July/August 2012



San Diego

Scale Staffel



Scale Staffel
FAC Squadron #41
AMA chapter 915

Founded to encourage and advance the hobby of building and flying free-flight scale and sport airplanes.

Club Officers

President
John Hutchinson (619) 303-0785

Vice President
Bob Overcash (619) 579-2174

Treasurer
Kathy McLaughlin (619) 303-0785

Annual Dues: None

Emailed Newsletter Subscription **Fee:** None, except we need your e-mail address. E-mail it to the editor.

Newsletter Editor

William Scott
wscott127@mac.com

(Layout graciously supplied by my wife, Ann Hoff Scott)

FLYING ACES
SQUADRON 41

——— President's Landing Strip ———

"Sometimes life gets in the way..."

by John Hutchison

Sometimes life gets in the way of model building and flying. George Mansfield, a professor of engineering at San Diego State University, is now pursuing other endeavors, but will not abandon us entirely. Mansfield will contribute a column on technical info. And, of course, we will be seeing him at the field. I want to thank George for editing the Scale Staffel newsletter. Thanks, George! I also want to welcome William Scott as our new editor. He's doing a great job.

Just to Catch up on Scale Staffel Activities, the April 28-29 event in Perris, CA was well attended. We had nineteen flyers entering 64 planes in eleven different events. Two good days of perfect flying weather and the trophies and awards were outstanding. Hope to see you at our next meet August 25-26 at Perris.

LLFF! (Long Live Free Flight!)

——— From the Editor ———

Advancing the building of free flight machines through experience, education, and collaboration. Those are my goals as the editor of this newsletter. For over 35 years this club has existed because of the joy and wonder that free flight gives to each of us. Remember the first time your plane maxed out, remember making it to the second round of a mass launch competition, or how about when your plane just flew away and you knew it was time to add dethermalizers to all of your planes. We all may still be in the process of creating those memories, and learning how to build and assemble that perfect next project, that is exactly what I hope to share in these pages. Yes, I'm new to this sport, hobby or obsession (depending on your point of view). But with all of your help, we can make this newsletter a great resource for all skill levels for years to come.

Something to Ponder: We took some wood, tissue paper, glue and a rubber band, added the thrill of competition, and now we have a sport that teaches math, science, chemistry, woodworking, patience, compassion and sportsmanship just to name a few.

I consider it a great honor to be your new editor.

Wishing you flights worth remembering,

William Scott

Scale Staffel Newsletter Editor

EVENTS FOR THE SAN DIEGO AREA

San Diego Orbiteers www.sandiegoorbiteers.com

Aug 19
Old Time Rubber Stick, Power, P-20,
HLG & CLG Otay Mesa Field

Sept 16
Coupe, Power, P-20, HLG & CLG Otay Mesa Field

Sept 21-23
US FF Championships, Lost Hills

Oct 14
P-30, Power, P-20, HLG & CLG Otay Mesa Field

Oct 27-28
SW FAI Champs, Boulder City NV

Nov 18
Old Time Rubber Stick, Power, P-20, HLG & CLG Otay Mesa Field

Dec 16
Coupe, Power, P-20, HLG & CLG Otay Mesa Field

EVENTS FOR THE WESTERN UNITED STATES

Scale Staffel www.scalestaffel.org

Outdoor Contest

Aug 25-26
FAC Perris CA

Oct 27-28
FAC Perris CA

Indoor contest

First Sunday of every month Grossmont college gym

WestFAC www.westernFAC.com

WESTFAC MK IV
April 24, 25, 26, 27 2013
Perris, CA

To add an event please e-mail the information to William Scott at wscott127@mac.com



Bob Hodes' TBD-1 Devastator—a scratch build from Mike Midkiff plans.

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Cover Photo

Scale Staffel April 28 Outdoor Contest WWI Mass Launch in Perris, CA. Photo by Karin Wilson.

Thank you, George Mansfield

Thank you, George Mansfield, for all of your efforts this past year, continuing the Scale Staffel Newsletter on-line. You have left some very big shoes to fill. Just know, there is space in each of the upcoming newsletters for you to write an article… this way you don't stray too far into the world of academic book writing. Best of luck on your future endeavors and we will see you at the flying fields. ***—Ed.***

Why John Hutchison was Inducted in the Flying Aces Club Hall of Fame

My family and I had just been up to Pomona to the AMA show. My daughter saw you could "build your own airplane" so we did, and that led to finding out about our local flying group. With a new larger Guillow's plane unwrapped and assembled, we headed over to the meeting. John greeted us like a grandfather. We hand wound up the plane and let it go. It crashed right into the far wall. John told us to bring the plane over he wanted to take a look at it. First he give us some tan colored rubber band material and told us to tie a good knot in it. Next he suggested we give the plane a left turn to keep it from hitting the wall. Then to help it fly better we added a second dihedral to the wing tips. Now the plane was circling the floor but not taking off. John made more suggestions and my daughter tried again, this time the plane got off the floor and made a complete circle. His next suggestion was to really wind it up. Wind it up she did and so with John's guidance, teaching, and patience she was able to get a $3 airplane to fly for the longest amount of time I have ever experienced. John's willingness and patience to share his knowledge epitomizes why he is in the Flying Aces Hall of Fame.

—William Scott

Reprinted from Flying Aces Club News May/June 2012

John Hutchinson: currently the C.O. of FAC Squadron 41, the SCALE STAFFEL Squadron in San Diego, CA. He is a founding member of this first FAC squadron in California along with Walt Mooney. He was the first Contest Director of WESTFAC at Perris, CA in 2007 and is currently on the WESTFAC working committee. He will be the Contest Director for WESTFAC IV at Perris in 2013. He was the first FAC member in California to be awarded the Blue Max for sixteen victories. John has worked for over 30 years to foster and support model aviation and the FAC in California and throughout America. He as been a personal mentor to me and hundreds of other new model builders, teaching them building skills and flight trimming as they developed into competitive builders and flyers. His leadership skills go well beyond the FAC. He has worked tirelessly to promote model building and flying with children in the Science Olympiad and other youth venues for many years.

—Roger Willis and
Kathy McLaughlin

Around 2003, I first met John at a Cactus Squadron FAC contest in Phoenix. I was just getting back into free flight at the time after a hiatus of about forty years, and was also just getting started in FAC scale. I was very impressed by the scale models that John had brought to the contest, and was very appreciative of the help and advice he so freely gave. His models not only looked good, they also flew very well. I learned a lot from him then, and the experience gave me an idea of just what was possible with free-flight scale.

A few years later, I started attending the Scale Staffel contests at Otay Mesa and Perris. I was impressed that John, as contest director, selflessly gave up so much of his flying time during the contests to ensure that the contestants enjoyed a well-run contest. The same applied to WESTFAC 1 at Perris.

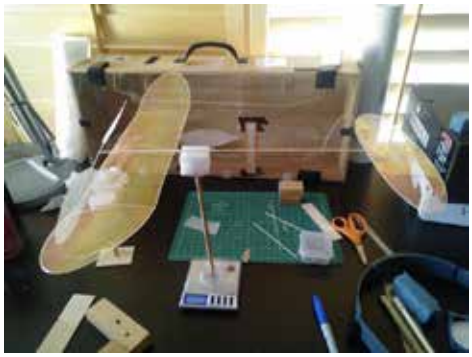
Through the years, I learned more about John's background, and came to realize that he was indeed one of the sparkplugs of free flight scale in the Western states, and had been for many years. After spending time with John at WESTFAC 3 in Colorado, I decided to nominate him to the FAC Hall of Fame. This was based on the belief that he had gone above and beyond in keeping free flight scale and particularly the FAC movement alive and well in the west. In November, 2011, the nomination was prepared and submitted to Ross Mayo.

Last night, 21 July, I was very happy to learn that John had indeed been selected to the FAC Hall of Fame at the FAC Nats at Geneseo.

—Bob Hodes


FLYING ACES
FLYING ACES CLUB





I named this ultra light EZB "Donna's Dragonfly", or "DDF", after my late sister-in-law, Donna. She often admired how my EZB would fly in our living room and remarked that it looked like a big, floating dragonfly.

Donna's Dragonfly

By Yuan Kang Lee

I am usually a fast builder. It is not because I am so adept at building that I build quickly. Rather, I build quickly so I can spend more time flying. I try to focus my efforts toward flying, as flying brings me immense enjoyment. Through extensive flying, I come to better understand my models, which I believe is the single most important factor for competition flying. By fully understanding the strength and weakness of my models, I can design needed improvements in the next model. Of course, even as I build fast, I make sure that there are no obvious performance-sapping flaws. One area that I don't compromise is model weight. I build and fly very light EZB's, and one key to their high performance is their light weight. I also do my best to not compromise structural integrity. If a model is not sturdy enough to hold its lines, it will not fly well. Ultimately, I make sure that I maintain my enthusiasm for this hobby by not getting bogged down in too much detail while building. I know that it is my enthusiasm for Indoor Flying that drives my enjoyment and improvement.

I have tried to push the envelope of flying very light EZB's. My two-time nationals winning EZB, "BS 6", weighs 340 mg, barely a third of the weight of a dollar bill. Larry Coslick, Jim Richmond, and Max Zaluska have also flown successful lightweight EZB's. The lightest of my EZB weighed 290 mg. But my quest to further lighten my models was not finished — it had been on my mind for some time to take the weight down to yet another level.

The key to reducing significant weight is to take a lot of weight from a couple of key areas and a little bit of weight from a lot of different areas. First, I would use Y2K2 film to cover the wing and the stab, instead of OS film. I had been given a small amount of Y2K2 from Mark Bennett, an indoor flier from Omaha, who had salvaged the film from the wings of his old F1D's. Using Y2K2 film would save 10 mg from the wing and 5 mg from the stab. Next, I decided that 15 mg could be reduced from the 60 mg wing structure. This amounted to a significant savings in weight but could compromise the wing structure if not done correctly. Additional weight would come from the following components: prop 10 mg, tail boom 5 mg, motor stick 5 mg, tissue tubes 5 mg, thrust bearing 5 mg, stab frame 5 mg. These reductions in total added to 65 mg of weight savings, and the resulting model would weigh a very svelte 225 mg. If this model could be built with sufficient structural strength, it would be a world-class flier.



The building of this ultra light EZB required a meticulous effort, in the very way that I had try to avoid. It was impossible to build this model fast. It took me about 20 hours in total, with most of the time working under magnification (2.5X) while wearing my Optivisor. By comparison, a typical lightweight EZB took 5 hours to build. A lot of time was spent carefully cutting wood, all done freehand using a scalpel and a straight edge. All wing and stab spars, including the tips, were carefully tapered to save weight. As an example, the typical light weight stab spar would be made from 0.030" x 0.015" strips of 3.7# balsa. For this ultra light model, I reduced the thickness (more aptly put, the thinness) of the spar to 0.012" and tapered it from 0.030" at the center to 0.020" at the tips. Luckily, my hands and eyes were up to the task. Further adding to the build time, most of the components were made successfully after two or three attempts. When I finally finished the model over a three-day period, I was exhausted. I could really feel the strain of working under magnification and handling very small components.

So how did I determine how light each component could be made without adversely affecting performance? By building and flying many light weight EZB's, I have developed good intuition for the overall requirements of an EZB model. I have developed this "feel" from repeated experiences of winding the motor, launching the model, catching it in my hand, trimming it, watching it fly, etc. This intuition has been further developed because I have chosen not to fly many different classes of models.

I named this ultra light EZB "Donna's Dragonfly", or "DDF", after my late sister-in-law, Donna. She often admired how my EZB would fly in our living room and remarked that it looked like a big, floating dragonfly.

I plan to showcase "Donna's Dragonfly" as an exhibition of how delicately an indoor model could fly. If time permits, I will fly "DDF" over Labor Day weekend at the Lakehurst hangar to see if it can pass the magical 40-minute mark.

April 28-29, 2012 FAC Scale Staffel Contest

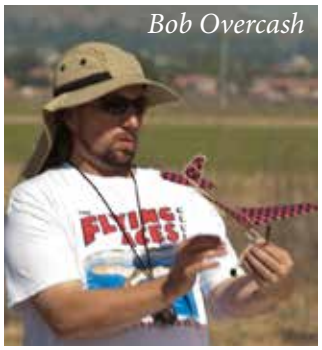
Photographed by Karin Wilson (Thank you, Karin!)



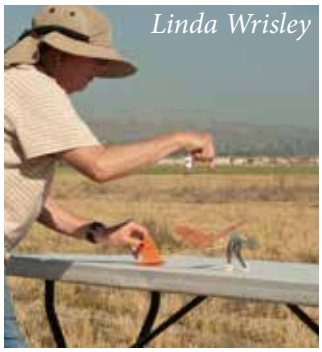




George Mansfield



Bob Overcash



Linda Wrisley





John Hutchison, Mark Chomyn and Kathy McLaughlin





Herb Kothe winds up.



Mark Chomyn



John Donelson



WWI Mass Launch



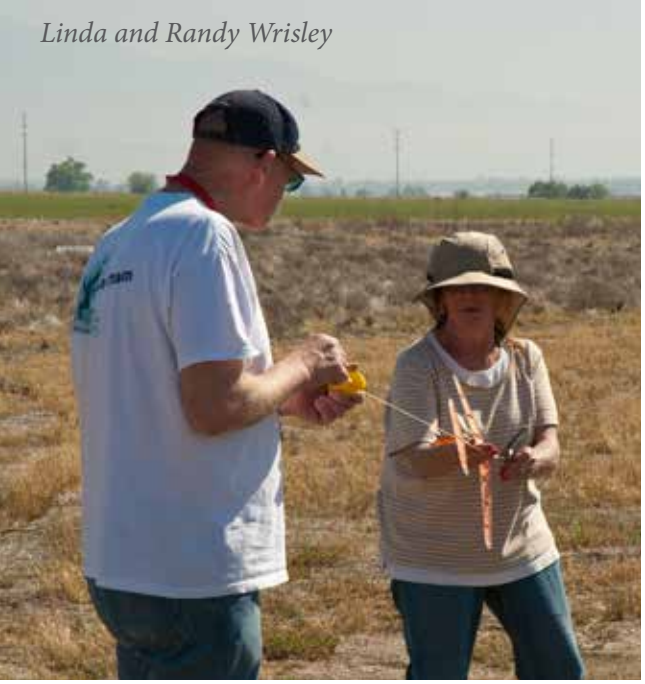
Mike Jester







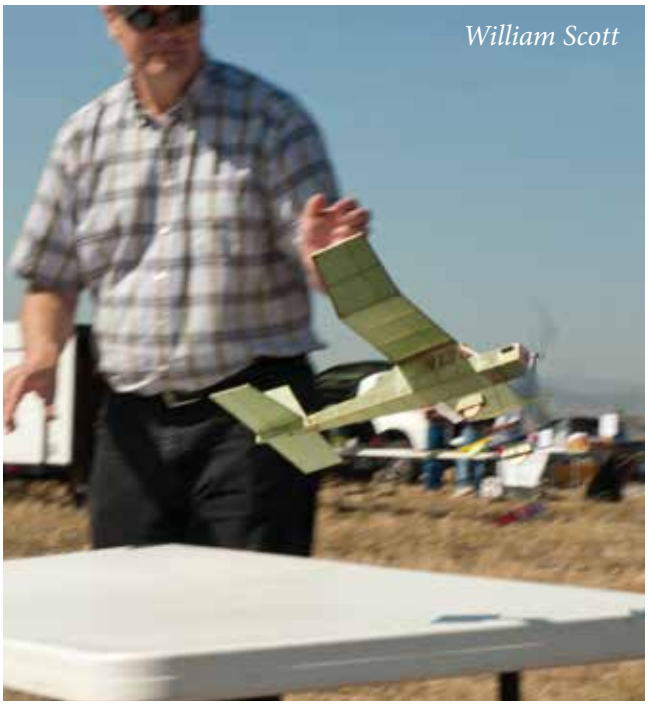



Linda and Randy Wrisley





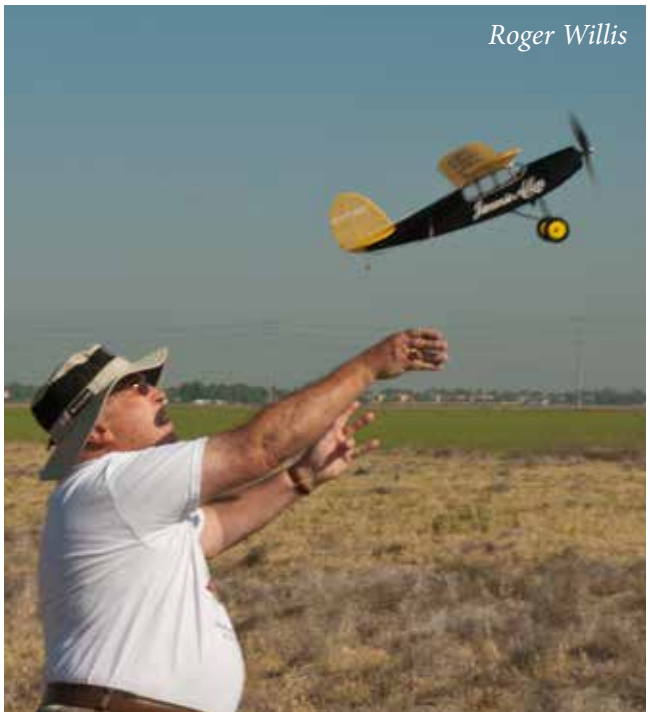



William Scott


Winning Phantom Flash




Bob Hodes


Roger Willis













John Merrill





Trophies made by Bob Overcash



Herb Kothe





WWII Mass Launch

April 28-29, 2012 FAC Kanone Report

Compiled by George Mansfield

EVENTS: 11 **FLYERS: 19** **ENTRIES: 64**

FAC KANONE REPORT	FAC CLUB NAME:	Scale Staffel Model Airplane Club	CONTEST DATE:	4/28-29/2012
CONTEST DIRECTOR:	George Mansfield	Email address:	gmansfield75@gmail.com	SQUADRON # 41

TOTAL NUMBER OF FLYERS IN EACH EVENT INDICATED IN PARENTHESES

EVENT: Rubber Scale (7 entries)

CONTESTANT'S FULL NAME	MODEL	FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS 1	2	3	TOTAL FLIGHT SECONDS OR BEST SCALE FLT FACTORED	BONUS POINTS	SCALE POINTS	TOTAL	PLACE	FAC MEMBER? Y N
Mike Mulligan	Kawasaki "Tony"	86	113	120	82.5	10	56.1	148.6	1	Y
Clint Brooks	Tiger Moth	42	35	60	60	15	58.9	133.9	2	Y
Roger Willis	Chambermaid	64	78	67	69	5	44.9	118.9	3	Y
Mike Jester	Fairchild 24	81	48	120	82.5	0	36.3	118.8	4	Y
Fernando Ramos	DH Mosquito	29			29	30	56	115	5	Y
Robert Hodes	DH Hornet	28			28	35	50	113	6	Y
George Mansfield	Fairey Barracuda	69	67	50	64.5	0	39.8	104.3	7	Y

EVENT: Power Scale (3 entries)

CONTESTANT'S FULL NAME	MODEL	FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS 1	2	3	TOTAL FLIGHT SECONDS OR BEST SCALE FLT FACTORED	BONUS POINTS	SCALE POINTS	TOTAL	PLACE	FAC MEMBER? Y N
Bob Wetherel	Puss Moth	90			90	15	60	165	1	Y
Robert Hodes	Sopwith Schneider Racer	70			70	25	55.8	150.8	2	Y
John Donelson	Fairey Barracuda	90			90	0	51.8	141.8	3	Y

EVENT: WW I Combat (6 entries)

CONTESTANT'S FULL NAME	MODEL	FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS 1	2	3	TOTAL FLIGHT SECONDS OR BEST SCALE FLT FACTORED	BONUS POINTS	SCALE POINTS	TOTAL	PLACE	FAC MEMBER? Y N
Herb Kothe	Fokker D7	x	57	85					1	Y
Robert Hodes	SE5	x	24	16					2	Y
Clint Brooks	SE5	x	30	scratch					3	Y
Mark Chomyn	SE5	x	22						4	Y
John Merrill	Fokker D7	x	6						5	Y
John Hutchison	Fokker D7	x	3						6	Y

EVENT: WW II Combat (8 entries)

CONTESTANT'S FULL NAME	MODEL	FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS 1	2	3	TOTAL FLIGHT SECONDS OR BEST SCALE FLT FACTORED	BONUS POINTS	SCALE POINTS	TOTAL	PLACE	FAC MEMBER? Y N
John Donelson	Kawasaki Hein	152	166						1	Y
Herb Kothe	Yak 3	94	82						2	Y
Mike Mulligan	Kawasaki "Tony"	121	scratch						3	Y
Robert Hodes	Yak 3	72							4	Y
Mark Chomyn	Kawasaki Hein	27							5	Y
John Merrill	North American P-51C	15							6	Y

EVENT: Embryo Endurance (9)

CONTESTANT'S FULL NAME	MODEL	FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS 1	2	3	TOTAL FLIGHT SECONDS OR BEST SCALE FLT FACTORED	BONUS POINTS	SCALE POINTS	TOTAL	PLACE	FAC MEMBER? Y N
Linda Wrisley	De' But	120	120	120	360	9		369	1**	Y
John Donelson	Embryo-matic	120	120	120	360	9		369	2**	Y
George Mansfield	De' But	120	93	120	333	9		342	3	Y
Robert Hodes	Modified Microbox	120	57		177	9		186	4	Y
Mark Chomyn	Hornet	26	63	61	150	9		159	5	Y
William Scott	Prairie Bird	33	66	30	129	9		138	6	Y
Fernando Ramos	Peaches	120			120	9		129	7	Y
John Merrill	Peck Pup	31	36	41	108	9		117	8	Y
Herb Kothe	Go Devil	*120	*120	*120	0	9		9	9	Y

Notes: * Hand launched; ** Flyoff results

EVENT: Jimmie Allen (6 entries)		FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS			TOTAL FLIGHT SECONDS OR BEST SCALE FLT	BONUS	SCALE			FAC MEMBER? Y
CONTESTANT'S FULL NAME	MODEL	1	2	3	FACTORED	POINTS	POINTS	TOTAL	PLACE	N
Herb Kothe	Sky Chief	120	120	120				360	1	Y
Roger Willis	BA Cabin	38	73	120				231	2	Y
George Mansfield	Blue Streak	87	67					154	3	Y
Tom Laird	BA Cabin	120						120	4	Y
Fernando Ramos	Sky Chief	67	43					110	5	Y
Gene Drake	BA Cabin	47						47	6	Y

EVENT: 2-bit + 1 (4 entries))		FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS			TOTAL FLIGHT SECONDS OR BEST SCALE FLT	BONUS	SCALE			FAC MEMBER? Y
CONTESTANT'S FULL NAME	MODEL	1	2	3	FACTORED	POINTS	POINTS	TOTAL	PLACE	N
Linda Wrisley	F.A. Moth	120	118	120				358	1	Y
Roger Willis	F.A. Moth	82	98	120				300	2	Y
Robert Hodes	F.A. Moth	63	69	66				198	3	Y
Chuck Michalovic	F.A. Moth	31	42	54				127	4	Y

EVENT: Phantom Flash (6)		FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS			TOTAL FLIGHT SECONDS OR BEST SCALE FLT	BONUS	SCALE	Best 3 of 6 flights		FAC MEMBER? Y
CONTESTANT'S FULL NAME	MODEL	1	2	3	FACTORED	POINTS	POINTS	TOTAL	PLACE	N
Bob Overcash	Phantom Flash	58	120	120	60	21	22	300	1	Y
Linda Wrisley	Phantom Flash	75	120	72				267	2	Y
Robert Hodes	Phantom Flash	62	120	60	20	68	56	250	3	Y
Mike Jester	Phantom Flash	35	47	88	82			217	4	Y
Mark Chomyn	Phantom Flash	42	32	39	57	37	41	140	5	Y
William Scott	Phantom Flash	35	34	34				103	6	Y

EVENT: Greve / Thompson (7)		FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS			TOTAL FLIGHT SECONDS OR BEST SCALE FLT	BONUS	SCALE			FAC MEMBER? Y
CONTESTANT'S FULL NAME	MODEL	1	2	3	FACTORED	POINTS	POINTS	TOTAL	PLACE	N
Mike Mulligan	Firecracker	102	176	235					1	Y
Herb Kothe	Chambermaid	164	189	106					2	Y
John Donelson	Goon	102	267	102					3	Y
Robert Hodes	Chambermaid	94	64	87					4	Y
Fernando Ramos	Chambermaid	146	63						5	Y
Roger Willis	Chambermaid	57	10						6	Y
Mark Chomyn	Caudron	24							7	Y

EVENT: Golden Age Civ/Mil (3)		FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS			TOTAL FLIGHT SECONDS OR BEST SCALE FLT	BONUS	SCALE			FAC MEMBER? Y
CONTESTANT'S FULL NAME	MODEL	1	2	3	FACTORED	POINTS	POINTS	TOTAL	PLACE	N
Herb Kothe	Taylorcraft	120	98	120				338	1	Y
Mike Jester	Fairchild 24	44	43	118				205	2	Y
Mark Chomyn	Aeronca	45	38	41				124	3	Y

EVENT: Grumman Mil. M/L (5)		FLIGHT TIMES OR HEAT ROUNDS FOR ML EVENTS			TOTAL FLIGHT SECONDS OR BEST SCALE FLT	BONUS	SCALE			FAC MEMBER? Y
CONTESTANT'S FULL NAME	MODEL	1	2	3	FACTORED	POINTS	POINTS	TOTAL	PLACE	N
John Donelson	Guardian	57	207	229					1	Y
Mark Chomyn	F6F	22	40	32					2	Y
John Hutchison	F6F	23	8						3	Y
Robert Hodes	F6F	5							4	Y
John Merrill	F4F	5							4	Y

Roster of Flyers

1. Bob Overcash
2. Bob Wetherel
3. Chuck Michalovic
4. Clint Brooks
5. Fernando Ramos
6. Gene Drake
7. George Mansfield
8. Herb Kothe
9. John Donelson
10. John Hutchison
11. John Merrill
12. Linda Wrisley
13. Mark Chomyn
14. Mike Jester
15. Mike Mulligan
16. Robert Hodes
17. Roger Willis
18. Tom Laird
19. William Scott

FLYING ACES
SQUADRON 41

SCALE STAFFEL SAN DIEGO

San Diego Scale Staffel

Outdoor Flying Contest

Saturday and Sunday, August 25 – 26, 7a.m. to Noon

SCAMPS Field at Perris, CA (33.785N, 117.199W AMSL 1,413ft)

Events Prizes

Awards for first to third place. First place trophies for WWI and WWII Combat.

Fees

$8 for Contest including entry for one event, $3 for each additional event, $20 maximum to cover contest entry and 5 to 11 events

Contest Directors

George Mansfield
gmansfield75@gmail.com
phone (858) 453-3857

John Hutchison
johnhutchison1@cox.net
phone (619) 303-0785

Awards Presentation

Immediately following the contest's final gun on Sunday

Hotel Accommodations

The Holiday Inn Express (five minutes from the field) has reserved a block of 12 rooms at $69, double occupancy for Fri and Sat, August 24 & 25, 2102. You must reserve your room before August 15.
Click here to link to hotel

Pilot's Meeting: 8 a.m. on both days

FAC Single Model Events

Fly any event on either day, but all flights for a given event must be flown on the same day

1. FAC Rubber Scale
2. FAC Power Scale (90 second max)
3. FAC Embryo endurance
4. FAC Jimmie Allen (Hand Launch)
5. FAC 2-Bit(+1) Rubber (Hand Launch)
6. FAC Phantom Flash
7. FAC Golden Age Civil Scale

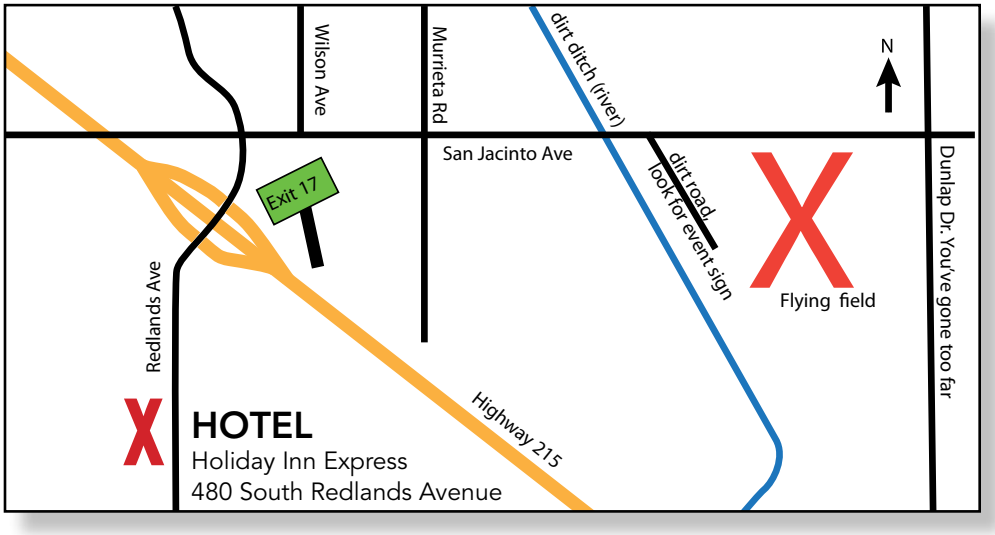
Mass Launch Events

Saturday

8. FAC World War 1 Combat: Wind at 8:20, Launch at 8:30 a.m.
9. FAC World War II Combat: Wind at 9:20, Launch at 9:30 a.m.

Sunday

10. FAC Greve/Thompson Race: Wind at 8:20, Launch at 8:30 a.m.
11. FAC Battle of Midway: wind at 9:20, launch at 9:30 a.m.



—— Outdoor Flying Contest Special Event ——

Battle of Midway Mass Launch Rules

Date: Sunday, August 26, 9:30 a.m.

Place: SCAMPS Field at Perris, CA, (33.785N, 117.199W AMSL 1,413ft)

Concept: Mass Launch event exclusively for combat aircraft and reconnaissance aircraft that were actively engaged in the Battle of Midway, June 1942.

RULES

1. All Primary FAC Rules and FAC Mass Launch rules apply.
2. Rubber power only.
3. No wingspan restrictions.
4. 2012 Pilot's Pre-launch Checklist strictly enforced.
   Combat aircraft must have 3-D armament.
5. Aircraft eligibility: see list in sidebar.
6. WWII Pacific Theater colors and markings required.
   Mid 1942 / Midway markings strongly encouraged.
7. Flight rules:
   a. Three rounds minimum, mass launched
   b. All flights timed to ground by mechanics
   c. Multi-engine models will be given winding window of 2 minutes per motor
8. Scoring:
   a. Bonus points added to flight time for each round. Example: a flight time of 67 seconds + bonus score of 15 = score of 82 seconds for that round.
   b. Bonus points awarded as follows:
      1. Mid / shoulder wing: +5
      2. Low Wing: +10
      3. Seaplane / Flying Boat: +10
      4. Biplane: +15
      5. Off-centerline twin: +25
      6. Four-engine: +35

"Best in Show" Special Award: one each to the best Japanese and the best U.S. aircraft, judged during the pre-launch inspection.

LIST OF ELIGIBLE AIRCRAFT

If the aircraft is not on this list, it is not eligible for the 2012 FAC Midway Event.

UNITED STATES

Navy — Carrier Based
- Douglas SBD Dauntless
- Douglas TBD-1 Devastator
- Grumman F4F Wildcat

NAVY — Warship Based
- Curtiss SOC-3 Seagull

NAVY — Shore based on Midway
- Consolidated PBY-5 and -5A Catalina
- Grumman TBF Avenger

MARINE CORP — Shore based on Midway
- Douglas SBD Dauntless
- Vought SB2U Vindicator
- Grumman F4F Wildcat
- Brewster F2A-3

ARMY AIR CORPS — Shore based on Midway
- Martin B26 Marauder
- Boeing B-17E Flying Fortress

JAPAN

NAVY — Carrier Based
- Aichi D3A-1 'Val'
- Nakajima B5N1 'Kate'
- Mitsubishi A6M2 'Zero'

NAVY — Warship based
- Kawanishi E7K1 'Alf'
- Nakajima E8N1 'Dave'
- Mitsubishi F1M 'Pete'
- Aichi E13A 'Jake'

Navy — on Seaplane tenders in invasion group fleet
- Mitsubishi A6M2-N 'Rufe'
- Mitsubishi F1M 'Pete'

Click Here to access some plans for the above planes

Calculating Tail Volume

From A.A. Lidberg Model Plan Service: www.aalmps.com



Photo by Karin Wilson

George Mansfield, Perris CA, April 2012

The Tail Volume Coefficient (TVo) is a very handy tool for understanding why a model acts like it does, and for determining what can be done to help it act more like what is desired. TVo will help decide just how big the stabilizer should be and provide a starting point for the Center of Gravity location. Here's the formula:

Tail Volume = (Tail Area/Wing Area} x (Tail Arm/Wing Avg. Chord)

where:

Tail Area = area of the horizontal stabilizer

Wing Area = area of the wing
[both areas include that encased by or covered by the fuselage]

Tail Arm = distance from LE of wing to LE of stab
[for untapered surfaces; for tapered, use LEs at average chord]

Wing Avg. Chord = area/wing span

Looking at the formula, one can see [other parts being the same] that a larger tail area and/or a longer tail arm will produce a larger tail volume.

Here are some sample TVo numbers:

AMA gas models	1.0 to 2.0
Mulvihill rubber	1.5 to 2.2
Wakefield rubber	1.4 to 1.7
Indoor rubber duration	1.0 to 1.5
Hand launched glider	.6 to 1.1
Full size 1913 Moraine-Saulnier, Type 'L'	.16

OK, so what do we do with the TVo number?

We can find a good starting point for the center of gravity location using this formula:

CG [in % back from the wing's LE] = 16 + (36 x Tail Volume)

An example: if Tail Volume is .50, then CG is:

16 + 36 x .5 = 34%

In practice, one should experiment around this recommended number, to see if duration could be improved.

This CG calculation is really handy for those old timer gas models that have no balance point marked on the plans!

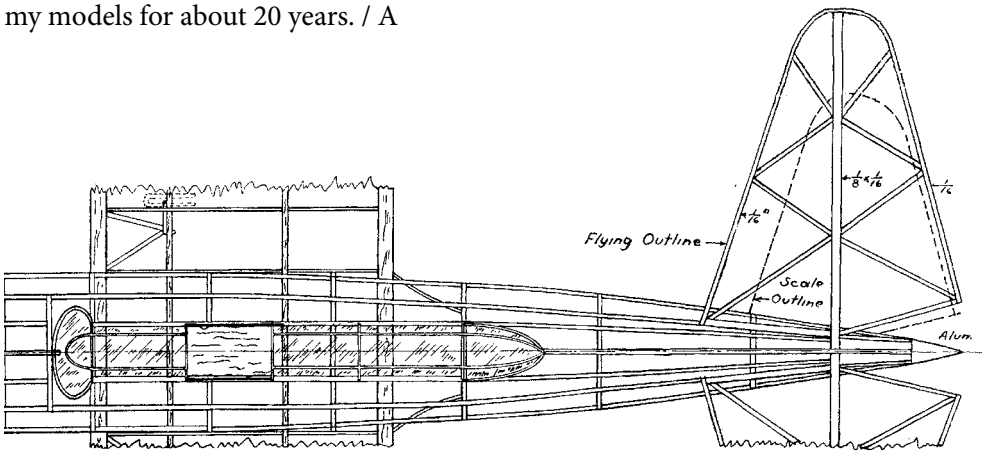
What else does this mean? In general, a forward CG such as the typical '1/3 back' or the 36% noted above, means that the wing will need to be at a higher angle of attack — and a powered model will, because of that greater angle, require more down-thrust. Both of these factors contribute to a model that could be considered less efficient, but, if it's a scale model, you don't have much latitude for changes. You do, at least have the balance point at a near-optimum location for that design. Check out that Moraine-Saulnier 'L' above — with its 6% stab area, the TVo is very small and the balance point will have to be quite far forward.

For a model that you're designing [or a scale model that you're working up], checking out the TVo is a good idea so you can tune the design for more efficiency. You can adjust the tail arm length and/or the tail area to get a greater TVo. Do you remember some of the post-WWII gas models like the Civy Boy that had a balance point at or beyond the wing's TE? When you look at such a model, you see a large stab plus a long tail arm — thus a large TVo. You will also see the wing and stab incidence at/near zero/zero. Now, that rearward CG is interesting, but the zero/zero makes climb adjusting a scary proposition, even though the glide can benefit from that set-up. It's been said that when the Civy Boy works, it's really hard to beat — but when it doesn't, the impacts will scare everyone!

So — give TVo a try — see how it works!

Portions of this page have been taken from William F. McCombs "Making Scale Model Airplanes Fly." See ads in Flying Models and the NFFS Digest for information on how to buy this book — which has many very helpful ideas for competition models as well as scale models.

The comments are mine, as I am a firm believer in TVo and have used it on all my models for about 20 years. / A



Tiny Cut off Saw

George Mansfield



I just bought a cool power tool: Harbor Freight's item #42307," mini cutoff saw" (see photo above). It has a max cut depth of 3/4", uses a 2" diameter, 100 tooth blade turning at 7800 rpm. Built in features include a 3/4" capacity stock holdinag vise with lockable miter adjustment and jaw groove for aligning and holding round stock, and convenient top- mounted on-off switch and tilt release. It even comes with a simple hold-down bench clamp to prevent 'walking' of the saw on your work table. The saw's footprint on your bench top is only 5" wide x 7" deep.

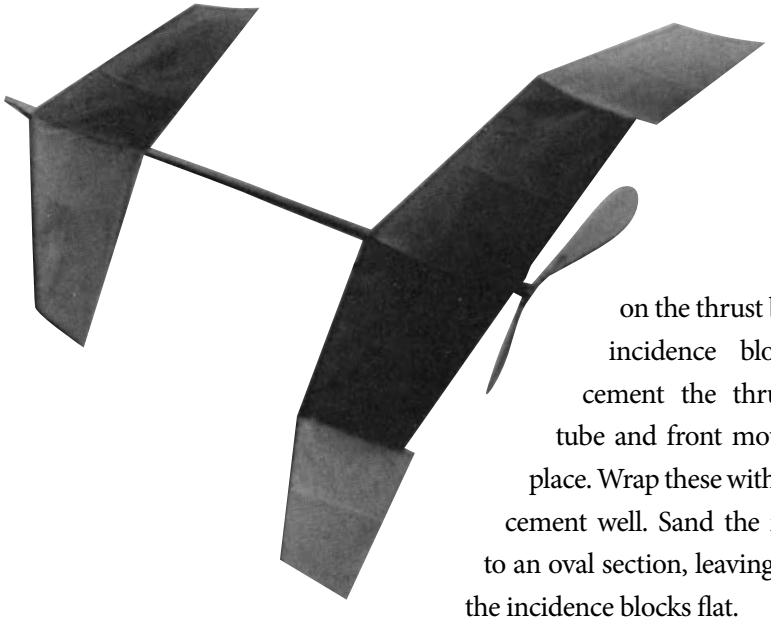
The motor max current is 0.9 amps and the saw can cut wood, plastic and non-ferrous metals. The photo shows sample material I cut. I was pleasantly surprised at the clean smooth cut faces of aluminum tube, hardwood dowels and balsa sticks. Just a tiny bit of sanding is needed to remove any fuzz at the cut ends.

The saw lists for $34.99, but was on sale to HF club members for $19.99!

The Zephyr

From Model Builder, March 1979, Volume 9, Number 86

By Randy and Irene Wrisley



A simple stick model that would be great for club contest. Full size plans on next two pages.

The "Zephyr" is a simple little rubber-powered canard that is a real eye-catcher and quite a performer to boot. Canards are fun and are capable of surprisingly good flights. Being a stick model, the Zephyr is very quick to build. Indoors or out, its consistent performance will make you wonder why this type of layout isn't explored further. (It's interesting to note that, according to Webster, a canard is "an obsolete kind of airplane with the rudder and elevator in front." Somebody better tell Burt Rutan about this, so he won't design any more "obsolete" airplanes like the Vari Viggen, Vari Eze or Quickie!)

Motor Stick

Cut the motor stick to length from a piece of rock-hard 1/8 x 1/4 balsa. Glue on the thrust bearing and incidence blocks. Next, cement the thrust bearing tube and front motor hook in place. Wrap these with thread and cement well. Sand the motor stick to an oval section, leaving the tops of the incidence blocks flat.

Wing

Make an airfoil template from 1/16 plywood. Cut out 14 ribs of light 1/16 sheet and set them aside. Pin down the leading and tip trailing edges on the plan. Cement the #1 ribs in place. Use shims to raise the center section trailing edge up off the plan as required and cement it to the #1 ribs. Add the rest of the ribs, trimming them at the aft end as necessary. When everything is dry, crack the leading and trailing edges at the #1 ribs and raise each tip 2 1/4 inches. Reglue the joints with Titebond or Hot Stuff.

Canard

The canard is built just like the wing. Use the leftover wing ribs, and when dry, raise each tip 1 3/8 inches for the proper dihedral.

Propeller

Cut the prop blades from 1/32 sheet balsa. The hub is 1/8 square balsa, 1 1/4 inches long, sanded round. Push a pin through the center and cut a slot 1/32 inch wide and 3/8 inch deep at each end. The slots should be about 60 degrees relative to the pin. Cement the blades to the hub. Put a coat of dope on the back side of each prop blade to get the proper curve (see side view). When dry, balance the prop as best you can.

The prop shaft is a piece of 1/32 music wire. Bend a loop in one end for the rubber motor, slide the shaft through the thrust bearing tube, add two glass beads, slide the prop on and bend the barb in the shaft as shown on the plan.

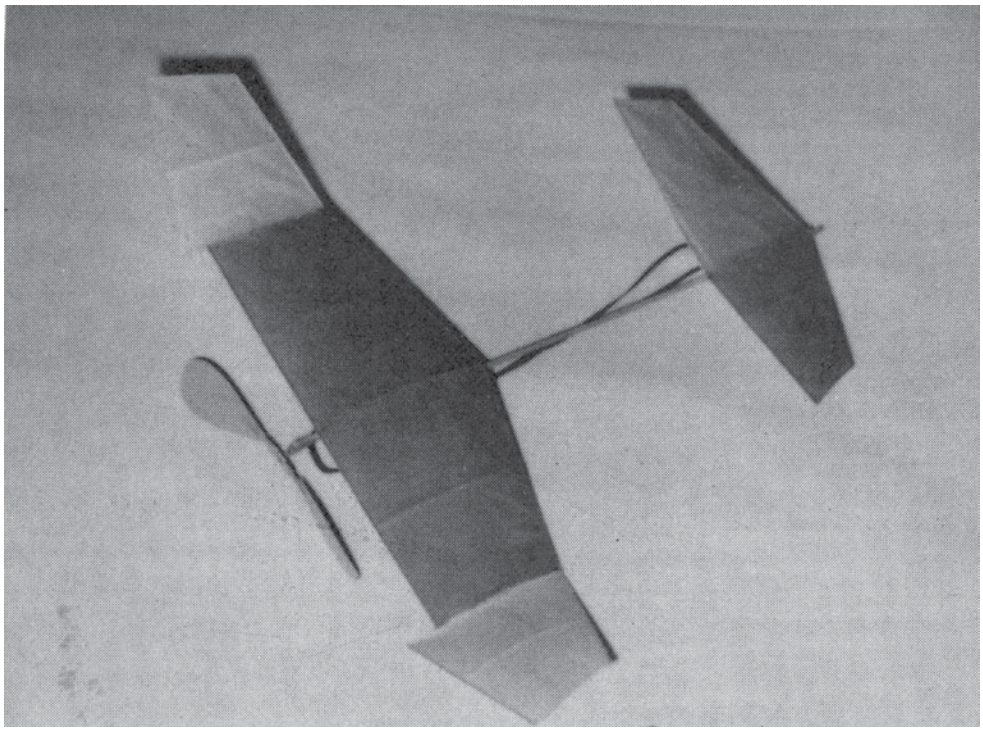
Covering

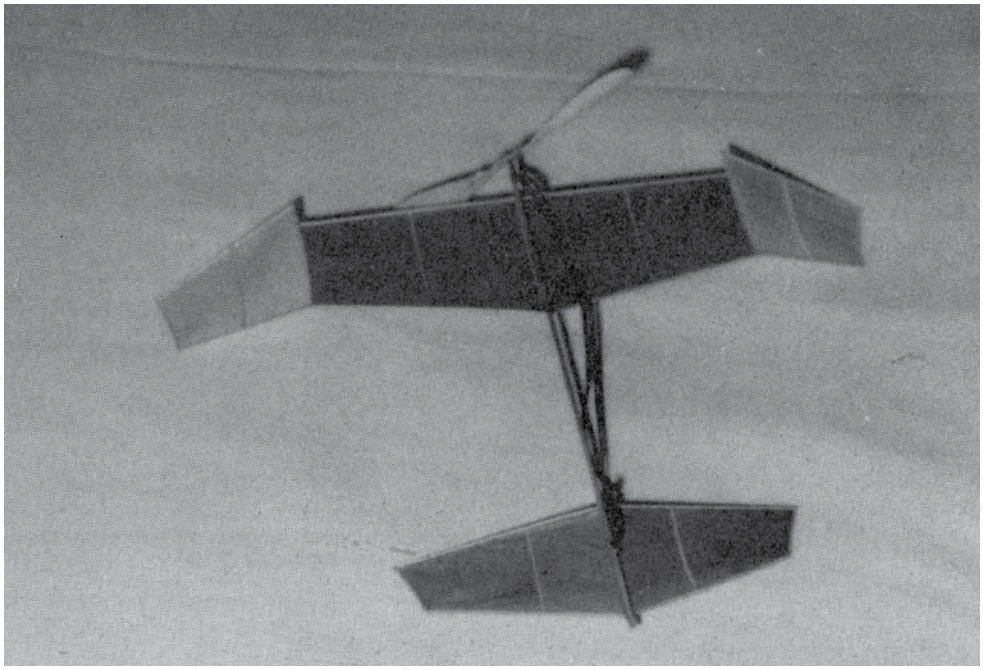
The wing and canard are covered with tissue. Don't shrink the tissue with water or dope, please, or you'll have to get your template out again, cut out 14 more ribs, and build a whole new wing and canard. By the way, the wing and canard are covered on the top surface only.

Assembly and Fying

Glue the wing to the motor stick. Spot-glue the canard in place. The motor is a single loop of 1/8 inch rubber with about 2 inches of slack. Balance the model where indicated with the motor in place. Hand glide the model to get the final trim, adding small bits of clay to the nose or tail as required. When you're satisfied with the glide, try a few hand wound power flights. The Zephyr should fly in left circles, spiraling up under power. Tilting the canard toward

the direction you want the model to fly will control the turn. Use a winder for maximum duration. Have a ball, and remember, Zephyr is capable of going O.O.S. on the slightest bit of warm air. After all, that's how it got its name!





November Indoor Contest

The Zephyr Rules:

All Classes: Wood must be 1/16" square or greater.

Class 1: A wooden propeller using the building instructions included in the article: 1/32" thick propeller, maximum diameter 8" flat or twisted. 1/8" square balsa hub, 1 1/4" long, sanded round

Class 2: A plastic single piece molded propeller, maximum diameter 8"

Three winners announced:

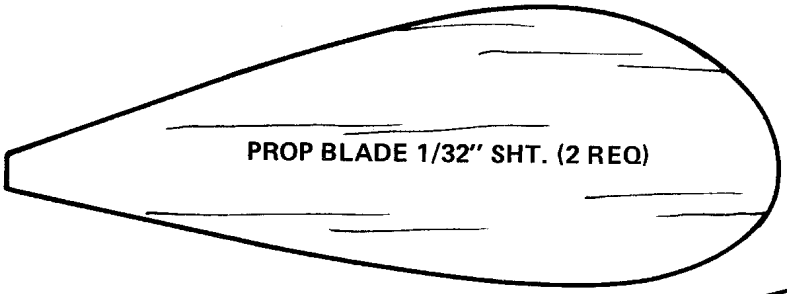
Class 1 Competition:
"Best three flights out of six"

Class 2 Competition:
"Best three flights out of six"

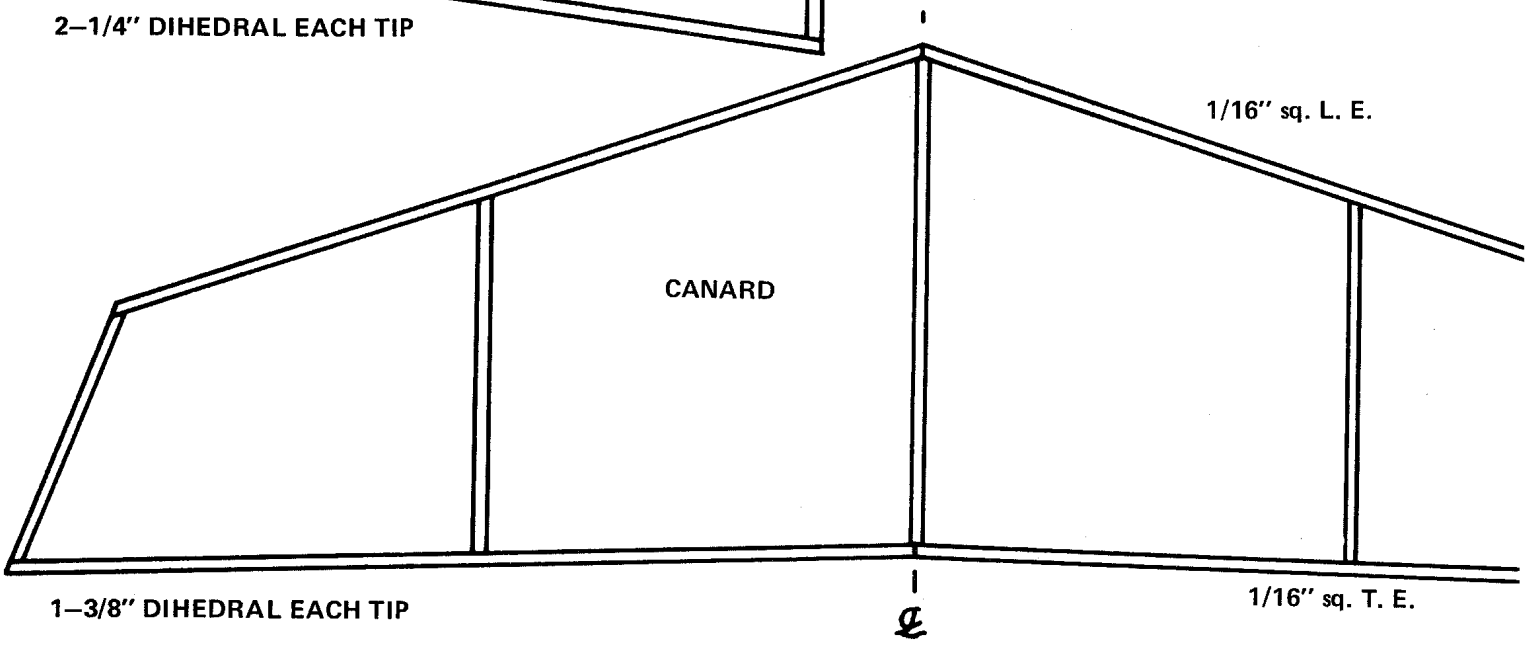
Mass Launch Competition:
All competing planes welcome in the mass launch. One flight.

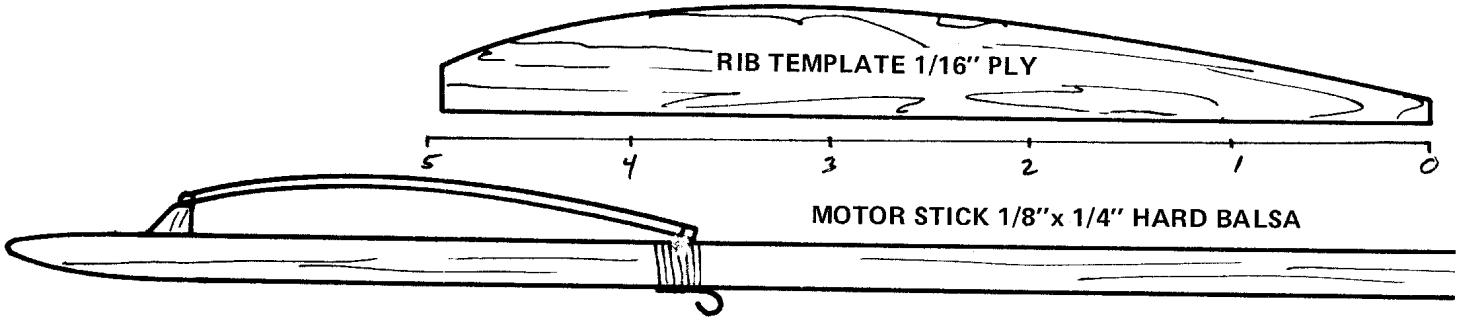
Contest Director

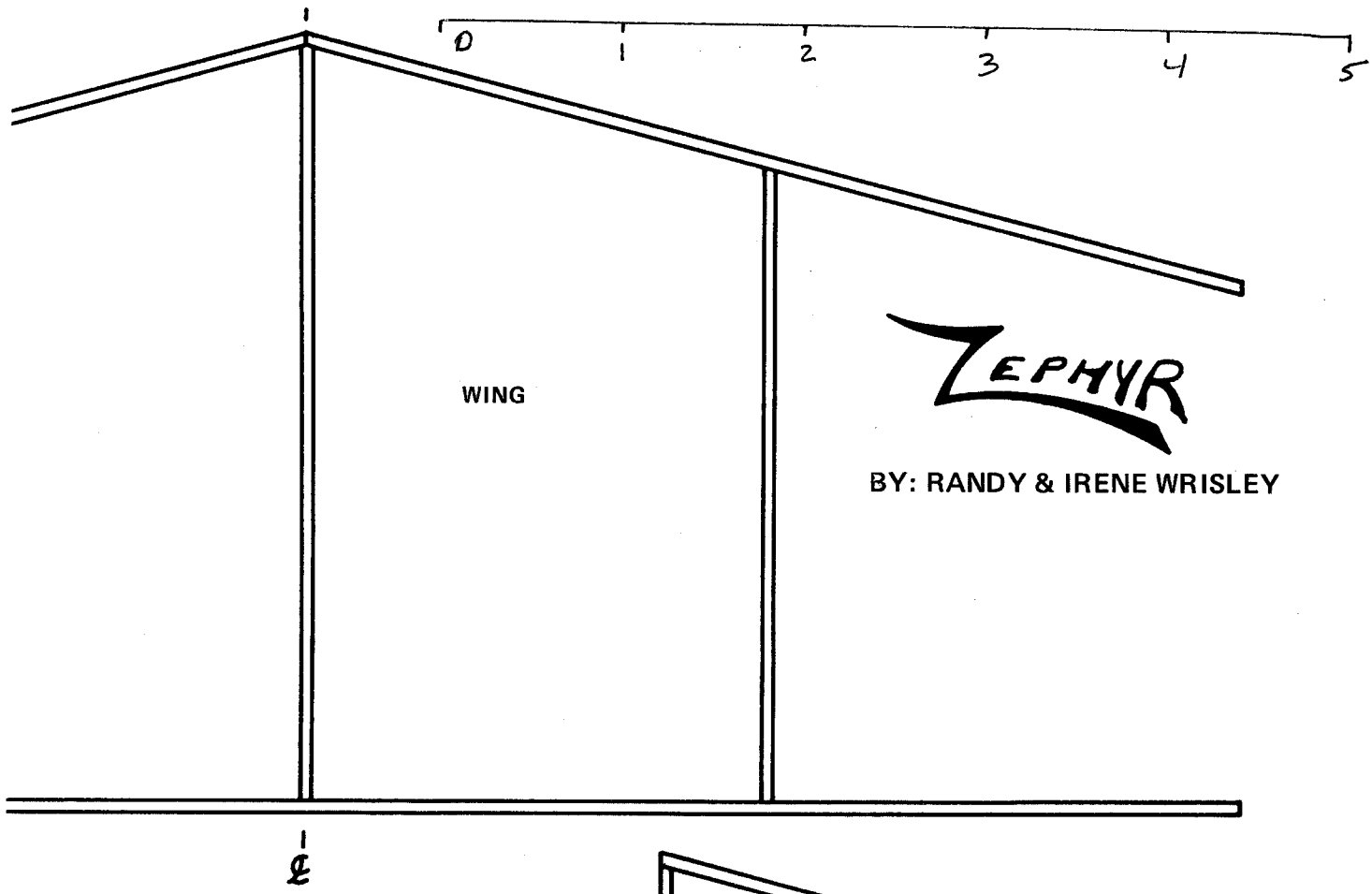
William Scott
wscott127@mac.com
phone (619) 701-2457

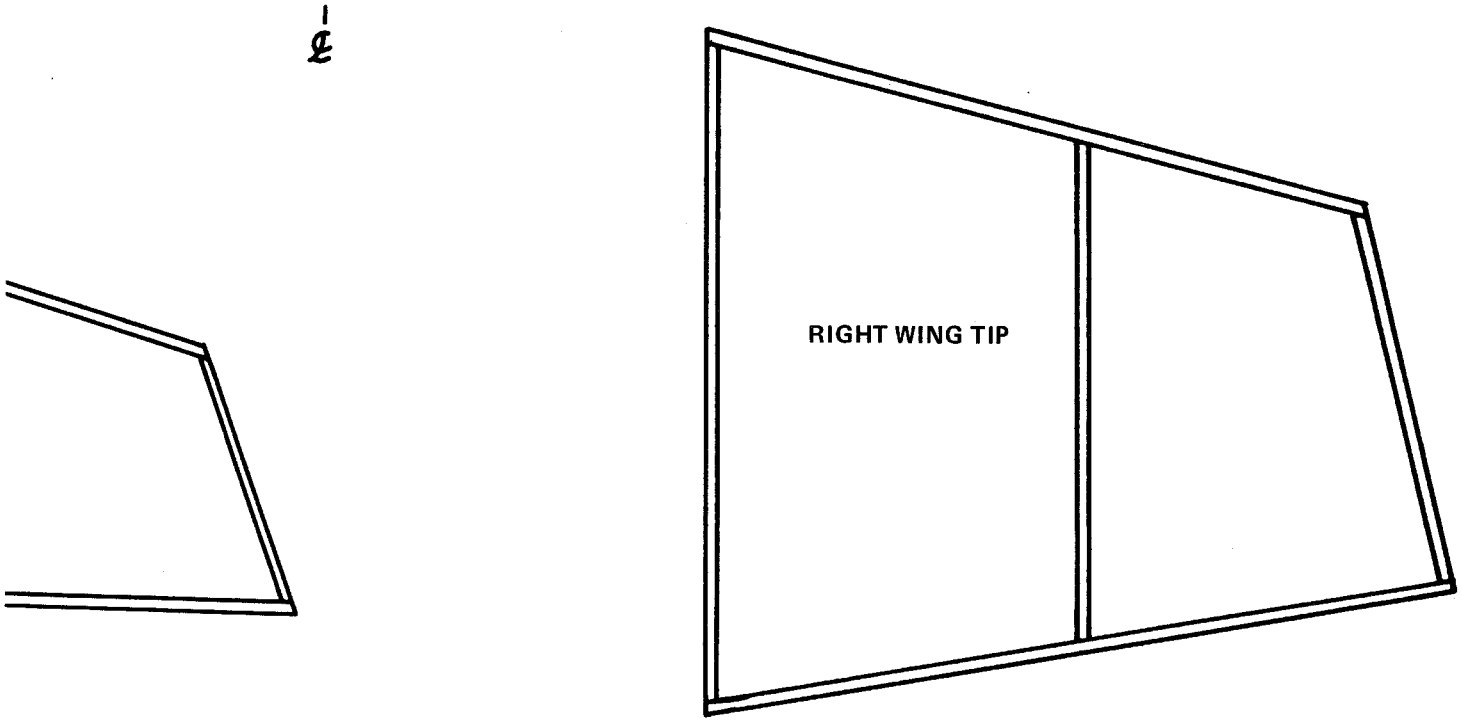

PROP BLADE 1/32" SHT. (2 REQ)

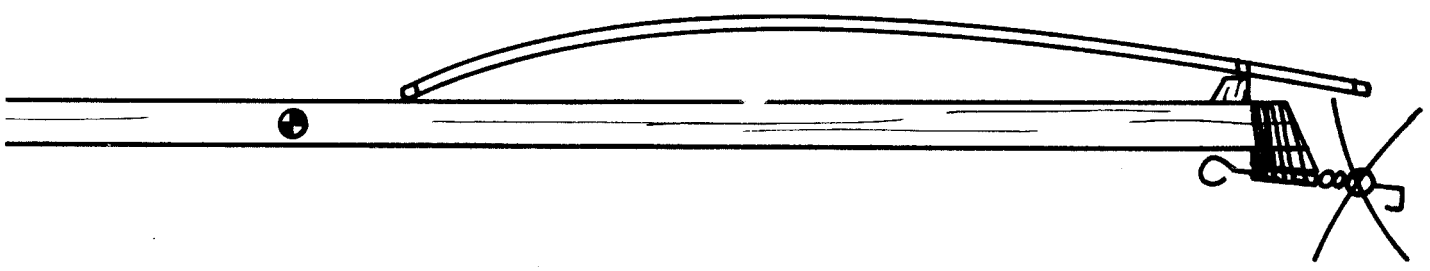
1/16" sq. L. E.
1/16" sq. T. E.
2–1/4" DIHEDRAL EACH TIP


1/16" sq. L. E.
CANARD
1–3/8" DIHEDRAL EACH TIP
1/16" sq. T. E.


RIB TEMPLATE 1/16" PLY
5
4
3
2
1
0
MOTOR STICK 1/8"x 1/4" HARD BALSA


1
0
1
2
3
4
5
WING
ZEPHYR
BY: RANDY & IRENE WRISLEY
℄


RIGHT WING TIP



The Winding of a Rubber Motor for Indoor Flying

by William Scott

The light bulb finally lit up one recent morning Sunday morning. The guys flying in the gym were saying they always want to know how many winds they have left when the plane lands. And I kept thinking to myself, why should they care? The better question is: How come I don't care how many winds I land with?

The Sunday morning pilots have been flying for years, one even at the National level. He is that good. I have watched him release a plane, watch the plane make one circle and then heard him declare, "that is only a four and a half minute flight I was hoping for a five minute flight," as he is catching the plane out of the air like the gentle landing of a soap bubble in someone's palm.

I started watching every flight Mike's A6 made; from the start, where he released the plane, to the finish, where he picked up the plane. At the release, he would kneel down and release his plane like a person would release a butterfly. I watched how the plane would slowly climb. As it climbed, I would guess if I thought it was going to hit the ceiling or not. Most of the time I was correct in my guessing. Most of the pilots would have their plane wound so the plane would come to within a few feet of the ceiling. The plane would then cruise for a while, and if I was very observant, I could actually see the circle getting bigger as the torque came off before the plane would begin descent. The descent would be slow, and the speed of the plane seem to be only slightly less than it's cruising speed, gentle enough to bring the plane home smooth and safely. Mike would take the plane over to the bench hook up the plane and unwind the motor. I went over and watched him unwind. He thought he had about 100 winds just by looking at the knots.

In contrast, here is a recap of my last and best flight. I wound up my motor, 600 turns on this particular motor for



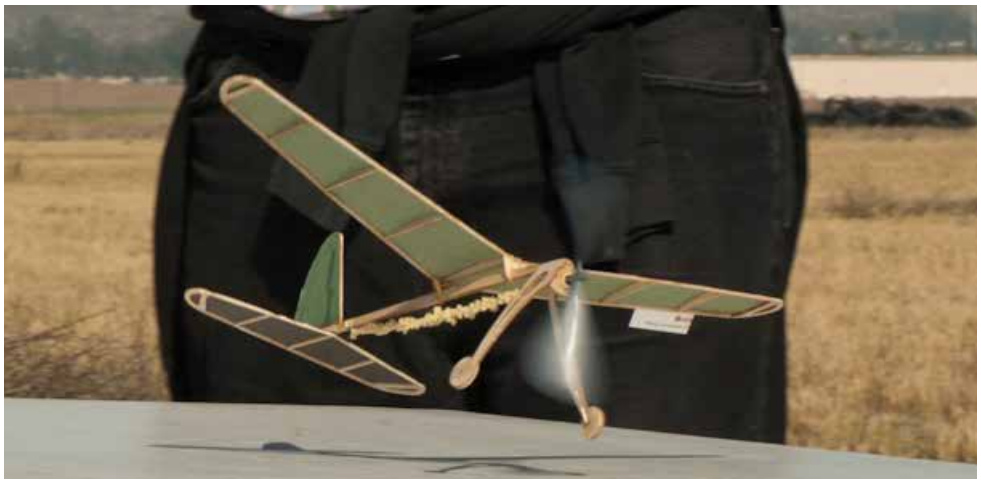
this particular airplane. It is an ROG Phantom Flash. I walked out to the middle section of the gym, looked up at the ceiling and tried my best to figure out if I'm standing between the ceiling support beams. I placed the plane on the floor and let it go free. The first circle I have to duck because it's coming right at my head. After four additional laps, the plane is close to the ceiling but the torque is coming off and the plane is now in cruise mode. The plane makes one more lap maybe two and starts descent. Half way down, the motor is 100% out of winds and the plane is now on a quicker (I think they call it a 'dead stick landing,' where your wooden propeller—the stick—is stopped) descent and lands hard but safely. Total flight time about 1 minute.

So what did I learn? First let's review what I think I know. When winding a motor there are three ranges the motor goes through. **The bottom**: The bottom does nothing but get you to the cruise, sure it turns the propeller, but that is about all. **The Cruise**: during the cruise the propeller spins just fast enough to keep the plane at level flight. And, **The Climb**: during the climb, the propeller spins fast enough to make the plane climb.

We would like the plane to climb to the ceiling but not into or through the ceiling. We want as much cruise as possible and we want a soft landing.

In comparison, Mike's plane went up slowly, and mine went up quicker.

It takes a certain amount of torque to get my plane off the floor. On my torque meter, that number is 0.75. I can get to that amount of torque in a variety



of ways. I can put on a really fat motor and arrive at 0.75 in 100 turns. Or, I can put on a thinner piece of rubber, and get to that number in 600 turns. Since I want the plane to fly for the longest amount of time the more turns I think, the better, especially since my plane ran out of turns and came down fast. That meant I needed more turns!

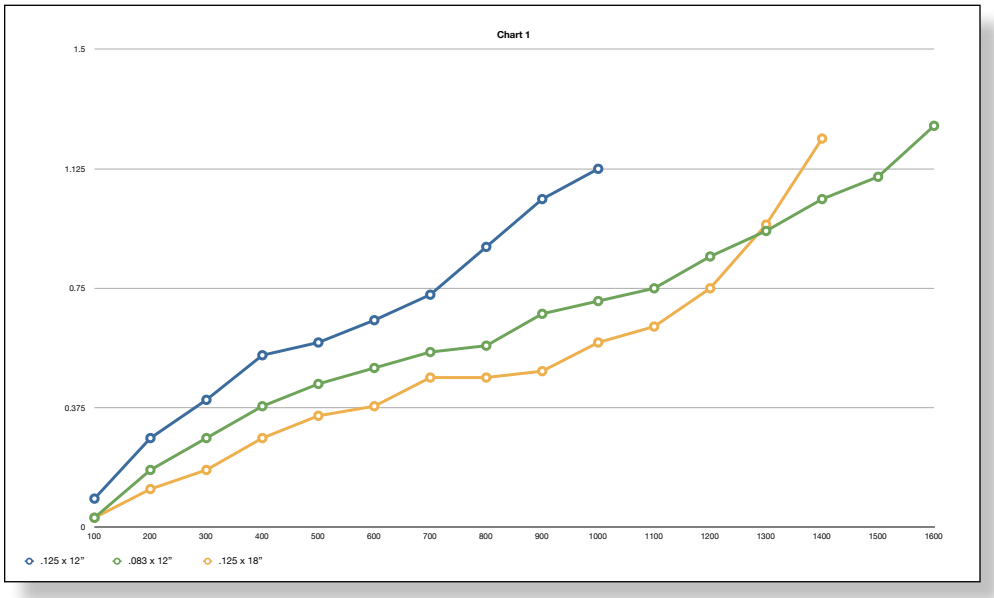
I have two options:

Option 1: Put more turns into my existing motor. But, putting more turns into my existing motor will cause the plane to hit the ceiling because I have over torqued for the flying site.

Option 2: Put on a thinner motor of the same length or put on a longer motor. Doing either should allow me to add more turns in at the cruise part of my motor winding.

Mike's plane came down very slowly and had winds left over. Mine ran out of winds and came down faster. At some point, as the motor unwinds, it will no long hold the plane in the air. This is what I call the "bottom" of the motor.

I measured three motors; my existing motor (0.125 thick, 12" long), a longer motor (0.125 thick, 18" long), and a thinner motor of the original length (0.083 thick, 12" long) and found the following: When I compared the number of winds required to get to the 0.75 torque, to get my plane off the ground, the existing motor (EM) requires just over 600 turns, the longer motor (LM) required 1100 turns and the thinner motor (TM) required 1200 turns. If I know where my cruise torque range is I can further figure out which motor will give me the best flight time. If the lowest amount of torque required to keep the plane in the air is 0.375, let's look at the chart to see which motor has more winds in the range from 0.375 to 0.75. The LM has 600 turns. The TM only has 700. The TM should give me a better cruise then the LM because there are more winds in that range. I'll try the longer motor and let you know if my real world results matches the graph in the next newsletter.



Some of you maybe thinking if 18" is better than 12" why not use a 24" motor? At some point the weight of the motor and/or the space required to carry that motor will keep the plane from flying to it maximum potential. According to an article by Rich Weber, President of the Cleveland Free Flight Society, which published in issue #112 of *Crosswinds*, he wrote, "Most models fly happily with a motor that's around 25% of the empty weight of the model." I'll let you know what I discover in our next issue.

The Big Apple & U.P.S.

John Hutchison





My wife, Kathy, and I attended the Flying Aces Club Nationals in Geneseo, NY, July 18-21. The FAC flying field at the airport in Geneseo is a free-flight mecca. You must attend this event at least once in your life. The flying field is a grass runway. Great for chasing. Great for flying. Great for timing. Just plane GREAT!

Scale judging was held at the banquet hall of the Quality Inn, the headquarters for the event. The array of aircraft was amazing. Towels should have been provided to keep the drool off the planes. We stayed at the Hampton Inn next door only a short walk away.

The timing and scoring seemed to run smoothly with new innovative computer programs created for the event. The program made it quick and simple to excuse the participants from the first couple of rounds of each mass launch event. Just printing the results for all events at the field headquarters was immediate and easy.

The sky was constantly filled with aircraft, but the multi-engine planes were the standouts of the crowd. When they flew, everyone stopped and gasped in amazement. Multi-engine seems to be the future as the first five places in FAC Rubber Scale were won by these entries. The biggest disappointment was the lack of power scale entries. The problem is the controversy over the electric powered aircraft. I feel it needs to be addressed. If anyone has any opinions or suggestions, please email me at johnhutchison1@cox.net.





Above: Niagara Falls

The weather was great. Not too hot or too humid. Friday it rained slightly. Living in southern California, I generally run inside on the three days a years that it rains, but I learned from others that the air after a rain can be buoyant. I had rushed to get my flights in before the rain, but those that flew after had magnificent times. I also learned that there is an "app" for that. I guess Kathy needs to get a "smart phone."

The banquet was excellent. I received second place in Jimmy Allen and third place in Old Time Rubber Stick. I was thrilled to also be elected to the FAC Hall of Fame. I want to thank Bob Hodes for my nomination and all of you who voted for me. I hope I can live up to this honor. The contest was superb and well conducted thanks to the efforts of Ross Mayo and his fine crew.

Shipping is always an "adventure." Speaking of UPS *aka United Parcel Service*, I now have issues with their ability to read—mainly the word, FRAGILE. I shipped three boxes and two arrived smashed. One contained my Fokker D-VII and the other contained my Jimmy Allen and my Old Time Rubber Stick. My Goon arrived in good shape. Phil Thomas from New Mexico also shipped UPS. One box with the fuselages arrived okay, but the other box with the wings he only received the lid. After a few phone calls they delivered the rest of the box with all the wings broken. He managed to fix at least one, so he could compete in an event. I spent all day Tuesday and most of Wednesday morning repairing the planes with several trips to Walmart and the hardware store for needed items. I always carry a tool kit and other stuff, but I didn't plan on UPS smashing the planes. I managed to repair them, but it was difficult. I longed for my hobby room instead of a hotel room. But, I still managed to place in two events even though the planes were not properly adjusted. I filed a claim with UPS, so we will see what happens with that. We managed to repair the crunched boxes, but on the return trip we sent the good one UPS and the other two we brought with us on Southwest Airlines. TSA opened them, but did not harm the planes.

Kathy and I played tourist for a couple of days visiting the Letchworth State Park and Niagara Falls, both very gorgeous venues.

LLFF! (Long Live Free Flight!)

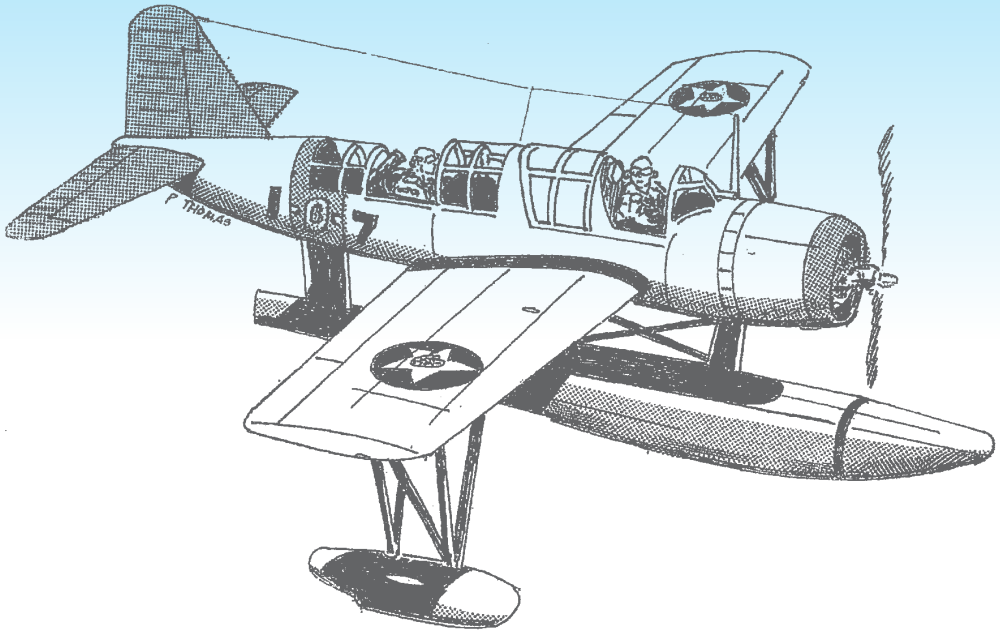




Above two photos: Letchworth State Park

April 24-27, 2013 WESTFAC MK IV Schedule of Events

SCAMPS Field, Perris, California

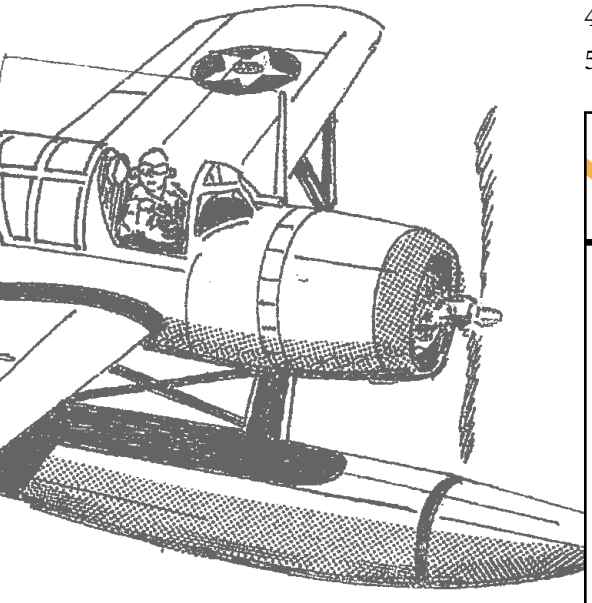


Contest Director

John Hutchison
johnhutchison1@cox.net
phone (619) 303-0785

Awards Presentation

8 p.m. Saturday night

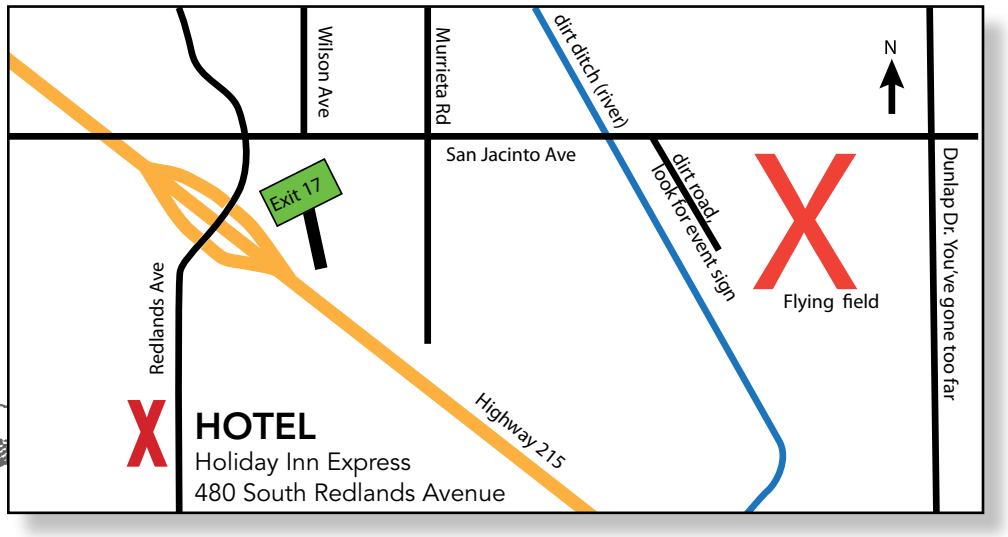


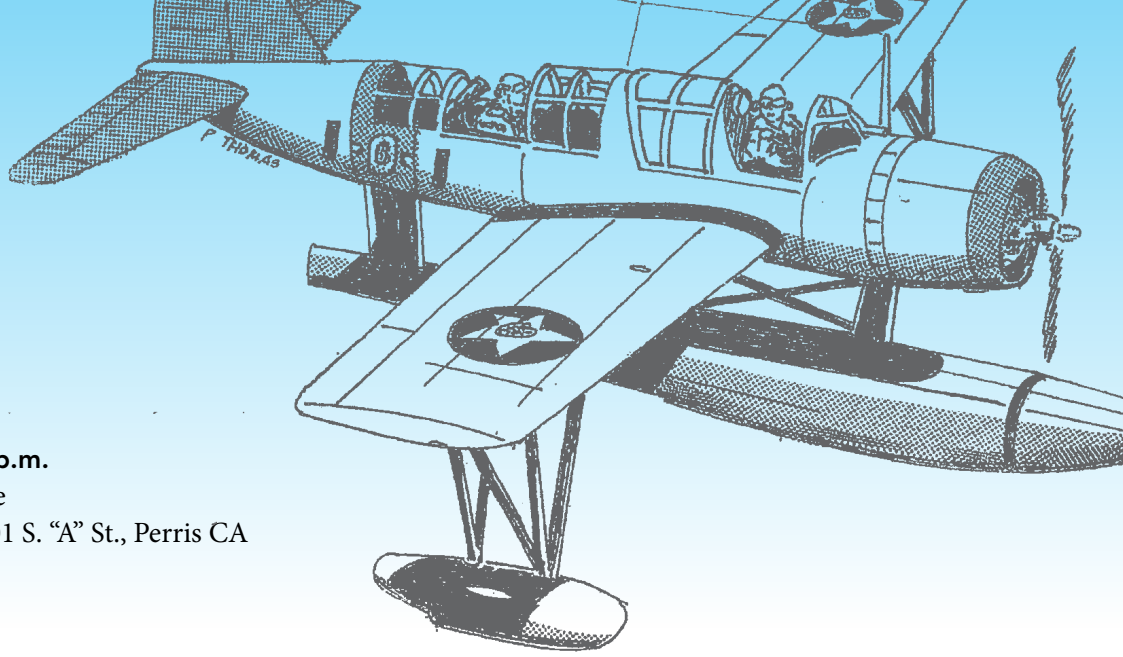
Pilot's Meeting: 8 a.m. on all days

FAC Single Model Events

Fly any event on Thursday, Friday or Saturday but all flights for a given event must be flown on the same day.

1. FAC Rubber Scale
2. Hi-Wing Peanut Scale
3. FAC Peanut Scale
4. FAC Jumbo Rubber Scale
5. FAC Power Scale





WEDNESDAY, April 24 Noon – 6 p.m.
Scale Judging will be conducted at the
Orange Empire Railway Museum 2201 S. "A" St., Perris CA
(951) 943-3020
Click here to link to museum

THURSDAY, April 25 8 a.m. – 5 p.m.
Mass Launches

8:30 a.m.	WWI Mass Launch
10:30 a.m.	Thompson Race Mass Launch
12:30 p.m.	Low Wing Military Trainer Mass Launch

Additional contests (fly any time on Thursday)
Golden Age Combined
Old Time Rubber Stick
Jimmie Allen (ROG)

FRIDAY, April 26 8 a.m. – 5 p.m.
Mass Launches

8:30 a.m.	WWII Mass Launch
10:30 a.m.	Greve Race Mass Launch
12:30 p.m.	WWII Mediterranean Mass Launch (click for rules/plans)

Additional contests (fly any time on Friday)
Modern Military Scale
Old Time Rubber Fuselage (ROG)
Embryo (ROG)

SATURDAY, April 27 8 a.m. – 5 p.m.
Mass Launches

8:30 a.m.	Twin Engine Scale Mass Launch
10:30 a.m.	Battle of Midway/Grumman Combined Mass Launch
3:30 p.m.	Flying Horde Mass Launch (click for rules)

Additional contests (fly any time on Saturday)
Dime Scale
2 Bit +1 (ROG)

Awards presentation

8 p.m.	Awards Ceremony Saturday Night
	Orange Empire Railway Museum Banquet Room

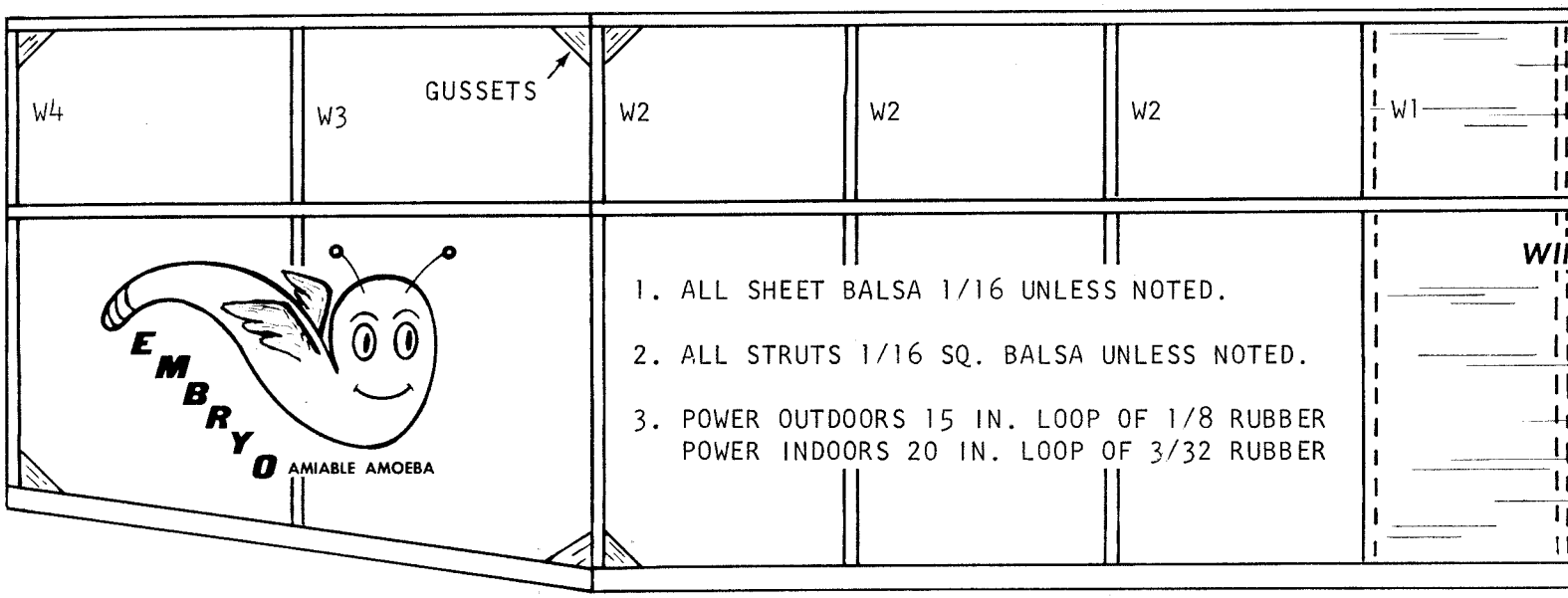
Click here to see our website at www.westernFAC.com

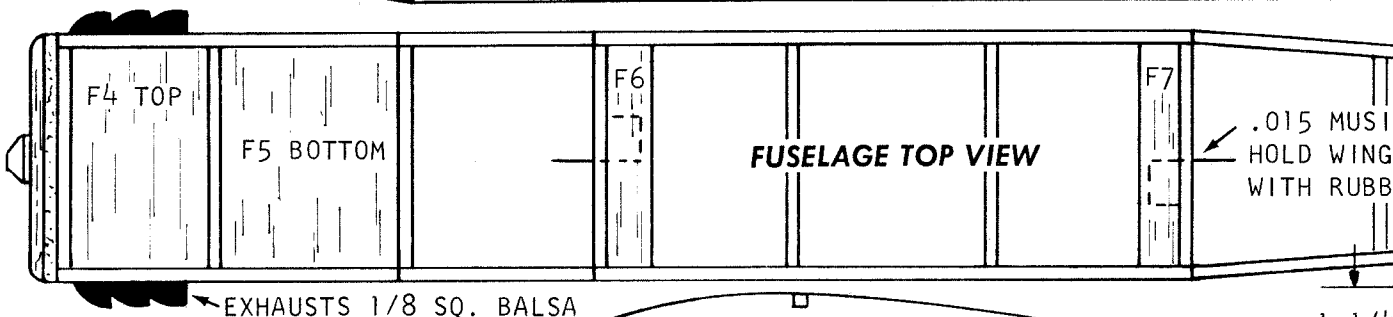
Fees
Entry: $25 (flies all events)
T-Shirt $15 per shirt

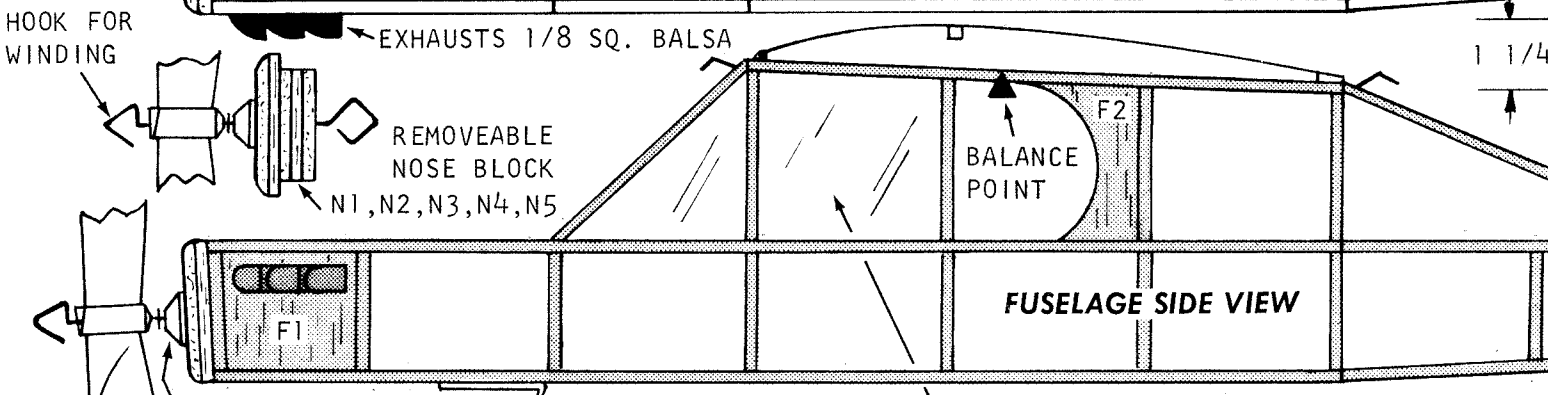
Awards Presentation
$25 per person

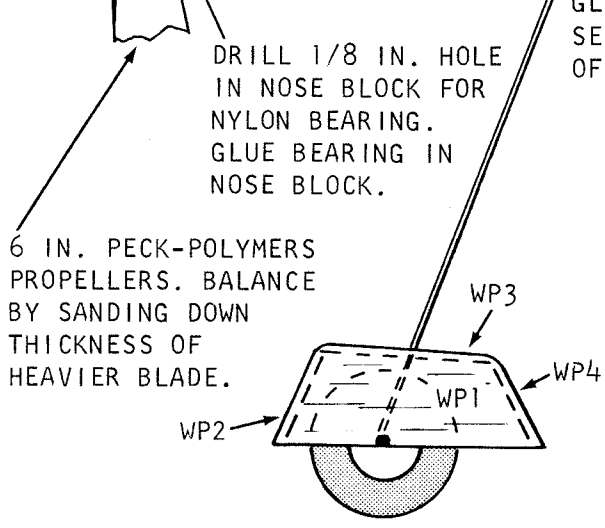
Registration
There is no on-line registration please click the link below for the mail-in registration form.
Click here for form

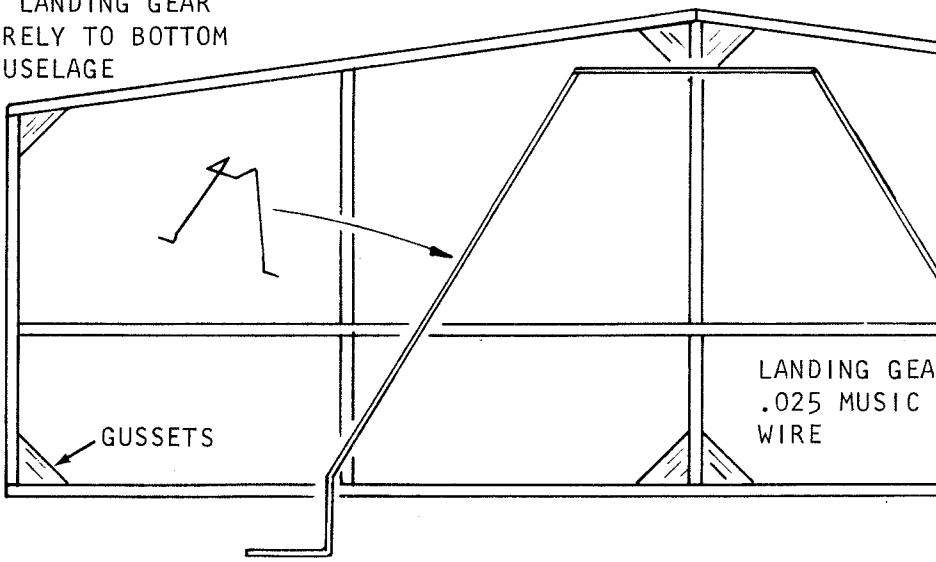
Hotel Accommodations
The Holiday Inn Express is five minutes from the field.
Click here to link to hotel





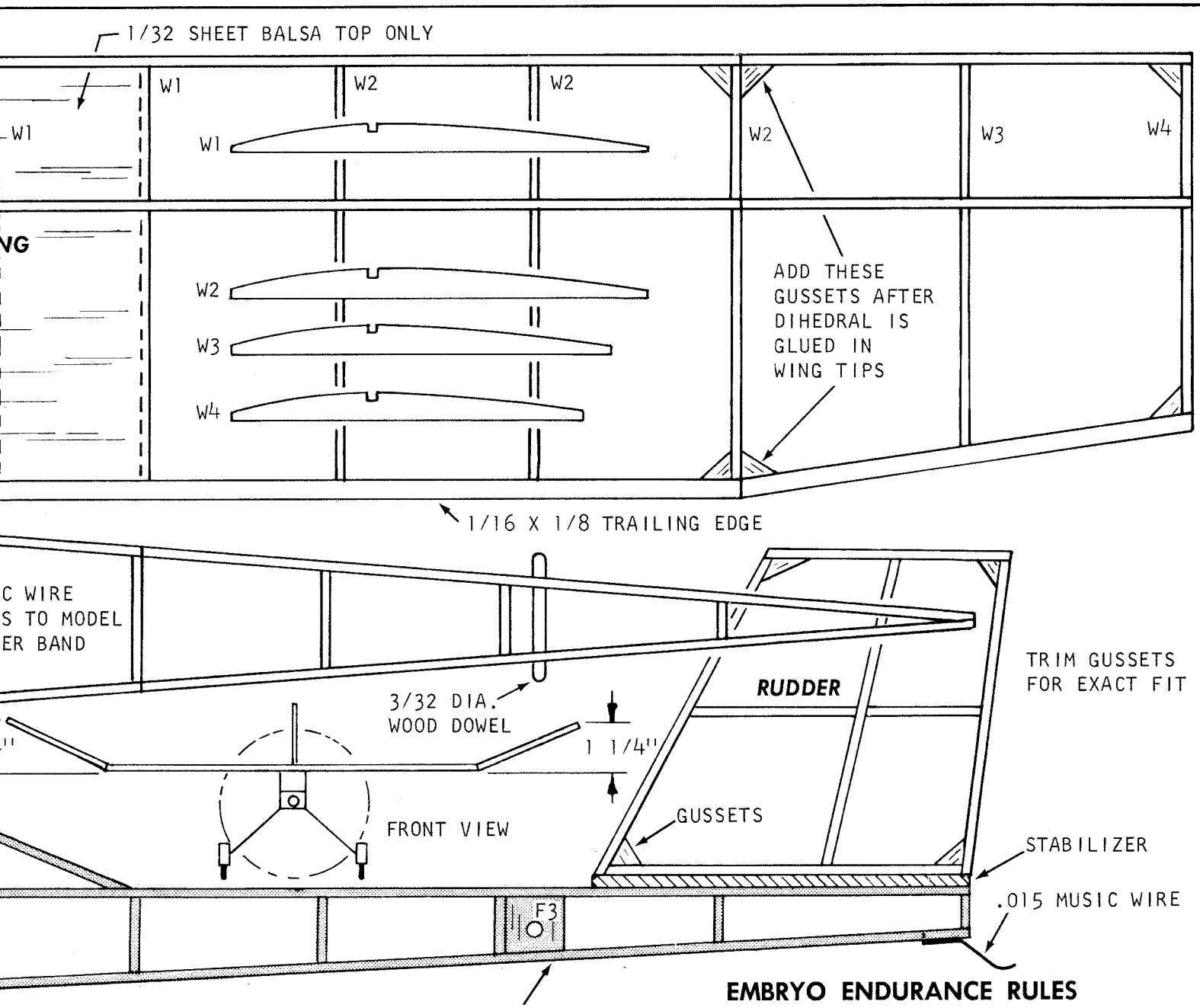


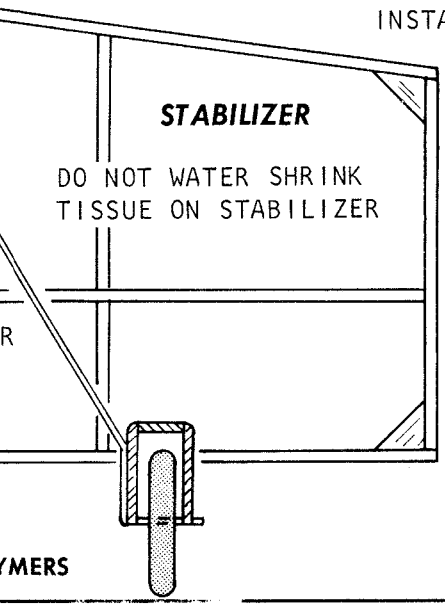




EMBRYO SYMBOL COURTESY DAVE STOTT
OF THE "FLYING ACES CLUB"

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EMBRYO ENDURANCE RULES

1. Not over 50 sq. in. monoplane or 70 sq. in. bipe wings. 45 sq. max. larger wing area. Stab area not to exceed 50 percent of wing area.
2. Fuselage volume to enclose a space 1 ¼ X 1 ½ X 3 in. or larger.
3. Wing and tail to be built up, tissue covered on both sides, no films.
4. No folding props. All models rubber powered only.
5. Model must R.O.G. from card table top UNASSISTED from a 3 point rest.
6. Landing gear legs must have ¾ in. dia. wheels or larger.
7. Four attempts for three official rise above table top level flights.
8. Highest flight total plus bonus wins. Fly off to break tie.
9. A bonus for the following details will be given: 5 seconds for a raised cabin or wind screen with open hole and headrest. 3 seconds for three dimensional wheel pants. 1 second for three dimensional exhaust pipes.

"PRAIRIE BIRD"

Embryo Endurance Model by Bob Peck

16 in. Wingspan

P.P Peck-Polymers BOX 2498 LA MESA, CALIF. 92041