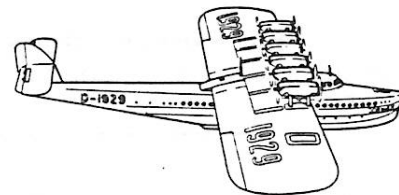
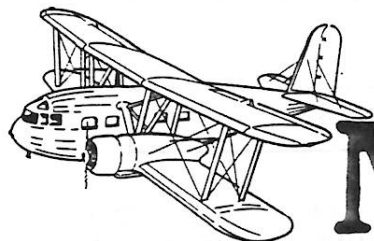


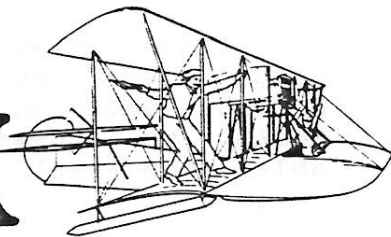
First Multi-Engine Transport — 1913



German DO-X Transport — 1929



Curtiss Condor-Sleeper Transport



Testing Robot-Pilot — 1913

MAX - FAX

THE NEWSLETTER OF THE D. C. MAXECUTERS
JANUARY/FEBRUARY 1990

MEMBERSHIP

Dues for membership in the D.C. MAXECUTERS is \$10 per year for residents of the USA, Canada, & Mexico, and \$11 for all other countries. Your mailing label indicates the last year and month for your current membership. A red X next to the label is a reminder that your current membership has ended. Send a check, payable to the D.C. MAXECUTERS, to the Treasurer.

MEETINGS

The D.C. MAXECUTERS hold meetings on the first Wednesday of every month at the College Park Airport.

PRESIDENT

Bert Phillips
1709 Crofton Parkway
Crofton MD 21114

SECRETARY

Ernie Greene
8103 Falstaff Rd.
McLean Va 22102

TREASURER

Allan Schanzle
20008 Spur Hill Dr.
Gaithersburg MD 20879

UPCOMING EVENTS

- Jan 6: Farquhar indoor flying, 4:00-7:00 PM, Profile contest.
- Jan 20: Farquhar indoor flying, 4:00-7:00 PM, Towline glider using "Bogus Scale" Bostonian as "tow-er".
- Feb 3: Farquhar indoor flying, 4:00-7:00 PM, Bostonian contest.
- Feb 17: Farquhar indoor flying, 4:00-7:00 PM. 10 inch'er contest.
- Mar 3: Farquhar indoor flying, 4:00-7:00 PM.
- Mar 10: PAX River Indoor Contest.

CLUB NEWS

ALLAN SCHANZLE

HANNAN'S RUNWAY ENDS IN PARADISE

Not everyone can say they live in, or even near to, paradise. But Bill Hannan and his wife Joan have indeed found that proverbial location. They packed their duds and up 'n left southern California for

a location in the northern portion of the state in a town called Magalia. It just happens to be next to Paradise, CA.

HANNAN'S RUNWAY
BOX 860
MAGALIA, CA 95954
(916) 873-6421

The entire RUNWAY went with them, so the business is still intact.

NEED A ONE GRAM SCALE?

Claude Powell sent in a note about a scale he purchased. The produce is called a REY Gramweight Scale, No. 400-446. It is available from SWEST, Inc. who can be reached at:

SWEST, INC.
PO Box 540938
Dallas Tx 75354
1-800-527-5057

The cost, including postage, is a nice even \$9.00. The propagan-da says it has a range from 0 to 50 grams.

PEANUTS IN JAPAN

Jiro Sugimoto sent a copy of their report about the SHONI PEANUT contest held in 1989. Boy, what a brochure! Twelve pages of glossy black and white photos. My knowledge of Japanese is about the same as my love for brussel sprouts, so I can't read a single word, but the pictures say it all. Flying wings, golden age, WW-II, you name it. The indoor flying facility looks like it is about 35 to 40 feet high, clean ceiling, and plenty of floor space. Hummmm, wonder if I can find a technical meeting coming up in Japan. Thanks, Jiro.

PROVISIONAL BOSTONIAN & NO CAL

Bill Clarke has proposed two events for the Pax River Indoor

Contest using the currently approved USIC rules. These events will be included in the next Pax River contest on March 10, 1990 (see the PAX Flyer in this issue). Bill Clarke will be the judge for these events. If you have any questions please contact him at (301) 474-3094.

THIS ISSUE

The feature plan for this issue is a real beauty, compliments of Dave Stott. The aircraft is the Bristol Brandon, seen at the last FAC NATS. This little critter has more charisma than John Wayne made westerns. In addition, you'll find a construction hint by the editor, a summary of the ALL EARL STAHL contest in October, a complete report of the events at the PAX River contest, and a few other random items that may be of interest. Of course, Tom Schmitt again gives us his usual high quality collection of photos.

A VERY GENEROUS DONATION

I close the club news for this issue by noting the extremely generous gifts of Gene Handler to the Maxcuters. Gene has been a modeler for quite some time, and was a hydrodynamics engineer for the government. He is now retired, and over the years, he has collected many model airplane kits, books, magazines, and modeling supplies. He has generously donated these to the club. Unfortunately, the reason for this gift is a diagnosis of cancer. Gene, we wish you all the best in your battle with this dreadful disease, and appreciate your desire for continued enjoyment of your personal memorabilia by the local modeling community.

THE BRISTOL BRANDON AIRLINER

Dave Stott

Built at Filton in 1921, the Bristol type 62 was powered by a 450 hp Napier Lion engine, and carried eight passengers. The model depicts the initial version of the prototype. It was later modified to a simpler two wheel orthodox landing gear. It was used on the Croydon-Paris route of Handley Page Transport, Ltd.

I have always considered the unsung heroes of commercial aviation past, present, and future, to be the paying passenger. Back in 1921, Bristol must also have held this breed in high regard. Just look at the comforts provided them in the cabin of the Brandon.

Windows, running the full length of the compartment, could be opened. Heat was provided by mufflers around the exhaust pipes (ever own a Volkswagen Beetle?). And, as if that were not enough, for passengers susceptible to air sickness, a small concealed self-emptying basin was provided in close proximity to each seat. These basins folded against the side of the salon and were readily accessible, the waste pipe discharging through the floor! Two less obvious considerations were a steel fire wall and fuel tanks mounted well outboard on the lower wings. Well gang, at least they had no terrorists to contend with back then.

Let's get on to the model. Most of us like to use our own construction techniques so I will not cover much detail. I would like to point out that the bottom longeron and landing gear struts were made of bass wood. The fuselage uprights and cross members were of medium-hard balsa. Motor peg is located just in front of station 13, between the E and A of the registration, and on a level of the center stroke of the E. Fuel tanks were solid, hollowed balsa, as was the expansion tank above and forward of the cockpit. Passenger cabin door is on left side only, while the wind driven generators

and ladder are on the right. Exhaust pipe for the center bank of cylinders of the Napier Lion protrudes from the bottom of the nose just behind the radiator. Engine cowl louvers, alike on both sides, protruded, while the small panel of three on the fuselage sides near the forward landing gear were indented.

References are rather meager. A 3-view from Aerial Age Weekly, Aug. 1, 1921, and one photo from "Flight," Oct. 13, 1921. Luckily, the photo was of the right side of the airplane, showing the ladder and generators clearly, and the expansion tank, missing from the 3-view.

Color scheme is pure speculation based on the single black and white photo, and the fact that red was used on many other Bristol designs preceding the Brandon. Anyhow, here is the scheme . . . silver wings, stab, engine cowl, expansion tank, and fuselage above upper longeron; brass radiator with black core; rest of fuselage, ladder, generators, all struts, landing gear, wheel discs, tail skid, fuel tanks, and rudders are red; white block containing black registration lettering on fuselage sides; wing registration lettering is black; frames around cabin windows are silver; Bristol logo on fin is white; exhausts are grey-black.

My model ended up weighing 3.4 ounces all-up flying weight. Some of this is a sheet of lead one inch square and about 70 thousandths thick glued inside the nose. Power is 4 strands of 1/8 Sig, and 4 strands of 3/16 Sig 22 inches long turning a balsa prop carved from a blank 3/4 by 1-1/8 by 10 inches. Flights are very stable with an open right climbing turn under power with a slightly tighter right turn in the glide. It will do about 40 seconds or so without any thermal aid.

PHOTO PAGES

Tom Schmitt

1. This issue's featured plan is just oozing with character, Dave Stott's terrific Bristol Brandon; photo by Mark Fineman.

Earl Stahl Day At "Shangrila", October 1989

2. Ernie Green and Don Srull discuss the finer points of loading a motor in Ernie's high flying Earl Stahl Fairchild 24.
3. Ken Evans came with this pretty F4F from Earl's plans.
4. You do not see many of Earl's Navions; this one a great flyer by Frank Rowsome.
5. Now this is determination; Bill Ceresa with Earl's ubiquitous Howard.
6. Here they are, the Earl Stahl day flyers on a cool Sunday in October.
7. Last but certainly not least, Hurst Bowers with another great flying model by Earl, the Interstate Cadet.

Pax River Contest, November 1989

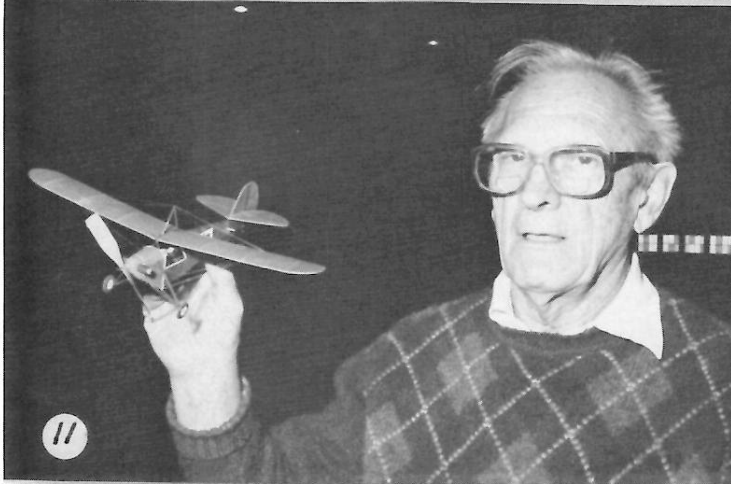
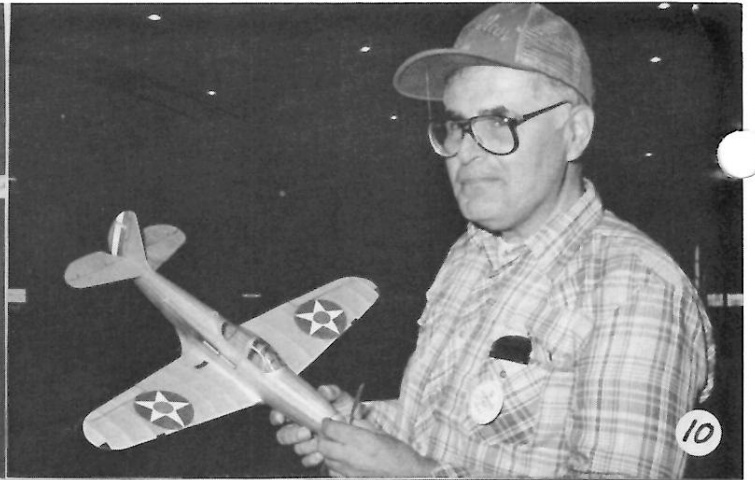
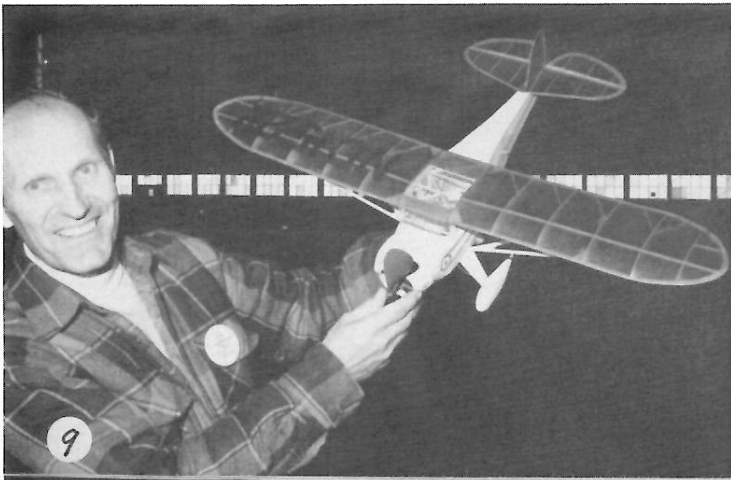
8. Prof Bud Carson launching his very pretty COCONUT Wright Air Sedan.
9. The winner in GOLDEN AGE, Allan Schanzle's Monocoupe from one of those great Sea Glen kits.
10. John Houck with his winning NAVY SCALE Mass Launch Bell XFL-1, Airabonita from a Golden Age kit.
10. Walt Eggert won our OLD TIME SCALE Mass Launch event with this little Megow Aeronca. Walt also walked off with the grand prize.
11. Dave Rees with his wall seeking COCONUT a YAK UT-M2. *Drop Dave a note! After a recent battle with a ladder he is in a back brace for at least two months. Hurry up and recover Dave; we want to see lots of new aircraft at the next FAC Nats.*
12. Pat and OL-LIE; Capt. Pat Daily was back in action at Pax River.
13. Holly and Jessie Campbell came to Pax River and had a great time. They hope to bring a Bostonian in March.
14. Dan Driscoll accepts a well deserved First Place trophy for the BOSTONIAN event from our AMA VP Howard Crispin.
15. Al Lidberg's latest aircraft, a beautiful 1930 Monocoupe Racer with a 29 inch span; plan also shows full span version at 40 inches. Photo by Al.

MODEL ENGINE COLLECTOGETHER NOTICE

Do not miss visiting the second annual Region 11 Collecto on Sunday, February 4, 1990 from noon to 6PM. It will be held in the Meeting Room of the Fairfax County Tysons-Pimmit Regional Public Library, 7584 Leesburg Pike, Falls Church, Virginia; the same location as last year.

Come on out Maxcuters and you may find that elusive old kit, engine or some other antique model aviation artifact that you have always wanted. Bring something to trade. For further information on displays, trading, etc., please contact your host, Martin Schindler (703) 938-2975.





INDOOR MODEL AIRPLANE CONTEST

NAS/NATC PATUXENT RIVER - LEXINGTON PARK, MARYLAND
HANGAR VX-1
MARCH 10, 1990
9:00 AM - 5:30 PM

NO ENTRY FEE BUT DONATIONS TO THE NAVY RELIEF SOCIETY ARE WELCOMED

MAJOR EVENTS (FAC Rules & Trophies awarded)

MASS LAUNCH

1- OLD TIME SCALE* 11:00 AM
2- WW-I 12:00 PM
3- NAVY SCALE 1:00 PM
4- PEANUT SCALE 2:00 PM
5- MILITARY GOLDEN AGE 3:00 PM

OTHER EVENTS

6- FAC RUBBER SCALE
7- COCONUT SCALE**
8- BOGUS SCALE BOSTONIAN
14 GRAMS MINIMUM WGT.***
(See rules in Nov-Dec
MAX-FAX)

SPECIAL EVENTS (Buttons awarded)

1- FAC INDOOR POWER SCALE (CO2 and MINI ELECTRIC)
2- NOVICE PENNYPLANE (AMA Rules)***

- * OLD TIME SCALE RULES - Any old time kit plan; vintage before December 31, 1942 with 20 inch wingspan or less.
** COCONUT Rules - 1 oz minimum weight w/o motor
Minimum wingspan - monoplanes 36 ins.- multiwings 30 ins.
Judging - 30 point maximum scale points
added to flight time in seconds for total score.
*** Single best flight time determines winner in these events.

PROVISIONAL EVENTS (Buttons Awarded)

1- NOCAL (6.2 gram minimum weight)****
2- 7 Gram BOSTONIAN****

**** Bill Clarke is Event Judge for these events;
see rules in this edition of MAX-FAX.

**AIRCRAFT FOR SCALE JUDGING MUST BE TURNED IN BY 11:00 AM
NO QUALIFYING FLIGHT IS REQUIRED**

**ALL FLIGHT TIMES MUST BE SUBMITTED BY 4:30 PM DEADLINE
AWARDS: 5:10 - 5:30**

LOCAL RULE: ONLY ONE MASS LAUNCH EVENT PER AIRCRAFT

CONTEST INFORMATION: CLAUDE POWELL 1 (301) 872-4105
ALLAN SCHANZLE 1 (301) 840-5884
TOM SCHMITT 1 (301) 530-0327

IMPORTANT NOTICES:

FOOD AND BEVERAGES WILL BE AVAILBLE IN THE HANGAR AT NOMINAL PRICES
PLEASE SUPPORT THIS EFFORT BY THE LOCAL FOLKS
ALSO PLEASE NOTE THERE WILL BE NO TABLES OR CHAIRS AVAILABLE IN THE
HANGAR SO BE SURE TO BRING YOUR OWN.

SPONSORED BY: NAVAL AIR STATION/NAVAL AIR TEST CENTER,
PATUXENT RIVER, MARYAND AND ST. MARY'S
COUNTY RECREATION AND PARKS.

THE ALL EARL STAHL CONTEST BOY, WAS IT A BEAUTY

Allan Schanzle

The weather was kinda crummy; a little cool with some periodic gusts, but the day before the bloody wind was humming along at 25 to 30 MPH. We were lucky,..... again. Sunday, October 9, dawned with great possibilities. Dead calm, and sunny. Could it be that we were going to once again have a classic day for a model contest? Had we started at 9:00 AM, we would have had the best of all possibilities. But by noon, the scheduled start time of the contest, the clouds began to roll in and a weather front brought dropping temperatures. Some gusts appeared, and before 12:30 I was 60 feet up in that dammed oak tree that has garnered up enough models in the past two years to win the Charlie Brown Memorial Model Eating Tree Award. I was lucky. It returned to terra firma with lots of tissue tears, but only four stringers were missing from the front of the fuselage. Shucks, 'twern't nutin'. The real Vultee was made like a tank, and if the original can take some flak, so can my model.... at least so I thought.

We ran the WW-II mass launch event first off, and before Dan Driscoll's Me 109 hit the ground, I was hanging 8 feet up in the bloody friggin' oak tree adjacent to the one I had climbed less than 60 minutes earlier. That flippin' Vultee has been hankerin' for a love affair with that clump of oaks all year. That was the fourth time I've climbed one of those suckers after that mother*^# er, ah, ... model, since its completion in July. This time, it took to a branch that was only 55 feet up. Cripes, is it only my imagination that I see branches below the top 10 feet of those trees? Perhaps the lower branches are Stealth versions to the Vultee. And, of course, I painted the fool thing green, just like the Chinese. I had to look for 5 minutes after climbing up 45 feet before I saw the thing. Makes you believe in that thing called "camouflage".

This was getting a bit to much for this old geeser. If you have ever climbed a pin oak, you know what I mean... more twigs with the

ENTRIES AND WINNERS IN THE ALL EARL STAHL CONTEST

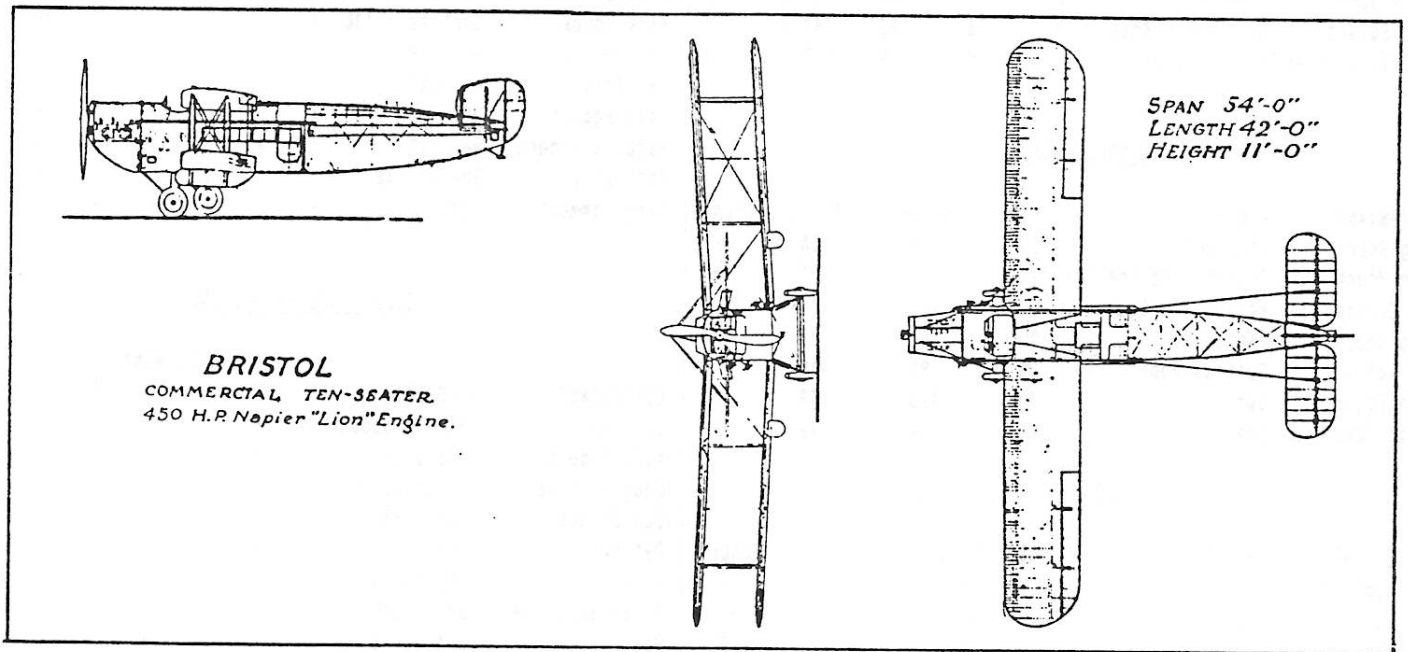
NAME	AIRCRAFT	THE WINNERS
1. TERRY PITTMAN	GENERAL SKYFARER	WW-II MASS LAUNCH ---- DAN DRISCOLL
2. KEN EVANS	GLOBE SWIFT	
3. KEN EVANS	WILDCAT	STINSON MASS LAUNCH - JERRY PAISLEY
4. JERRY PAISLEY	STINSON VOYAGER	
5. ALLAN SCHANZLE	MILES MAGISTER	GOLDEN AGE MASS LAUNCH - J. PAISLEY
6. ALLAN SCHANZLE	VULTEE VANGUARD	
7. BILL BELL	STINSON VOYAGER	TRANS-COMSAT SPEED ----- BILL BELL
8. BILL CERESA	HOWARD	
9. FRANK ROWSOME	NAVION	TRANS-COMSAT NAVIGATION- F. ROWSOME
10. TOM YANOWSKY	STINSON VOYAGER	
11. DAN DRISCOL	HOWARD	TARGET TIME ----- HURST BOWERS
12. DAN DRISCOL	Me 109	
13. ERNIE GREENE	REARWIN SPEEDSTER	MASS LAUNCH FOR ALL - JERRY PAISLEY
14. ERNIE GREENE	FAIRCHILD 24	
15. HURST BOWERS	INTERSTATE CADET	
16. SCOTT PAISLEY	REARWIN SPEEDSTER	

strength of steel than Don Srull has kanonen. Why do you think they call it a "pin" oak? So much for the Vultee. Right there on the spot it was retired, ... permanently.

So much for my personal problems. Look at the list above. The way I see it, this group of local yokels is one of the best around. Go ahead, count 'em. There's 16 Earl Stahl designed airplanes listed there. And I know of 4 that didn't show up. I counted 28 people on the field at one time.

Jerry Paisley was the big time winner with his Stinson Voyager. He tried to convince me that the Stinson saw combat in the second big fuss, but his documentation of this phenomenon was lacking, so I wouldn't allow it.

After all the flying had been completed, we returned to the local german gasthaus for real german sausage, sauerkraut, german potato salad, pretzels and dip, and beer, beer, and more beer. Now that, folks, is the way to end a day of flying.



PAX RIVER RESULTS 11/2/89

PEANUT SCALE MASS LAUNCH

CONTESTANT	AIRCRAFT	ROUND ELIMINATED						PLACE
		1	2	3	4	5	6	
Dave Rees	Contestor	-	-	X	-	-	-	-
Walt Eggert	Gere Sporster	-	-	-	X	-	-	3
Doug Buchanan	Lacey M-10	-	-	X	-	-	-	-
Pat Berg	Piper J-5	X	-	-	-	-	-	-
John Houck	Heinkel 100V8	-	-	-	-	-	-	1
Randy Kleinert	Lacey M-10	-	-	-	-	X	-	2
Pat Daily	Renard R-17	-	X	-	-	-	-	-
Paul Spreiregen	Nesmeth Cougar	-	X	-	-	-	-	-
Bill Powell	Lacey M-10	X	-	-	-	-	-	-
Joe Spelz	JN-1	X	-	-	-	-	-	-
Tom Savage	Lacey M-10	X	-	-	-	-	-	-

BOSTONIAN

CONTESTANT	AIRCRAFT	BEST FLIGHT	PLACE
Dan Driscoll	Pacific Ace	105	1
Doug Buchanan	Boston Wheeler	76	-
Pat Berg	Boston Found	32	-
Allan Schanzle	Bostom Pup	--	-
Randy Kleinert	Original	90	3
Pat Daily	Pacific Ace	94	2
W. Maitre	Boston Moth	34	-
Paul Spreiregen	Boston Found	--	-
Robert Hall	Boston Pup	70	-
Bill Clarke	Boston Twin	--	-
Jerry Paisley	Pumpkin	56	-

PAX RIVER RESULTS 11/2/1989

FAC RUBBER SCALE

CONTESTANT	AIRCRAFT	STATIC	BONUS	FLIGHT	TOTAL	PLACE
Paul Spreiregen	Fairchild 24	42	0	57	99	--
Mark Houck	Nieuport 12	37	15	62	113	--
John Houck	Hanriot HD-1	41	15	56	107	--
Dave Rees	Gen'l Aristocrat	51	0	76	119	3
Walt Eggert	Cessna 34	39	0	121	121.5	--
Walt Eggert	Gere Sportster	47	15	68	126	1
Pat Daily	Albatros DIII	44	15	57	116	--
Pat Daily	Boeing F3B-1	47	15	66	125	2

FAC POWER SCALE

CONTESTANT	AIRCRAFT	STATIC	BONUS	FLIGHT	TOTAL	PLACE
Allan Schanzle	Tiger Moth	57	15	120	139.5	2
Walt Eggert	Curtiss MF Boat	59	35	122	141.5	1
Paul Spreiregen	Piper Cub J4	38	0	109	118	3

COCONUT SCALE

CONTESTANT	AIRCRAFT	STATIC	FLIGHT	TOTAL	PLACE
Doug Buchanan	Vagabond	27	8	65	--
John Houck	Supermarine Sparrow	23	28	51	--
Bud Carson	Wright Air Sedan	27	102	129	2
Dave Rees	YAK UT-M2	27	64	91	--
Pat Daily	Curtiss Robin	20	96	116	3
Walt Eggert	Verville	23	125	148	1
Allan Schanzle	Gee Bee D	28	44	72	--

NO-CAL

CONTESTANT	AIRCRAFT	BEST FLIGHT	PLACE
Paul Spreiregen	Lacey M-10	38	--
Pat Berg	Farman	33	--
Walt Eggert	P47-N	119	2
Claude Powell	Farman	65	3
W. Maitre	Cub E-3	55	--
Bill Clarke	OV-10	143	1

OLD TIME SCALE MASS LAUNCH

CONTESTANT	AIRCRAFT	LAST ONE DOWN WINS	PLACE
Walt Eggert	Megow Aeronca	-----	1
Dan Driscoll	Comet Funk B	-----	2
Doug Buchanan	Taylorcraft	-----	3
Claude Powell	Aeroneer	-----	-
Paul Spreiregen	Fairchild	-----	-

WW-1 MASS LAUNCH

CONTESTANT	AIRCRAFT	ROUND ELIMINATED						PLACE
		1	2	3	4	5	6	
John Houck	Hanriot HD-1	X	-	-	-	-	-	-
Pat Berg	SE-5A	X	-	-	-	-	-	-
Mark Houck	Nieuport N-12	-	X	-	-	-	-	-
Dave Rees	Martinsyde S-1	-	-	-	-	-	-	1
Walt Eggert	Fokker DVII	-	-	-	X	-	-	2
Pat Daily	Albatross DIII	-	-	X	-	-	-	3

NAVY SCALE MASS LAUNCH

CONTESTANT	AIRCRAFT	ROUND ELIMINATED						PLACE
		1	2	3	4	5	6	
Doug Buchanan	SkyFaidr	X	-	-	-	-	-	-
Mark Houck	Curtiss XF13C	X	-	-	-	-	-	-
John Houck	Bell XFL-1	-	-	-	-	-	-	1
Pat Berg	Wildcat	X	-	-	-	-	-	-
Walt Eggert	OS2U-1	X	-	-	-	-	-	-
Randy Kleinert	Hellcat	-	X	-	-	-	-	3
Pat Daily	Boeing F3B-1	-	-	X	-	-	-	2
Gary Hammett	Zero	X	-	-	-	-	-	-

GOLDEN AGE MASS LAUNCH

CONTESTANT	AIRCRAFT	ROUND ELIMINATED						PLACE
		1	2	3	4	5	6	
John Houck	Rearwin Spdstr	X	-	-	-	-	-	-
Walt Eggert	Cessna 34	-	X	-	-	-	-	-
Doug Buchanan	Allied Sport	-	-	X	-	-	-	3
Dan Driscoll	Piper J-3	X	-	-	-	-	-	-
Pat Berg	Ryan	-	X	-	-	-	-	-
Mark Houck	Aeronca 7AC	-	-	-	X	-	-	2
Allan Schanzle	Monocoupe	-	-	-	-	-	-	1
Pat Daily	Curtiss F6C-3	X	-	-	-	-	-	-
Glen Simpers	Taylorcraft	-	X	-	-	-	-	-
Paul Spreiregen	Fairchild	-	X	-	-	-	-	-

NOVICE PENNYPLANE

CONTESTANT	AIRCRAFT	BEST FLIGHT	PLACE
Randy Kleinert	Original	7:31	3
Paul Spreiregen	Cezar Banks	2:06	-
Walter Eggert	Original	5:03	-
Glen Simpers	2-cents Worth	7:52	2
Bill Clarke	PP III G1	8:23	1

THE GREAT COVER-UP

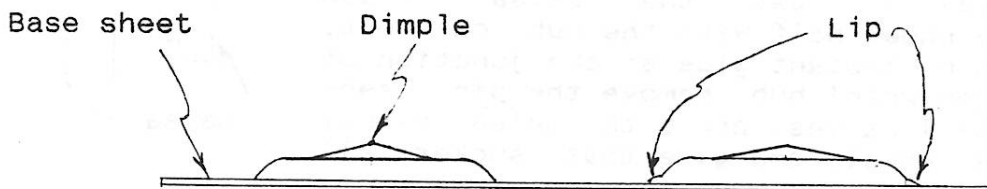
Or how to hold on vacuum formed wheels
without a blob of junk

Allan Schanzle

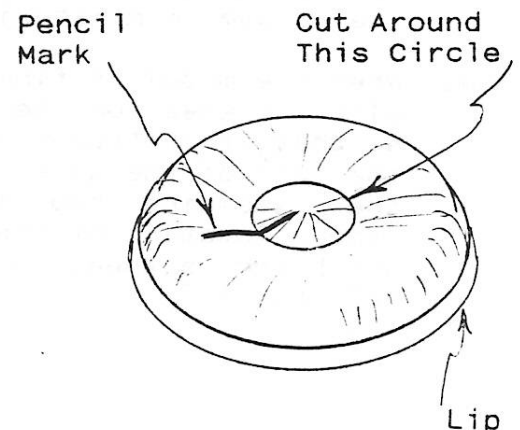
After nearly 50 years of building model airplanes, I still have the desire to improve my building techniques with scale models. As an example, I recently decided that I don't like to see wheels held onto scale models with the landing gear wire bent at a right angle, or a blob of solder dangling out there for all to see. I must be getting old and crotchety, but I'm going to make the judges work a little harder to find flaws in my models. At the rate I improve my skills, I figure I should be able to get 60 FAC scale points at the FAC NATS in the year 2024. Oh really, you don't expect to be there? Well, by damn, I do.

Let's assume you are using those neat light weight vacuum formed wheels from Golden Age (I discussed a similar technique for solid balsa wheels in the May/June 1987 issue of MAX FAX). Here's the recipe.

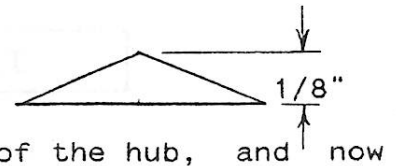
1. Check the 4 wheels from the side view. Two will have "lips" on the base of the flat plastic.



2. Use a scissors to separate the wheels. Leave as much of the base material as possible around the two wheels with lips. For the halves without lips, cut as close to the edge of the wheel as possible. Use fine sandpaper to remove any excess from the "lipless" halves until they slip into the halves with the lips. DO NOT GLUE.
3. Use a thin pin to punch a hole in the wheel halves WITHOUT lips at the location of the dimple noted in step 1. DO NOT PUNCH HOLES IN THE OTHER HALVES.
4. Take the wheel WITH lip and use a pencil to draw a radial line from the center of the wheel past the junction of the hub and tire. Do this on both the outside and inside of the wheel. You will use these lines at a later step. With a brand spankin' new #11 Xacto blade, cut around the circle defining the edge of the hub and the wheel. The cut will be easier to make if you make a series of light pressure cuts, rather than trying to do it in one fell swoop.

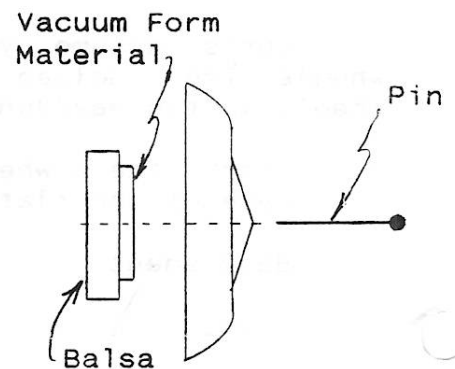


5. Now check the hub "cone" you cut out in Step 4. If the height is 1/8 inch or more, proceed to step 6. If this distance is less than 1/8 inch, cut a piece of scrap 1/8 or 3/32 balsa into a circle slightly larger than the diameter of the hub, and now proceed with step 6.



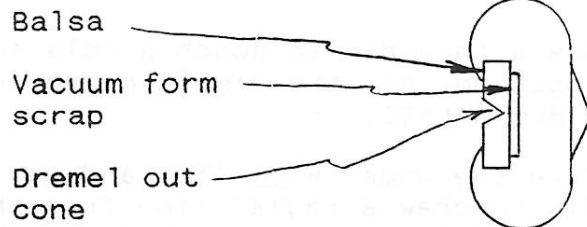
6. Cut a piece of scrap vacuum form material about 1/4 inch square from beyond the edges of the wheel halves. Use that friendly pin again, and punch a hole near the middle of this scrap plastic. Punch the pin as perpendicular to the material as possible. If you are using a piece of scrap balsa, as noted in step 5, then use instant glue to adhere the square of vacuum form material near the center of the balsa circle. Punch the pin again through the square material as well as the balsa. From here on, we'll assume you're using the combination of balsa and vacuum form material, although the balsa may not be necessary in your case.

7. Take that pin again, push it through the wheel half with the pin hole in the hub, and then slip on the balsa/vacuum form disk. Place this half of the wheel onto the other half of the wheel (the one without a hub) and make sure the pin is perpendicular to both halves. Somehow, (you figure out the procedure, 'cause I fumbled around forever), get the balsa flush against the wheel half with the hub cut out. Place a spot of instant glue at the junction of the balsa and wheel hub, remove the pin, separate the wheel halves, press the balsa firmly against the wheel, and glue that sucker all around the circle.

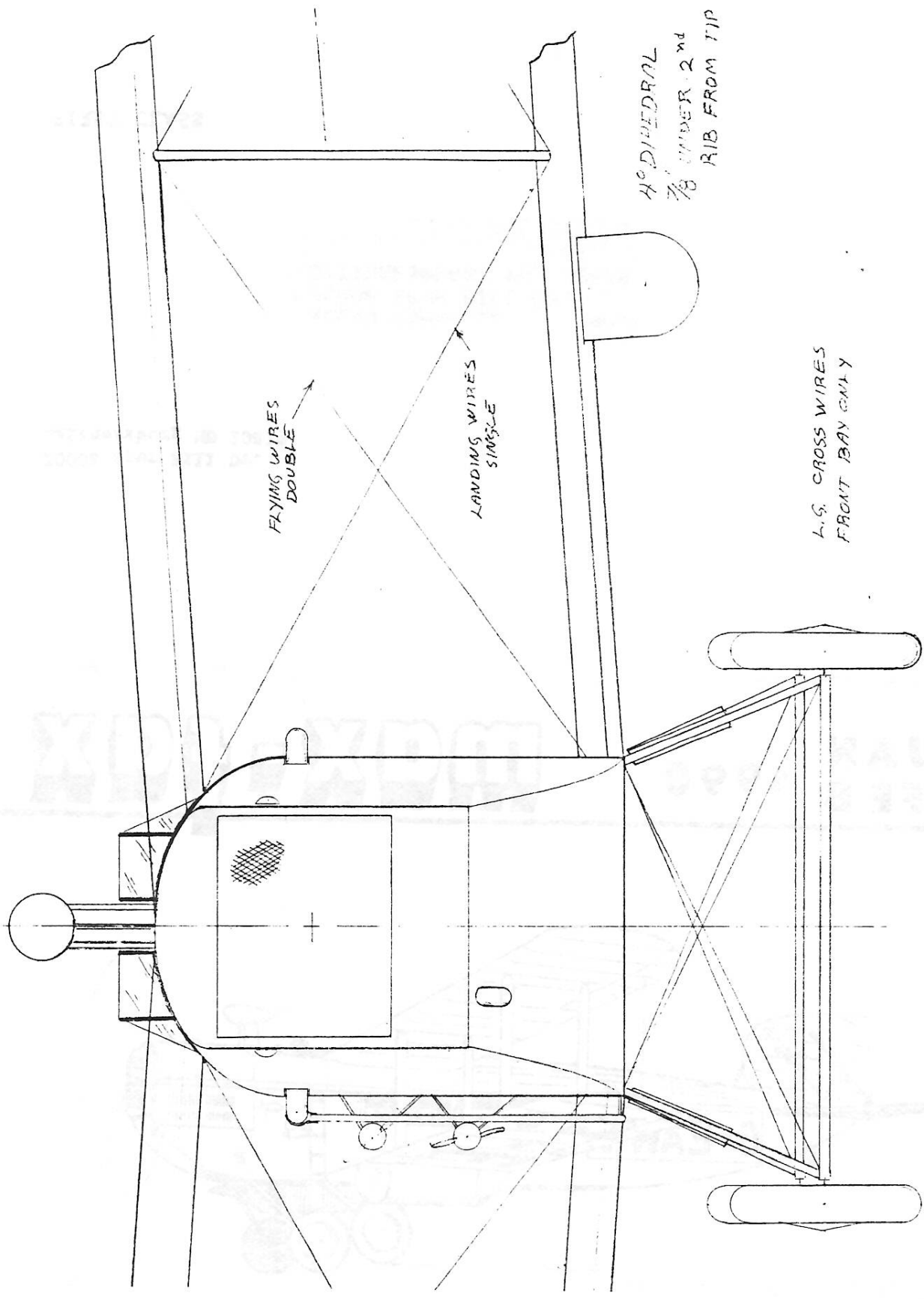


8. Now, at last, glue the two wheel halves together, but NOT the hub you cut out in step 4. Sand off excess material. Paint the wheel and hubs, remembering that one hub is a loose and separate part. DO NOT PAINT OVER THE PENCIL MARKS YOU MADE IN STEP 4.

9. If you used the scrap balsa, take a Dremel tool with a conical tip and grind a hole in the scrap balsa, but be careful not to grind through the vacuum form material.



10. When the model is finished, and the wheels are ready to be installed, slip the wheel on the axle with the balsa side out. Cut the axle wire so that it protrudes just beyond the balsa. Place a drop of epoxy on the end of the wire, and finally, use RC56 or a similar glue to hold the remaining hub in place. Use the pencil marks to line up the proper location of the hub on the wheel. Paint over the pencil marks, and bingo, a wheel is in place with no ugly or apparent means of being held on.



4° DIHEDRAL
 3/8" UNDER 2"
 RIB FROM TIP

FLYING WIRES
 DOUBLE

LANDING WIRES
 SINGLE

L.S. CROSS WIRES
 FRONT BAY ONLY

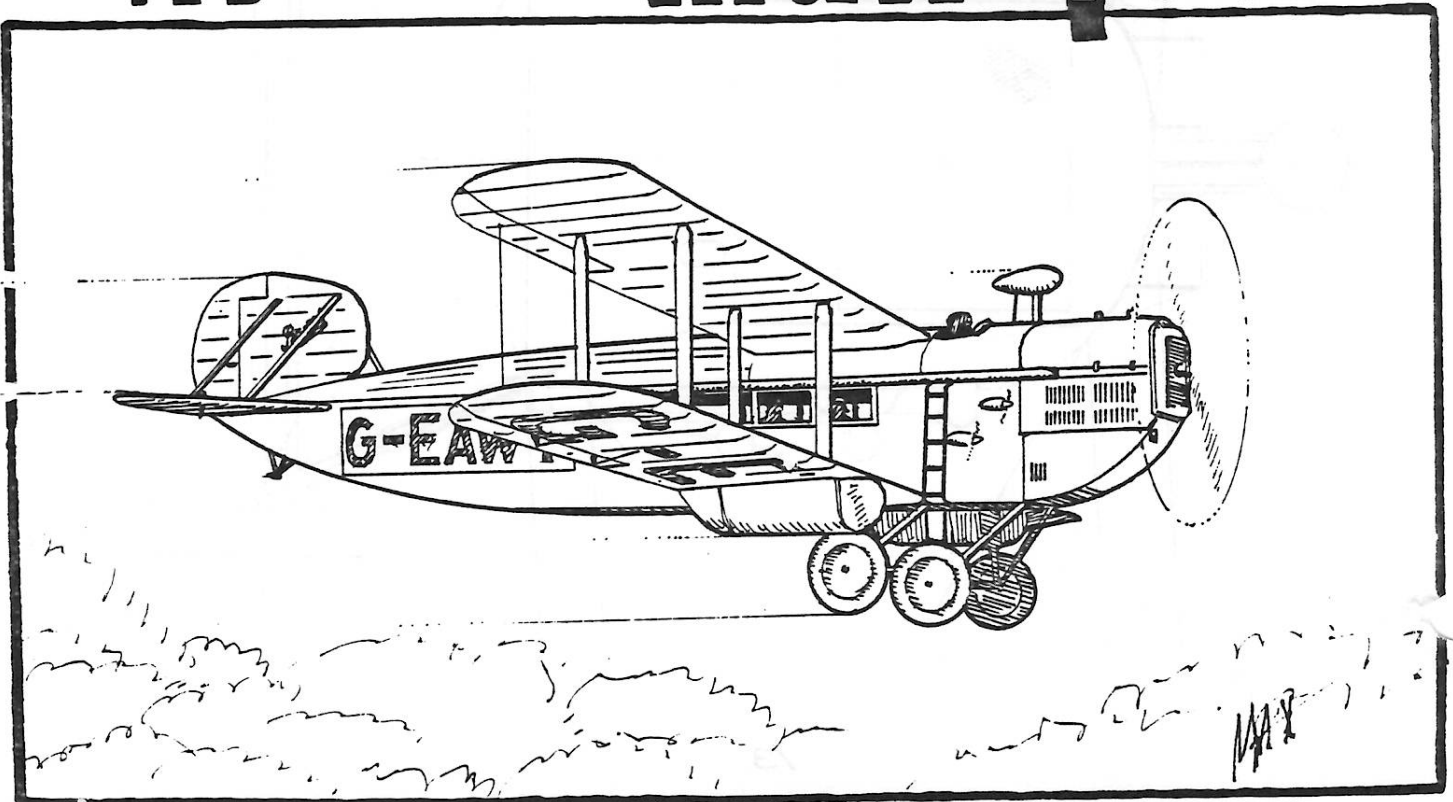
FIRST CLASS

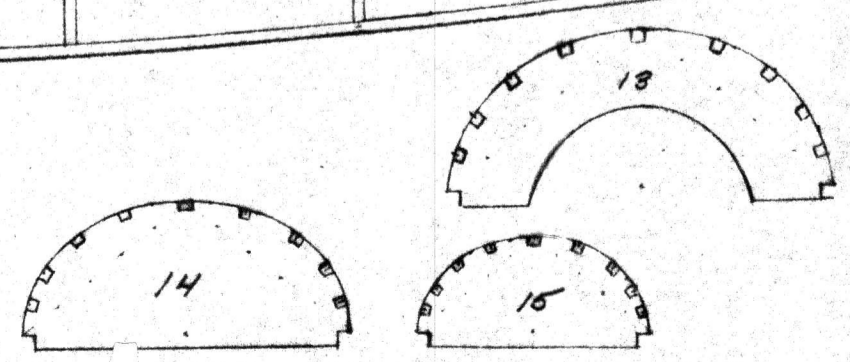
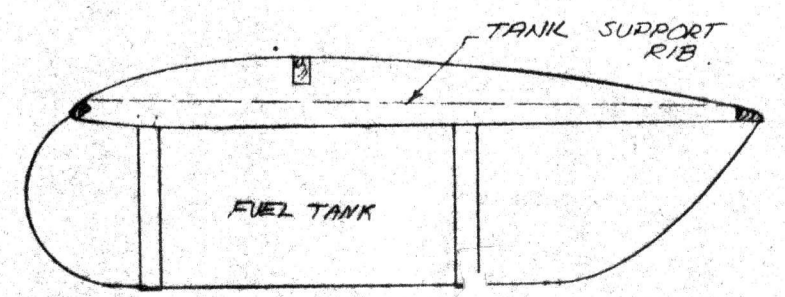
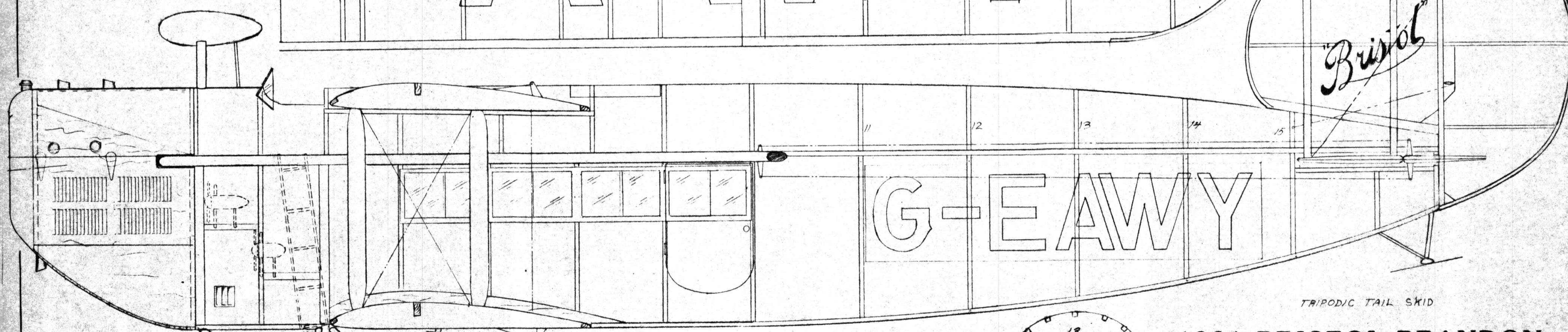
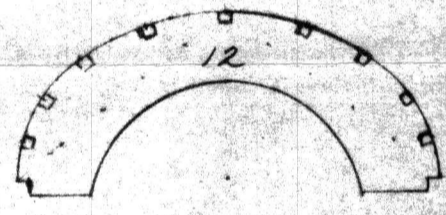
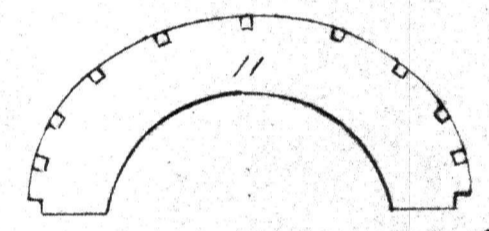
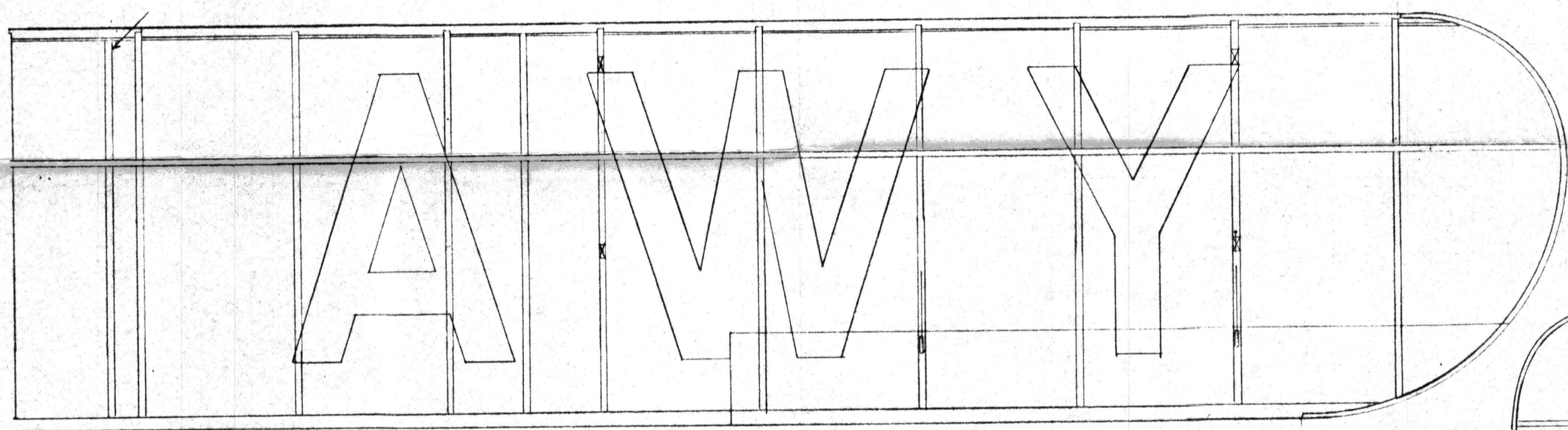
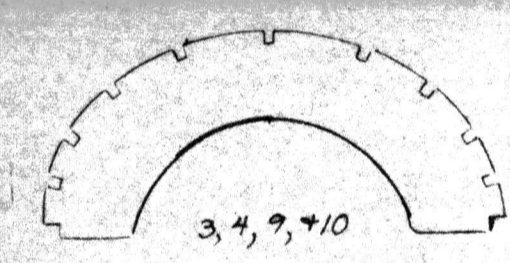
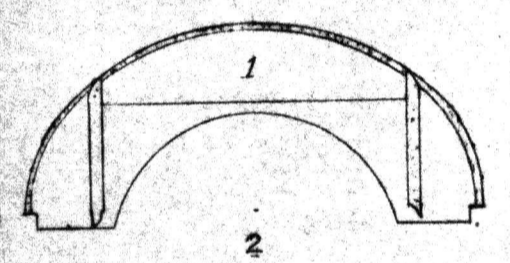
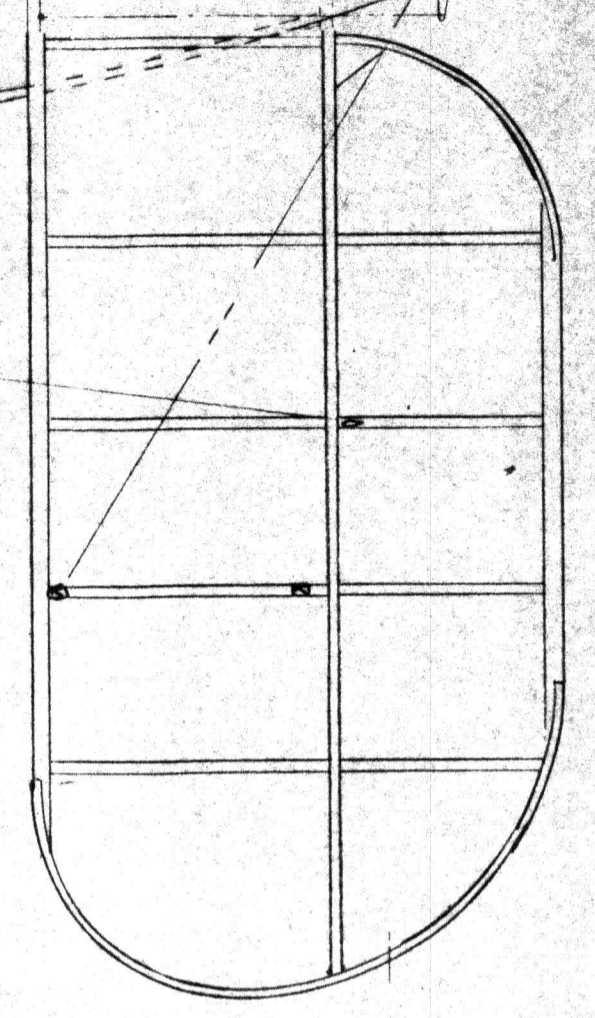
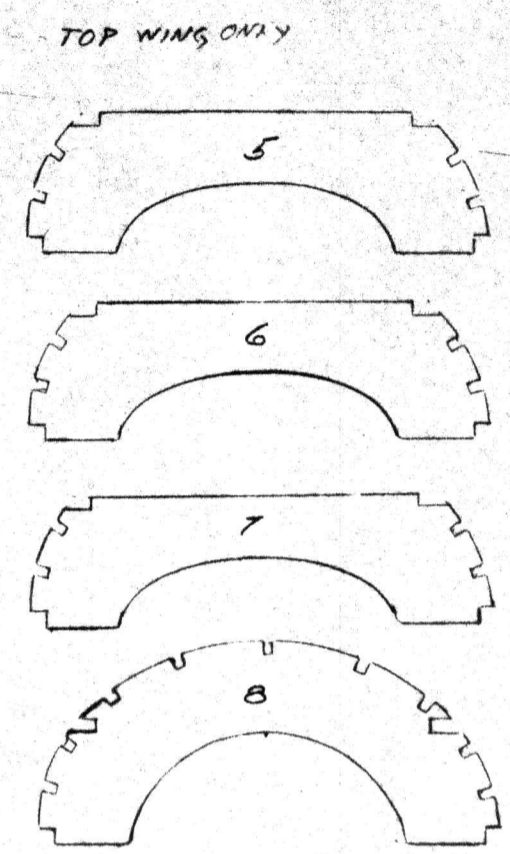
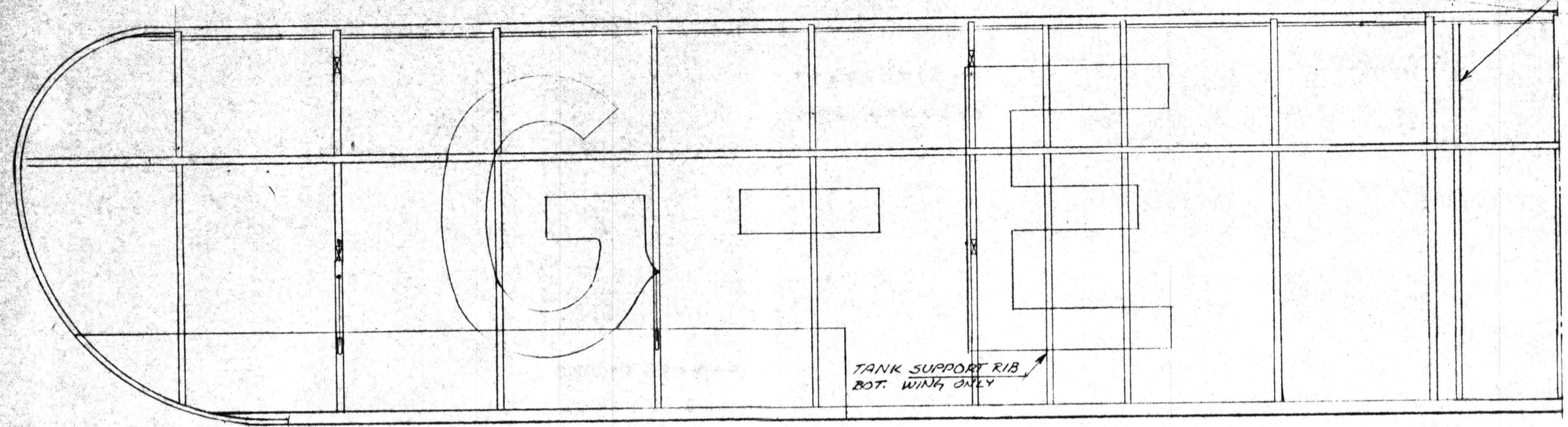
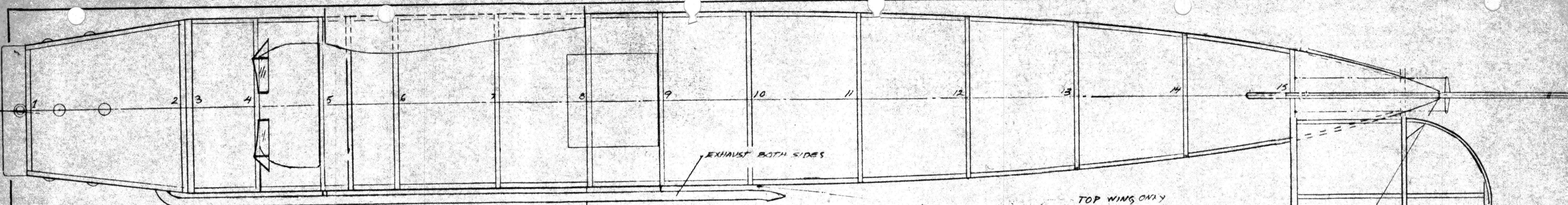
ALLAN SCHANZLE 9008
2008 SPUR HILL DR.
GAITHERSBURG, MD. 20879

2008 Spur Hill Dr.
Gaithersburg MD 20879

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