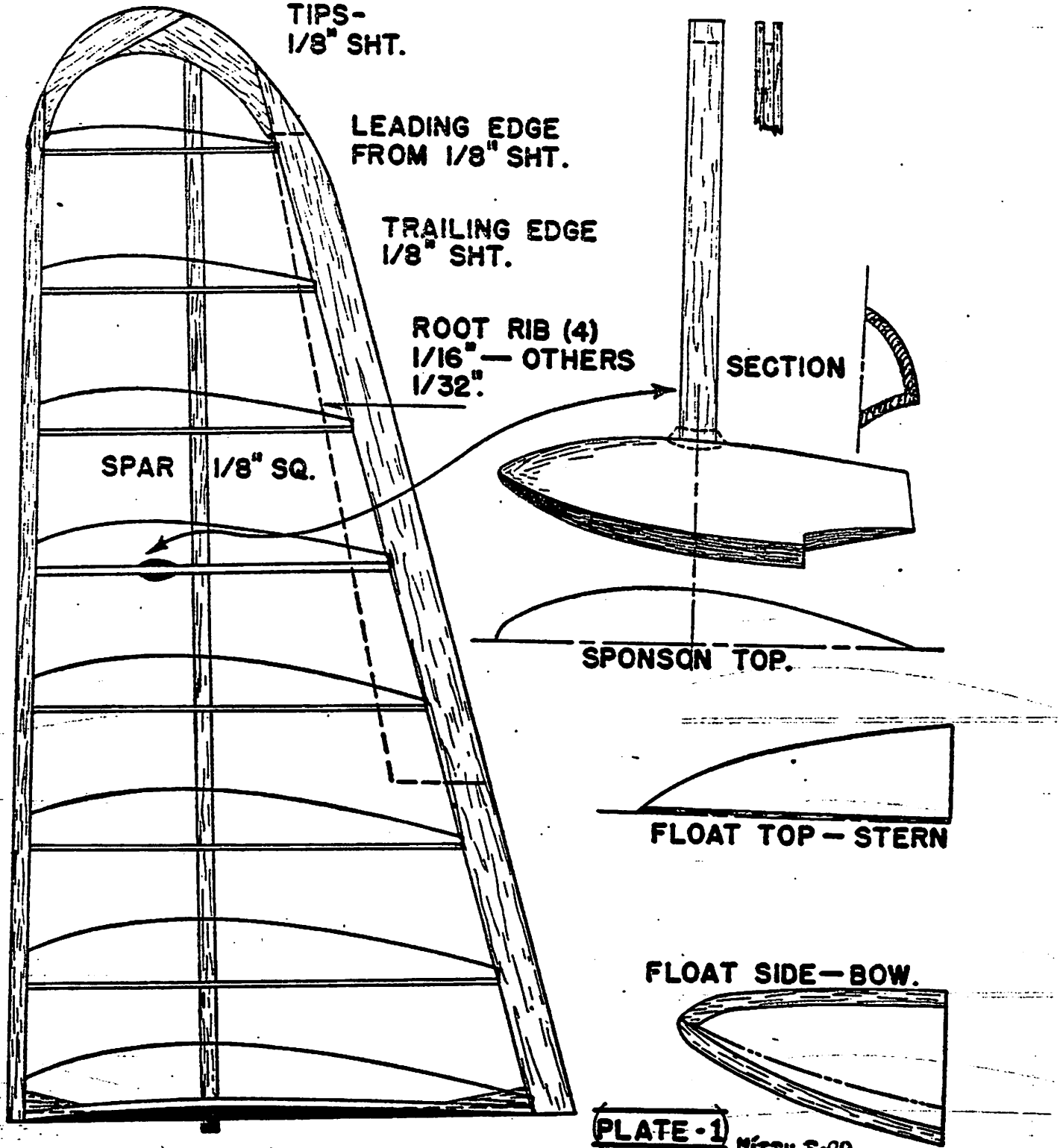


PLATE - 1

Nitro S-00

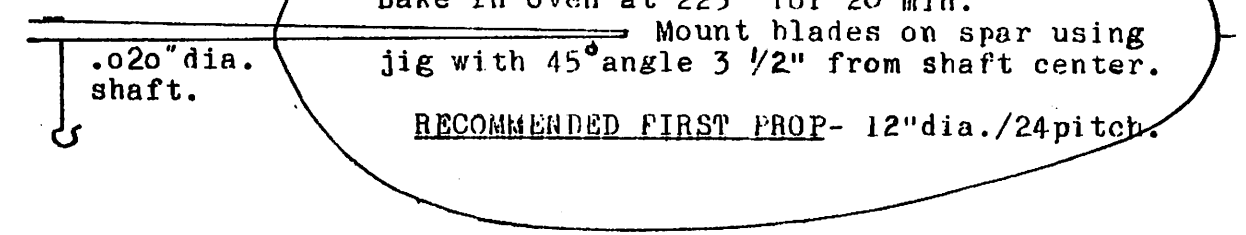
COURTESY

WOOD SIZES

WING-L.E.& T.E. cent. sec. I/I6" hd. Tips I/I6 sq. soft. Ribs I/32 sq. I/8"wash left main panel.
STAB-L.E.& T.E. I/32xI/I6 soft. ribs I/32 sq. I/8"wash lft. main. I/2"left tilt.
STICK-3/I6xI/4 med. taper last 3" rear to 3/32xI/4. Last 3" front taper to I/8x3/I6. Harlan "PENNYPLANE" thr. brg. mounted w/ 3°lft. thr. no down thr. Space prop shaft I/4"from bottom of stick.
BOOM-I/I6xI/4 taper to I/I6 sq. med. Mount I/4 neg. to stick.
FLARE
PROP-Spar 3/32 sq.x 6"lg. Last 1 1/2 taper to I/32x3/32. Hard Bal. Blades I/32 soft sanded to .020" at tips.
SYM.
PROP-Spar I/8 dia.x 6" lg. Hard. Taper to I/32" dia. Blades I/32 Soft.

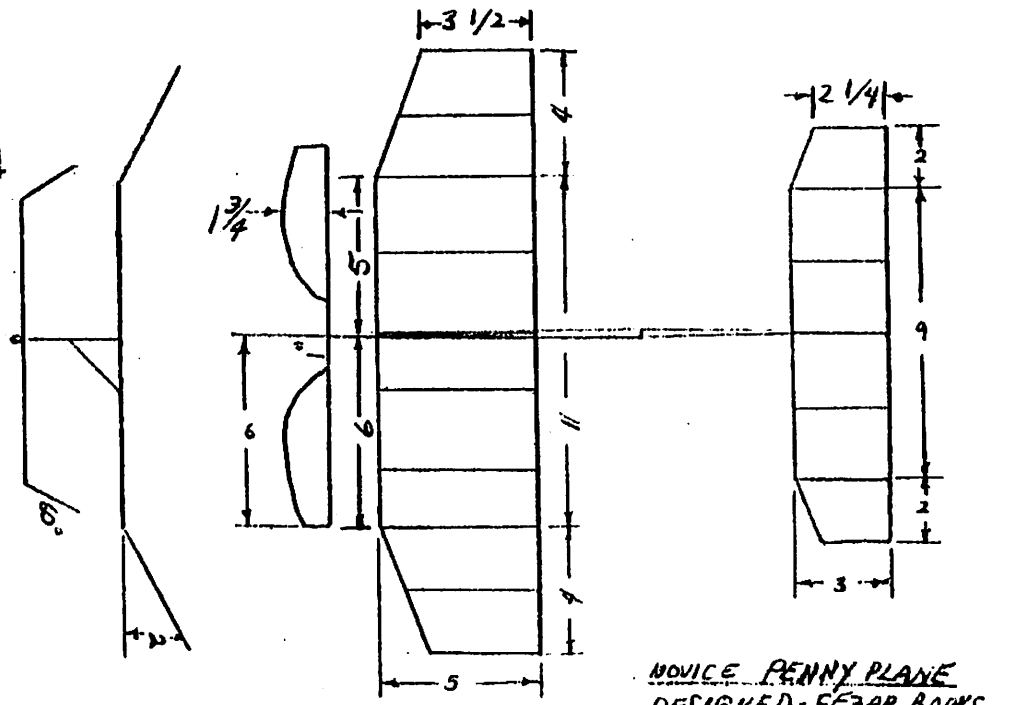
WEIGHTS

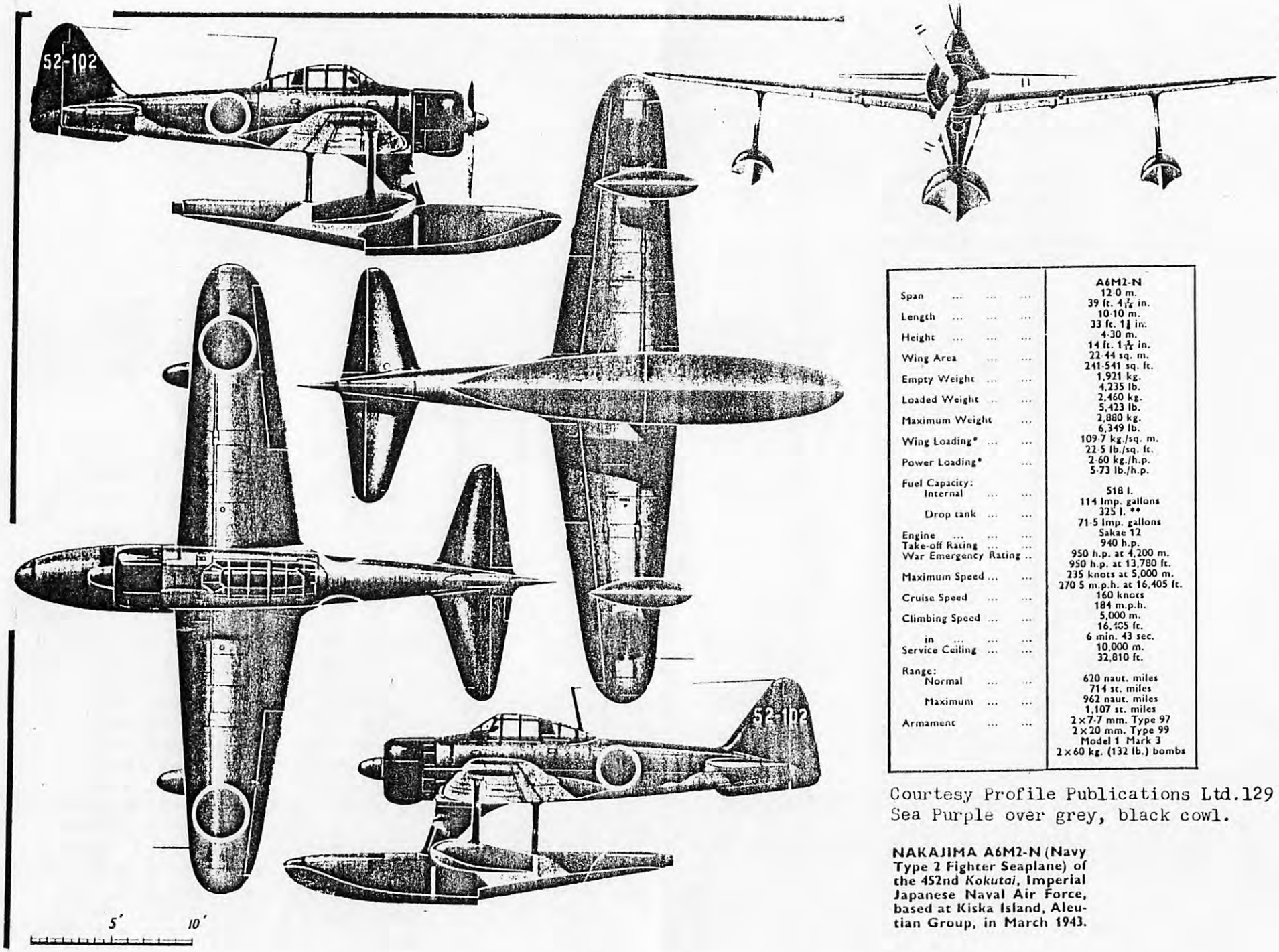
WING- I.0g.
BODY- I.2g.
PROP- I.0g.
3.2g.



TO FORM BLADES:
Soak blades in hot water for 10 min.
Form at 17° on one gal. glass jug.
Bake in oven at 225° for 20 min.
Mount blades on spar using jig with 45°angle 3 1/2" from shaft center.

RECOMMENDED FIRST PROP- 12"dia./24pitch.

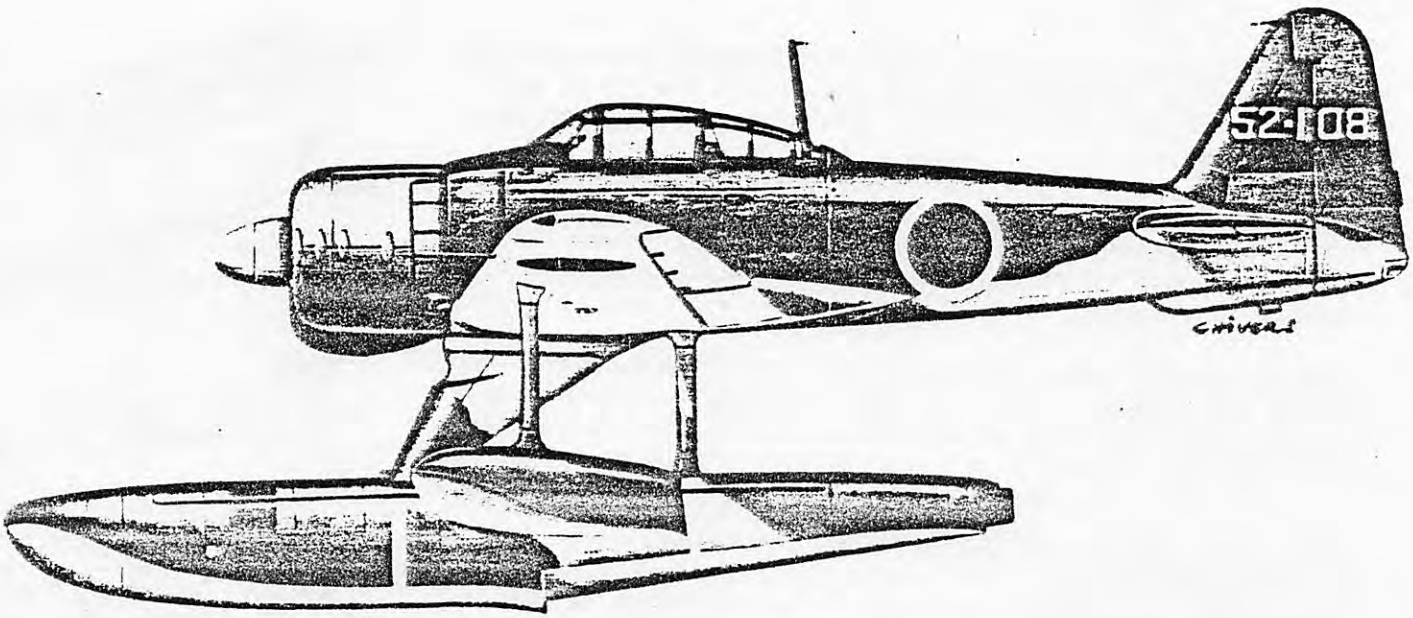




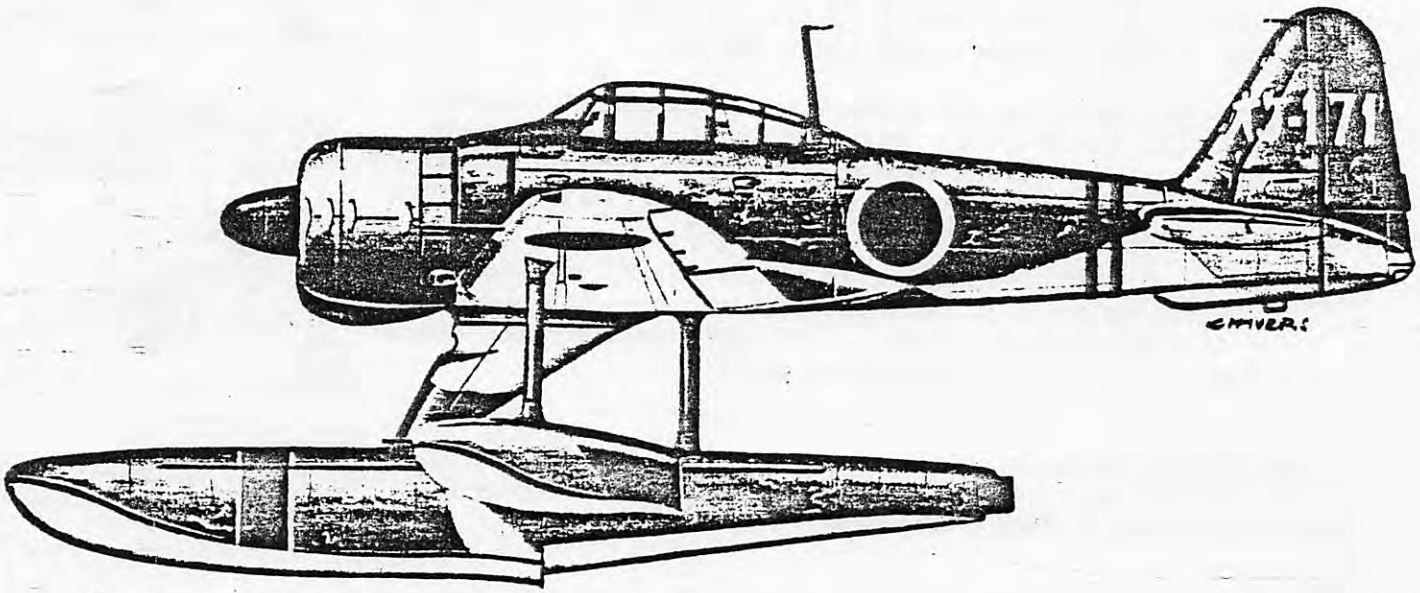
	A6M2-N
Span	12·0 m. 39 ft. 4⅞ in.
Length	10·10 m. 33 ft. 1⅜ in.
Height	4·30 m. 14 ft. 1⅛ in.
Wing Area	22·44 sq. m. 241·541 sq. ft.
Empty Weight	1,921 kg. 4,235 lb.
Loaded Weight	2,460 kg. 5,423 lb.
Maximum Weight ...	2,880 kg. 6,349 lb.
Wing Loading*	109·7 kg./sq. m. 22·5 lb./sq. ft.
Power Loading* ...	2·60 kg./h.p. 5·73 lb./h.p.
Fuel Capacity:	
Internal	518 l. 114 Imp. gallons
Drop tank	325 l. ** 71·5 Imp. gallons
Engine	Sakae 12
Take-off Rating	940 h.p.
War Emergency Rating ..	950 h.p. at 4,200 m. 950 h.p. at 13,780 ft.
Maximum Speed	235 knots at 5,000 m. 270·5 m.p.h. at 16,405 ft.
Cruise Speed	160 knots 184 m.p.h.
Climbing Speed	5,000 m. 16,405 ft.
in	6 min. 43 sec.
Service Ceiling	10,000 m. 32,810 ft.
Range:	
Normal	620 naut. miles 714 st. miles
Maximum	962 naut. miles 1,107 st. miles
Armament	2×7·7 mm. Type 97 2×20 mm. Type 99 Model 1 Mark 3 2×60 kg. (132 lb.) bombs

Courtesy Profile Publications Ltd.129
Sea Purple over grey, black cowl.

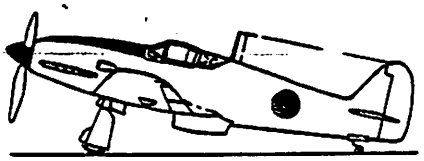
NAKAJIMA A6M2-N (Navy Type 2 Fighter Seaplane) of the 452nd *Kokutai*, Imperial Japanese Naval Air Force, based at Kiska Island, Aleutian Group, in March 1943.



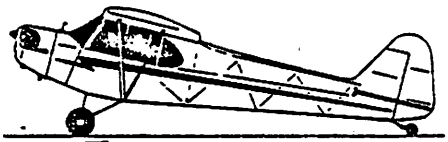
Nakajima A6M2-N (Rufe) of the Japanese Naval Air Force, 452nd Kokutai, Kiska Island, Aleutians, March 1943. Topsides are purple with grey below. Black cowl was found on most naval aircraft. No orange panels on wings. Aircraft painted in this scheme usually faded to a brown tint in a short time.



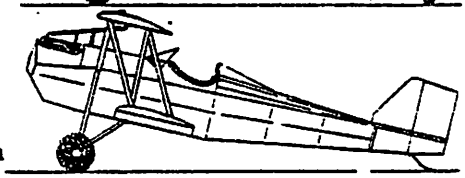
Nakajima A6M2-N of the Otsu Kokutai, Japanese Naval Air Force, based at Lake Biwa, in Jaunary 1944, used in the defense of Honshu. Finish is dark green (topsides) and pale green (undersides) with black cowl and maroon spinner with black blades. Two red fuselage bands were unit identification markings with orange identification panels on wing's leading edges.
Courtesy Scale Modeler 8/78



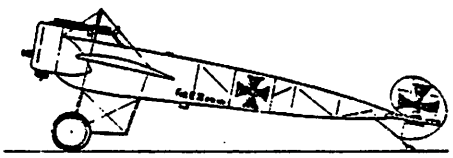
*KAWASAKI He-61 HEIN (TONY)-The Tony is a unique and super clean WWII warbird. With exact scale configuration it is not for beginners. Fast flight and a challenging structure are prime features. Ailerons, elevator and Cox TD power. Room available for third channel. 1" = 1' scale. 40" span.



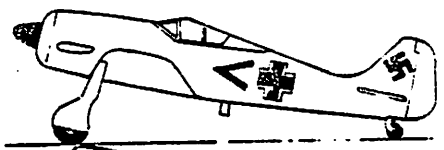
*PIPER J-3 CUB-A classic by 1945, our drawing features very light built-up construction and Cox Golden Bee power for realistic flight. Two channel, Ace pulse, or free flight; take your pick. 1" = 1' scale. 35" span.



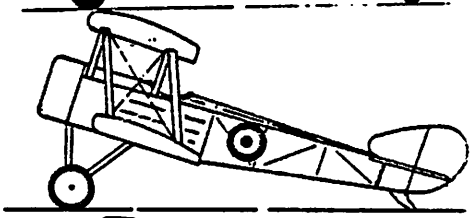
*GERE SPORT-Bipes are beautiful! The 1930's Gere Sport with its angular lines and Ford power indicate its homebuilt heritage. Both wings removable. Exact scale outlines. Two channel, Ace pulse, or free flight. 1½" = 1' scale. 30" span



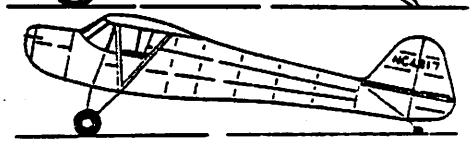
*FOKKER E-III-A light and lacy exact scale rendering of Tony Fokker's monoplane. With its delicate but functional scale rigging this plan will appeal to all WWI buffs. Keep the power down and slow fly with two channel or pulse. Free flight OK too. 40" span.



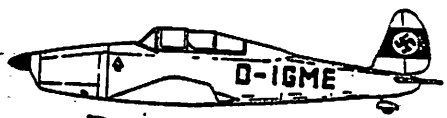
*FOCKE-WULF FW190A (WÜRGER)- The FW190A helped write the book on fighter warfare in WWII. Aside from its military potential it is indeed a handsome aircraft. The TOM THUMB design is lightweight along the lines of a stick and tissue type. It will fly on Golden Bee or TD power. 1" = 1' scale. 35" span.



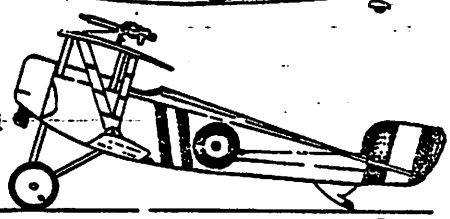
*SOPWITH "PUP"- The Admiralty called it Type 9901. Its pilots called it the "Pup" (offspring of the Sopwith 1½ Strutter). Either way the Pup was a delightful craft to fly. Lightweight construction marks this popular design. 2 channel and TD recommended. 36" span.



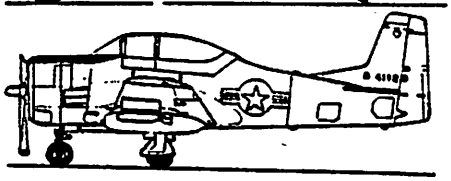
*TAYLORCRAFT MODEL B- Shades of the early 1940's. A 48" span stick and tissue classic beefed up for 2 channel and a Golden Bee. Can be flown FF too; Very light design.



*ARADO Ar 96- The Arado was perhaps the most prolific German trainer in use around 1938. With its wheels up it does move out. Many people will not recognize the prototype in bright cub yellow. An uncommon design, easy to build, and quite fast if built light. 1" = 1' scale. 36" span.



*NIEUPORT Ne.11 (BÉBÉ)- Predecesser to the Ne.17, the Bébé has an appealing simplicity to it. This classic bipe has been scaled to 1¼" = 1' yielding a 37" span. Its simple construction means lightweight. Fly it on 2 channel or pulse.



*T-28D TROJAN-The hefty lines of the T-28 are captured in this 1" = 1' design for .10 - .20 power and four channel control. Not a beginners project. 41" span.

TOM HOULE 11333 N. LAKE SHORE DRIVE MEQUON, WI 53092

Ordering & Shipping - Sky Tracings are shipped in 9 X 12 manila envelopes. Plans are $5.00 each or any three for $12.00. Add 50¢ per plan for first class postage. Send check or money order - no cash please. Make remittance payable to Tom Thumb Sky Tracings.

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