

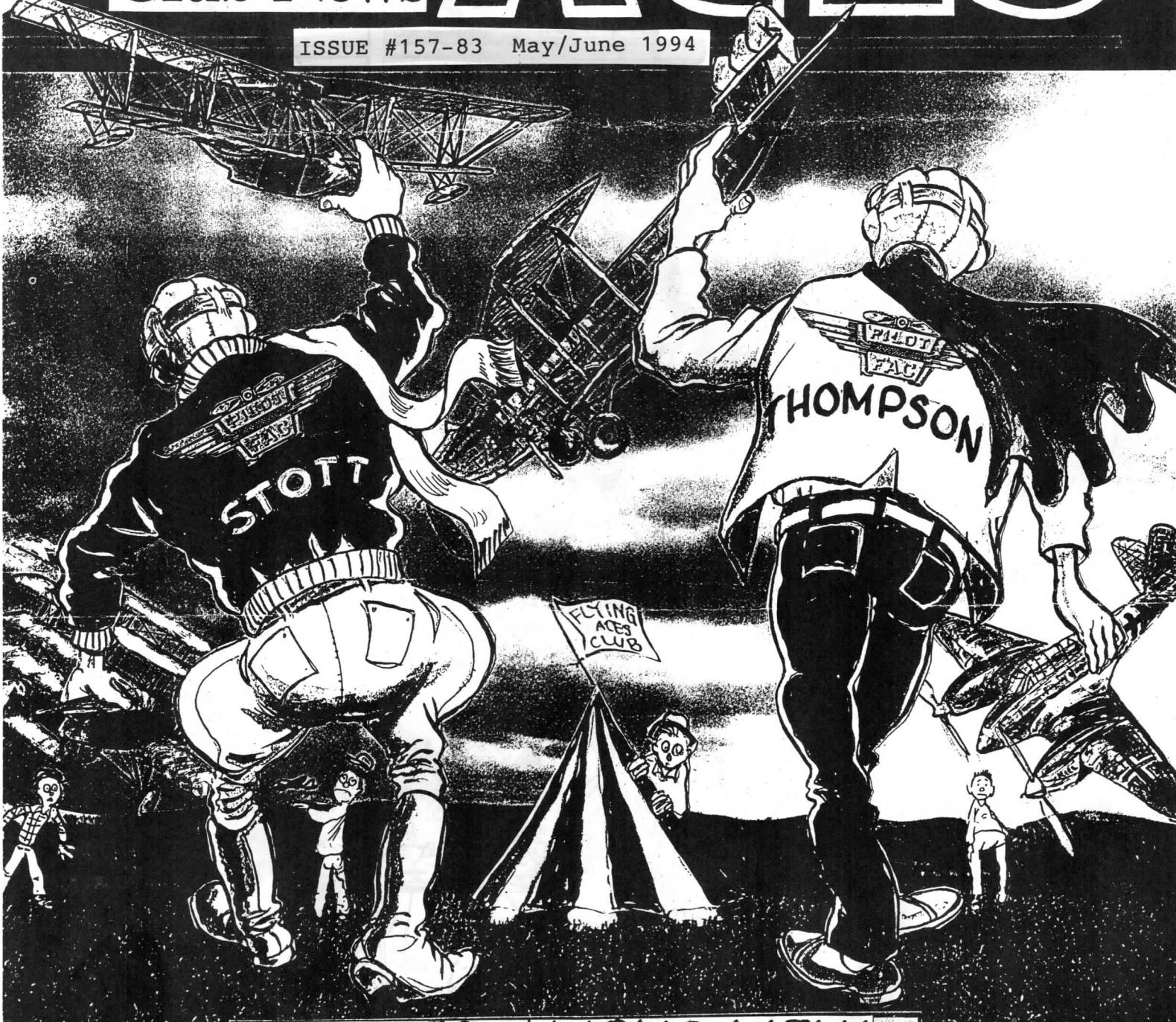
FICTION  
MODEL  
BUILDING  
FACT

THE FIRST FAC CONTEST: NOV. 1967

# FLYING ACES

Club News

ISSUE #157-83 May/June 1994



GIANTS AMONG MEN!

STORY BEHIND THE COVER!

1967...

FIFTY CENTS GETS  
'YA IN, KID! DON'T  
LOSE THAT 54" COMET  
T-CRAFT... HAWWW!



TEMP: COLD ACTION: HOT

DON'T FORGET, DAVE ~ ME BIG SCALE JUDGE !! YOU CAN GREASE MY PALM WITH SILVER...



JEEZ - IT'S COLDER THAN A POLITICIAN AT CHRISTMAS. DON'T BLOW THAT MOTOR GOIN' FOR THE GOLD, GUYS!

AW BALONEY - IT'S A NICE BALMY DAY, THOMPSON!



WELL - CHECK OUT THIS NELSON MAUBOUSSIN TANTUMM - IT OUGHTA FLY TWICE AS GOOD WITH TWO WINGS - HAWWW!



HMM - WHERE ARE THE NAV LIGHTS? NO DOOR ON THIS... HOW DO I GET INSIDE? - AND NO PITOT TUBE-

CHECK THE RELIEF TUBE, TOO



HIGH WING CABIN, MINUS FIVE BONEYS, THOMPSON - BY THE FAC SCALE RULES AND HUNG, WELL GIVE A FLYING CHANCE TO ALL CLOUD-CUDDLING BALSA BUTCHERS \*

WHUD HE SAY?



HOW ABOUT THIS? THE FIRST BIG FLYING ACES CLUB CONTEST - NINE BRAVE SKY-HURTLEERS FREEZIN' THEIR BUNS FOR GLORY.. AND A TROPHY FOR EVERYBODY!



YEP. MAYBE SOME DAY THERE WILL BE SCADS OF TISSUE-TRIMMERS - ON WARMER DAYS - SAY, IN UPSTATE NEW YAWK EH?

A TIP OF THE OLD FLYING HELMET TO OUR FOUNDERS AND INSPIRATION - STOTT & THOMPSON - WITHOUT WHOM

# NEWS ON THE WING!

Our cover on this issue depicts two intrepid airmen about to do battle in the skies over Pinkham Field! This drawing and the story drawing on the preceeding page were done by our old friend Bob Rogers. This cover was done to honor our two founders. So please, if you attend the FAC Nats this year, go up to them and give them a great big "THANK YOU"! For without their leadership the art of rubber scale modeling would have gone the way of the dinosauer long ago.

We have lost four more FACers. Our sympathy goes out to their families and friends, they will be sadly missed by all. To Charles Roth, John Meinecke, Jack McReady and Lyn May, happy flying, fellas.

Once again we have been asked if we accept memberships for more than one year. The answer is yes. You may pay for as many years as you want, we'll accept your money, no question!

Boy! Did we pull a Boo-Boo in the last issue! Remember the photo of the Aeronca floatplane that we didn't have a name for? We called him builder UNKNOWN. Well, he is none other than Earl Van Gorder who writes the highly rated column for rubber power fans in the FLYING MODELS magazine. A thousand pardons, Earl. Say you'll forgive me!

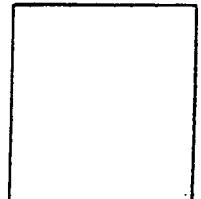
Now for some info for you on the FAC Nats Mk. IX. We will be lodged in the dormitory called Jones Hall. It is a little bit farther in on the campus but not too much. We will park in parking lot "R" which is right next to where we have always parked. We will have registration there on Thursday July 7th from 1:00 pm until you are all accounted for. When you arrive in Geneseo just follow the usual signs that will be posted all over the downtown area and they will lead you directly to Jones Hall. Judging will take place on Friday evening and this time you will be limited to just two models per JUDGED event. This will allow the judges to get finished before two o'clock in the morning as has been happening in the past. This is just not fair to them considering they are giving up their time that could be spent with old friends. Also do not bring in any models that you are going to fly in the mass launch events to be judged, unless you will be flying them in a judged event also. We need the space and the judges can maybe get through before midnight. In fact they have to be done by then, period! Hope you all understand.

Many thanks who all of you who have contributed to this issue. Without you we have no newsletter. Keep your "STUFF" coming!

We have just received some new kits and they are exciting. Dave Diels new kits of the Ryan Navion, the Globe Swift and the Dornier Do-335 are the usual Diels kits, good wood, tissue and those great decals, etc. Dave also sells canopies and decals for many of his designs. Get his latest catalog, send about 2 Bucks to; Diels Engineering, P.O. Box 263, Amherst, Ohio 44001. We also received 3 new kits from Lil-Planes Kits. Haven't had a chance to try one yet but they look real good. The ones I got were the Kawasaki Komet, the Farman F-190 and the Ford AT. Priced at \$9.95 each, postpaid is OK too. See ad in this issue. We also want to tell you about the Bill Barnes Tie clasp and/or lapel pin. You can order one from Bud Overn, Ad in this issue, they will help make you look like the best dressed modeler in the FAC!

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If the box on the right has the dreaded RED "X" in it, it is time to renew your membership which includes the newsletter. Cost is \$10.00 per year in the United States and Canada. Overseas the cost is \$15.00 per year. Six issues per year published every other month. This is your last issue under your old membership. Please make checks payable to "Flying Aces". Send to FAC-GHQ, 3301 Cindy Lane, Erie, Pa. 16506.



4.

## HOW MANY TURNS FOR TAN II

by Ollie Benton

The new Tan II rubber from FAI Supply is quite different from the old black rubber or the original Tan. Overall it is better.. It has less of a power burst, it is more consistent in not suddenly breaking, and it will take more turns. The power seems to be a little less than the old Tan or black (I don't have a torque meter so not certain). But the "cruise" portion of the motor run seems longer, resulting in longer flights. Recently I ran a few experiments to see how many turns I could safely put into various lengths and sizes of Tan II.

For a peanut model I had a 14" loop of 1/8" rubber. I ran three tests. In each test, the rubber did fine up to 1500 turns. All broke between 1500 and 1600. I would recommend staying with a maximum of 100 turns to the inch on 1/8". For another plane, I wanted a 22" loop of 3/16". I tested this up to 1800 turns with no break. It still felt springy. I believe that you can safely go with 75 turns to the inch, maybe up to 85.

My last tests involved two loops of 3/16". The first motor had two loops 19 inches long (braided). It broke at just over 1250 turns. The second motor had two loops 21" long (unbraided). It was tight and ready to break at 1350 turns. I conclude that you can get about 60 turns to the inch on 2 loops of 3/16". This is about 20% more than on the old Tan or black.

In every case, before a motor broke, there is a very noticeable tightening of the motor. It felt like it was about to break! This is a major improvement over the old Tan, which would break without warning.

The above tests were run in an unheated workshop at 40° F. The rubber should do better at 60-80°. When unhooking a motor that did not break, I found that it had been cut almost all the way through by the prop hook. Conclusion: Put a plastic tube over the prop hook to lessen the chance of breaking.

\*\*\*\*\*

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continued from page 3.....

We would also like to reccomend a new booklet entitled "Dress Up That Scale Ship" by Stan Fink, ad in this issue.

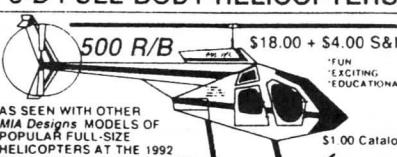
One more note on the FAC Nats, Please if you are going to attend, send in your entry form as soon as possible, looks like another record turnout!

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

Lt. Col. Lin Reichel, CinC-FAC

\*\*\*\*\*

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## HOW TO COVER A MODEL AIRPLANE USING THE WET TISSUE METHOD

I believe that many of us would agree that the most challenging part of building a stick and tissue model airplane is the covering of the framework. In all probability, many models are never completed and possibly many potential builders give up in disgust and frustration because they just don't seem to have the ability to cope with this part of the project.

Many times I have been asked how I get the tissue on my models so tightly or if I put the model in the oven to shrink the paper. Realistically, there is no magical method or secret formula for obtaining a satisfactory covering job. You simply have to make up your mind to the fact that it is just another phase of the project that has to be dealt with and it's up to you to get the job done.

It's true that some are gifted with more talent than others, but that's hardly an excuse for the average builder or even the novice not being able to turn out an acceptable covering job. Simply put, it takes a lot of practice, patience and perseverance to accomplish anything we attempt to do, even when it comes to putting the tissue on a model airplane. Besides that, it can be very rewarding and encouraging to turn out a fairly decent covering job, especially if it's your first attempt at it. With a little "practice" and "patience" you'll soon find that covering a model can actually be fun!

Now that we're thinking positively, let's face up to the task and put some tissue on those bare bones using the wet tissue method.

### PROCURE THE FOLLOWING ITEMS:

Sharp Scissors

18"-36" Steel Ruler

New Single Edge Razor Blade

Double Edge Razor Blade (Broken in half and then to a point on one end)

Atomizer Bottle (Discarded Windex or similar - containing a 50/50 mixture of water and rubbing alcohol)

A small jar of 50/50 mixture Clear Dope and Thinner (I prefer Nitrate)

A 1/4" or 1/2" Soft Bristle Brush

A Soft Lead Pencil

Clean off your work bench, don't attempt to cover your model in a mess of clutter! It can be very discouraging to puncture that neatly covered wing on an X-ACTO knife handle protruding out of the workboard. I usually tape or thumbtack down a piece of inexpensive white poster board on my workboard. It makes for a nice smooth, snag free area to work on.

Ok, let's concentrate on covering the wings and fuselage first, we'll get to the tails later.

**Step 1:** Prepare the structure prior to covering by checking for any glue globs or irregularities that might protrude or show thru the covering. Make sure you have sufficient gussets, spars and braces in the critical areas where wrinkles are most likely to develop. Ensure that all areas are sanded smooth and even. When everything seems satisfactory, proceed by applying at least 3-4 coats of the 50/50 clear dope to all the structure that will come in contact with the tissue until there is an apparent gloss or sheen on the framework. Of course let each coat dry between applications and sand each one lightly using a very fine grit paper.

### Step 2: Covering the structure

**A:** Select the appropriate covering material for your particular model. Example; You wouldn't cover a P-nut ship with a heavy grade or domestic tissue. The weight incurred would render it no more than a shelf model!

**B:** Familiarize yourself with the characteristics and quality of the material you are using and stay with the brand that is easiest for you to work with. I prefer Esaki tissue sold by Micro-X. It is light in weight with a nice soft texture, but is very porous. It is especially difficult to work with wet because it tends to shred easily when you try to pull the wrinkles out.

It's best to practice covering and old structure or build one to experiment on before you start putting the tissue on your model. This will prevent having to re-cover your project and all the frustration that goes with it!

I start by measuring the wing panel's length and width, then mark off and cut the tissue in rectangular sections using scissors or the single edge razor blade and steel ruler. I allow at least 1/2" margin around the perimeter of the actual frame size. Make sure the grain of the tissue runs spanwise on the wing, and fore and aft on the fuselage. You might as well cut enough tissue sections to do the entire wing. I always cover the bottom of the wing panels first since the tissue seems to stretch tighter on the top due to the curvature of the wing airfoil. By doing the bottom first, it tends to help alleviate any bowing problems that might occur.

Lay the tissue section on the wing framework ( I usually do this procedure on my lap) making sure the margin of overlap is about the same all the way around. Have your brush and dope jar handy. Spray the tissue with a fine mist of water/alcohol mix (don't be afraid to get it overly damp). Carefully begin to pull the tissue from the root rib to the wing tip, then from leading edge to trailing edge. Do not apply and dope yet!

This is the critical point of the procedure since the tissue will tend to shred if pulled too hard. If the tissue starts to dry, just wet it again until this step is completed. After the covering is laying on the frame, free from any major wrinkles, begin to apply dope to the root rib first, doping right thru the covering, then apply some dope about midway of the chord on the wing tip. Make sure the tissue is still damp enough, then proceed to stretch and dope the tissue down around the whole perimeter, being sure not to snag or shred the tissue. Patience comes into play here, so don't rush the job, just take your time.

Note; Some materials are less porous and have much better wet strength and the dope may not penetrate thru the tissue, so it may be necessary to lift up the tissue and dope the framework underneath it in order to get it to adhere. This is another reason for knowing the characteristics of the material you're working with.

Just before the covering completely stretches, I trim the excess margin off around the perimeter of the panel (the pointed half of the double edge razor blade works good here) making sure there is enough tissue left to wrap and dope around the edges to cover the raw wood. When you are reasonably sure that no major wrinkles or sags have developed dampen the covering again and proceed to cover the top of the wing panel.

The reason for re-wetting the covered bottom surface is that when it dries and stretches it tends to twist or warp the wing panel making is more difficult for the top covered surface to straighten it. Re-wetting the surface relaxes the tissue allowing the structures to maintain its original shape until the top covering is applied.

The top surface is done exactly like the bottom. The only problem you might have is at the wing tip, but by covering wet you should be able to get the tissue on in one piece. As the tissue is pulled over the tip rib to the tip, several little pockers may occur, but by redoping and re-wetting as you go along you can usually work out the wrinkles enough so that when it dries and stretches the surface will be tight and smooth.

After the panel is done, dry and wrinkle free, check by sighting along the leading and trailing edges for any bows and/or warps. I always straighten my wing and tail surfaces by hand as opposed to pinning them down. If need be, dampen the tissue and twist the panel in the opposite direction to remove any warps. I also set the wash-out in the wing at this time. Just make sure both panels have the same amount. After everything seems satisfactory to you, brush on a coat of the 50/50 dope and set aside to dry. Proceed to cover the other wing panel the same way. Depending on the size of the model, I usually give the flying surfaces at least three coats of clear dope. P-nuts get one or two while jumbos can stand quite a few more. At this time I usually apply all details such as; aileron outlines, license numbers, wing walks, insignias, etc., before attaching wings to fuselage. Of course do whatever is easiest for you.

Let's do the fuselage next. Once again check to make sure the framework is smooth and free of any irregularities or glue blobs that might show thru the covering. Commence to coat the framework with clear dope in the same manner as you did the wing. If the fuselage is more slab-sided, ala J3 Cub, it usually can be covered in four or five pieces of tissue (sides, top and bottom) without any major problems. If some areas have extreme compound curves or abrupt shapes, then the tissue will have to be cut to accommodate as needed. You'll be amazed at how much more area can be covered with one piece of tissue when applied wet. If the fuselage is oval or round, such as WWII ships, the tissue will not cover as large an area in one piece.

Note: When I build a round fuselage, I don't scallop the formers between the stringers as is commonly done. The reason is, it gives me two options when I apply the covering. I can either cover fore and aft or around each section between the bulkheads. The un-scalloped formers provide an attach surface for the covering and really doesn't look all that bad when the project is completed. Besides that, when you get one of those aggravating weed punctures, it's much easier to patch the small area between the formers and stringers than having to replace the whole strip of covering down the side (to each his own here).

The round or oval fuselage is more time-consuming to cover but with some practice and patience, the job will be done before you know it! When satisfied with your handwork, give the fuselage three or four coats of clear. I usually apply door outlines, stripes, panels, etc., at this time.

Last but not least we are ready to cover the tailfeathers! For smaller tails that are built flat, I usually pre-shrink the tissue on a frame large enough so that all the tail frames can be covered by the same piece. I leave the tissue on the frame and stick the tail parts to it, allowing ample drying time. If you cut the part away to soon the tissue tends to relax causing a bumpy looking surface. I do this step in the evening and let it dry overnight. When completely dry cut the part away (the pointed double-edge blade works good here) and stick the other side of the tail to the remaining tissue that is still on the frame. When the second side is dry cut it away from the frame leaving enough margin around it to cover the raw edges. Sometimes using this method the tissue has

a tendency to relax a little even when thoroughly set. Usually it's not enough to hurt the appearance and it's far better than having a drum-tight job that resembles a potato chip! For adhesive, I've been using a product called STIX-IT made by Sig that works great for covering dry. Thinned white glue or clear dope can be used, but I like the STIX-IT best. (Use whatever works best for you.)

If the tail surfaces have a symmetrical airfoil or a flat surface that has a thicker and sturdier structure I cover with the tissue wet because warpage of the framework is less likely to occur. Follow the same procedure of covering as you did on the wing and fuselage. I think you'll be happy with the results.

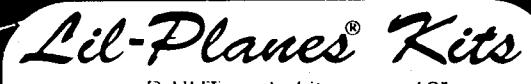
#### Conclusion:

I have tried to relate to you in this article a method of covering a model airplane that I prefer and that works well for me. There is no right way or easy way to accomplish this task and it all comes down to whatever way works best for you. As you can tell by now I am in no way a writer and would much rather show you how than tell you how. I'm sure there are many other modelers out there that are much more proficient at covering a model than I am and could write a much better and more interesting article. However, I hope I have been able to help you in some way to make this phase of model building enjoyed rather than dreaded. So don't be discouraged if your first covering job is not perfect. Just remember: Practice, Patience and Perseverance, then go on to your next project.

It may take several models before you become a top-notch tissue trimmer. Just don't give up, you'll soon get the hang of it. After all my covering jobs don't always turn out the way I would like them to either. Besides no one will notice a few wrinkles when your plane is a hundred feet in the air on its way to a max!

Respectfully submitted,

Phil Cox  
Callumet Escadrille



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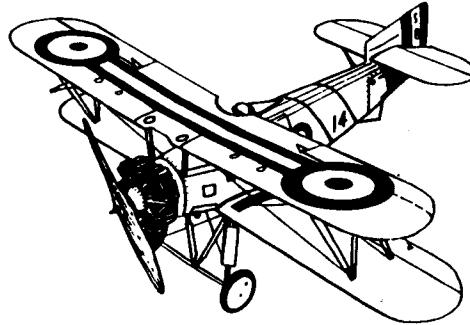
Designs by Dave "VTO" Linstrum

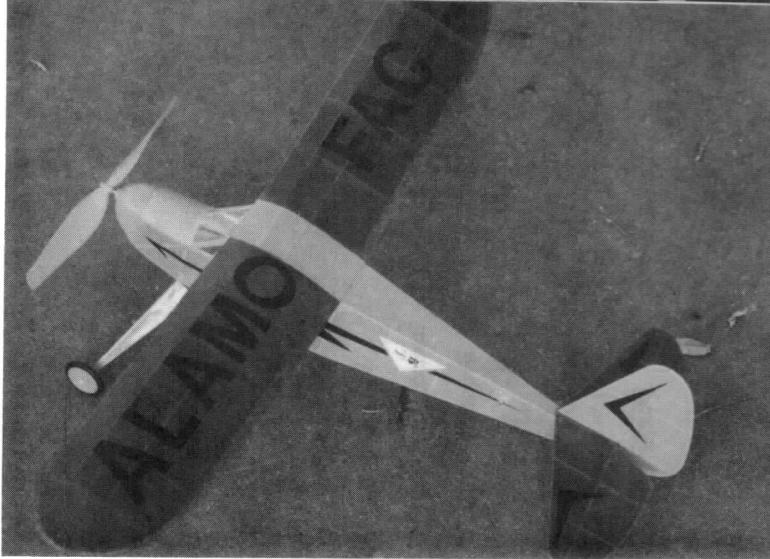
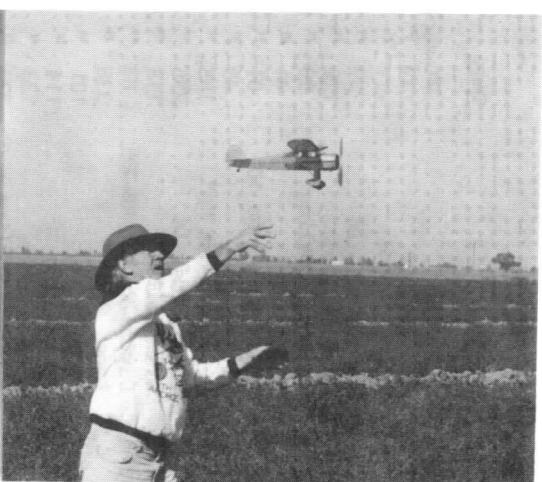
- D1. Martin MO -1
- D2. Pilatus Porter
- D3. Curtis Jenny Mono
- D4. Kitfox
- D5. Kawasaki Komet
- D6. Ford AT
- D7. Farman F-190

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Top row; Great looking Douglas DC-3. This is another one of the plans by Scientext. Electric powered.  
Richard Miller launching his Waco SRE, real nice flyer.

Middle row; Bill Teseny with his Korda "Victory". Bill is sponsoring the Golden Age event at this year's FAC Nationals.

John Blair right after being awarded his "Blue Max" Medal. Look at that Smile! Way to go John!  
Bottom row; Glenn Bearry's Pacific Ace showing off its FAC Squadron name. We hear Glenn's a great builder  
and flyer, and young, too!

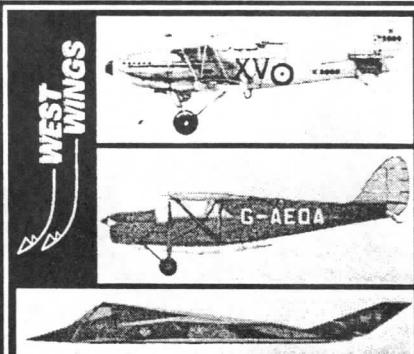
Bob Isaack's Hellcat showing the fine details of its canopy. Canopies are available from Bob  
as well as many others. (see ad in this issue)

# Peanut & No-Cal Scale Postal Meet News

## INDOOR NO-CAL (not in order)

<u>Pilot</u>	<u>Plane</u>	<u>Time</u>
Jim Anderson	Tipsy Jr.	71 sec.
Dan Benner	Grumman F4F	137 "
Chuck Powell	Taylorcraft	111 "
Jeff Englert	Farmar Postale	59 "
Chuck Powell	Cassutt Racer	119 "
Paula DiDonato	Waterman Gosling	53 "
Tom Derber	Rider R-2	41 "
Mike Matrie	Arsenal Defiance 10	81 "
Jan Jones	Plymocoupe	49 "
Barrie Taylor	Bristol Scout "D"	195 "
John Vorhees	Farmar Postale	296 "
Michael Spiess	Grumman F4F	119 "
George Bredehoff	Dayton-Wright RB-1	63 "
Barrie Taylor	Lacey M-10	338 "
Kristina Luzzi	Fike "E"	101 "
Frank Hirlman	Cosmic Wind	114 "
Dave Braun	P-47	133 "
George Lewis	Waterman Gosling	223 "
George Bredehoff	Republic A-10	27 "
John Marett	Taylorcraft	184 "
Frank Morton	J-3 Cub	46 "
Jerry Knoblach	Tipsy Jr.	70 "
Al Martenson	Shinden	52 "
John Koptonak	Folkerts SK-4	155 "
John Koptonak	Ambrosini	130 "
John Koptonak	Northrop Black Bullet	62 "
Roy Bourke	Cessna Centurian	382 "
Roy Bourke	Clipped Wing Spitfire	352 "
Roy Bourke	Fike "E"	296 "
Sidney Gilbert	Finnair	153 "
Walt Leonhardt	Martin MO-1	38 "
Aaron Petersen	Hughes H-1	159 "

\*\*\*\*\*



WW-09	Hawker Hart	25"	\$20.95
WW-08	Puss Moth	24"	\$16.95
WW-06	F-117a Stealth	15"	\$16.95
WW-10	Westland Widgeon	24"	\$15.95
WW-03	Hawker Sea Fury	22"	\$19.95
WW-04	Spitfire Mk.22/24	25"	\$19.95
WW-21	Mig-29 (profile)	12"	\$7.95

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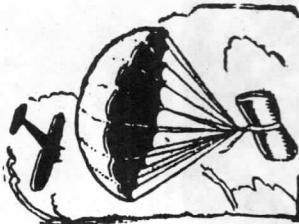


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<u>Pilot</u>	<u>Plane</u>	<u>Time</u>
1. Dave Stott	Fairchild 24	126 sec.
2. Wayne Brock	Mr. Smoothie	76 "
3. Glenn Bearry	Texan	70 "
4. Ron Hummel	Lemberger LD-20B	68 "
5. Doc Martin	Waco	62 "
6. Ron Hummel	Livingston Monocoupe	62 "
7. George Nunez	Caudron 460	47 "
8. George Nunez	Brewster Buffalo	45 "
9. Walt Leonhardt	Nesmith Cougar	39 "
10. Ron Hummel	ME-109E	32 "

<u>Pilot</u>	<u>Plane</u>	<u>Time</u>
1. Sidney Gilbert	Lacey M-10	124 sec.
2. George Nunez	Ol' Ironsides	96 "
3. Bruce Holbrook	Alco Sport	90 "
4. Tommy Westlin	Fike "E"	77 "
5. Sidney Gilbert	Martin MO-1	75 "
6. Tom Hallinan	Mr. Smoothie	65 "
7. Aaron Petersen	Ord-Hume	57 "
8. Frank Hirlman	Nesmith Cougar	57 "
9. Jim Anderson	Ord-Hume	46 "
10. George Lewis	Maboussin 40	45 "
11. Tommy Westlin	Caudron "N"	41 "
12. George Bredehoff	White Monoplane	32 "
13. Tommy Westlin	Albatross D-III	27 "

<u>Pilot</u>	<u>Plane</u>	<u>Time</u>
1. Ron Hummel	Olds Tailwind	935 sec.
2. Mike Ransom	F4U Corsair	291 "
3. Dave Linstrum	Farmar Postale	125 "
4. Mike Ransom	OS2U Kingfisher	105 "
5. Paul Herbst	Gee Bee R-1	82 "
6. Walt Leonhardt	Martin MO-1	45 "

9.

\* \* \* The Forever Flyer \* \* \*  
 Mumbo Jumbo #62 from the pen of the Glue Guru

Salutations, disciples! Today we shall ponder the import of a recent meeting at FAC Hqs. Summoned hurriedly, Mr. Thumsome and I assembled in Col. Run Likehell's dank basement, there to be greeted by the Col. himself, positively brimming over with bonhomie.

"Welcome, gentlemen! I've brought you here to help usher in the new era - one of perpetual flight! Think of it - models that fly forever! Not the usual minute or so, but whole hours! Days! And to think that once we spent our time counting mere seconds! Hah! Never again!"

A puzzled Mr. Thumsome broke in, "You mean atomic powered engines, Chief? There was an Atom Engine but I heard that guy cheated and really used gas."

"No, no! I mean a traditional rubber powered motor source. Just look at this drawing. Of course, it's in German and wartime secrecy necessarily prevented full disclosure, but I've worked it out! Yes, it holds no secrets from these eyes..."

"Sir, when was it published?"

"That's the whole point, GG! July 1917! You've doubtless heard of Hindenburg's Amerika Program. Well, here it is - a means of beating our revolutionary balsa wood flying models with old country hardwood and silk. And look how simple it is! Just one MW shaft with a hook at each end driving a bevel gear connected to the prop. Put a wound motor on one hook and an unwound one on the other, and what happens? The wound one runs down, driving the prop, and winding up the other motor! Then the freshly wound one takes over and the process reverses. It can go on all day! There's no end..."

Deep uneasiness seized me. "Sir, I think there's a flaw in your argument."

The Col. bridled, "That's the trouble with you, GG, rigid thinking! True genius requires flexibility; yes, it takes the ability to see opposing viewpoints simultaneously...hours of operation...days!"

"Dunno, Chief. How do we run contests if every model flies for days?"

The Col. nodded, "Good question, Thumsome. Good forward thinking there. And that's why I've called this meeting. There is a problem here and we must wrestle with the possibilities. Of course some would say, 'ban gears and be done with it' but I think that would be wrong. On the other hand..."

"I've got it, Chief! You know the way the Others lock up their aerobatic judges in those cages so they won't be skooshed by their dumb models? Well suppose we locked up our contestants in cages so they couldn't go home! That would sure do it!"

"Er...in the future Thumsome, just shut up."

"I was just trying to help, Chief".

"I know. That's the tragedy of it all. Just shut up."

"Sir, there is good reason to think the idea can't work. It all has to do with perpetual motion and the conservation of energy. You're ignoring the losses implicit in spinning the prop and driving the motor. If one assumes..."

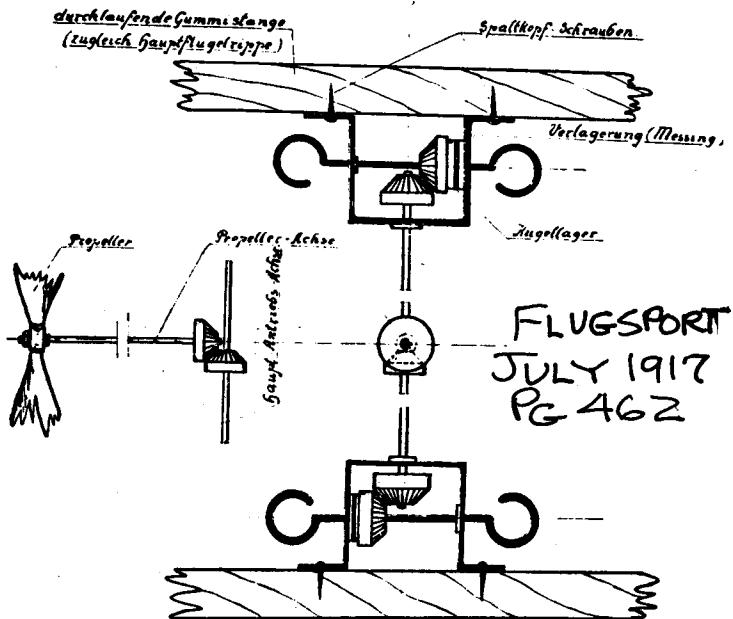
"Are you saying that the Germans were wrong? Well, no wonder they lost the war!"

"No sir, but I suspect your view of the designer's goal to be in error. He wasn't pressing for perpetual flight. My guess is that he wanted 'add-up' from two motors running in a spanwise sense along a heavy spar."

The Col. nodded slowly. "Is that all? It sure isn't much of a goal. There can't be more than a few seconds gained".

"Yeah", agreed Mr. Thumsome, "It doesn't pay to build cages for seconds".

The Col. sighed. "Meeting dismissed".



FLUGSPORT  
 JULY 1917  
 PG 462

# Contest Calendar

All of these contests include FAC events.

June 11...21st Annual Great Lakes Scale contest, Erie, Pa. Joe Barna, 3517 Kristie Dr., Erie, Pa. 16506 (814) 833-4985. Aug. 6...Picnic Meet, Vic Didelot, 4410 Lorna Lane, Erie, Pa. 16506 (814) 838-3263. Also, Sept. 24--Oct. 8.

June 11-12...Mosquito Squadron, Palm Bay, Fla., Steve Bacom, 836 Banbury Dr., Port Orange, Fla. 32119. Also on Sept. 3-4-5, Nov. 19-20 and Dec. 30.

June 11...Alamo Escadrille, San Antonio, Tex. Bill Teseny, 1410 Palo Duro Rd., Austin, Tex. 78757. Also July 9, Aug. 13, Sept. 10, Oct. 8, Nov. 12.

June 12...Glastonbury Modelers, Durham, Ct. Ed Novak, 106 Cutlery Ave., South Meriden, Ct. 06450.

June 18...Tigertown Squadron, Rockton, Ont. Doug Deller, 27 Rosser Cr., Brampton, Ont. L6X2R3. Also Aug. 6, Aug. 20, Sept. 10, and Sept. 24.

June 18...Calumet Escadrille, Country Club Hills, Ill. Phil Cox, (219) 838-2402 or Les Burdsal (219) 924-1149. Also July 16, Aug. 20, Sept. 17 and Oct. 15.

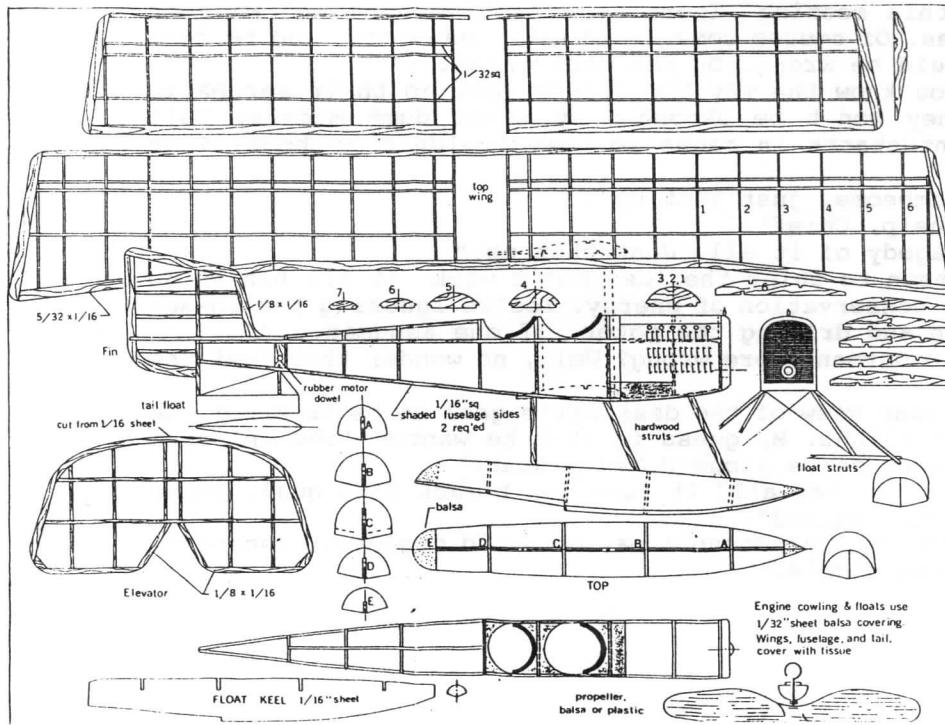
June 19...Mini-Contest, D.C. Maxecuters, Allan Schanzle, 20008 Spur Hill Dr., Gaithersburg, Md. 20879. Also Aug. 14 and Sept. 10.

June 19...Bay State Squadron, Falmouth, Ma. Mike Nassise, 22 Greenfield St., South Easton, Ma. 02375.

June 25-26..One Design Contest, Galeville, NY, David Kennedy, 1005 Buttonwood St. Norristown, Pa. 19401 (610)277-9973.

July 24...McCook Field Squadron at Wright Field, Dayton, Ohio. Frank Scott, 6633 E. LeFevre, Casstown, Ohio 45312-9750.

Can anyone give us a name for this bird?  
Was it a real aircraft or just a model  
someone dreamed up? If you have anything  
on this please send to FAC-GHQ or to Jim  
Poche, 9114 Hermitage place, River Ridge,  
La. 70123.



## FLYING ACES Mid-South Championships August 6 - 7 Tullahoma, TN

Rubber Scale

Peanut Scale

Power Scale

Jumbo Scale

Golden Age

Golden Age Biplane

O.T. Rubber

WWI Combat

WWII Combat

Racers

This is one  
of the best  
fields in the  
Eastern  
U.S., 1 1/2  
miles by 1 1/3  
mile.

Contact:  
Ollie Benton  
409 Brady Pt. Rd  
Signal Mtn., TN 37377  
(615) 886-1293



Contest Results  
Please send all contest results directly  
to; Roy Courtney, Box 88, Elma, N.Y. 14059.  
FAC Squadrons

For a list of all FAC Squadrons send a self-  
addressed, stamped envelope to; FAC-GHQ, 3301  
Cindy Lane, Erie, Pa. 16506.

## WHAT COLOR WAS IT?

### Part 7. By Dave Stott.

## BALSA SHEETING TECHNIQUES

by Bob Tszack

Los Photos locos '99

Well Clubsters, it looks like I have job security here. At the end of part 6 I pronounced it the end of this series. So I thought! A large package arrived in the mail from FAC Bill Glick with a lot more dope on colors, plus a bit more that has turned up here and there. As before, when I have it I will mention the source, registration, and any other info to help identify the ship being described, such as model number, engine, etc. I have also decided to get into foreign airplanes as well. But, that comes later. For now, let's have a look at these.....

EAGLEROCK: Engine type unknown. Cream, blue trim  
P-36 Prototype. X17Y. Blue fuselage with wings and entire tail yellow. (Air Classics, Vol. 6 #2, pg. 7. photo & caption)

CURTISS: Hawk II, Cyclone, This one sold to Nazi Germany. Silver, red trim. (Photo and caption, same source as above)

Robin. OX-5. Wings and entire tail yellow. Fuselage, struts & registration, NC7145 orange. Wheel spokes exposed, and silver.

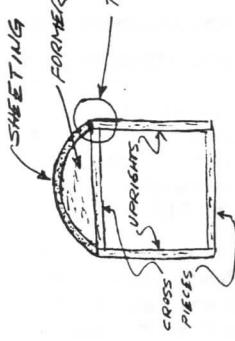
Touroplane. Kinner, 100HP. 6842 (No prefix) Orange wings, stab, & fuselage stripe. Silver wing struts. Rest of plane green. Lettering white. This and Robin above from Antique Airplane Digest, Vol 44 1st - 4th Qtr. 1991.

Aristocrat: Yellow ring cow with blue scallops. Ship is blue below fuselage curved color demarcation line, yellow above NC878H Lettering is blue on yellow, yellow on blue. Wheel hubs silver (Antique Airplane News, Vol. 44, 1, 2, 3, 7 4th Qtr., 1991) (Not same issue as above!) Skyrocket. CF-DCH Built 1945 in Canada. Yellow wing and stab., rest of ship green. Silver wheels, modern military style. Trim & lettering is yellow on green, green on yellow. (Airpower Museum Bulletin, 1993.)

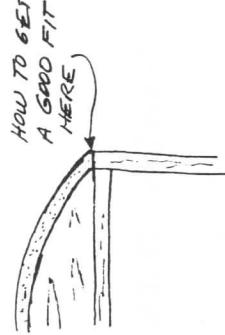
Solent Flying Boat. ZK-AMO Tasman Empire Airways Ltd. Two tone blue striping on hull and fin. Hull below stripe, tip floats, and engine nacells dove grey, rest of ship white. Logo is blue and white stylized bird. N.Z. flag on fin Registration lettering black. (Airplane, part 25. Pub. in England)

In part 8 we will list the British planes, their colors and the page on which their photo appears in the Putnam book, "British Racing and Record Breaking Aircraft", by Peter Lewis, the first author who has made an effective effort to record the colors of the planes he writes of. Bravo!

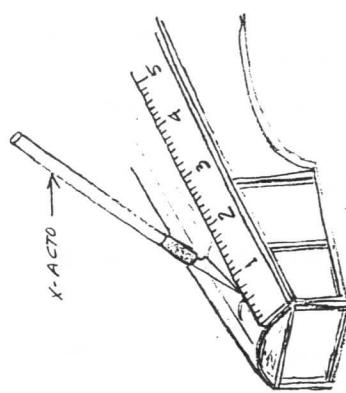
S.O.S.--I would like to trade a Berkeley T-33  $\frac{1}{2}$ A ducted fan kit in good shape and complete for a Berkeley Vought Crusader ducted fan kit in like condition; Rudy Klubber, 2021 Lakeland, Lakewood, Ohio 44107, phone; (216) 226-6838.



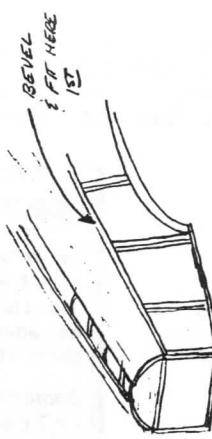
① TYPICAL FUSELAGE CROSS SECTION



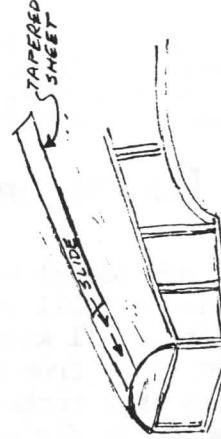
② PROBLEM AREA ENLARGED



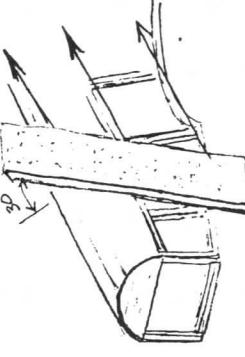
④ USE A STEEL STRAIGHT EDGE TO TRIM SHEETING AT TOP CENTER.  
MAKE GAP A LONG WEDGE SHAPE  
(TRIM LINES NOT PARALLEL)



③ SAND BEVEL ON BALSA SHEETING  
FIT TO FUSELAGE LOW BEGONS FIRST  
THEN BEND SHEETING & CYA GLUE TO  
FORMERS INSIDE FUSELAGE. LEAVE  
GAP AT TOP CENTER



⑤ CUT A PIECE OF BALSA SHEETING  
TO SAME SIZE AS GAP IN STEP 4  
MAKE THIS PART LONGER THAN NECESSARY  
AND SLIDE INTO PLACE TIGHTLY. USE CYANO  
BASE GLUE (AMBER, SILENT, DCO ETC.)



⑥ USE SANDING BLOCK  
TO "FAIR-IN" WEDGE  
FACE & GLUE LINES  
AFTER GLUE DRIES.

## Contest Calendar

July 31...Flint Balsa Termites at Flint, Mi. David Livesay, 1911 Carmanbrook Pkwy. Flint, Mi. 48507-1445. Also on Aug. 28, Sept. 18 and Oct. 2.

Aug. 27-28..39th Eastern Canada Open, at Gananoque, Ont. Jerry McGlashan, 170 Fairhaven Ave., Pointe Claire, Quebec H9S4A7.

Oct. 1....KUDZU FAC at Raeford, N.C. Dave Rees, 606 Walnut Creek Dr., Goldsboro, N.C. 27534.

Oct. 9....I.M.A.C. at Country Club Hills, Ill. George Flemming, 2819 E. 103rd St. Chicago, Ill. 60617.

Oct. 15-16.. Cactus Squadron Annual, Arizona. Bob Schlosberg, 7420 E. Buena Terra Way, Scottsdale, Az. 85250.

July 16...Whitwell, Tn. Ollie Benton, 409 Brady Point Rd., Signal Mt., Tn. 37377, Also Nov. 5.

June 26...Cleveland Free Flight Society at Lorain County Com. Col., Lorain, Ohio. Jim Hyka, 16225 Parkgrove, Cleveland, Ohio 44110. Also July 17, Gordon Roberts, 5539 Hilltop Oval, Parma, Ohio 44134 , Aug. 14, Russ Brown, 1909 N. Sedgewick, Lyndhurst, Ohio 44124 and Sept. 11, Russ Brown again.

## Scale Postal Meet

Hey! Skysters! A new postal contest for you to enter. This one will be for models built from Kit plans. All kit plans will be eligible except those from Comet Kits which will still be in a contest of their own. All you need do is fly your model and send in the time to GHQ. Every time you better a time send it in. Enter as many times with as many models as you wish. Same rules for the Comet contest. Send us the date you flew, the time of your flight, the name of your plane and the plan you built it from and don't forget to put your <sup>NAME</sup> on your entry. The contest starts now and will end on Oct 31, 1994. Entries postmarked after Nov. 1, 1994 will not be accepted.

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- Original scale models - free-flight and R/C. Single and multi-engine types. 18" to 48" wingspans.
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  - Accessory list free with LSASE
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**500 • PLANS • 500**

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### EXCITING DOMEDUSTER PRODUCTS!

Dress Up That Scale Ship by Stan Fink is a new 25 page booklet which explains 8 proven ways to beautify stick and tissue models. It is designed for both beginners and advanced modelers and has 8 illustrations and 2 charts of best uses. It is available for \$10 ppd.

Domeduster Plan Packet #3 has 12 new full size plans for 7 classes including Ministick, Peanut Scale, Pistachio, Bostonian, EZB, Beginner Duration and Hand Launched Glider. These plans are printed on 11 x 17" sheets for easy building. Cover art is by Dave Linstrom. \$8 ppd.

Domeduster Plan Packet #2 is sold out.

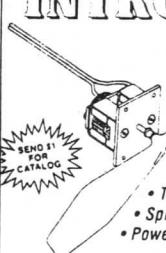
Domeduster Plan Packet #1 with 12 plans for 7 classes is still available, but there are just a few left. \$8 ppd.

Domeduster Spoked Wheel System, 2nd Ed. is a fully illustrated, step-by-step booklet which gives you complete instructions for making your own spoked wheels. It has 20 illustrations and 6 photos. Only a few left. \$8 ppd.

The price of each booklet includes postage and handling. When ordering, please make checks payable to Stan Fink, 1810 Pine St., Phila., PA 19103.

### ELECTRIC FREE FLIGHT INTRODUCING!

THE  
**DUAL  
MINI-6  
MOTOR**



- Two 6 Watt Motors geared together
- Spins a 7" prop
- Powers 150-225 sq. in., 5-7 oz. models



Assembled motor, prop, and wiring harness ..... \$29.95  
NiCd battery 3 x 150 mAh ..... \$12.95  
NiCd Battery 4 x 150 mAh ..... \$17.95  
Please add \$2.50 postage/handling to your total

PO BOX 11558, GOLDSBORO, NC 27532

Wanted; Stinson Voyager scale documentation, 3-views, color, etc., Dorothy Odum, Box 6, Marion, Ill. 62959.

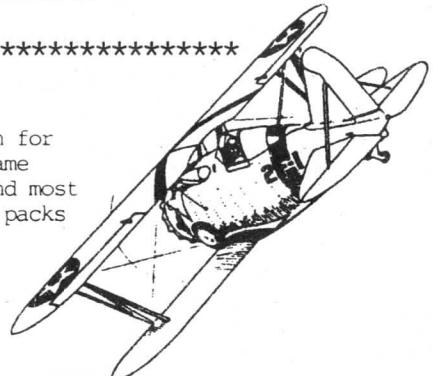
Wanted; Jim Moynihan, 5212B Magnolia Dr., Lockport, NY 14094 is looking for scale info for the following aircraft, Caproni CA-100 and the Swiss EKW C-3603.

\*\*\*\*\*

#### FLYING ACES PLANS

We are still offering the FAC Plan Packets to you. Price is \$8.00 each Plus \$2.00 each for postage. Pack #1 has 10 plans on 16 sheets (11 X 17), Pack #2 has 11 plans with the same format. All of these plans have appeared in the very early issues of the newsletter and most of you have probably never seen them. Your continued support by purchasing these plan packs continues to keep our overall operating costs to a minimum.

Send your order to; FAC-GHQ, 3301 Cindy Lane, Erie, Pa. 16506.



#### FOR SALE---DIME SCALE PLANS

##### **FAC SOCIAL NOTES:**

**Joe A. and A. Whitehouse were  
very good friends.**



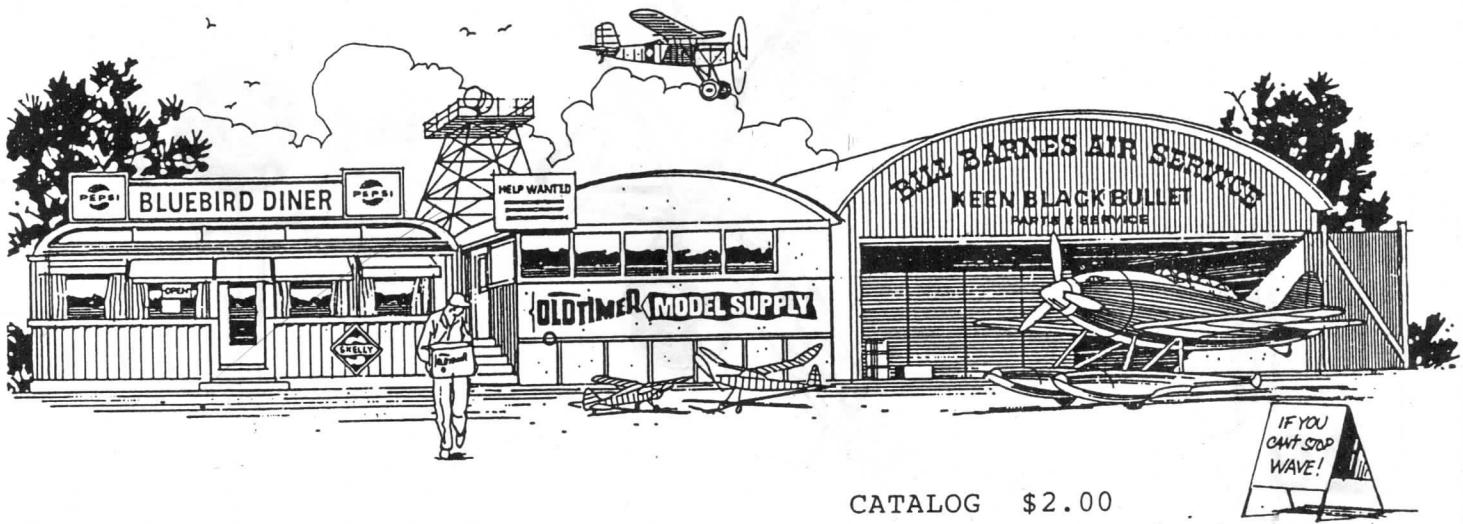
Not Arch Rivals.

The Old Time Model Aeroplane Co. has three sets of Dime Scale plans available. This is a brand new company run by our old friend Chet Bukowski, a long-time FACer. Plan set #1 includes; Cessna C-34, Taylor Cub, Fleet Trainer, Curtiss Robin, and an Arrow. Set #2; Stinson 105, Rearwin Speedster, Bellanca Skyrocket, Fairchild 45 and a Swallow. Set #3; Ryan SC, Porterfield Zephyr, Curtiss Hawk, Monocoupe and a Mechanics Flyabout. The sets sell for \$7.00 per set plus \$1.50 per set for shipping. Why not send for all 3 sets? You won't be disappointed! The Old Time Model Aeroplane Co., Box 116, Wilmington, Ma. 01887.

Just added to the above; Endurance Pack, Guillow's Endurance Flyer, Fighter, Pursuit, Trainer, Sport, and Single Engine Transport. Great fun flyers!



OLDTIMER MODEL SUPPLY BOX 7334 VAN NUYS, CA. 91409



CATALOG \$2.00



# Airmail Pals

*Aeroindex presents...*

## GREAT AVIATION BOOKS FROM DOVER

Dear Lin,

The Sept./Oct. 1993 issue was special for me because it included a plan for the Kari Keen Coupe. I believe this is the first plan I have seen for a rubber powered Kari Keen Coupe.

I was born and raised in Sioux City, Iowa, and have a special interest in the Kari Keen Coupe. I was getting flight instructions in a Kari Keen Coupe in 1941. I had the dual portion almost out of the way when I joined the Coast Guard so as not to be drafted into the Army. I do think the owner of the Kari Keen was glad that happened. My depth perception was/is not that good and when trying to land I would level off about 6-8 feet above the ground, thinking I was on the ground, and then KERWAM!, as the plane dropped to the ground. The Kari Keen didn't have all that good of a shock absorbing landing gear, just over-size tires, and the bump was felt.

I washed and serviced the two planes the owner of the Kari Keen had for the flight instructions he gave me. I have followed closely any and all information I could find on the Kari Keen. Now thanks to your efforts and Dave Livesay's plans, I'll be able to build a model of the Kari Keen Coupe.

Regards,  
Bob Lonseth

Dear Lin,

I have recently received some back issues of Flying Aces Club News from my brother Ed Whitten, who lives in New York City. I have noticed in "Model Aviation" and "Model Builder" and "Flying Models" magazines some information concerning the PAC meets and activities. I have also presumed from these articles that this organization has more interest in rubber powered models than other clubs. Since I have but recently rejoined the model builders, after 60 years of flying the big ones, I've got a lot of catching up to do.

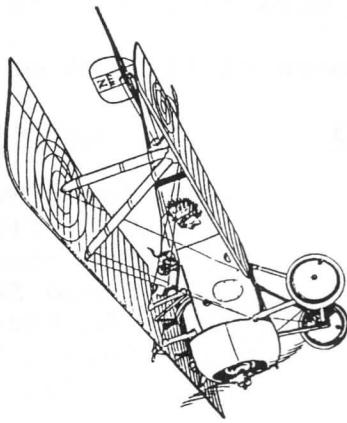
I particularly enjoyed the Peanut scale drawings of the Vought SB2U type in issue #68, by Pres Bruning. I flew an SB2U at Midway-1942 as a member of VMSB-241. Upon returning home in 1943, I visited brother Ed at the Vought plant in Stratford, Ct., where he was working on the OS2U-3 and teaching night school.

At the plant was an SB2U-2 with a 1250 HP P&W up front. This was the plane Vought wanted to sell to the USMC, but the Navy said "NO" and stuck to the 850 HP P&W, for its long range scouting capability. I got a chance to fly this plane and at 12,000 ft. cruise was 165 KIAS - and a fuel consumption about 20% greater than the 850 HP model. What a difference this could have made in combat!

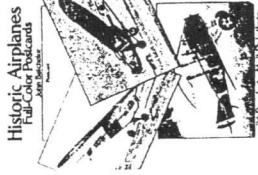
This was a lousy dive bomber compared to the SBD - but a lot better than the BT's, SBC3, or SBC4 or even the A-25. With gear down we rarely dove over 375 kts, but controls were VERY heavy and pull-outs took 2500--3000 ft, so had to drop quite high. I was a section leader in Major Norris' SB2U attack group, and the only reason we did not DIVE bomb, but had to GLIDE bomb was only because of weather. We had to work our way down below the overcast to find the target. Enough of history. Summer Whitten



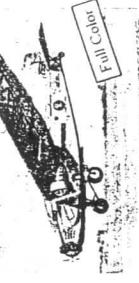
**PICTURE HISTORY OF AVIATION ON LONG ISLAND: 1908-1938** by George C. Dade and Frank Strnad. This remarkable photo-history documents the aerial exploits that earned Long Island the nickname, "Cradle of Aviation." Over 300 rare photographs span 30 years of achievement: the exploits of Curtiss, Lindbergh, and other pioneers, breakthroughs, endurance records, etc. \$12.95 + 1.00 shipping.



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**AEROINDEX** P.O. Box 5124, Hamden, CT 06518

15.

**16.**

FLYING ACES OUTDOOR CHAMPS

Sept. 3-4, 1994

Time, 8:30 am until 4:00 pm. AMA National Flying Site, Muncie, Ind.

Registration Form

Please print

Name \_\_\_\_\_ AMA No. \_\_\_\_\_  
Street \_\_\_\_\_ Jr/Sr \_\_\_\_\_ Open \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Entry fee \$20.00 flies all events. Please send before Aug. 15 if possible. Send to; Lin Reichel, 3301 Cindy Lane, Erie, Pa. 16506.

Awards through third place, more places if advance entries warrant it.

All contestants must be members of the AMA or the MAAC.

Schedule      Saturday Sept. 3      Sunday Sept. 4

World War Two \*  
FAC Scale  
Embryo Endurance  
Multi-Wing \*  
Pioneer Scale  
Hi-Wing Peanut  
FAC O.T. Rubber

World War One \*  
Greve/Thompson Race \*  
FAC Power Scale  
Jumbo Scale  
FAC Peanut Scale  
Golden Age Scale  
No-Cal Scale

\* Mass launch events.

All Pioneer scale models must be flown in the Pioneer event only, regardless of size.

No Hi-Wing Peanuts in the FAC Peanut event.

Multi-Wing event models must have gear down. No World War One types.

FAC O.T. Rubber will have all flights on Saturday (3). Flyoffs to break ties will be flown on Sunday if necessary.

Please bring proof of scale for the mass launch events so we can eliminate the models that don't measure up.

See you all there!

---

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

Wanted; Pictures, 3-views or other info for the Pottier P-100TS, Richard Zapf, 126 Elm St., Georgetown, Ma. 01833.

Ken Wilson, 2324 East Florida St., Evansville, Ind. 47711-4812 wants to know what issue of M.A.N. contained the 3-view of the Waco RNF by James E. Dunavent. Probably late 60's through early 80's.

## Shock Absorbing Landing Gear

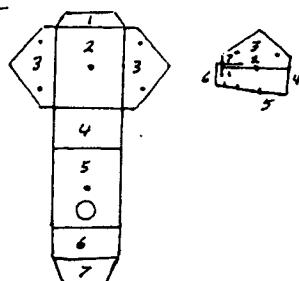
by Jake Larson--Part Ten

Boy, I thought that was French for a girl who always says "NO!"

### Piece D Resistance! "Taube" Landing Gear (Erich)

Front      Side

$\frac{1}{64}$  Alum Sht  
make 2



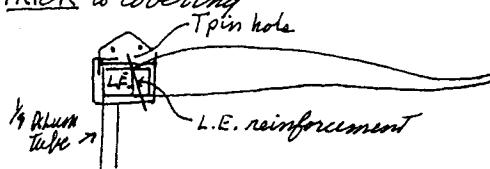
The size of this unit depends on the size of the Erich Taube you are making. Ruspler taubes had a different landing gear.

all bends are in reference to section 2!

- Pre drill holes in #3. Drill 4 holes to fit straight pins
- Pre drill hole in #5 as a tight fit for  $\frac{1}{8}$  alum. tube
- Bending - Done AROUND L.E. AFTER wings are made but

Follow  
This  
sequence  
exactly!

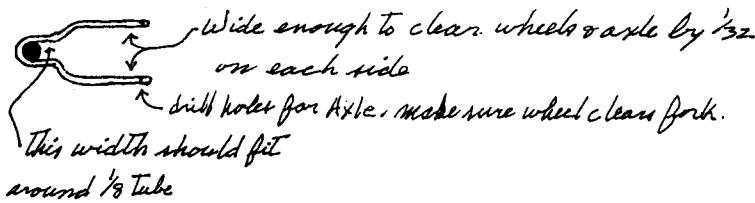
- Bend #3's UP 90° PRIOR to covering
- Bend #1 DOWN 90°
- Bend #4 DOWN 90°
- Bend #5 FORWARD
- Bend #7 UP 90°
- Bend #6 UP so that #6 is in FRONT of #1 and #7 is on TOP of #2



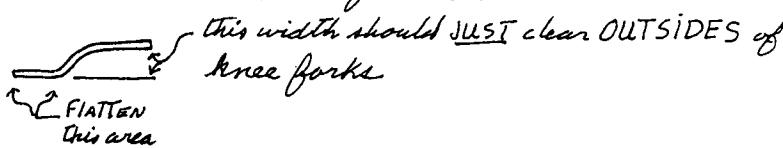
- Drill hole for T pin through #2 + #5. hole should slant to rear. Do this AFTER unit is assembled around L.E. of Wing.

Taube L.G. cont.

- Knee Forks - Make 2 of  $\frac{1}{16}$  Alum tube.



- Shock Forks - Make 4 of  $\frac{1}{16}$  Alum tube



### G. Assembly

#1 insert  $\frac{1}{8}$  tube  
& C.A. glue



- drill/tap hole through both sides L to R
- Fit Knee fork to lower part of  $\frac{1}{8}$  tube with  $\frac{1}{32}$  clearance between  $\frac{1}{8}$  tube & rear of front part of fork. i.e:



### VANCE GILBERT EDGEWISE

If you have admired Vance's models and wit, you should know that he is every bit as gifted as a singer-songwriter as he is as a modeler. In January, his first commercially distributed album came out: VANCE GILBERT EDGEWISE, Philo CD PH 1156, 1994, Rounder Records Corp., One Camp Street, Cambridge, MA 02140. Help a friend - and do yourself a favor - ask for it (under Folk Music) at the better music stores first. Good listening on the drive to Genesco.

18.

REGISTRATION FORM  
FAC-NATS MARK IX

MAIL TO; Lin Reichel, 3301 Cindy Lane, Erie, Pa. 16506

Name \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ AMA No. \_\_\_\_\_

I wish to make the following advanced reservations for the FAC Nats Mk. IX.

\_\_\_\_ entry fees at \$20.00 each.....\$\_\_\_\_\_

\_\_\_\_ banquet tickets at \$16.00 each.....\$\_\_\_\_\_  
(with no dormitory reservations)

\_\_\_\_ reservations for double occupancy with meals  
and banquet at \$163.00 each.....\$\_\_\_\_\_

\_\_\_\_ reservations for single occupancy with meals  
and banquet at \$206.00 each.....\$\_\_\_\_\_

Total enclosed....\$\_\_\_\_\_

Please note that we are unable to refund cancellations after June 15, 1994.  
If you plan to share a double occupancy with someone, please indicate their  
name so we can direct the University to set up the proper room arrangements.

Second person \_\_\_\_\_

WAIVER: I (we) hereby release the National Warplane Museum, the State University of New York, the Flying Aces Club, the Detroit Cloudbusters Club, the Calumett Escadrille and all persons connected with this contest from any liability whatsoever for accidents incurred while participating in this contest. I (we) also agree to abide by all flying and field rules in force at this contest.

SIGNATURE \_\_\_\_\_

\*\*\*\*\*

EVENT SCHEDULE FOR THE FAC NATS MARK IX

Friday July 8, 1994

Shell Speed Dash  
World War One Dogfight \*  
Embryo Endurance  
No-Cal Scale  
Aerol Trophy Race \*  
Golden Age Scale (civil)  
FAC Old Time Rubber  
Modern Military \*\* \*  
Golden Age Military \* \*\*

Saturday July 9, 1994

FAC Scale  
High Wing Peanut  
Greve Race \*  
World War II Combat \*  
Pioneer Scale  
Electric Ducted Fan Scale\*\*  
FAC Old Time Rubber  
Powder Puff Scale \*\*

Sunday July 10, 1994

FAC Peanut  
Thompson Race \*  
WW I Peanut Dogfight \*  
FAC Power Scale  
Jumbo Scale  
Electric O.T. Gas \*\*  
FAC O.T. Rubber Flyoff  
Flying Horde \*

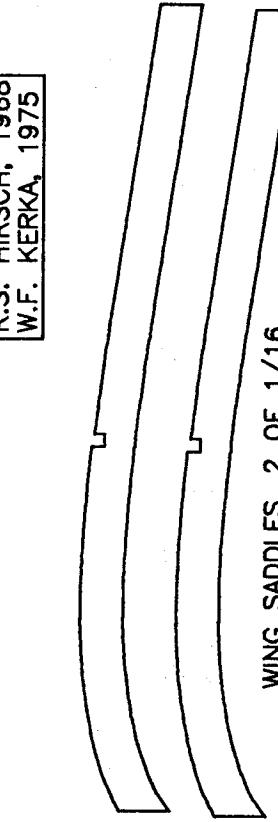
\* Mass launch events

\*\* See rules in Issue #154-80 Nov./Dec. 1993.

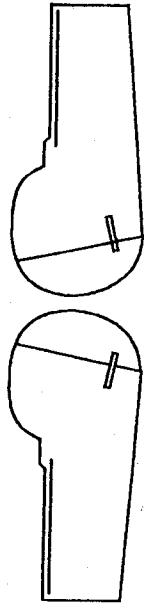
Contest Directors: Lin Reichel, Dave Livesay and Dan Kane.

Check in time at the University will be from 1:00 pm until (?) on Thursday July 7, 1994.  
We will be staying in the Jones Dormitory, follow signs downtown.

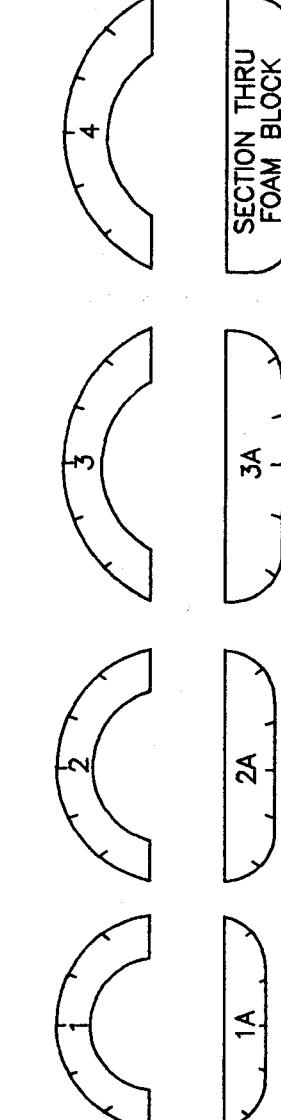
REFERENCES:  
3-VIEW DRAWINGS  
R.S. HIRSCH, 1968  
W.F. KERKA, 1975



COLOR SCHEME:  
FUSELAGE, FIN, RUDDER - BLACK  
WING, STABILIZER - YELLOW  
REG., RACE NOS. ON WING - BLACK  
RACE NOS. ON FUSELAGE, JACKRABBIT,  
REG. NOS. ON FIN/RUDDER - WHITE  
PROP - SILVER, DULL BLACK REAR  
WHEEL COVERS - BLACK  
WING SADDLES, 2 OF 1/16

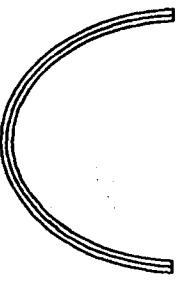


LANDING GEAR LEG COVERS OF BOND PAPER,  
COVER WITH BLACK TISSUE, ATTACH TO LOWER  
WING SURFACE WHERE INDICATED. NOTE GEAR  
RETRACTS INTO FORWARD FAIRING OF BELLY

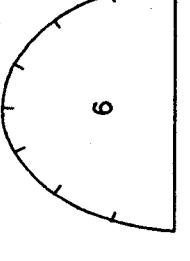


FUSELAGE FORMERS  
OF 1/16 SHEET

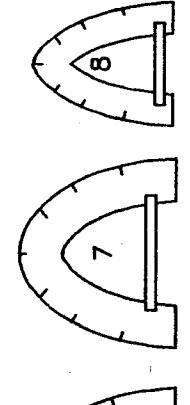
SECTION THRU  
FOAM BLOCK



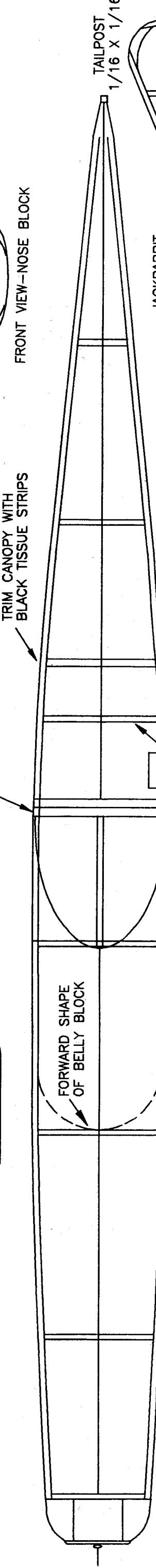
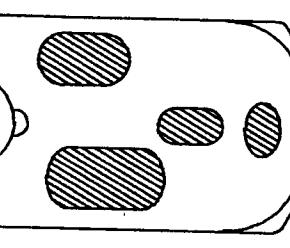
LAMINATE 2 STRIPS  
 $1/32 \times 3/32$



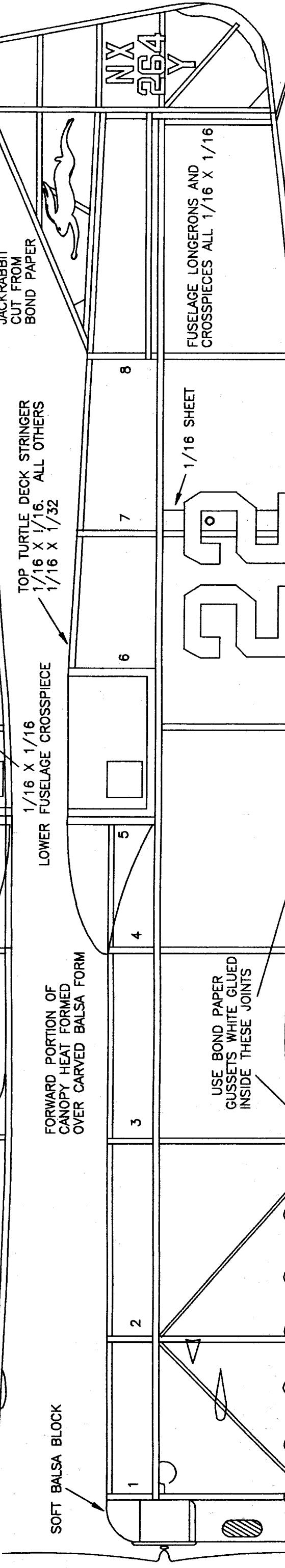
TRIM CANOPY WITH  
BLACK TISSUE STRIPS



FRONT VIEW-NOSE BLOCK



TAILPOST  
 $1/16 \times 1/16$



JACKRABBIT  
CUT FROM  
BOND PAPER

TOP TURTLE DECK STRINGER  
 $1/16 \times 1/16$   
 $1/16 \times 1/32$ . ALL OTHERS

LOWER FUSELAGE CROSSPIECE  
 $1/16 \times 1/16$

FORWARD PORTION OF  
CANOPY HEAT FORMED  
OVER CARVED BALSA FORM

SOFT BALSA BLOCK

USE BOND PAPER  
GUSSETS WHITE GLUED  
INSIDE THESE JOINTS

BALANCE  
POINT

1A  
2A  
3A  
4A  
5A  
6A  
7A

EXHAUST PORTS RIGHT SIDE  
ONLY. SIMULATE WITH GRAY  
TISSUE DISCS.

BELLY TANK CARVED OF HIGH DENSITY FOAM  
PAINT WITH THINNED WHITE GLUE, TISSUE COVER.

1/32  
PLY DISC  
SPLIT DOWEL  
NOSE PLUG KEY  
4 LAMS  
1/8 SHEET

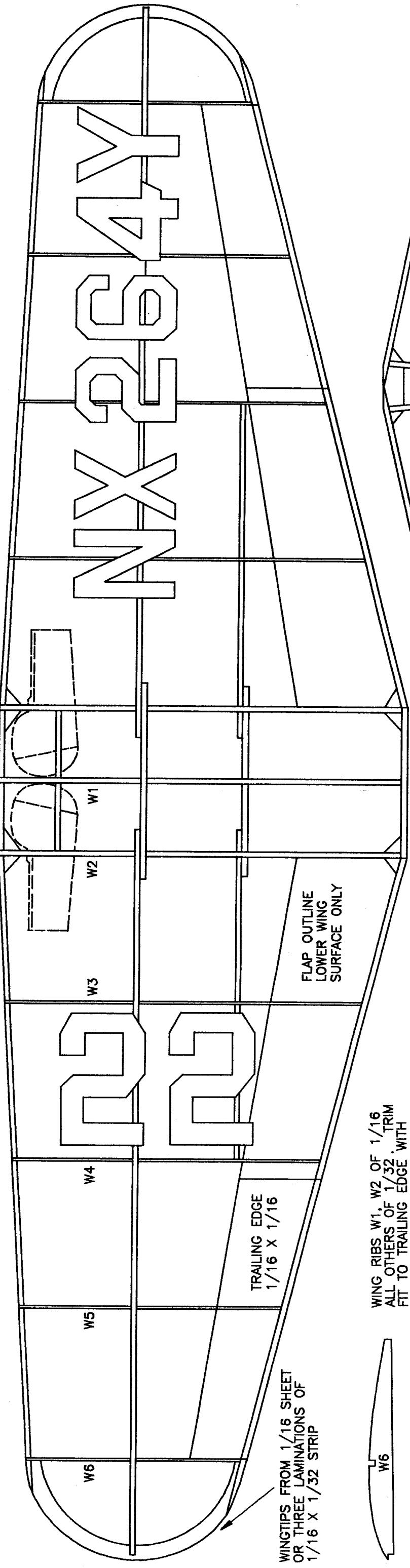
DIMENSIONS ARE IN INCHES. MODEL ALL BALSA EXCEPT AS NOTED..

PROTOTYPE FLEW WITH 6 1/2" CUT-DOWN  
PECK 7" PROP AND ONE 24" LOOP OF  
FAI 1/8" TAN RUBBER. ~3 DEGREES  
DOWN, 2 DEGREES RIGHT THRUST.

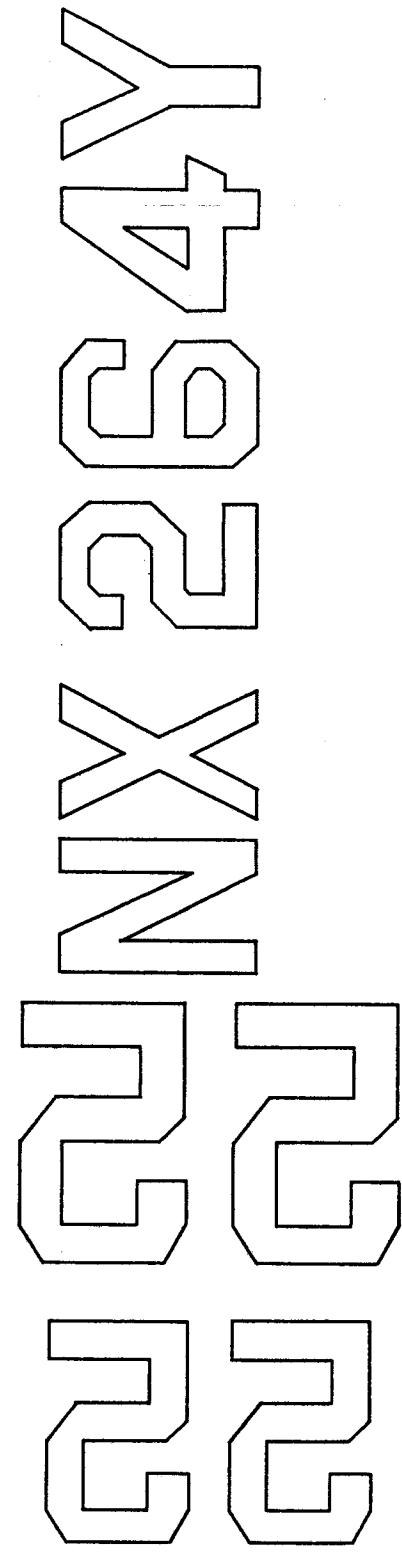
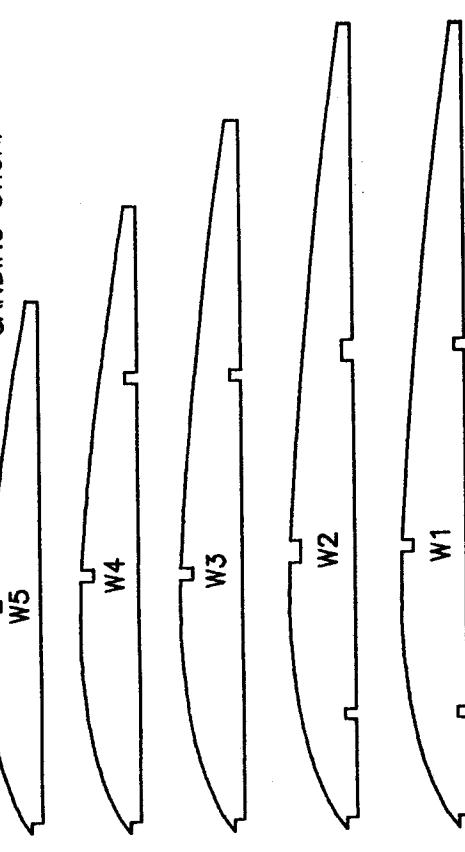
1 1/4 INCH DIHEDRAL  
UNDER EACH WINGTIP  
LEADING EDGE, SPARS,  
SPAR JOINERS 1/16 X 1/16

BUILD WING CENTER SECTION FIRST  
THEN BUILD AND JOIN OUTER PANELS

DIHEDRAL BREAK

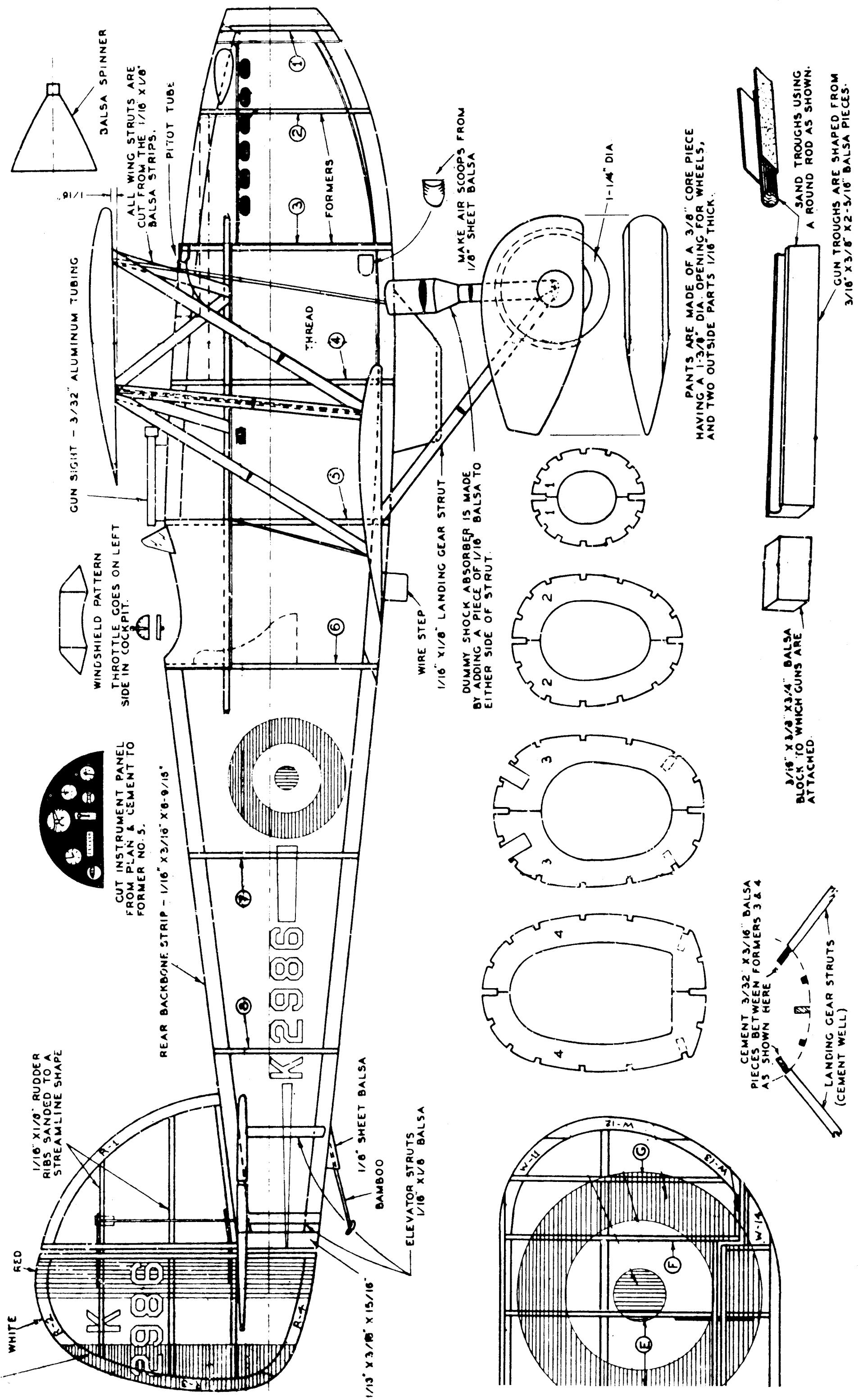


WING RIBS W1, W2 OF 1/16  
ALL OTHERS OF 1/32. TRIM  
FIT TO TRAILING EDGE WITH  
SANDING STICK.

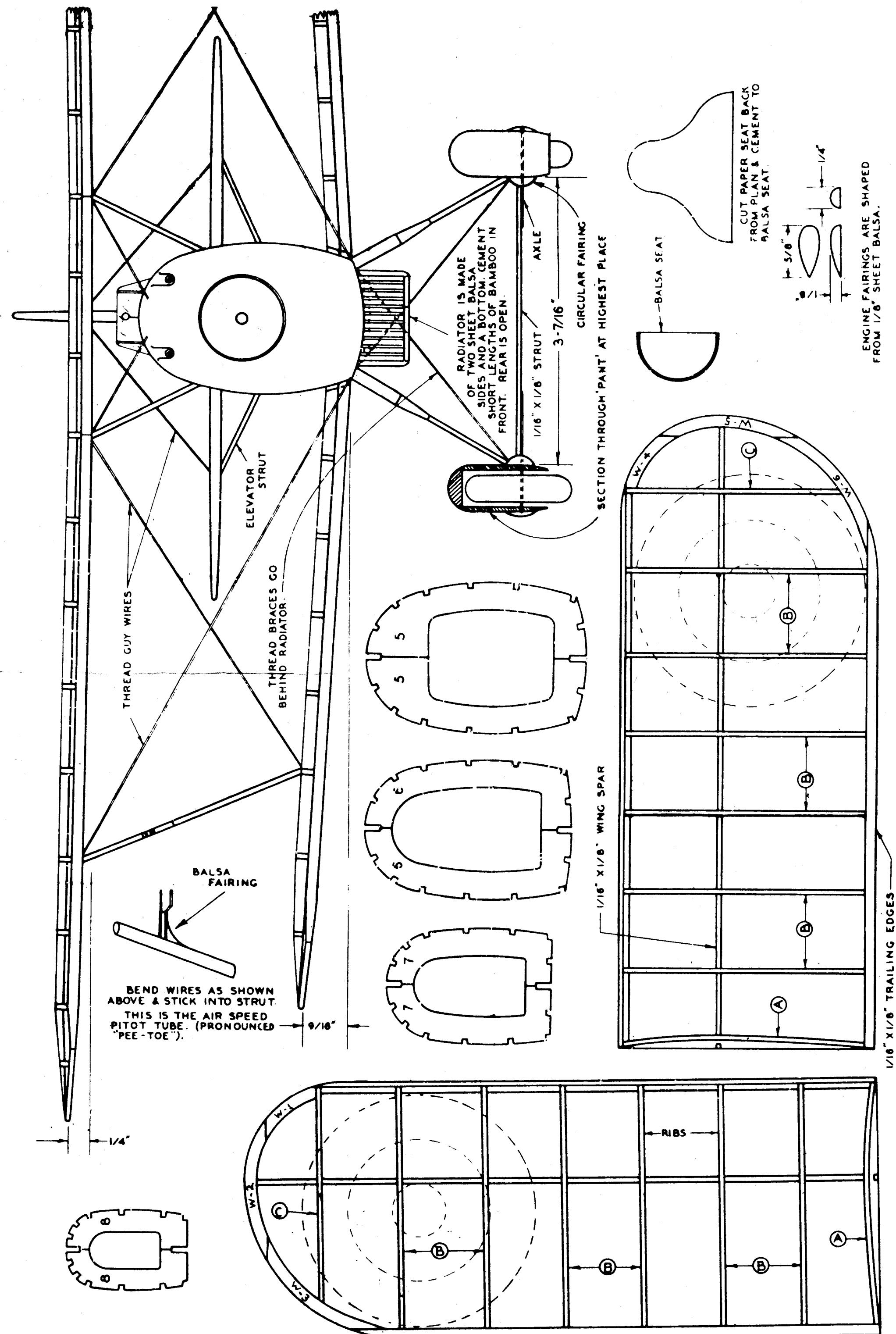


MARCOUX-BROMBERG  
"JACKRABBIT"  
FORMERLY KEITH RIDER R-5

1938-39 GREVE TROPHY RACEPLANE © TOM NALLEN 1993







### L.E. RIB TEMPLATE

CUT RIBS  $\frac{1}{16}$  DEEP FROM  $\frac{1}{16}$  SHEET  
TRIM L.E. TO FIT PLAN

### HOW DO YOU GET IT TO FLY?

- BALANCE MODEL AT CG WITHOUT PROP ASSY
  - GLIDE MODEL: IF DIVES AND TUCKS ADD MORE REFLEX, IF STALLS ADD CLAY TO NOSE
  - EXPERIMENT WITH REFLEX AND CLAY UNTIL A SMOOTH, STABLE GLIDE IS OBTAINED
  - MARK NEW CG FOR YOUR MODEL
  - INSTALL PROP ASSY
  - REBALANCE TO NEW CG WITH MOTOR
- \* CRACK RIBS AND REFLEX AIRFOIL PROGRESSIVELY TOWARD WING TIP  
MAX  $\frac{3}{16}$   
BEND ELEVONS UP  $\frac{3}{8}$

$\frac{1}{16}$  SQUARE

DIHEDRAL NOT TO SCALE  
BUILD WING FLAT - SEPARATE AT CENTER  
CUT OUTER DIHEDRAL JOINTS  
SLIDE  $\frac{3}{8} \times \frac{1}{8}$  BLOCK UNDER JOINTS - GLUE  
ALLOW TO DRY - BLOCK UP TO SET CENTER  
GLUE CENTER AND ADD GUSSETS  
COVER, INSTALL IN FUES, AND SET REFLEX

ZIP CORD COPPER  
WIRE - GLUE TO  
TOP OF SPARS

CUT ELEVONS  
FREE

$\frac{1}{16}$  SQUARE

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\*

\*

\*

ACTUAL AIRCRAFT WAS ALL MAGNESIUM!

$\frac{1}{16}$  SHEET TYP

$\frac{1}{16}$  SQ TYP

CENTER RIB  $\frac{1}{16}$  SHEET

BEND SHAFT  
FROM 0.020 MUSIC WIRE

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PROP BLADES  $\frac{1}{32}$ "C" GRAIN  
PROP SPAR IS A TOOTHPICK  
MOUNT BLADES AT 30° @ 2 INCHES RADIUS  
FORM BLADES ON 5 INCH DIA. JAR  
15 DEGREES OFF VERTICAL TO THE RIGHT  
THIS WILL MAKE A LEFT HANDED PROP!

PROTOTYPE FLEW ON 13 INCH LOOP OF 0.070 TAN  
WEIGHT W/O MOTOR: 3.7 GRS

MOTOR STICK  $\frac{3}{16} \times \frac{1}{8} \times 8\frac{5}{8}$   
MOUNT ON RIGHT SIDE OF FUES

MOTOR HOOK  
0.020 MUSIC WIRE

CANOPY

ENTIRE AIRCRAFT IS BLACK  
COVER WITH PECK JAP TISSUE  
ACTUAL AIRCRAFT HAD THE NUMBERS  
238353 ON TOP FIN AND A  
'STAR N' BARS' ON LOWER FIN  
NUMBERS APPEAR WHITE IN PHOTO

NORTHROP XP-56 'BLACK BULLET'  
A PUSHER/FLYING WING NO-CAL  
DRAWN BY JOHN KOPTONAK  
3/94  
NORWICH FLYING ACES - FAC SQUADRON 20