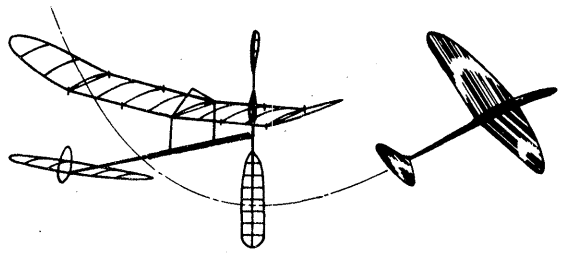
The Voice of N.I.M.A.S. JAN/FEB·1978

INDOOR NEWS and VIEWS



Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

RESULTS FROM THE 1978 INDOOR WORLD CHAMPIONSHIPS

1.	J. RICHMOND	US	41:49	36:52	42:53	31:16	-----	-----	84:42
2.	B. ROMAK	US	4Ø:55	4Ø:27	13:43	28:58	31:51	33:22	81:22
3.	R. HIGGS	CDN	35:16	39:44	9:18	3Ø:57	14:37	36:45	76:29
4.	D. SIEBENMANN	CH	13:Ø5	3Ø:32	37:23	8:34	32:32	37:3Ø	74:53
5.	L. BARR	GB	11:Ø3	37:23	24:54	15:15	36:34	1:13	73:57
6.	S. NONAKA	J	28:33	33:Ø5	4Ø:36	27:11	12:28	25:55	73:41
7.	J. MCGILLIVRAY	CDN	35:45	37:2Ø	-----	25:42	36:19	34:44	73:39
8.	E. CIAPALA	PL	34:43	38:15	11:39	12:59	34:51	34:Ø6	73:13
9.	R. GREEN	GB	6:4Ø	29:28	33:44	22:38	39:18	1Ø:36	73:Ø2
1Ø.	R. BUTTY	CH	34:37	28:52	37:17	24:31	27:Ø3	33:23	71:54
11.	D. MORLEY	GB	3Ø:45	32:57	38:Ø6	31:ØØ	25:41	33:22	71:28
12.	C. WOLTHOORN	NL	31:2Ø	36:2Ø	34:58	33:Ø2	12:47	35:Ø1	71:21
13.	V. KMOCH	YU	3Ø:28	33:4Ø	37:Ø5	24:Ø9	26:31	-----	7Ø:45
14.	K. VOGLER	BRD	8:38	3Ø:12	34:29	29:38	36:Ø3	23:47	7Ø:32
15.	Y. BANBA	J	34:33	35:27	39:22	25:Ø1	3Ø:23	-----	7Ø:ØØ
16.	W. HULBERT	US	34:39	26:38	23:48	33:1Ø	31:49	34:38	69:17
17.	E. CHLUBNY	CZ	33:31	35:4Ø	-----	22:52	32:22	-----	69:11
18.	J. DIHM	PL	32:58	3Ø:55	34:17	31:44	6:15	-----	67:15
19.	T. MATSUZAWA	J	:14	35:4Ø	27:Ø3	31:17	3Ø:Ø9	22:44	66:57
2Ø.	K. RYBECKY	CZ	32:23	1Ø:39	9:Ø6	29:34	33:21	3Ø:49	65:44
21.	H. EROFEJEFF	SF	3Ø:32	29:46	33:Ø3	32:25	3Ø:1Ø	12:15	65:28
22.	C. COTUGNO	I	34:15	8:ØØ	3Ø:59	29:47	-----	Ø:2Ø	65:14
23.	F. MIGANI	I	27:Ø1	1:48	33:13	28:57	11:52	31:4Ø	64:53
24.	R. CZECHOWSKI	PL	31:Ø6	27:59	33:47	19:42	1Ø:Ø7	28:36	64:53
25.	S-O. LINDEN	S	16:18	24:ØØ	32:54	2Ø:5Ø	31:34	29:41	64:28
26.	J. KALINA	CZ	11:48	29:47	3Ø:Ø3	31:4Ø	31:16	26:ØØ	62:56
27.	M. THOMAS	CDN	6:43	26:32	31:15	27:12	24:15	31:29	62:44
28.	K. NOTTELMANN	BRD	5:18	19:22	32:Ø7	28:43	11:4Ø	-----	6Ø:5Ø
29.	L. GABRIJEL	YU	26:Ø7	33:28	-----	31:17	8:45	29:Ø9	6Ø:45
3Ø.	D. DOMINA	US	23:14	11:23	3Ø:33	14:ØØ	25:51	29:53	6Ø:26
31.	W. BEEKMEYER	NL	28:11	26:44	3Ø:37	19:13	-----	-----	58:48
32.	H. RAULIO	SF	15:55	23:52	29:22	25:5Ø	25:19	27:Ø9	56:31
33.	G. MASCIULLO	I	16:24	23:Ø3	24:Ø8	26:56	28:18	9:31	55:14
34.	T. STRAZBERGER	YU	22:15	Ø:42	31:27	23:Ø4	21:3Ø	23:16	54:43
35.	S. PONTAN	S	16:24	15:39	27:31	25:Ø4	22:47	21:15	52:35
36.	W. WETZEL	BRD	14:29	26:48	25:1Ø	23:28	22:55	25:28	52:16
37.	M. SITAR	AUS	21:41	24:26	27:39	5:19	-----	-----	52:Ø5
38.	T. FORSS	SF	17:36	2Ø:47	22:32	27:Ø5	16:27	6:46	49:37
39.	E. LIEM	NL	:47	19:Ø7	25:42	2Ø:Ø2	23:48	19:36	49:3Ø
4Ø.	A. JONSSON	S	13:24	19:Ø8	18:4Ø	14:56	-----	-----	37:48

TEAM PLACINGS

	NATION	TOTAL		NATION	TOTAL
1.	UNITED KINGDOM	218:27 (GB)	8.	ITALY	185:21 (I)
2.	UNITED STATES	214:25 (US)	9.	WEST GERMANY	183:38 (BRD)
3.	CANADA	212:52 (CDN)	1Ø.	NETHERLANDS	179:39 (NL)
4.	JAPAN	21Ø:38 (J)	11.	FINLAND	171:36 (SF)
5.	POLAND	2Ø5:21 (PL)	12.	SWEDEN	154:51 (S)
6.	CHECHOSLOVAKIA	197:51 (CZ)	13.	SWITZERLAND	146:47 (CH)
7.	YUGOSLAVIA	186:13 (YU)	14.	AUSTRALIA	52:Ø5 (AUS)

1978 INDOOR WORLD CHAMPIONSHIPS

Cardington, England
by William Hulbert

I guess I have been working toward this trip since about 1960 when I was introduced to indoor modeling in Youngstown by Joe Hindes and some others. I became enchanted with Indoor and have since concentrated mostly on Indoor and on FAI Indoor especially.

The ability to use the Goodyear Air Dock has helped me very much. Previously, I had good success in lower ceilings, but could not cope with high ceiling flying without practice in higher ceilings.

In the few months prior to Cardington, I switched from FAI rubber to the new Pirelli which Team Manager Ray Harlan made available to the team. I then made one 40+ flight and a number of 38's and 37's at Goodyear and felt pretty good. When it was time to leave, I had an additional new model box and six completely tested models plus two spare wings.

The trip over became extrtemely hectic due to a baggage foul-up at Kennedy Airport. A 2 1/2 hour layover turned into a frantic scramble to make our Freddie Laker flight. My wife Jean and I recovered about the time we reached Gatwick Airport. Fortunately, all the team's models arrived in good shape.

Our trip from Gatwick, south of London, to Bedford, north of London, took most of a day because of problems in getting a van. We finally made it and caught up on our loss of a night's sleep and the effects of jet lag. A couple of days of rest plus sightseeing put us in good shape for test flying on Saturday.

The air dock at Cardington is one of two of identical construction. It was well cleared out, except for one small inflated blimp at one end. The blimp caused both Richmond and Romak anxious moments as their 40+ flights came down in that vicinity. We all had fairly good flying during the practice session, with a 37 minute flight concluding my day.

Air conditions were generally quite good during the meet, but on Monday the air deteriorated somewhat. I am convinced that the Goodyear hangar is the best spot in the world to fly because of it's large volume and 80' of clear girders at the top. In comparison, Cardington came to a fairly abrupt peak; a catwalk near the peak cuts down on flying room at maximum altitude.

I volunteered to fly first on Sunday and decided to put in a "safe" flight. Using a 17 1/2" loop of new Pirelli which weighed about .054 oz and had 1940 turns, I did 34:39 and was never in trouble. Jim Richmond and Bud Romak followed with great flights which established the standards needed to win. Dan Domina was plagued by problems which didn't leave him throughout the contest.

My second flight with approximately the same motor had 2080 turns and promised excellent time as it leveled out next to the roof. To my amazement, it did not cruise--it immediately started down and landed in 25 minutes. I was stunned since I had flown this combination about a dozen times at Goodyear and Cardington. I found that the bracing wire on the leading edge at the left dihedral break had slipped. This caused excessive washin and high drag. Little things are so important! My third flight with another model and prop was underpowered and consequently I missed out on the best day.

On Monday, I felt I did fairly well considering that conditions were not quite as good so that more power was needed. The resulting higher prop RPM kept times down somewhat. The WCh was a great experience and certainly demonstrated to me that there is a world of difference between flying for yourself to make the team, compared to having the added burden of representing your country at a World Championship. I think that unless you have been there yourself, criticism of an individual or a team effort is ill-advised.

A controversy arose which I feel must be resolved in the near future. I feel that steering is essential and should not be eliminated. However, the use of steering to arrest or slow down the climb of an over-wound model should not be permitted. Also, Dan Domina demonstrated easily that you can lead a model to the roof by pushing on a peg ahead of the wing with the balloon string. A ruling of the FAI Jury rightfully eliminated the pegs, but some altitude limitation was still accomplished.

My only regret, besides not winning the Team Championship, was the lack of time to visit with other fliers and observe their models and building techniques. We were so busy test flying, making our own official flights and helping each other that we had little opportunity to visit.

The banquet did give us an opportunity to to meet some of the others, and was a fitting climax to a World Championship, with Jim Richmond getting the accolades he so richly deserved.

As a postscript, my models were packed with an inch of foam rubber around the boxes--and were destroyed on the return trip. Better then than on the way over! Oh, well, I was going to redesign for 1979 anyway!

****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

Hurry!

On the last page of this issue you will find an entry blank for the Fourth NIMAS Annual Record Trials (FNART - careful how you pronounce that!). Entry deadline is June 3, 1979. Due to the usual reasons, this issue is so late that it may be difficult to make entry on time. If you want to go, send the entry off and call 305-858-6363 to announce the pending arrival of the form. Please note--it isn't necessary to enter to attend the most fun-filled contest in the world--extra timers and helpers are needed for satisfactory operation fo this contest! Come ahead, and bring even an Easy B to putter with. Not only will you have more fun, but this increases your chances to really improve your own flying--someone is always willing to give help and advice.

Comments on Photos

It was originally announced this issue would contain pix from the '78 WCh. However, the photos which were in hand are silk finish color prints, and the film technician estimated over $100 to copy them to black and white for publication. So, if you cover an event for INAV, please use black and white (first choice), or loan us the negatives for any color prints you take. The tech said that to make black and white prints from color negatives is quite straightforward and inexpensive, in contrast to any other approach.

This Issue

What happens when the company you work for gets new business faster than it can hire qualified persons to do the work? You cope as well as you can--and hope other commitments can eventually be fulfilled. Thus, this issue is at least one month later than planned. Bear with us, it has to get better!

Thank You!

Enough of you cared that I make it to FNART (careful) that an airline ticket for me was donated so I could fly up rather than drive (which I could have afforded, but did not have time to do). Thanks to each and every one of you who helped in this--I really was 'down' over the prospect of missing another NIMAS bash!

'79 Nats (Repeat)

AMA has announced that the site of the 1979 National Model Airplane Championships will be Lincoln, Nebraska. More details have appeared in various issues of MODEL AVAITION, and will be summarized in the next issue. We have been furnished a photo of the Indoor site, which may appear in a future issue. Meanwhile:

Unofficial Nats Events

Terry Rimert, 467 Orange Ave., Baldwin FL 32234 has been appointed NFFS Unofficial Events Director. He will be delighted to accept volunteers to sponsor and run any unofficial events. Terry has requested that indoor flyers contact him if there is some possibility of developing any new Indoor events such as Indoor Helicopter, Ornithopter or Autogyro. Contact Terry ASAP so that good advance notice can be generated.

NIMAS POSTAL MEET

The 1979 NIMAS Postal Meet can be entered using any flights made in 1979, so long as those flights were made under conditions described by AMA Rules for the particular model class involved, (subject to the rules below). That is, the flights can be from contests or flying sessions, so long as they were properly timed and the other rules are met. (For example, HLG flights are scored as the best two of nine flights, so the entry for any event can't consist of the two best from one day's flying. It is permissible to enter HLG times from one session and Easy B times from another.) Postmark deadline for entry is ~~May~~June 7, 1979. (Final reminder - time extended in case anyone forgot due to lack of reminder. If you had otherwise planned to enter times flown up to May 7, you now have another chance.)

Events: Easy B; paper covered only, all-wood prop, solid motor stick and boom, no bracing.

HLG; AMA Rules except two ceiling classes. Class I--18' to 25'; Class II--25' to 35'.

Pennyplane; AMA Rules

General Rules: Free entry. Please indicate height of ceiling for each entry, using FAI ceiling measure. Ceiling height is used to compute fudge factors used for final scoring. Separate classes for Juniors in each event, anyone may enter. Send entries to Box 545, Richardson TX 75080.

A New HLG Record Coming?

Stan Stoy appeared at the '78 Nats with a folding HLG --that is, the wing folded to minimize drag during the launch. A number of persons watched with interest as he test-flew the glider (after making official flights with another, conventional glider). Since that pioneering effort, he and his brother Mike have done additional work on this concept. On April 12, 1979, at the 90' Madison Street Armory in Chicago, Stan was able to set a new record of 146.8 seconds to beat Bucky Servaites' Cat II HLG record by 4 seconds. Not long ago, Stan called me to tell me about this new bird, and to say he hoped to be at FNART. Just one more reason to attend--see Stan beat his new record with one more in a long line of innovations and advances in model aerodynamics! INAV will have more details on this glider in future issues; but how can anyone say FF is dead when we have this kind of talent pushing out the frontiers of our hobby/science?

EAST COAST INDOOR MODELERS NEWS FLASH
April 2, 1979

The East Coast Indoor Modelers, the oldest purely indoor club in the country, has announced its 1979 schedule of flying sessions at Lakehurst Naval Air Station's (New Jersey) Hangar No. 1. Present understanding is that Hangars Nos. 5 and 6 are unavailable.

May 6, 1979	June 30-July 1,1979	Aug. 19, 1979
May 20,1979	July 22, 1979	Sept. 23,1979
June 10, 1979	August 5, 1979	Oct. 7, 1979

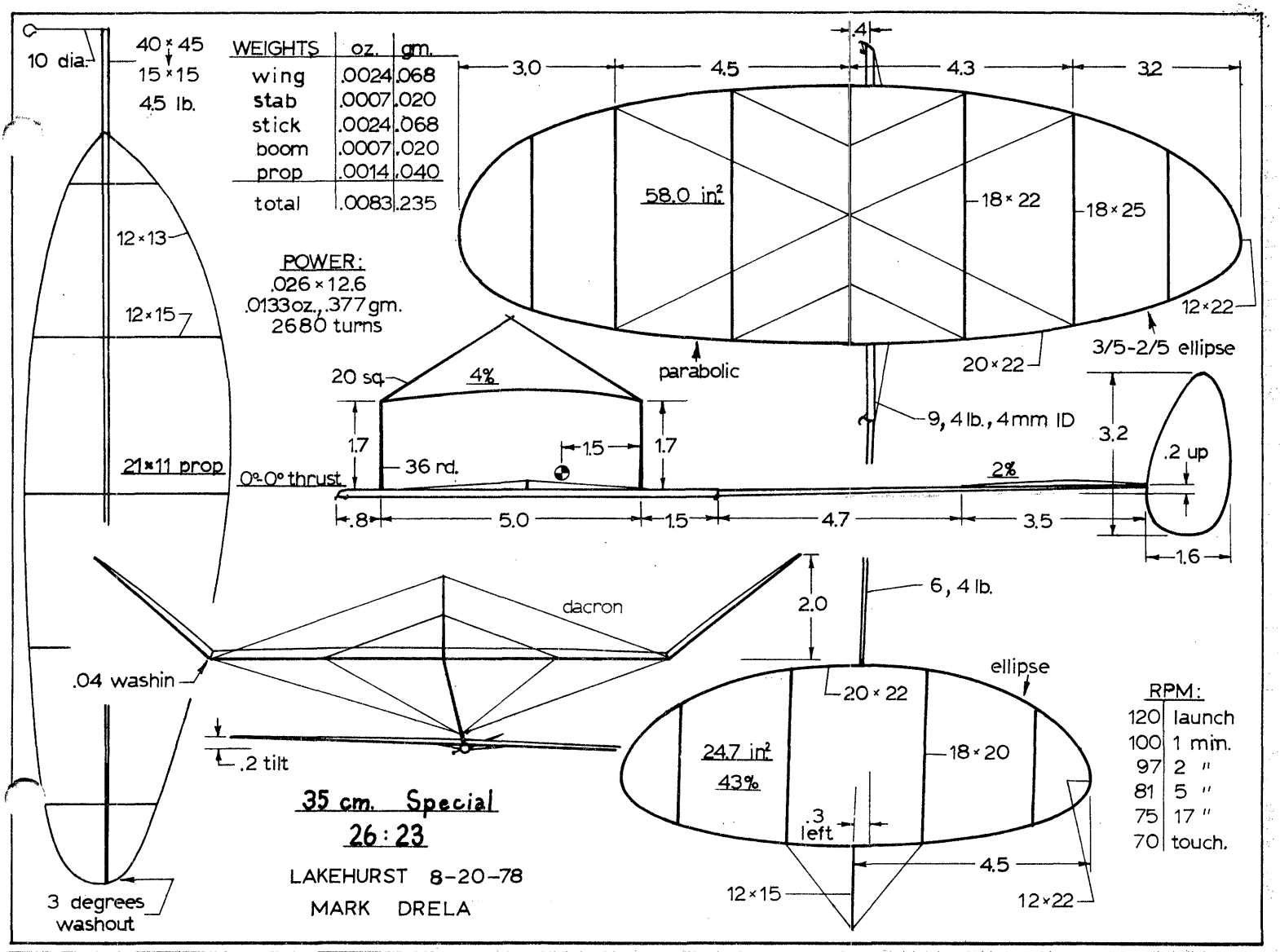
Special note of the following should be made:

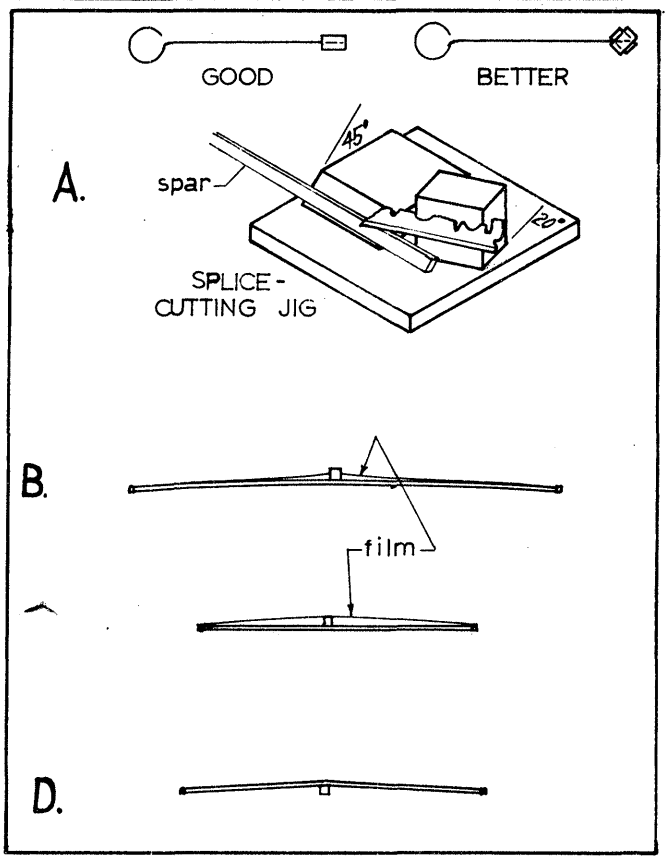
Ref. May 6.....This flying session will be held in conjunction with an indoor contest arranged by Hank Lykes, an officer at the base, for HLG, Peanut Scale, and CO2.

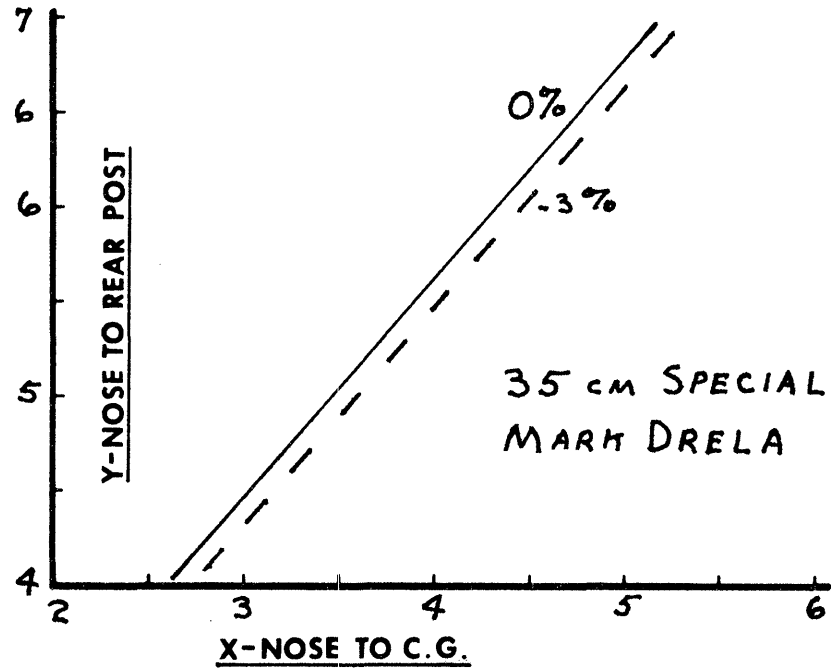
Ref. June 30-July 1 .....This two day session is the scheduled FAI Indoor Team Semi-Final Contest.

Ref. Sept. 23 .....A two event contest will be held for Manhattans and Bostonians. Cups to first 5 places in each.

At all sessions, prior to the finals, a Local contest under the FAI Indoor Team Program may be held.


10 dia.
40 × 45
15 × 15
4.5 lb.
WEIGHTS oz. gm.
wing .0024 .068
stab .0007 .020
stick .0024 .068
boom .0007 .020
prop .0014 .040
total .0083 .235
POWER:
.026 × 12.6
.0133oz., .377gm.
2680 turns
12 × 13
12 × 15
21 × 11 prop
0°-0° thrust
20 sq.
4%
1.7
36 rd.
1.5
1.7
.8
5.0
1.5
4.7
3.5
2%
parabolic
58.0 in²
3.0
4.5
4.3
3.2
.4
18 × 22
18 × 25
12 × 22
20 × 22
3/5-2/5 ellipse
9, 4 lb., 4mm ID
3.2
.2 up
1.6
dacron
.04 washin
.2 tilt
2.0
6, 4 lb.
ellipse
20 × 22
24.7 in²
43%
18 × 20
.3
left
4.5
12 × 15
12 × 22
3 degrees
washout
35 cm. Special
26:23
LAKEHURST 8-20-78
MARK DRELA
RPM:
120 launch
100 1 min.
97 2 "
81 5 "
75 17 "
70 touch.


GOOD
BETTER
A.
spar
45°
20°
SPLICE-
CUTTING JIG
B.
film
D.


Y-NOSE TO REAR POST
X-NOSE TO C.G.
7
6
6
5
4
2
3
4
5
6
0%
-3%
35 cm SPECIAL
MARK DRELA

STATE OF THE ART

Dear Bud,

Included is a drawing of my 35 cm. model that managed to break Laurie Barr's record of 24:00. The flight was made during the August 20 session in Lakehurst under not the best of conditions. There was extensive air movement in the hangar at the time and the humidity was high (over 80%). I think the plane could benefit from a larger prop and more rubber. The weight can be brougt down also, since the wood used for the model was not of the best quality. It appears that 30 minutes is not far away! By the way, if anybody out there is looking for something different or challenging, then the 35 cm class is for you. These planes are extremely economical; a single sheet of wood will make two motorsticks an two tailbooms. Also, compared to, say, an A ROG, they are far easier to build, fly, and handle. Try it, you'll like it!

Probably the most significant detail about this particular plane is the differential area in the wing in addition to the offset. The parabolic shape of the left wing concentrates more area in the tip than the elliptical shape of the right wing. This gives a plane that can bomb up under full torque without offset thrust, and with very little washin and stab tilt. An FAI with a similar setup needed only 1/16" washin to control the power burst. This can do nothing but help the cruise.

MARK DRELA

PROP FORUM

Opposite are sketches of alternate prop construction.

Sketch A shows a better way to orient rectangular spars. Instead of making the larger dimension go fore and aft, it is placed roughly perpendicular to the ribs by tilting each spar about 45 degrees. Since the spar can now properly resist lift forces on the blade, the prop will be stiffer for a given weight. A jig should be used to accurately cut the splice.

Sketch B shows the spar on top of the ribs. The spar is wet during covering so that the film adheres to the sides of the spar. The result is a faired-in spar and a turbulator on the top surface. The ribs should be of lower camber than normal.

C and D are a delight to use on smaller models, such as A ROG or 35 cm. The ribs are simply straight strips--faster and a heck of a lot easier to make than tiny curved ribs. In C, film going over the spar gives sufficient camber. In D, crack the "ribs" on a flat surface with the dull edge of a razor blade. Be sure to apply some cement to the top of the crack.

A LOOK AT YESTERYEAR

Curtis Janke relates the following bit of model history: Back in about 1929, the outdoor stick event was won by Don Burnham, with a twin pusher. He was dissatisfied with his times and developed a light tractor model, and won again the following year. Since it was really little more than an indoor model, this got a few people mad and they put in the first outdoor weight rule - two ounces per 100 sq. in. This got Burnham mad, in his turn, and he showed up the next year with a twin push-pull! I imagine there was no doubt about it being up to weight! The model reportedly flew well, but folded a wing in propwash from an Army plane giving an aerobatics demonstration. More to our interest, Don Burnham flew an indoor version in the indoor Nats. It was said that the model flew poorly due to a high wing loading; it is worth noting that in 1931, over 40 years ago, a fellow was flying a design that no one has even thought of since! How's that for progress?

INDOOR TEAM SELECTION IMPASSE

With "points" vs. "finals" having reached an impasse... has anyone suggested proving these methods simultaneously over the next 6 years by the process of preliminarily picking 2 teams, 1 by each method (in the first 15 months of each WC cycle); then, conducting a bonafide stateside WC dry-run at which time the final 3 U.S. Team members are determined?

If such side-by-side comparisons were made and analysed, perhaps the "results" would make even the best reasoned "rhetoric" superfluous!!!

If this becomes feasible to try...I would offer several other suggestions for the committee's consideration - a) the manager to be selected at time of the 15 month prelims by the current method, b) the stateside dry-run to be held in a "comparable" building to the WC building, c) the dry-run to be scheduled between 90 and 30 days prior to the WC, d) that dry-run competition be limited to half of each contestants plane inventory, but not exceeding 4, and e) the stateside WC dry-run format duplicate exactly the WC format.

Additionally, do we not need some kind of FAI Indoor Meet Schedule which is officially published and distributed to each eligible program participant in January of each year?

Jack Carter

CONTEST RESULTS

LIAMAC Cat. II INDOOR CHAMPIONSHIPS, Hicksville, NY
April 9, 1978 50'+ ceiling.

Jr/Sr Easy B	
Joe Nuszer, Jr.	5:42.0
Mark Trubowitsch	3:58.9

Jr/Sr Peanut Scale	
Joe Nuszer, Jr.	133.4
Dan Rees	129.5
Mark Trubowitsch	81.2

Jr/Sr HLG	
Joe Nuszer. Jr.	77.0
Mark Trubowitsch	74.4
Barry Pailet	74.3
Dan Rees	31.0
Dray Hooke	30.0

Indoor Scale	
Dan Domina	173.5
Jack Minassian	168.7
Joe Nuszer, Sr.	162.0

Open Easy B	
Bill Tyler	11:00.0
Frank Haynes	9:50.4
Joe Nuszer, Sr.	9:08.6
Pete Andrews	9:01.5
Pat Ciambrello	8:23.0

Manhattan Cabin	
Pete Andrews	5:57.3
Frank Haynes	5:17.0
John Kukon	5:12.2
Bill Tyler	4:41.0
Joe Nuszer, Sr.	4:29.2

Open HLG	
Dan Domina	86.7
Jean Pailet	73.3
Joe Nuszer, Sr.	71.7
Jack Minassian	71.0
George Myers	57.7

HIGH POINT WINNERS
Jr/Sr - Joe Nuszer, Jr. Open - Joe Nuszer, Sr.

Autumn Indoor Model Airplane Meet, East St. Louis Armory
Cat. I 34' ceiling, Nov. 19, 1978. Temperature 64°.

Open HLG	
Chris Matsuno	1:10
Mike Joerms	1:06.6
Don Hickman	0:57

Peanut Scale	
Bob Klipp	193 pt.
Carl Fries	134
Jay Tryon	

Easy B	
Dick Hardcastle	8:46.6
Tom Croft	8:15.0
Paul Tryon	7:06.0
Chris Matsuno	6:23.0
Carl Fries	6:18.0

High Point	
Chris Matsuno	14
Dick Hardcastle	11
Tom Croft	11

Senior HLG	
Tom Croft	1:02

Junior HLG	
Jay Tryon	0:57.8
Austin Thomerson	0:39.4
Sam Evenson	0:26.4

AMA Stick	
Dick Hardcastle	13:06.8
Paul Tryon	9:29.0
Roy White	9:08.0

AMA Cub	
Sam Evenson	0:32

Manhattan Cabin	
Joe Fierce	1:06.6

Junior High Point	
Jay Tryon	7

TOP TEN CEILING DODGERS

The Top Ten Ceiling Dodger listing began years ago as various fliers maintained an informal competition with the goal of posting the highest time in any particular site without touching the ceiling. Any model class may be used and the times are fudged to 35' ceiling. It is a fun way to develop high performance not related to the model's ability to survive ceiling contact.

Name	Time	Ceiling	Fudge	Score
1. Stan Chilton	1115	35'	1.0	1115
2. Tom Vallee	810	20'	1.323	1071.6
3. Robert Dunham II	1454	89'	.627	911.7
4. Hal Crane	682	20'	1.323	902.3
5. Dob Dunham	1357	89'	.627	850.8
6. Dick Hardcastle	653	23'	1.234	805.8
7. Bud Tenny	1275	89'	.627	742.9
8. Hewitt Phillips	528.2	20'	1.323	698.8
9. Howard Haupt	456	22'	1.261	575.0
10. Steve Lovens	433.2	20.5'	1.307	566.2

TOP NOTCH CAT. I & II SITES ARE AVAILABLE BUT NOT USED

Burton Coliseum, with a 105' ceiling, is representative of hundreds and hundreds of lousy indoor flying sites...because although we can put a man on the moon it seems beyond our skill to "utilize" only the top 100' of an otherwise optimum building!!!!!

The 1979 Indoor Nats will be held under Pershing Auditorium's 51' ceiling...and thus it, too, becomes another lousy FAI Cat. III site by a mere 2'!!!

My home site at Racine's Memorial Hall with a 40' ceiling ...is yet another lousy AMA Cat II site by only 5'!

And one could go on and on and on.

Perhaps, if one did not build or fly long enough, one could document 531 such lousy indoor sites around the country.
Is it really so complicated, as to make it impractical. to accurately time indoor flights in the top 100' of Burton Coliseum?

Jack Carter

The Voice of N.I.M.A.S. APR MAY·1978

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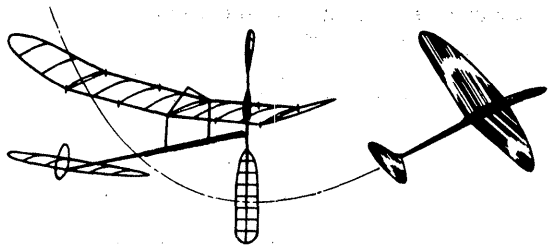


Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

Nats Photos, Anyone?

Although I will be at the Nats briefly, for the NFFS Hall of Fame Banquet, I will not be able to get any photos of the Nats Indoor events. Anyone who takes photos and would like to share them, please drop me a line as soon as possible after the Nats to tell me they are coming. If you take other than black and white photos, please loan me the negatives so I can get prints made. Remember to mark or number them in some way and tell me who or what the photo represents.

FAI Team Qualification Results

Results from most of the local and regional meets are on hand, so far as I know. These will be presented in the next issue, perhaps with coverage of the Finals. Hopefully, the next issue will precede the Finals (set for Labor Day weekend), but I can't guarrantee this. If you attend the Finals and take and pictures, please read the paragraph above again and substitute "FAI Finals" for "Nats Indoor"!

Loose Ends

In a fairly recent issue of INAV, Ron Williams gave his formula for the glue he uses to build his models. In the formula he mentioned DOP, and some of you have asked for a translation. DOP = dioctal phthalate, a plasticizing agent for all nicrocellulose-based plastics, which describes both our glue and microfilm. A note in passing--it is very easy for us to use terms like DOP which aren't exactly household words. I apologize for not flagging this abbreviation and translating it!

The Fourth NIMAS Annual Record Trials

A Brief History

A number of questions which came up during the NIMAS banquet indicate that the following remarks would be of interest to most of the current members.

First, NIMAS was founded late in 1961 by Dave Copple, Joe Bilgri, Pete Sotich, Dick Kowalski, Chuck Tracy, Dick Black and Bud Tenny. A membership application blank which sometimes gets sent out in response to membership queries lists a number of goals and purposes for NIMAS:

1. To act as the voice of indoor fliers in the United States.
2. To promote indoor flying in any way, but especially by encouraging newcomers.
3. To act as a clearing house for comments on indoor rules change proposals.
4. To act as a point of origin for ideas that are becoming rules proposals.
5. To provide, when possible, information about changes in technology, advanced design data, and any other technological information about indoor models.
6. To provide news of indoor activity from around the world and encourage international activity whenever possible.

It was a fond dream for many of us that an annual meeting be held (much like the NFFS meeting at each Nats) so various NIMAS members could get acquainted or renew friendships which otherwise get carried on only by mail. Before FNIRT, SNIRT, THNIRT and FNART, only one meeting was held--at the 1962 Chicago Nats. AMA's Technical Director, Frank Ehling, asked that NIMAS determine how best to use the Stout Commercial perpetual trophy which he had just renovated. (Another Stout trophy was then and remains the award for Indoor Cabin at the Nats). On our recomendation, the Stout Commercial trophy is now awarded for high overall time in Indoor Stick at the Nats.

Not until the FAI Team Selection Program held in 1967 did a site suitable for the dreamed-of annual NIMAS bash appear. With advance knowledge (seldom available lately) that the 1968 Indoor World Championship was to be held in a 115' domed site in Italy, the atrium at West Baden was chosen as the most nearly matching site in the U. S. In later years, some Team Selection qualification meets were held at West Baden, and some of us noted that the atrium would nicely support an annual NIMAS meeting and funfest.

John Martin stepped forward to ramrod the event and C.D. the meet. In discussions with others, John decided that the event should encourage relaxed, friendly flying instead of the increasingly cut-throat competition that even indoor meets were developing. The format came to be called the NIMAS Index--with each flight competing for the existing national record for the model and age class of the entry. Thus, an A ROG might beat an FAI Stick and a Novice Pennyplane might beat both of them! The key is to divide the contestant's flight time into the record time to compute the NIMAS Index. It worked!

The first two contests, FNIRT and SNART, had only a few entrants--but those few became ardent boosters of the event. Now, those who can't make the current meet any particular year will be seen to fidget a lot one certain week each year! When THNIRT rolled around, the entry climbed to 32 fliers plus various supporters, timers and family members. If the family doesn't enjoy model flying, there are other local activities for them.

The actual contest site (the atrium) is 200' in diameter and has just less than 100' ceiling height. This room is surrounded by an inner ring of hotel rooms, a corridor and an outer ring of rooms. As a result, the contest area is well isolated from weather disturbances. The major obstruction in the building is a central bandstand which once lowered from the ceiling. Below that is a pod resembling an inverted mushroom which used to catch many models.

The mushroom (nicknamed "toadstool" because it was poison to models!) has been shrouded by a sheath which Bucky Servaites devised and installed yearly. This year, Roy White added a plastic skirt around the top of the bandstand, and less than ten models were caught during the whole meet. Several models per hour had been the norm when only part of the structure was covered.

Besides the magnificent flying conditions, there is a very good dining room adjacent to the atrium. Thus, everyone can stay for the entire meet with no need to go outside the building unless they want to. At night, there is enough light filtering down from the lighted ceiling to allow flying of all except microfilm covered models; it is not unusual to see models flying at any hour. In fact, one is reminded of earlier Nats meets where one would miss a significant part of the activity simply by going to sleep!

FNART Competition Results

NIMAS Index Winners

Contestant	Model Class	Age	Time	Index
Mike Van Gorder	Novice Penny	Junior	*10:44.7	1.232
Jim Richmond	AMA HL Stick	Open	44:43.0	1.230
Mike Clem	Novice Penny	Junior	10:40.5	1.224
Walt Van Gorder	Novice Penny	Open	12:49.8	1.149
Don Lindley	Autogyro	Open	7:15.0	1.039
Stan Stoy	HLG	Open	**2:32.4	1.038

*A later flight was posted at 11:11.0
**A later flight series gave 2:40.2

Winners By Individual Class

It should be noted that the advance entry for FNART totalled only six people at the time the trophies had to be ordered. So, even though he had faith that the entry would increase, John Martin only ordered six engraved pewter mugs for the Index competition, plus one each for Manhattan Cabin and Easy B (these events do not have AMA record classes and thus do not compete in the Index).

If I really wanted to be mean, I would list the entry as it was made! The result would be long lists of names under each event, with no corresponding times shown. The contest format, which stresses beating an existing record to place in Index, encourages experimentation with various models to determine which class the flier has the

best chance of setting a record. Consequently, though entry was made in many events by most of the fliers, only a very few official flights are made in each event. So, as you peruse the results below, realize that many, many flights were made that were not entered on the Index timing form.

CLASS A R.O.G.

Larry Loucka	17:07.0	Dick Obarski	13:11.0
Ron Ganser	13:27.0	Dave Lindley	9:37.4
Rick Doig	13:16.6		

AMA H.L. STICK

Jesse Shepherd	13:58.0

F.A.I. STICK

Rick Doig	25:28	28:57	54:24
Dick Obarski	23:33	28:43	52:16
Jack Carter	26:27	20:31	46:58
Bucky Servaites	33:24*		
Gerry Skrjanc	24:28		

*Bucky flew other flights in the FAI Local, which did not get recorded in FNART notes.

AMA H.L. PAPER STICK

Stan Chilton	23:38.3	Rick Doig	16:01.5
Dick Obarski	20:52.0	Mike Van Gorder	16:01.0
Gerry Skrjanc	17:22.5	Jim Jones	7:26.0

UNORTHODOX EVENTS

Helicopter		Autogyro	
Don Lindley	2:56.0	Don Lindley	7:15.1
Dave Linstrum	2:12.0		

H.L. GLIDER

Stan Stoy	*2:32.4	Bernard Boehm	2:16.1

*Stan's higher record flight was done the next day; the flights by Mike Stoy and Mike Jeorras were not captured in the notes for this report.

EASY B

Dick Obarski	18:52.1	Gerry Skrjanc	15:11.5
Stan Chilton	*18:43.3	Walt Everson	6:42.2

*Stan also made a challenged flight (see text) of 21:06.2 which was replaced by the listed time. His next high time was two days later, at 20:24.

MANHATTAN CABIN

Walt Van Gorder	9:41.6	Walt Everson	6:35.0
Larry Loucka	8:41.0	Roy White	5:39.0
Dick Obarski	8:00.3	Ron Ganser	5:13.0

PENNYPLANE

Cezar Banks	13:55.2	Gerry Skrjanc	11:22.0
Walt Van Gorder	*13:50	Mike Van Gorder	10:44.7
Gordon Wisniewski	13:35.2	Roy White	10:30.0
Jim Miller	11:30.2	Charlie Sotich	6:23.7

*Walt's time is approximate; I missed getting it.

NOVICE PENNYPLANE

Walt Van Gorder	12:49.8	Mike Clem	10:40.5
Cezar Banks	11:45.7	Gordon Wisniewski	10:06.4
Mike Van Gorder	11:11.3	Jeff Everson	9:36.0

PEANUT SCALE

Jim Miller	21/59 sec	Currie "Wot"
John Martin	26/51 sec	Kalinan K-5
Charlie Sotich	18/75 sec	Volksplane
John Martin	23/44 sec	Farman Jabaru
Jim Miller		Fike E

AMA SCALE

Charlie Sotich	51/67.6 sec	Volksplane
Jim Miller	54/75.6 sec	ITOH
John Adams	51/67.6 sec	Vickers Vincent
John Martin	50/46.7 sec	Farman Jabaru
John Martin		Weyman-Lepere
Gerry Skrjanc		Pilatus Porter

Additional Comments

Many of the times listed above were the result of determination and repeated attempts, but two of the times deserve more comment. First, Jim Richmond appears to be very casual in his flying. His apparently effortless flight activity results from a tremendous amount of preparation. His "300" was the same one he used in 1978. Just as last year, the record flight was preceded by a midair collision which damaged the model. After the repair, Jim studied flight and rubber motor data, selected and wound another motor and launched the model. The model never came close to any part of the building, but had several near-misses with other models. The flight time (44:43) had never before been approached in any building smaller than a blimp hangar.

It is a mark of Jim's craftsmanship and skill that he needed no test flight after the repairs. This same skill was demonstrated two days later when he re-braced a FAI model wing, selected a motor, etc., and flew. The model was slightly overpowered and touched the plastic shroud. It did a massive tail slide to land short of the 33:24 mark set two days before by Bucky Servaites. After another data search and rubber selection, the model made the traditional 'no touch' Richmond flight and landed at 37:52.

The other record time worthy of note is Stan Stoy's HLG mark. The glider is a further development of the folding wing HLG Stan test flew at the 1978 Nats, but this machine has a three-panel fold to give a 9.5" wingspan at launch. At the top of the pattern, when the glider slows down, the wing unfolds for a smooth roll into level flight results (usually!). This glider was too light for the atrium ceiling, so Stan's flights did not make the best use of the ceiling height. However, when the wing unfolded to almost 100 square inches of undercambered surface, it came down mighty slowly!

Stan was accompanied by his brother Mike and Mike Jeorras, both with folding models of the same design. Mike Stoy's model was heavier so it got higher, making good flights. Since Mike had only one day of flying (Stan came early), he didn't really get the model trim just right. The interesting thing about this design is that it accomodated a different throwing style (Mike Jeorras') with little problem. Too often, HLG's seem to be one-man machines, but the 'Folder Mk VI' showed no such tendencies.

Two other pewter mugs were awarded--Walt Van Gorder won Manhattan Cabin with 9:41.8 and Dick Obarski won Easy B with 18:52.1. An AMA Scale score of 149.3 placed Charlie Sotich in the mug, while Jim Miller's Currie Wot Peanut Scale model copped the last available mug. Few people took photos of Charlie Sotich's Volksplane; everyone assumed that the whole world had seen the model! In fact, a record application for 'The Oldest Existing Peanut Scale Model' will be submitted, but there probably is insufficient evidence to verify the claim. A fellow Chicago Aeronut vainly tried to take up a collection to buy the model. He muttered something about a "burial party"...

The relative humidity in the Atrium was measured at 85% during much of the contest. In the Easy B event, an excellent 21 min.+ flight was made by Stan Chilton. Someone asked contest officials to check his wing chord. It failed--throwing out the flight. Stan opened his box and asked that his six other wings be measured. Only one passed and he used that wing to make an 18:42 flight. He then asked that the wing be checked again. It failed, but the flight was allowed to stand on the grounds that the model was legal before the flight. Stan then took the first wing to an air-conditioned room for half an hour, whereupon it passed. Meanwhile, Dick Obarski's model was processed for flight, and it passed before the flight by a slim margin. Later, an informal check showed that no other Easy B's at the meet would pass after long exposure to the high humidity! It is apparent that CD's should be given some kind of guidelines to cover such conditions.

On the third day, Stan Chilton brought out the original wing for a check. It passed and he made a flight of 20:24 just before the plastic shrouds were cut down. He had shortened each wing rib by 1/64" and then tightened the covering--just to be sure that the wing wouldn't 'grow' too large again!

In the other duration events, Cezar Banks and Walt Van Gorder battled over the Pennyplane record, with Cezar finally getting 13:55.2 on almost the last flight of the contest. Also, Mike Van Gorder and Mike Clem see-sawed over the Novice Pennyplane mark, but Mike Van Gorder prevailed at the very last. The next day, Mike Clem tried all day to top the new record and never quite made it.

Only one HLG besides the folders showed up, but Bernard Boehm's total of 2:16.1 was a classical demonstration of conventional HLG techniques. His launches were very repeatable, and used most of the available


DAY ONE OFFICIAL FLYING
33:24 BUCKY SERVAITES
44:43 JIM RICHMOND
DON LINDLEY
MIKE VAN GORDER
MIAMI INDOOR AIRCRAFT MODEL ASSO
MIAMA
OUND PLEASE NOTIFY
ARLIE SOTICH
51 W. 62ND PL
HICAGO ILL. 60629
PHONE (312) 735-1353
AMA 3187
29 DEC. 1977
F-AIBS

ceiling height. It will be interesting to note the reaction of some HLG fliers to the advance in technology which Stan Stoy has demonstrated!

Other records were broken by margins insufficient to gain a winning Index:

Jr. A R.O.G. Stick--9:37.4; Dave Lindley Index = 1.035

Open FAI HL Stick--33:24; Bucky Servaite's Index = 1.022

Jr. Paper Stick--16:01; Mike Van Gorder Index = 1.052

(An Index of 1.052 is a winning score, but no duplicate prizes were given.)

THE PICTURE STORY

All photos by Bud Tenny except as noted:

Top Line

Left--Stan Chilton's Easy B which made two flights over 20 minutes. Conventional design except for underslung fin. (Jack Carter photo)
Center--Jesse Shepherd test flying a new FAI model; it was later damamged in a midair collision.
Right--John Martin really had to hustle to keep the "big board" up to date!

Second Line

Left--John Martin's Fike E never left the box and John was heard to ask, "How does anyone CD a meet and get any flights made?"
Center--Bob Mullins with his bipe Pennyplane.
Right--Cezar Banks with his bipe Pennyplane which really got a workout keeping ahead of Walt Van Gorder.

Third Line

Left--We kept telling Mike Clem to "wind it up", so he finally did. Here's the blastoff!
Left Center--Dave Linstrum brought kits and wood to the meet instead of models; this is one of three Banks' Novice Pennyplanes built as Dave led a class in building these models. The other ones flew better than Dave's model (Dave really didn't get time to trim it in).
Right Center--Jim Richmond shows off his World Record AMA "300". (Jack Carter photo)
Right--Jim Jones launches his Novice(?) Pennyplane on a test flight. Note unusual motor stick stiffener which was simply a sheet web atop the stick. The model still needed a bit of ballast!

Fourth Line

Left--Jeff Everson lends a helpful hand as Walt winds up his Manhattan Cabin model.
Center--John Adams lets the motor unwind while he ponders future strategy for flying his Vickers Vincent. T built-up motor on the model was very well do
Right--Old habits die hard, so Charlie Sotich felt th need to ID his bipe Pennyplane on the fin.

Bottom Line

Left--John Martin's Farman Jabaru. It had a novel shock-absorbing landing gear.
Center--Bucky Servaites prepared to launch his FAI model.
Right--Charlie Sotich plans strategy for the next flight of his bipe Pennyplane.

RECORDS? MAYBE!

The following record listings represent the activity in the Northwood atrium during FNART. Note that some of the listings are followed by times which exceeded them and thus also qualify. (All the AMA records were granted except for *, which were not applied for.

Junior A R.O.G. - 9:37.4, Dave Lindley
*Open FAI Cat. II FAI - 33:24, Bucky Servaites
Open FAI Cat. II FAI - 37:52, Jim Richmond
Open Autogyro - 7:15.0, Don Lindley
Junior Paper Stick - 16:01.0, Mike Van Gorder
Open HLG - 2:32.4, Stan Stoy
Open HLG - 2:40.1, Stan Stoy
Junior Novice Pennyplane - 10:40.5, Mike Clem
Junior Novice Pennyplane - 11:11.3, Mike Van Gorder
*Open Novice Pennyplane - 11:45.7, Cezar Banks
Open Novice Pennyplane - 12:49.8, Walt Van Gorder
Open Pennyplane - 13:55.2, Cezar Banks

World Record Applications:

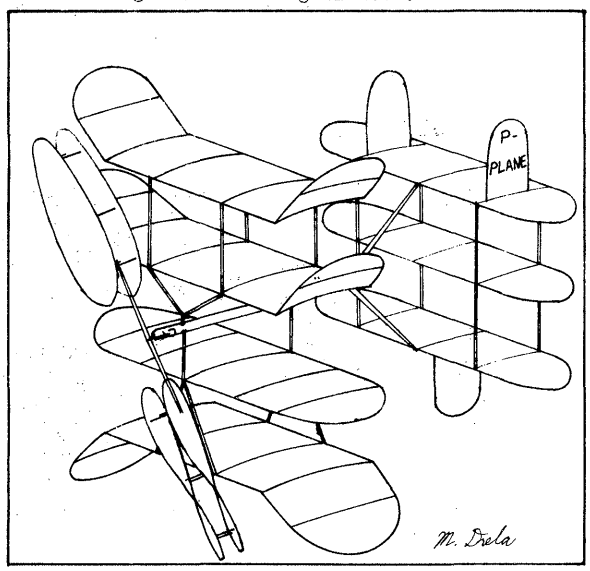
FAI Cat. III - 37:52, Jim Richmond
FAI Absolute Record - 44:43, Jim Richmond

****NOW HEAR THIS****

Some attendees at FNART indicated that they didn't hear about the dates for the contest in time to be prepared. TAKE NOTE: The Northwood atrium and facilities have been reserved for June 21-29, 1980 for the purpose of holding the 1980 Indoor World Championship (June 21-25, 1980, if approved) and VNART (June 26-29, 1980. No subscriber or NIMAS member now claim to be uninformed! Other details will be announced when firmed up.

STATE OF THE ART?

The model of the month is the result of a joint effort by McLean, Kukon, and Jaecks to produce the ultimate Pennyplane. As anyone can see, it is a rather conventional design and hence, no 3-views are provided; a sketch will suffice. The model is still in the developmental stage, however, and the performance figures are being witheld.



A CORRECTION!

A previous announcement of Lakehurst flying dates was in error, and the remaining dates listed below should be considered as official. It is still advisable for anyone planning to attend to call Dan Domina (609-448-2840) or [illegible] Kukon (609-737-3522) on the Friday before any meet to confirm continued site availability. I apoligize for any inconvenience caused by the previous announcement.

Aug. 22, 1979 Sept. 23, 1979 Oct. 28, 1979

COLUMBIA FLIERS IN TIGHT MANHATTAN FORMULA FINISH

At the March 11, 1979 4 gram contest at Columbia Universit's Low Library Rotunda the top three contenders jockeyed for final position. Going into the close it was Pete Andrews, Frank Haynes, followed by Bill Tyler. With the last model down, both Frank and Bill had passed Pete and the order was reversed. Unlimited official flights add unlimited tension right to the last minute.

Bill Tyler	5.49 grams	6:44.0
Frank Haynes	4.28 "	6:18.6
Pete Andrews	4.78 "	6:06.2
Bob Bender	6.55 "	4:46.5
Joe Nuszer, Sr.	4.33 "	4:28.3
Don Garofalow	5.06 "	4:04.1
Randolph Boston	4.80 "	3:57.6
Aubrey Kochman	4.90 "	3:28.0
Ichiro Sugioka	4.00 "	3:00.3

OHAUS SCALE

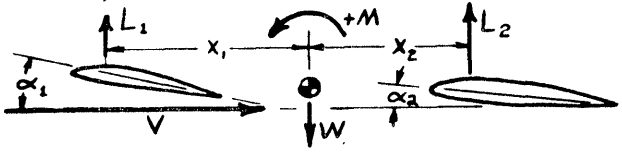
At the Manhattan Formula contest at Columbia University on March 11, CD Ed Whitten weighed all models with an "Ohaus 10-10 Precision Metric Reloading Scale, Model 1010-10 (capacity 101 g x .01 g)". The only reworking needed was to replace the pan with a weighted hook, a relatively simple task. A "reloading scale" is, of course, one intended for weighing out powder charges for cartridges used by a target shooter. Weighing at the contest went well An extension of the arm to move the model further from the table would be an improvement if doing so did not upset the scale in some manner. Due to inexperience in using the scale, the CD did do a bit of fumbling with the micrometer poise. The sacle was purchased wholesale from the Wilkens-Anderson Co. for about $35.00. The Ohaus Scale Corp. is located at 29 Hanover Rd., Florham Park NJ 07932. Maybe a bit expensive, as compared to a balsa beam balance, the Ohaus scale gives exact weight as well as a go-no go reading, and it does not lose accuracy with humidity changes.

PITCH STABILITY OF CANARD AIRCRAFT

(dedicated to Clarence Mather)

Construction of model aircraft is mostly a black art. This is not to say that serious or fanatical competitors construct scale replicas of their opponents' machines and stick pins in them, but that we usually design on experience (ours or copying someone else's) rather then knowledge derived from basic scientific principles (this is known as engineering). The neophyte often has to construct many models to gain an intuitive knowledge of a model type; this is particularly true of the canard type of model aircraft. This is an effort to illuminate the principles behind "tail first" flight.

It is first necessary to construct a reference schematic (or a model) of our model (Figure 1). In the figure it can be seen that lift of the front wing (L_1), lift of the rear wing (L_2), and "weight" or inertia and gravitational force on the aircraft (W) are the only forces on the system. The relative wind over the wings (V) produces the lift, which may result in a moment about the center of mass. Obviously, there must be no moment, otherwise the aircraft will tend to pitch



down (dive) or up (stall). Less obvious is the fact that a moment resisting any pitch change must be generated for stability. First, let us assemble the moment according to the sign convention on the figure.

$$M=0= -L_1 x_1 + L_2 x_2$$

Lift on the wing is $L=qC_L S$

where C_L is the lift coefficient of the total wing, S the wing area, and q the dynamic pressure, related to the air velocity by

$$q=\tfrac{1}{2}\rho V^2 \quad \text{where } \rho=\text{air density}$$

For most airfoils (including those on indoor models) the lift coefficient is approximately proportional to the angle of attack (measured from the zero lift angle of the wing). Mathematically we say the derivative of lift with respect to angle of attack is constant.

$$dC_L/d\alpha = C_{L_\alpha} \quad \text{thus} \quad C_L = \alpha C_{L_\alpha}$$

giving $$M= -C_{L_\alpha}\alpha_1 S_1 q x_1 + C_{L_\alpha}\alpha_2 S_2 q x_2$$

Here it is assumed that $C_{L_{\alpha_1}}=C_{L_{\alpha_2}}=C_{L_\alpha}$ or both wings have about the same airfoils and geometries.

The stability criterion for the moment is

$$\partial M/\partial\alpha > 0$$

Neutral stability is $\partial M/\partial\alpha = 0$

and so $$\partial M/\partial\alpha = -C_{L_\alpha} S_1 q x_1 + C_{L_\alpha} S_2 q x_2$$

Sticklers for accurate calculus derivation, please note that after the PROPER forms are followed you still get this result (perhaps with better dummy variables...). This gives us, with a bit of algebra

$$S_2 x_2 > S_1 x_1$$

This reveals how to construct the aircraft (wing placement). But we can also find from M=0.

$$C_{L_\alpha}\alpha_2 S_2 q x_2 = C_{L_\alpha}\alpha_1 S_1 q x_1$$

and $$S_2 x_2 = S_1 x_1 (\alpha_1/\alpha_2)$$

so that the stability criterion becomes

$$(\alpha_1/\alpha_2) S_1 x_1 > S_1 x_1 \quad \text{or} \quad \alpha_1 > \alpha_2 \text{ !!!}$$

This tells us that the angle of attack of the foreward wing MUST be greater than the rear wing. A little thought tells us that this is true of ANY aircraft, canard, conventional, or tandem.

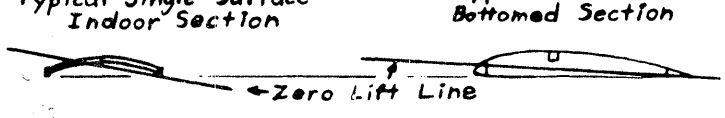
A more useful form of this principle is

$$x_2/(x_1+x_2) > L_1/W$$

It is fairly easy to define the proportion of total lift generated by the front wing, and thus arrive at the cg location from the distance between wing aerodynamic centers.

This linearized derivation of stability ignored difference in lift curve slope between wings, but the interested can readily prove that these results are INDEPENDENT OF DIFFFRENCES IN WING CONSTRUCTION. Of course, non-linear effects may introduce some deviation but they are almost always insignificant.

Now, it is easy to be led astray by some features of wing theory. The worst thing is that different airfoils (wings) have different zero-lift angles of attack. See Figure 2.



Both wings are apparently at the same angle of attack, but due to the great camber of the left wing, it is actually at a higher angle of attack than the right one. Imagine these wings were part of a model and the left wing was in front. I have actually built an (extremely!) stable Manhattan Cabin along these lines.

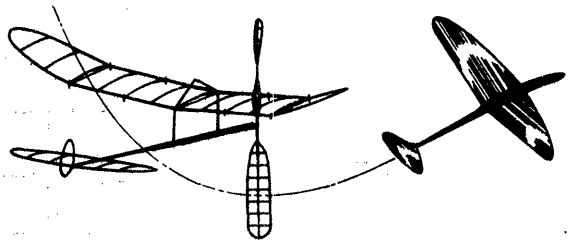
I'm afraid I've already written too much, so to avoid Bud Tenny's ire I will refer any further questions to myself:

Walter Lounsbery, P.O. Box 1465, Rolla, MO Zip 65401

It is a pity that canards are not in greater use in models,especially since we modelers are free of constraints which present full-size canard designers with some difficulties.

The Voice of N.I.M.A.S. JUN JUL-1978

INDOOR NEWS and VIEWS



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****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

Last Issue

Some of you noticed that the most recent issue (sent out just before the Nats) was dated Apr/May 1978. So I goofed again! It was intended that the issue be dated Mar/Apr 1978, but the midnight oil made things slippery and I slid right past March.

This Issue

Once again, you have an issue which is largely made up of material made available by faithful readers, with much of it camera-ready. It is the loyal support of so many people which makes it possible for INAV to continue. Thank you, and keep up the good work! At the moment, we need contest announcements for Contest Calendar and info about results from the contests afterward. Yes, I know you sent results from your contest last year, but this year I promise to try harder!

The Next Issue

Will contain full results of the 1979 Team Selection Finals, including several pictures. I have a formal report to peruse (can't share the full report, since it was written for AMA, but I can get the flavor), and some additional comments and data. If anyone wants to make it into print by submitting your very own report, now is the time! Also, maybe by then I will have worked up the long overdue report on the 1979 NIMAS Postal Meet. Not even I know who won yet!

!!Fast-Breaking News!!

Only one month after the fact: The top five fliers at the 1979 Team Finals were:

Ray Harlan	1110.00 points
Pete Andrews	1100.36 "
Dan Domina	1077.75 "
Erv Rodemsky	1045.3 "
Bill Hulbert	1015.31 "

Immediately after the contest, Dan Domina officially resigned his team position, which advanced Rodemsky to the Team and Bill Hulbert to official first alternate.

Comments on the 1979 Indoor Nats

We have no report from the Nats except for the published results reproduced below. Excellent coverage is available in the Nov. '79 Model Aviation, including good pictures. If any INAV readers took pictures, no one made them available.

Nominations Wanted!

Steve Geraghty, who lives at 194 Vista Del Monte, Los Gatos CA 95030, has volunteered to be the chairman of the NFFS Model of the Year effort for 1980. Nominations are in order for the following categories:

F1A Nordic Glider	Indoor Rubber
F1B Wakefield Rubber	Indoor/Outdoor HLG
F1C Power	Outdoor Rubber
Small AMA Power (1/2 A)	Large AMA Gas Power

Special Awards

It's Never Too Early!

Every so often the rumor circulates that AMA will need to de-centralize the Nats, due to the extreme lack of suitable sites which combine the essential ingredients of a Nats site:

- Low cost housing including camp space for those who use a camper or van to make a family vacation.
- Adequate space for Free Flight, including chase and retrieval roads or facilities.
- A usable indoor site (we have had one or two recent Nats where the site really was not adequate, but other considerations weighed in favor of the overall accomodations.
- A suitable site for control line events (mainly area for multiple circles, all smoothly paved except for a grass or dirt combat circle).
- Multiple RC sites, separated by sufficient distance to permit simultaneous activity on all allotted frequencies at each site--Pattern, Soaring, Pylon and Scale.
- A central location for the AMA HQ operation.
- An active local group willing and able to pull together hundreds of details and arrangements which would be impossible for AMA HQ to manage.
- Numerous other smaller requirements!

Recently, I was "sounded out" by two different people on whether NIMAS would be willing and able to host the Indoor Nats if the AMA Nats had to be decentralized. It is never too early to think about such a thing; comments are welcome, pro or con, but especially comments which view the whole picture. It is not enough to simply say "It's a good idea!"; there are several very important concerns which require very careful thought. More in a future issue.

CONTEST CALENDAR

FLORIDA-Miami

The 1979/1980 Indoor season at Miami kicks off with Contest #1 on Sunday, Oct. 21, 1979 at the Opa Locka Goodyear Hangar, with meets to follow on Nov. 8 and Dec. 9, 1979. As usual, confirm the site availability by a call to 305-858-6363 the night before a meet. "Doc" Martin has expressed concern over the future of this site since the Dade County Commissioners have failed to deal with Goodyear on their new hangar and Goodyear is moving to Pompano Beach.

NEW JERSEY-Lakehurst

A contest for Manhattan Cabin and Bostonian (contact Ed Whitten, Box 176, Eall St. Station, New York NY 10005 ph. 212-724-0282 for rules on Bostonian models). One major difference between the two is that the Manhattan must weigh 4 grams and the Bostonian must weigh 7 grams.

NEW YORK CITY-Columbia University

Flying schedule for the Low Library Rotunda, Columbia University, is Oct. 7, Oct. 21, Nov. 4, Nov. 18, and Dec. 9, 1979, with more planned in 1980. In planning are some building instruction sessions for beginners and a special novice class called Blatter. Contatct Ron Williams at 212-722-5262 for more info.

OKLAHOMA-Oklahoma City

The Sooner Free Flight Society begins their winter series of indoor meets on Oct. 14, 1979 at the National Guard Armory, 200 NE 23rd St., Oklahoma City. Events for all sessions are HLG, Pennyplane, Easy B, Peanut Scale and AMA Scale. Meets run from 9 am to 5 pm, and a nominal site use fee is charged. Other meets are scheduled for Nov. 25 and Dec. 23, 1979 and Jan. 20, Feb. 17 and Mar. 16, 1980. Contact Al Bissonnette, 6528 SE 15th, Midwest City OK 73110, ph. 405-737-1085.

A TRULY WORTHY AND MASSIVE EFFORT!

A band of dedicated NFFS members have assembled and produced "NFFS International 1979 Planbook", containing 109 plans plus text and articles describing models entered in the 1979 FF World Champs at Taft, California. This reference volume surely will become a collector item in years to come. It is available for $10 plus mailing cost according to the following schedule: Book rate in U. S. - $1, priority mail U. S., Canada and Mexico - $2.50, Air Mail to Europe - $3.50, Far East - $5. All payment to be in U. S. Funds. Send orders to: NFFS Plans & Publications 4858 Moorepark Ave., San Jose CA 95129.

AN HISTORIC FIRST!

Other newsletters have had full-size plans, but INAV has not had the opportunity until now. Clarence Mather's report on the A-6 model flown by the San Diego Orbiteers includes a full-size plan for one version of this fun model class.

1979 NATIONAL CHAMPIONSHIPS

#1 Event, Stick
Category, Open

1	Stan Chilton, Wichita KS	27:15
2	Clarence Mather, San Diego CA	26:13
3	Daniel Belieff, Sykesville MD	23:41
4	Richard Hardcastle, Ballwin MO	23:40
5	William Shailor, Detroit MI	22:55
6	Dan Domina, East Windsor NJ	22:25
7	David Erbach, Lincoln NE	17:00
8	Charles Sotich, Chicago IL	11:46
9	Walter Erbach, Lincoln NE	2:09

#1 Event, Stick
Category, Senior

1	Joe Kubina, Warren MI	9:44
2	Peter Brown, Stn Mtn GA	2:34

#1 Event, Stick
Category, Junior

1	Mike Clem, Dallas TX	11:00
2	Bradley Fulmer, Mishawaka IN	6:40
3	Susan Brown, Stn Mtn GA	4:50
4	Karen Brown, Stn Mtn GA	3:34
5	David Brown, Stn Mtn GA	2:12

#2 Event, Paper Stick
Category, Open

1	Stan Chilton, Wichita KS	17:50
2	Dan Domina, E. Windsor NH	14:17
3	Charlie Sotich, Chicago IL	13:38.5
4	Daniel Belieff, Sykesville MD	12:36
5	Ronald Roberti, Norman OK	11:13
6	David Erbach, Lincoln NE	9:08
7	Walter Erbach, Lincoln NE	8:09

#2 Event, Paper Stick
Category, Senior

1	Joe Kubina, Warren MI	3:36
2	Peter Brown, Stn Mtn GA	2:32

#2 Event, Paper Stick
Category, Junior

1	Mike Clem, Dallas TX	12:34
2	Bryan Fulmer, Mishawaka IN	6:45
3	Bradley Fulmer, Mishawaka IN	5:36
4	David Turgeon, Spring Valley, CA	4:34
5	Susan Brown, Stn Mtn GA	3:08
6	David Brown, Stn Mtn GA	2:08
7	Karen Brown, Stn Mtn GA	1:04

#3 Event, Cabin
Category, Open

1	Dan Domina, E. Windsor, NJ	16:26
2	Robert Dunham, Tulsa, OK	15:28
3	Robert Dunham Jr, Tulsa, OK	9:40
4	David Erbach, Lincoln, NE	9:31
5	Walter Erbach, Lincoln, NE	8:34
6	Daniel Belieff, Sykesville, MD	6:50

#3 Event, Cabin
Category, Senior

1	Joe Kubina, Warren, MI	9:18.7

#3 Event, Cabin
Category, Junior

1	Mike Clem, Dallas, TX	5:56
2	Bryan Fulmer, Mishawaka, IN	3:07
3	Carl Linstrum, Ft. Lauderdale, FL	3:02

#4 Event, FAI Stick
Category, Open

1	Clarence Mather, San Diego CA	51:27
2	Dan Domina, E. Windsor NJ	48:26
3	William Shailor, Detroit MI	46:00
4	Richard Hardcastle, Ballwin MO	44:41
5	Daniel Belieff, Sykesville MD	38:41
6	Charlie Sotich, Chicago IL	27:07

#4 Event, FAI Stick
Category, Senior

1	Peter Brown, Stn Mtn, GA	2:36

#4 Event, FAI Stick
Category, Junior

1	Mike Clem, Dallas, TX	23:14.
2	Susan Brown, Stn Mtn, GA	10:30
3	Carl Linstrum, Ft. Lauderdale, FL	7:15
4	Karen Brown, Stn Mtn, GA	5:01
5	David Brown, Stn Mtn, GA	2:09

#5 Event, Pennyplane
Category, Open

1.	Richard Hardcastle, Ballwin, MO	11:27.0
2.	Gordon Wisniewski, Greendale, WI	10:16.8
3.	John Oleary, Bloomington, MN	6:44.0
4.	Bob Boyer, San Diego, CA	6:31.7
5.	James Clem, Dallas, TX	6:27.7
6.	Robert Loeffler, Norman, OK	5:51.0
7.	Roger Miller, Emporia, KS	4:22.4
8.	David Erbach, Lincoln, NE	4:04.4
9.	Jim O'Reilly, Wichita, KS	2:24.0

#5 Event, Pennyplane
Category, Senior

1.	Collin Dimaio, Los Angeles, CA	6:23.4
2.	Billy Carney, Jacksonville, FL	5:15.8
3.	Peter Brown, Stn Mtn, GA	0:23.2

#5 Event, Pennyplane
Category, Junior

1.	Mike Clem, Dalls, TX	6:50.4
2.	Bradley Fulmer, Mishawaka, IN	5:34.0
3.	Bryan Fulmer, Mishawaka, IN	5:25.6
4.	Carl Linstrum, Ft Lauderdale, FL	4:54.5
5.	John O'Reilly, Wichita, KS	4:05.0
6.	Melinda Anderson, Goshen, IN	3:25.8
7.	Karen Brown, Stn Mtn, GA	2:50.6
8.	Susan Brown, Stn Mtn, GA	2:45.2

#6 Event, Easy B
Category, Open

1.	Stan Chilton, Wichita, KS	16:49.8
2.	Clarence Mather, San Diego, CA	14:22.1
3.	Richard Hardcastle, Ballwin, MO	13:51.0
4.	Ronald Roberti, Norman, OK	10:20.2
5.	Edmund Turner, Ft Worth TX	10:6.
6.	Bob Boyer, San Diego CA	9:42.0
7.	Carl Fries, Crestwood MO	9:06.0
8.	John O'Leary, Bloomington, MN	8:56.2
9.	Daniel Belieff, Sykesville, MD	8:42.
10.	James Clem, Dallas, TX	7:15.
11.	William Rogers, Stevens Pt, WI	5:13.
12.	Fred Anderson, Goshen IN	4:31.
13.	Linda Brown, Stn Mtn, GA	4:15.

#6 Event, Easy B
Category, Senior

1.	Collin Dimaio, Los Angeles, CA	7:27.4
2.	Billy Carney, Jacksonville, FL	4:57.0
3.	Peter Brown, Stn Mtn GA	2:34.6

#6 Event, Easy B
Category, Junior

1.	Mike Clem, Dallas, TX	6:54.2
2.	Kevin Loeffler, Norman OK	6:45.5
3.	Bradley Fulmer, Mishawaka, IN	5:43.2
4.	Bryan Fulmer, Mishawaka IN	5:22.0
5.	David Turgeon Spring Valley, CA	5:04.4
6.	Susan Brown, Stn Mtn, GA	4:56.4
7.	Melinda Anderson, Goshen, IN	4:16.4
8.	Karen Brown, Stn Mtn, GA	3:25.8
9.	David Brown, Stn Mtn, GA	0:5.0

#7 Event, Indoor HL Glider
Category, Open

1	Stan Stoy, Woodridge IL	98.2
2	Michael Stoy, Woodridge IL	94.0
3	Robert Dunham, Tulsa OK	93.2
4	Paul Shailor, Detroit MI	91.2
5	Anthony Vaughan, Edmond OK	91.0
6	Dale Segle, Wenatchee WA	90.6
7	William Schlarb, S Bend IN	86.8
8	Dan Domina, E Windsor NJ	84.9
9	Bob Boyer, San Diego CA	83.9
10	Gerald Guiles, Nat City CA	78.7
11	Daniel Belieff, Sykesville, MD	76.6
12	Michael Joerms, Westmont IL	76.0
13	Terry Rimert, Baldwin FL	71.5
14	Larry McFarland, Arlington TX	71.1
15	Ronald Roberti, Norman OK	70.7
16	Matt Gewain, Cerritos CA	68.2
17	Bruce Kimball, Seattle WA	66.6
18	Bill Langley, Kansas City MO	57.8
19	Richard Hawes, Omaha NE	57.1
20	Roger Miller, Emporia KS	11.4

#7 Event, Indoor HLG
Category, Senior

1	Joe Kubina, Warren MI	76.8
2	Collin Dimaio, Los Angeles CA	68.4
3	Peter Brown, Stn Mtn GA	46.4

#7 Event, Indoor HL
Category, Junior

1	Bryan Fulmer, Mishawaka IN	84.0
2	Mike Clem, Dallas TX	75.0
3	David Turgeon, Spring Valley CA	71.8
4	William Langley, Plattesburg MO	71.0
5	Bradley Fulmer, Mishawaka IN	61.4
6	Draycott Hooke, Mountain Home PA	54.0
7	Eric Vaughan, Edmond OK	53.3
8	David Hooke, Mountainhome PA	39.4

#8 Event, AMA Scale
Category, Open

1.	Dan Domina, E Windsor, NJ	175.0
2.	Don Srull, McLean, VA	154.4
3.	Greg Thomas, Richfield, MN	150.20
4.	Chas Sotich, Chicago, IL	142.2
5.	Ron Roberti, Norman, OK	134.2
6.	Bill Stroman, Norwalk, CA	128.3
7.	Curt Sanford, Dallas, TX	116.1
8.	Lloyd Wood, Florissant, MO	98.3

#8 Event, AMA Scale
Category, Junior

1.	Melanie Sanford, Dallas, TX	100.0
2.	Stefanie Sanford, " "	96.0
3.	Liz Sanford, " "	92.5
4.	Susan Brown, Stn Mtn, GA	76.0
5.	David Brown, Stn Mtn, GA	58.0

#8 Event, AMA Scale
Category, Senior

1.	Guy Larsen, Roanoke, TX	122.8
2.	Peter Brown, Stone Mtn, GA	81.2
3.	Tom Comparet, Los Angeles, CA	65.0

#9 Event, Peanut
Category, Open
Sponsored by Peck Polymers

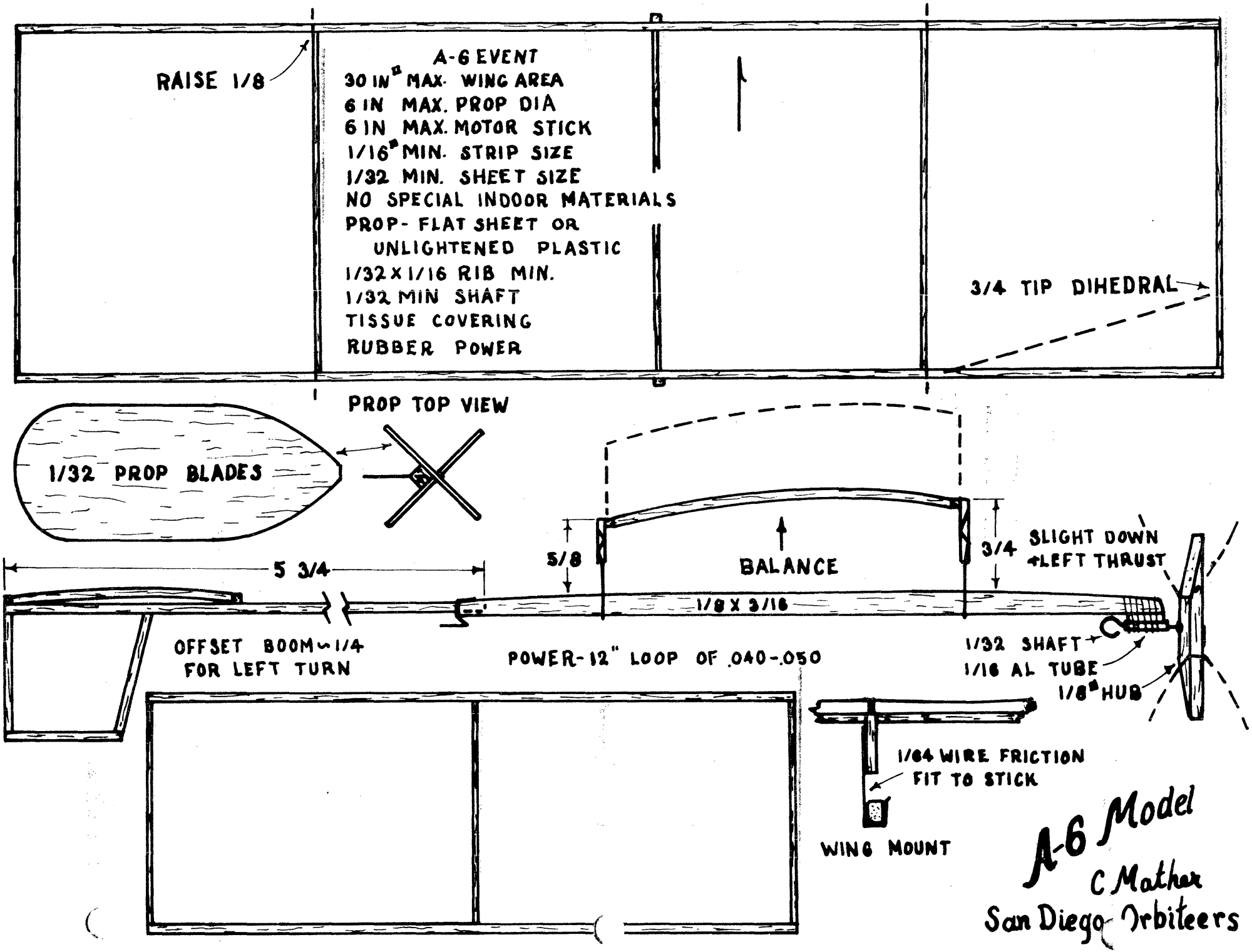
1.	Clarence Mather, San Diego, CA	209.4
2.	Don Srull, McLean, VA	135.9
3.	Bob Willey, Lincoln, NE	135.2
4.	Ron Roberti, Norman, OK	128.0
5.	Charles Sotich, Chicago, IL	125.5
6.	Gregory Thomas, Richfield, MN	120.0
6.	Lloyd Wood, Florissant, MO	120.0
7.	Curt Sanford, Dallas, TX	109.0
8.	Charles Puckett, Mt Vernon, IL	108.6
9.	Thomas Blakeney, Ft Worth, TX	104.
10.	Fred Anderson, Goshen, IN	93.6

#9 Event, Peanut
Category, Senior
Sponsored by Sterling

1.	Guy Larsen, Roanoake, TX	107.7
2.	Collin Dimaio, Los Angeles, CA	106.8
3.	Glenn Anderson, Goshen, IN	82.5
4.	Peter Brown, Stone Mtn, GA	75.0
5.	Tom Comparet, Los Angeles, CA	73.1

#9 Event, Peanut
Category, Junior
Sponsored by Sterling

1.	Melanie Sanford, Dallas, TX	99.2
2.	Stefanie Sanford, Dallas, TX	89.5
3.	Liz Sanford, Dallas, TX	87.0
4.	Susan Brown, St Mtn, GA	64.0
5.	David Brown, St Mtn, GA	54.7


RAISE 1/8
A-6 EVENT
30 IN² MAX. WING AREA
6 IN MAX. PROP DIA
6 IN MAX. MOTOR STICK
1/16" MIN. STRIP SIZE
1/32 MIN. SHEET SIZE
NO SPECIAL INDOOR MATERIALS
PROP- FLAT SHEET OR
UNLIGHTENED PLASTIC
1/32 X 1/16 RIB MIN.
1/32 MIN SHAFT
TISSUE COVERING
RUBBER POWER
3/4 TIP DIHEDRAL
PROP TOP VIEW
1/32 PROP BLADES
5/8
BALANCE
3/4
SLIGHT DOWN
+LEFT THRUST
5 3/4
1/8 X 3/16
OFFSET BOOM ~1/4
FOR LEFT TURN
POWER- 12" LOOP OF .040-.050
1/32 SHAFT
1/16 AL TUBE
1/8" HUB
1/64 WIRE FRICTION
FIT TO STICK
WING MOUNT
A-6 Model
C Mather
San Diego Orbiteers

CONTEST REPORTS

Illinois Model Aero Club, Madison St. Armory, Chicago IL Feb. 11, 1979. Outside temp. 15°F, inside 62°F with some drift.

Indoor HLG

Open

Bob Watson	2:05.0
Stan Stoy	1:57.6
Bernard Boehm	1:56.3
Bob Warmann	1:29.0
Mike Preston	1:26.8
Chuck Markos	1:20.0
Eric Anderson	0:42.6

Jr/Sr.

Kris Warmann	1:23.0
Brian Fulmer	1:19.6
Bradley Fulmer	0:59.0
Aaron Markos	0:52.0

Pennyplane

Jr/Sr/Op.

Gordon Wisniewski	10:31.4
Charlie Sotich	9:02.6
Dennis Jaecks	7:03.2
Clarence Wells	5:18.4

Novice Pennyplane

Open

Bob Siedentorf	6:30.8
Eric Anderson	5:23.6
Joe Fierce	5:10.4

Jr/Sr.

Kris Warmann	5:40.0
Brian Fulmer	5:06.0
Aaron Markos	5:03.0
Chad Kurth	3:44.0
Bradley Fulmer	2:45.0

Sport Scale

Open		Scale	Time	Total
Bob Siedentorf	"Baby Ace"	93	53.4	146.4
Charlie Sotich	"Volksplane"	72	69.6	141.6
Bill Gough	"Bucker Jungmeister"	83	43.0	126.0
Lewis Groebe	"1929 Monocoupe"	95	28.0	123.0
Don Lockwood	"Fike E"	59	56.0	115.0
Clarence Mills	"Davis DA-2"	64	47.2	111.2
Scott Wisniewski	"Pilarus Porter"	61	49.8	110.8
Eric Anderson	"Baby Ace"	59	15.0	74.0
Jr/Sr.				
Mike Siedentorf	"Lacey M-10"	76	15.0	91.0
Mike Gaynor	"Piper Cub"	52	7.3	59.3

THE A-6 MODEL

by Clarence Mather

The A-6 model is easy to build and requires none of the specialized indoor modeling supplies or techniques. Yet it flies well in small gyms and living rooms. Several flights of over three and a half minutes were made in a recreation center gym. Thus it offers satisfaction and a challenge to get the most from it. It is ideal for those after-the-business-meeting activities of clubs. Modelers inexperienced in indoor flying can learn indoor trimming techniques and how rather small changes can affect flight time drastically. The model is sturdy by indoor standards and can survive banging around ceilings and lights. It is strong enough to fly outdoors but we have not done so.

It may seem that there are too many constraints on design and construction of the A-6 model, but experience has shown that loopholes will be exploited to produce grotesque designs. Consider the current Pennyplanes for one example. The rules are:

1. Wing area 30 square inch maximum - the "A" part of the name.
2. Motor stick length and prop diameter 6" maximum- the "6" part of the name.
3. Minimum strip size 1/16" square and and minimum sheet thickness 1/32".
5. Rib depth 1/16", tissue covering, rubber power.
6. Prop can be plastic, used as purchased--no sanding for lightening. Prop can be made of flat sheet blades on a 1/8" square hub.
7. Prop shaft is 1/32" wire and the bearing is 1/16" aluminum tubing.

This is some of the reasoning used to arrive at the above rules: By specifying area we allow the modeler to experiment with aspect ratio and outline shape. However the higher aspect ratios pay a weight penalty because of the minimum size strips. The same holds for tail boom length and tail surface areas. The small model size allows them to be circled in very small sites and to be transported easily. The wood sizes and material availability were intended to encourage more participation. The prop diameter and motor stick length were kept small to give a compact model that was large enough to fly well. The prop and bearing are the hardest part of a model. A ready-made plastic prop is the simplest but we decided to allow the flat sheet wood type as well. The flat blades and sheet hub are easy to assemble and they perform well! It is quite easy to stick the prop shaft through the hub from corner to corner with good accuracy. The 1/32" wire and 1/16" tubing makes a smooth bearing arrangement which is simple to assemble. Using wires to hold the wing on the stick allows the modeler to slide the wing fore and aft for balancing and also to twist the wires to change the washin in the wing. Both adjustments are critical to indoor flying. The model flies well on a couple of rubber bands looped together to form a longer motor.

We sent out a plan and a piece of tissue with the monthly newsletter. Fudo Takagi stripped up some rubber and offered a piece to anyone who came out with a model. Pirelli .040" to .050" wide worked fine for us. A number of different designs showed up including a high aspect ratio model and a canard. So far the rather standard type designs have done best.

The model is a good one to use with groups of beginners if guidance is available as in modeling classes. Peck Polymers sells a neat plastic thrust bearing which could be used instead of the aluminum tubing shown. It is sold with formed shafts which fit the bearing well for a smooth unit. For beginners, the plastic prop would be easier than the built up wood version. We didn't intend for the model to be for the rank beginner but rather for the club as a group activity.

THANKS TO FREE FLIGHT NEWS

The item reprinted below and the accompanying plan sheet were taken from Ian Kaynes' Free Flight News, 1/78 issue. Some minor activity in CO_2 has been rumored here in the U.S., but we have no specific reports.

A NEW INDOOR CLASS--CO_2 DURATION

by Geoffrey Lefever

Last year for the first time, the Indoor Technical Committee held a contest at Cardington for CO_2 Duration. It is unfortunate that conflicting dates appeared in the modeling press; the result was only three entries. Ron Green was the winner and his best flight was 3:56. However, the Technical Committee is sufficiently confident in the appeal and performance of these models to provide three competitions for CO_2 Duration in the next season's indoor programme, including one at the Indoor Nationals.

At present, the class is without restrictions and is open to any CO_2 engine-powered models, the sum of the best two out of six flights to count. Although currently available CO_2 motors have a very modest power output, the models can produce a high performance when indoor model techniques are used to give a very light airframe. The models can be impressive at Cardington, although it must be admitted that they cannot perform anywhere else. The amount of flying that can be fitted into a day at Cardington is enormous, and this goes a long way to compensate for the traveling involved. Also, every day is a flying day and is largely free from the vagiaries of weather which plague outdoor meetings.

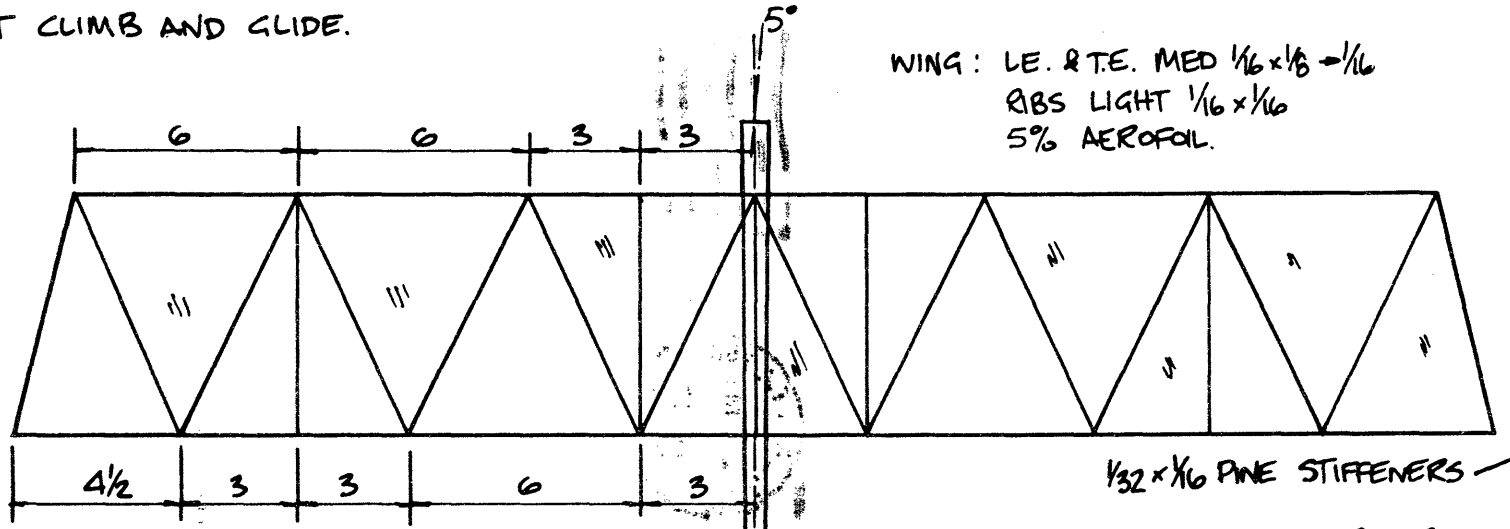
The drawing opposite shows my own model which is the first of what I hope will be many. The construction and size and weight were something of a shot in the dark and were arrived at as follows. The model must climb to the top of the great shed--that is about 150 feet, take a fairly long time to get there and then produce a very acceptable glide. Obviously, the power to weight ratio must be very high. I set the balance at 1/2 oz motor, tank and prop, to 1/2 oz airframe. The engine speed adjustment could give a run of up to two minutes but at a fairly low power output. I hoped this would be sufficient for a steady climb. Finally, a one ounce model which needed a sinking speed on the order of one foot per second would have to be quite large or very clean aerodynamically. I wanted the model to fly slowly to reduce stresses and so Easy B-type construction was adopted. I wasn't sure if wing bracing would be necessary but the first hand launch resulted in massive dihedral--and so bracing was provided. No further problems were encountered. The wing and tailplane are both covered with lightweight Japanese tissue which was ironed between sheets of newsprint but not treated in any other way. The power unit is the 'Telco', one of two types currently in this country. Both types are similar in size and weight. The propeller I changed for one of greater area produced by Jiri Kalina's model factory in Prague. The fuselage is a simple box of light 1/32 inch sheet, the fin and wing supports are also 1/32 inch sheet. The motor is fixed to a 1/16 inch ply bulkhead with 'Zap'. I included 5° right thrust, but no downthrust. The fin is set at 5° right turn. Wing incidence in zero relative to the fuselage datum line and also the thrust line. The tailplane trailing edge is 3/8 inch above the top of the fuselage.

Once the wing was braced on site and the glide elevation established, no further adjustments were needed. With generous dihedral and a forward CG, the model climbed steeply in a rolling climb--it was rather reminiscent of a slow-motion old time 'Banshee' (For those old enough to remember such ships--Ed.).

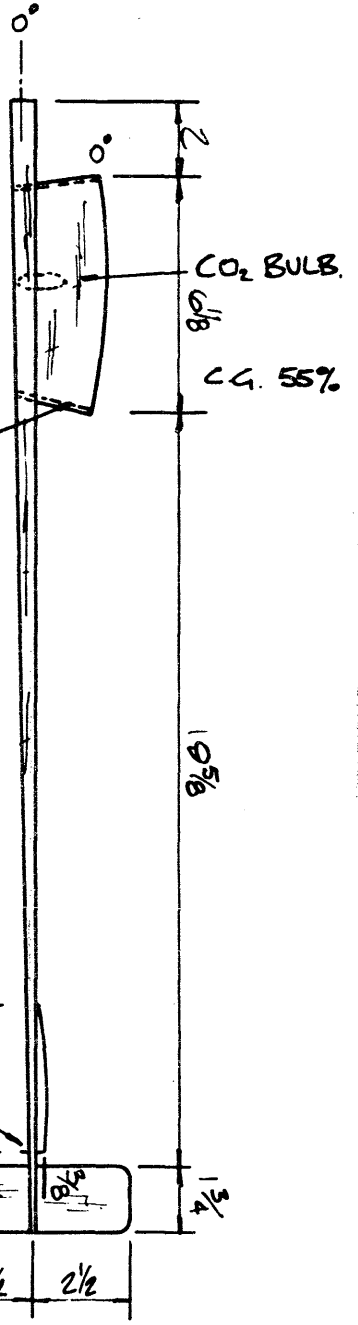
With a good charge, the model levelled out just under the centre catwalk. The glide is slow and quite good. The best flight to date is 4:57 from a very good charge which gave a 2:30 engine run. With such a performance, there must be the basis for an excellent competition class. Why not give it a go?

ALL DIMENSIONS IN INCHES.

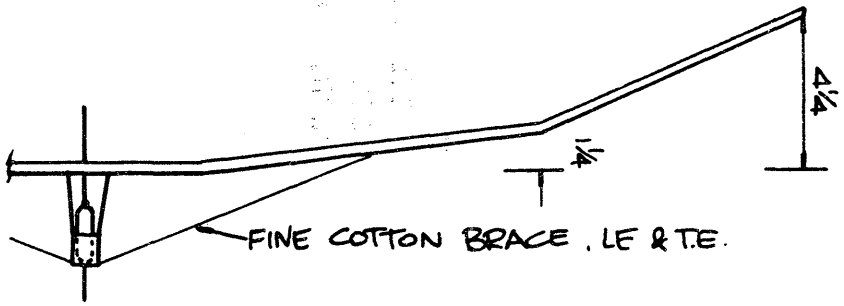
RIGHT CLIMB AND GLIDE.



WING: LE. & T.E. MED 1/16 × 1/8 → 1/16
RIBS LIGHT 1/16 × 1/16
5% AEROFOIL.



FUSELAGE: LIGHT 1/32 BOX 3/4 → 3/8 □
WING MOUNT AND FIN LIGHT 1/32

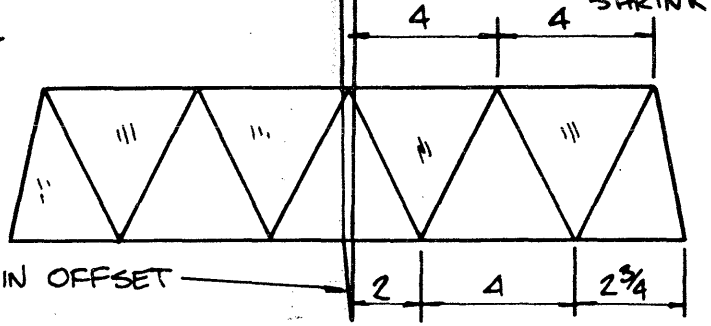


TAILPLANE: L.E. & T.E. LIGHT 1/16 × 1/16
RIBS LIGHT 1/16 × 1/16. 5% AEROFOIL.

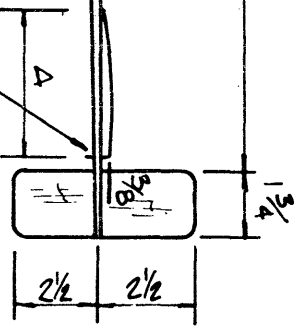
COVERING: LIGHTWEIGHT JAP OR ORDINARY NT CONDENSER PAPER. IRON BEFORE USE DO NOT SHRINK

WEIGHTS:

TELCO CO_2 + PROP	: 14
FUSELAGE	: 9
WING	: 4
TAIL	: 1
TOTAL (GM.)	: 28



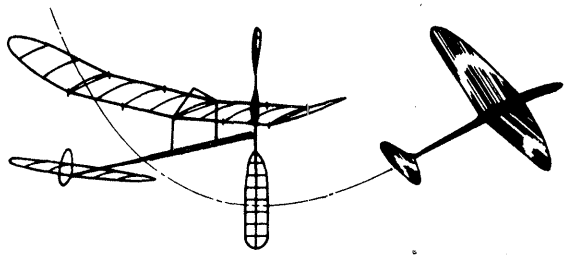
1/16 ROUND IN TISSUE SOCKET.



'INDOOR CO_2 DURATION' by Geoffrey Lefever.

The Voice of N.I.M.A.S. AUG/SEP-1978

INDOOR NEWS and VIEWS



Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

1979 INDOOR TEAM SELECTION FINALS

Flier	1	2	3	4	5	6	7	8	9	Total	Flyoff Points	Prior Points	Total Points
Ray Harlan	40:57	35:15	43:48	-	-	-	-	-	-	84:45	1000.00	110.00	1110.00
Pete Andrews	38:57	36:05	44:59	28:43	26:57	17:48	-	_	-	83:56	990.36	110.00	1100.36
Dan Domina*	1:19	39:10	37:33	40:19	29:58	24:11	31:29	18:50	42:25	82:44	976.20	101.55	1077.75
Erv Rodemsky	41:23	9:50	5:42	37:48	35:00	-	-	0:18	-	79:16	935.30	110.00	1045.30
Bill Hulbert	34:59	38:33	34:07	38:10	30:09	33:53	32:54	8:27	37:39	76:43	905.21	110.00	1015.21
Ron Ganser	0:46	33:55	0:08	-	23:20	16:08	34:22	36:33	38:06	74:39	880.83	108.41	989.24
Bud Romak	31:38	35:13	-	34:50	35:36	30:29	34:38	31:42	36:36	72:12	851.92	110.00	961.92
Bob Gibbs	-	37:35	18:57	19:20	30:15	31:17	27:44	34:45	24:44	72:20	853.49	107.48	960.97
Jim Richmond	14:41	11:48	12:20	39:33	28:54	31:58	32:34	13:18	-	72:07	850.93	110.00	960.93
Richard Doig	30:08	25:54	26:31	36:52	8:05	27:52	31:00	7:14	35:45	72:37	856:83	90.12	946.95
Manny Radoff	31:03	32:40	35:59	36:18	-	9:37	33:15	5:02	31:28	72:17	852.90	85.87	938.77
Dick Obarski	30:47	35:57	35:00	5:03	20:36	13:07	-	32:15	6:03	70:57	837.17	93.41	908.73
Ed Stoll	32:39	14:10	33:09	35:47	17:25	14:00	28:11	30:11	-	68:56	813.37	95.36	908.73
Paul Tryon	32:57	35:50	30:14	7:06	23:41	23:42	31:23	15:04	33:02	68:52	812.59	95.48	908.07
Al Rohrbaugh	13:37	38:23	16:03	30:39	12:37	18:06	27:05	29:11	6:11	69:02	814.55	89.53	904.08
Bucky Servaites	29:11	25:51	11:33	34:41	30:34	22:30	-	-	-	65:15	769.91	108.65	878.56
Gerry Skrjanc	18:59	33:02	31:29	-	-	1:27	19:24	-	-	64:31	761.26	82.67	843.93
Bob Platt	35:04	10:01	7:10	26:09	27:02	11:14	2:26	11:05	-	62:06	743.74	102.50	835.24
Hal Crane	10:29	28:59	23:42	27:20	24:04	22:51	-	-	-	56:19	664.50	109.14	773.64
Cezar Banks	-	-	-	8:03	-	-	-	-	-	8:03	94.99	91.20	186.19

*Dan Domina formally resigned his opportunity to be #3 team member at the conclusion of this contest.

Erv Rodemsky is officially #3 team member and Bill Hulbert is the #1 alternate.

NOTES ABOUT THE TEAM SELECTION FINALS

The following comments were gleaned from reports by Dick Kowalski and letters from Hal Crane. In general, the twenty "best" U.S. indoor fliers faced good to less than average conditions during a three-day contest with nine official flights allowed. Their final score was computed using the best the best two flights. Under the program guidelines, each flier entered the Finals with points which were accumulated at both local and regional qualification trials during the previous 20 months of the program, which began in January, 1978. Previous Finals had been scored on the basis of two of six flights, and no reason was given for the new nine flight/score two format.

The two reporters agreed that the first day had the best weather, but Hal noted that flights between 40 and 45 minutes occurred in rounds 1,2,4 and 9, while rounds 2 and 4 had the most flights between 35 and 40 minutes. The weather deteriorated on the second day with many thunderstorms across the state, even though only light rain fell at the hangar. Even in the good air of the first round, only 18 fliers put up flights, with 19 flights in round 2 (the most flights in a round). Of 142 official flights made in nine rounds, 6 were over 40 minutes and 27 were between 35 and 40 minutes. Many flights could have been longer if they had not descended into areas with obstructions on the floor.

The last day started with a strong inversion layer at about 125 feet which gradually lifted as the day progressed. In the seventh round, only Hulbert's 40:36 test flight was noteworthy, and the eighth round showed similar results. The real battle began in the ninth round. Since the fourth round the top three had been Harlan, Andrews and Rodemsky, but Domina posted 42:25 to add almost five minutes to his total which placed him in third. Hulbert also made a final strong effort which was scuttled by drift. At the end of the contest Domina resigned from the team slot, leaving Rodemsky in third and Hulbert as first runner-up. It can be noted that a number of others were also trying hard in the eighth and ninth rounds, with five fliers bettering their scores in those two rounds.

FAI QUALIFICATION TRIALS RESULTS

The listings below represent all the FAI results I have received. While it may not be complete, it will give an idea of the program as it progressed.

FAI Local Qual. Trials, Ames Research Center, April 29-30, 1978

Bud Romak	30:29	32:58	63:27	10.00
Bob Gibbs	19:00	31:23	50:23	7.94
Andy Faykun	22:18	18:21	40:39	6.41

Oakland Cloud Dusters Local Qual. Trials, Ames Wind Tunnel May 14, 1978

Bob Gibbs	26:31	31:26	57:57	10.00
Joe Bilgri	26:40	29:01	55:41	9.61
Bud Romak	29:10	24:15	53:25	9.22

Moffett NAS Local Qual. Trials, June 25, 1978

Erv Rodemsky	32:02	37:02	68:04	10.00
Bud Romak	36:57	30:45	67:42	9.89
Bob Gibbs	29:26	27:10	56:36	8.27

FAI Local Qual. Trials, Lakehurst NAS, June 17, 1978

Pete Andrews	32:01	34:45	66:46	10.00
Bill Tyler	29:47	32:16	62:03	9.29
John Kukon	29:17	29:17	58:34	8.77
Richard Whitten	26:19	27:46	54:05	8.10

FAI Regional Qual. Trials, Lakehurst NAS, July 1-2, 1978

Pete Andrews	35:25	37:57	73:22	100.00
Bill Tyler	34:55	34:37	69:32	98.82
Bob Platt	31:18	36:24	67:42	96.21
Dan Domina	32:47	34:23	67:10	95.45
Richard Whitten	28:40	31:52	60:32	86.03
John Kukon	26:30	30:08	56:38	80.48
Hal Crane	26:15	22:34	48:49	69.37

FAI Local Qual. Trials, William & Mary Hall
Aug. 18, 1978, 60' ceiling.

Bob Platt	23:53	25:50	49:43	100.00
Hal Crane	21:24	24:03	45:27	91.41
Bob Champine	18:44	14:10	32:54	66.17

FAI Regional Qual. Trials, Goodyear Aerospace Hangar,
Sept. 16-17, 1978

Jim Richmond	37:36	34:20	71:56	100.00
Ron Ganser	35:04	35:46	70:50	98:53
Bill Hulbert	36:06	33:25	96:66	96.66
Al Rohrbaugh	30:07	34:17	74:24	89.50
Dick Obarski	26:02	34:28	60:30	84.10
Ed Stoll	25:28	27:59	53:27	74.30

FAI Regional Qual. Trials, Ames Research Center,
Nov. 25-26, 1978

Bud Romak	33:00	33:09	66:09	100.00
Bob Gibbs	32:26	32:03	64:29	97.48
Joe Bilgri	31:02	31:06	62:08	97.00
Bob Randolph	31:47	31:44	63:31	96.02
Clarence Mather	27:21	27:03	54:24	82.24
Cezar Banks	25:00	26:26	51:26	77.75
Andrew Faykun	4:47	14:10	18:57	28.65

FAI Local Qual. Trials, Los Angeles CA, March 4, 1979

Clarence Mather	17:38	19:41	37:19	10.00
Cezar Banks	20:19	15:31	35:50	9.60
Bob Randolph	16:52	17:57	34:49	9.34
Andy Faykun	13:34	16:28	30:02	6.34
Howard Haupt	13:41	-	13:41	3.67

FAI Local Qual. Trials, St. Louis MO, March 25, 1979

Stan Chilton	16:24	14:00	30:24	10.00
Dick Hardcastle	14:25	14:41	29:06	9.58
Paul Tryon	12:33	13:24	25:57	8.54

FAI Local Qual. Trials, Dallas TX, April 14, 1979

Ed Turner	9:39	9:10	18:49	10.00
Jesse Shepherd	7:00	9:00	16:00	8.50
Jim Clem	6:19	6:17	12:36	6.70
Dick Mathis	4:20	4:16	8:36	4.57

FAI Regional Qual. Trials, Miami FL, April 29, 1979
Goodyear Hangar, Opa Locka Airport, Miami.

Ray Harlan	23:34	18:27	42:01	100.00
Roman Szymula	18:27	16:54	35:21	84.13
Dave Linstrum	14:43	9:42	24:25	58.11

FAI Local Qual. Trials, Bedford TX, July, 1979
Bedford Boy's Ranch Gym, 26.5' ceiling.

Bud Tenny	9:40	12:03	21:43	10.00
Jesse Shapherd	10:12	8:10	18:22	8.45
Jim Clem	8:05	5:32	13:37	6.27

****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

This Issue

An attempt has been made to pull together all the FAI Team Selection Program information on hand, with the hope that some overdue recognition be made of this continuing activity which allows the AMA to field a team for the Indoor World Championships held every two years. The issue has been under preparation for some time, due to very little of the material being camera-ready. Thanks again to those who continue to sent information for INAV, since no news medium can exist without news to publish!

Happy Birthday to NIMAS!

A brief historical note: NIMAS organization began in December, 1961, and INAV, which began as a local newsletter in March, 1961, was adopted as the official communication medium of the new organization a few months later. It is extremely gratifying to know that this effort has continued so long; one early member once opined that he had expected me to begin repeating myself after about six months! Continued input from many people has prevented such a necessity. Actually, it might be in order to reprint much more from earlier issues--some information never goes out of date!

Merry Christmas!

Christmas cards have already begun arriving, and it is once again good to hear from so many of you. Thank you for remembering, and we wish you the best. Keep in touch, and let's look forward to a brighter and better New Year!

Change of Address

Any NIMAS member who moves and wishes to notify his fellow members of his new address need only request that the announcement appear in INAV. Richard Doig has moved:

Richard Doig, 6 Canary Hill Dr., Pontiac MI 48055

NIMAS Awards

For years, NIMAS has had a special recognition award for those fliers whose performance is better than average but may not have set a national record for one reason or another. The system is patterned after the awards given for soaring pilots, with three levels of recognition for each ceiling category: Silver, Gold and Diamond. One of the most honored fliers is Dan Domina, who has gathered one or more awards for both gliders and rubber-powered models in all three ceiling categories. The record must be checked to see exactly how many awards Dan has, but he has qualified as Ace (all three awards in a single category) at least once. His latest application is for these flights made at the Indoor Team Finals at Akron:

Cat. III Silver Rubber Award - 40:19
Cat. III Diamond Rubber Award - 42:25

Congratulations to Dan Domina, and to the many other fliers over the years who have qualified. An upcoming issue will give more details of the Awards, and a list of all the honorees will be presented.

FAI INDOOR REPORT

Indoor Program Awards Prepared

Some time ago the Indoor Team Selection Committee designated two special awards for program participants, both to be perpetual trophies. The Merrill C. Hamburg Award goes to the flier racking up the highest score at each Team Selection Finals, and the Pete Andrews Outstanding Achievement Award is for that participant who demonstrates the most improvement in his personal state-of-the-art as he competes for a team berth. The committee owes a special debt of gratitude to Hardy Brodersen for his design of these trophies, and to Jim Jones for his construction of the trophies. Hardy has rare artistic design talent and Jim is well known for his craftsmanship, so these should be really beautiful awards.

Indoor Team Selection Committee News

Recent activity (since the Finals) of the Indoor Committee include the following:

Erv Rodemsky has been confirmed as the recipient of the Pete Andrews Outstanding Achievement Award. This is a perpetual trophy to be awarded to the flier deemed "most improved" in each team selection program.

Ray Harlan, outgoing committee chairman, received the Merrill C. Hamburg award for high score at the Team Selection Finals.

Bill Hulbert was confirmed by the committee as the manager for the 1980 U.S. Indoor Team.

Jim Richmond has been unaminously elected by the committee as the new chairman.

CONTEST CALENDAR

FLORIDA-Miami

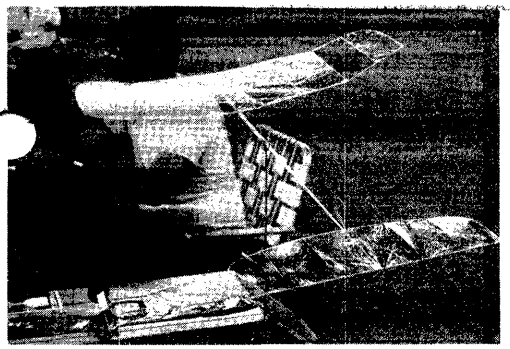
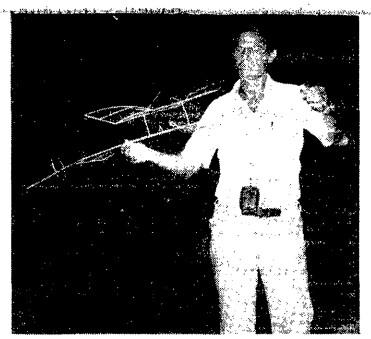
The 1979/1980 Indoor season at Miami kicked off with Contest #1 on Sunday, Oct. 21, 1979 at the Opa Locka Goodyear Hangar, with meets following on Nov. 8 and Dec. 9, 1979. 1980 meets are planned, but "Doc" Martin has expressed concern over the future of the Opa Locka site since the Dade County Commissioners have failed to deal with Goodyear on their new hangar and Goodyear is moving to Pompano Beach. For latest news about 1980 contest schedules and site availability, call 305-858-6363.

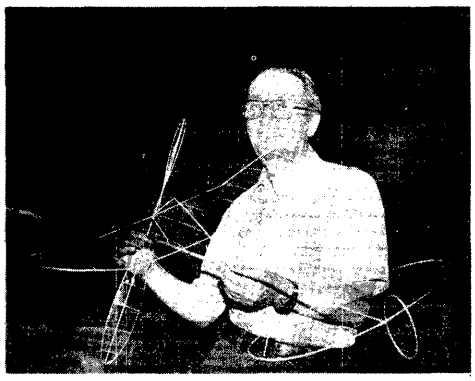
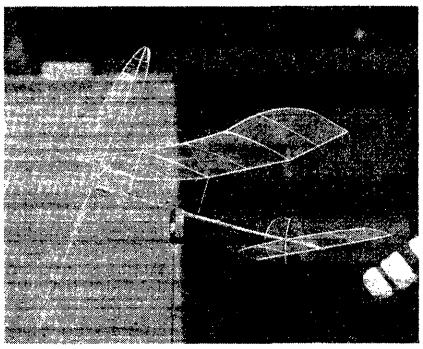
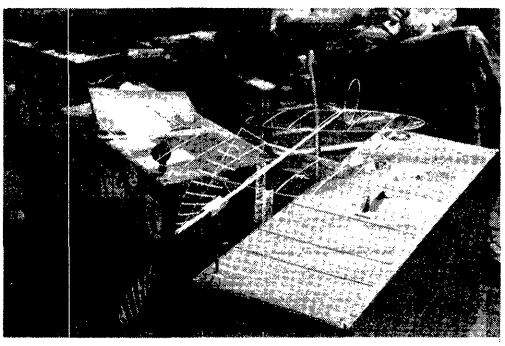
MINNESOTA-Minneapolis

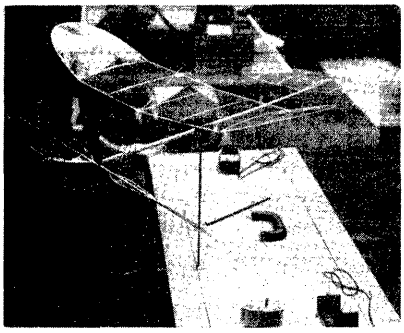
Cat. I indoor contests are planned by the Minneapolis Model Aero Club and the Minneapolis Piston Poppers, running from Noon to 4 pm on Jan 27, Feb. 17 and Mar. 23, 1980. The site is Burnsville Senior High School gym, with 33' ceiling and floor space equivalent to 3 standard gyms. For further details, contact Jack O'Leary at 1147 Kell Circle, Bloomington MN 55437, 612-888-6667.

MISSOURI-St. Louis Area

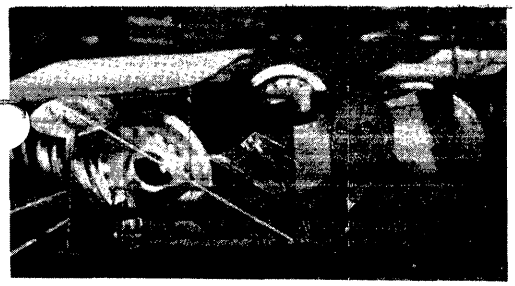
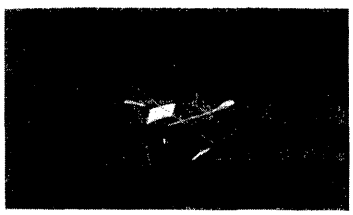
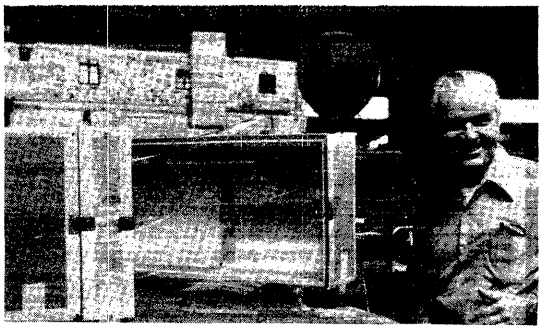
Indoor Contests at the East St. Louis Armory, East St. Louis IL on Dec. 23, 1979 and Jan. 20, Feb. 17 and Mar. 29-30, 1980. Site is AMA Cat. I, and times for the Dec. 23 contest are 9 am to 5 pm CST. Events are HLG, Easy B, Pennyplane, Microfilm Stick, Peanut Scale, Novice Pennyplane and Delta Dart. For more details, contact Jim Bennett, 324 Helfenstein, St. Louis MO 63119, ph. 314-962-5271.





NEW YORK-Rochester

Indoor sessions at the Kodak Office auditorium, 343 State St., Rochester, lst and 3rd Sunday each month, 1 pm to 5 pm. This site has a 26' smooth ceiling, and more details can be had from Bob Clemens at 716-392-3346.

OKLAHOMA-Oklahoma City

The Sooner Free Flight Society begins their winter series of indoor meets on Oct. 14, 1979 at the National Guard Armory, 200 NE 23rd St., Oklahoma City. Events for all sessions are HLG, Pennyplane, Easy B, Peanut Scale and AMA Scale. Meets run from 9 am to 5 pm, and a nominal site use fee is charged. Other meets are scheduled for Nov. 25 and Dec. 23, 1979 and Jan. 20, Feb. 17 and Mar. 16, 1980. Contact Al Bissonnette, 6528 SE 15th, Midwest City OK 73110, ph. 405-737-1085.

OREGON-Albany

Indoor contests will be held at the South Albany High School, 3705 South Columbus St., Albany, on Jan. 13, Feb. 17, Mar.2 and Mar. 30, 1980, 9 am to 3 pm. Ceiling is 42'. Events: Old Timer Scale, Earle Moorehead Event, W.W.I Scramble, Beginner's Duration. For detailed rules, contact Bob Stalick, 5066 NW Picadilly, Albany OR 97321, ph. 928-8101. Old Timers are rubber powered replicas of Old Timer or Antique gas models, Earle Moorehead models are rubber powered models not fitting any other event, WWI Peanut models qualify for W.W.I Scramble, and beginner duration models have 24" max span and unmodified commercial plastic props.

THE PICTURE STORY

The photos were furnished by Hal Crane and Richard Doig. Credit lines on Crane's photos, all others by Doig. Note some photos from July Regional meet. For the photo nuts: Doig photos black and white prints from ASA 400 Kodacolor print film, most shot without flash. Crane photos also from color negatives.

ROW 1

Left - The typical Richmond stance--winding and flight preparation from a comfortable chair. Jim hung on all flights the first day.

Center - Bud Romak's launches all show intense concentration. Crane photo.

Right - Photo from July Regionals; Paul Tryon did well on first time in a high ceiling.

ROW 2

Left - Pete Andrews shows off his beautiful bird. Crane photo.

Center - Beautiful model by Ron Ganser. Photo looking toward south end of hangar and showing some of the small buildings which made steering critical.

Right - Dan Domina's model. Note extreme stab tilt; stab twisted flat relative to wing during climb.

ROW 3

Left - Smiling Dick Obarski had one flight which hit 39 times and still landed safely.

Center - Model by Richard Doig. Torque meter has snap-in mounting to box.

Right - Very nice box by Cezar Banks; models arrived with minimal damage.

ROW 4

Left - Erv Rodemsky shows off his distinctive design. No chance of timer mistaking another model for this one!

Center - Ray Harlan with his winning model.

Right - Al Rohrbaugh's models flawlessly constructed as usual.

ROW 5

Left - Photo from Regional meet - Ron Ganser's area had aircraft wheels everywhere; these were gone for the Finals, but illustrate unusual hazards.

Center - Photo from Regionals - a mid-air by Tryon and Obarski, both models undamaged.

Right - Bob Gibbs' three-section box holds six models.

STATE OF THE ART

The Star Walker by Jim Richmond

Exhibit VI: Description of Richmond 52 Min 14 Sec Record Attempt FID-32D

Outdoor atmospheric conditions on the day of the record flight were warm and breezy with partly cloudy skies. The temperature was 75-80°F. The relative humidity was 60-70% and the wind was 5-15 MPH. There was some turbulence in the air inside the building during the entire day, partly due to some outside doors being open at times. The drift rate of the air was also regarded as higher than normal.

The model was the current holder of the FID-32C World Record having made a flight of 44 Min 43 Sec two months before in the Atrium of Northwood Institute at West Baden, Indiana. As a result of this it was believed that the model could exceed the FID-32D record also and attempts were made on two other occasions in the Goodyear Aerospace Hangar. Atmospheric conditions were very poor at these times and the model was severely damaged due to collisions with the building structure. The necessary repairs caused the weight of the model to increase but even so the wing loading of this very light model remained lower than any other known indoor model.

Numerous attempts were made during the day with most flights being aborted due to the drift or turbulence. Fortunately the model was not severely damaged during these attempts.

Then at 7:45 PM with conditions detetiorating as the air started moving from the effect of the cooler evening temperatures, the last possible attempt was made. The rubber motor was wound to 2000 turns using a 10:1 geared winder. Initial winding torque was .70 inch ounces but turns were backed off to 1950, producing a launching torque of .45 inch ounces. The model was hand launched into flight at a moderate climb angle and it proceeded upward smoothly with a slight Southerly drift. At 50 feet the model ran into a turbulent shear layer in the center of the building. This layer was caused by the upper air drifting Northward while the lower air was drifting Southward. The model was buffeted about in this turbulence and after several minutes while hopes of a good flight were vanishing, the model finally found some calm air on the West side of the bulding. It then proceeded to climb up and as it did so it worked its way back toward center and above the turbulent layer. A slow drift toward the North end of the building then took place as the model proceeded to its peak altitude of 155 feet.

The initial propeller speed was 35 RPM. After 11 minutes of climb the propeller speed was recorded at 33 RPM. The model reached its peak altitude at the 18 minute mark where it remained for 11 minutes. During its slow descent the propeller was once more clocked at 29.5 RPM.

The drift during the climb carried the model first South about 35 feet and then North about 90 feet. During the descent the model picked up the Southerly drifting air and returned slowly toward the launch site. By this time the shear layer had abated and was no longer a problem. Thge model slowly descended to a clear area on the floor just 15 feet from the launch position.

Examination of the model after landing revealed that the motor had 198 turns remaining unused. The overall average propeller speed for the flight was 29.8 RPM. Total turns expended during the flight were 1752.

THE STARWALKER - A WORLD RECORD

by Jim Richmond

The absolute word record. The longest indoor flight ever made. In a lifetime of modeling an ultimate goal to be sought but perhaps never achieved. Although I suspect it isn't generally recognized as such, the attainment of the absolute world record is an achievement ranking at or above that of winning the world championship. After all, you don't generally find the current world champion's plane on display at the Smithsonian or his name in the Guiness Book of Records.

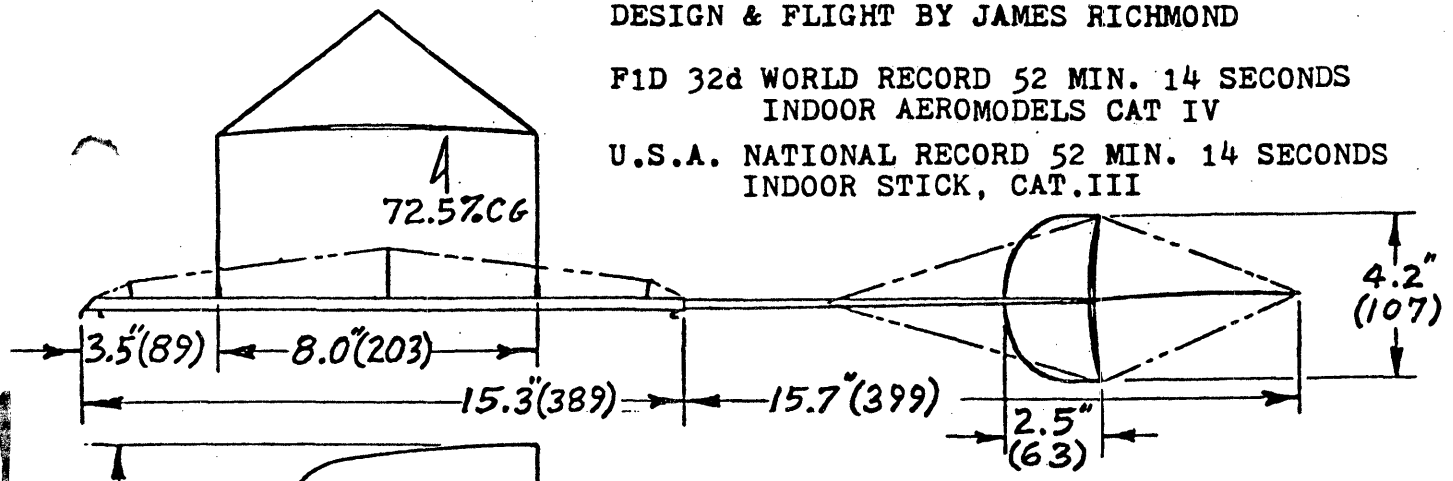
This plane was designed and built in the winter of 1977-1978 for the specific purpose of making world record attempts. Its success at breaking existing records (three world and three national records to date) has been a surprise even to me since I regarded it as sort of an interim design--an expanded version of my FAI ships. The primary reason for its excellent performance is simply that its flight wing loading of .0096 g/in^2 is less than that of any other competitive model even built (at least insofar as my historical records indicate). Of course the plane has a few other good characteristics besides light weight. It is a pleasure to fly in still air with its slow motion operation but its delicate structure and slowness are a detriment in the turbulence and drift of Akron. It took three days of determined effort to finally get one good flight up and down in one piece. Bu that time the plane was a patched up mess. Well, there were a few other flights one might call good--including one over 50--but these weren't record breakers.

Oh yes, the plane has one nasty trait. It refuses to do a good performance without first getting smashed and then patched up. Each record and the non-record 50 were preceeded by such events.

DESIGN & FLIGHT BY JAMES RICHMOND

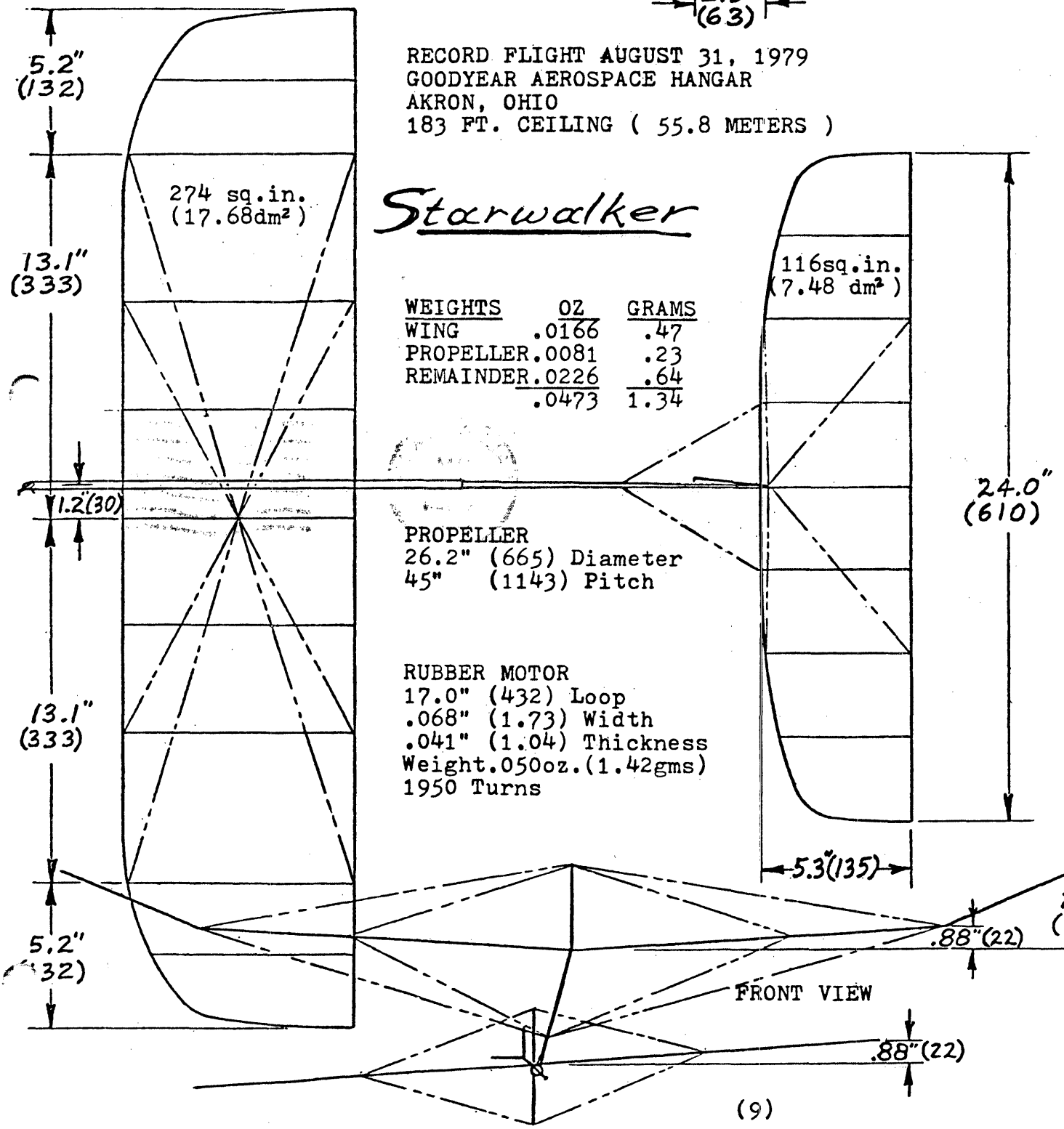
F1D 32d WORLD RECORD 52 MIN. 14 SECONDS
INDOOR AEROMODELS CAT IV

U.S.A. NATIONAL RECORD 52 MIN. 14 SECONDS
INDOOR STICK, CAT.III



RECORD FLIGHT AUGUST 31, 1979
GOODYEAR AEROSPACE HANGAR
AKRON, OHIO
183 FT. CEILING (55.8 METERS)

Starwalker



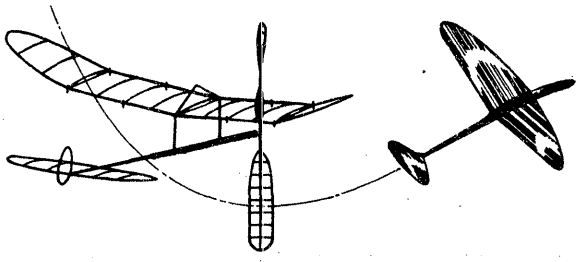
WEIGHTS	OZ	GRAMS
WING	.0166	.47
PROPELLER	.0081	.23
REMAINDER	.0226	.64
	.0473	1.34

PROPELLER
26.2" (665) Diameter
45" (1143) Pitch

RUBBER MOTOR
17.0" (432) Loop
.068" (1.73) Width
.041" (1.04) Thickness
Weight.050oz.(1.42gms)
1950 Turns

The Voice of N.I.M.A.S. OCT/NOV · 1978

INDOOR NEWS and VIEWS



Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

A Funny Thing...

Happened on the way to the last issue! After I got it to the printer, I checked over the masters only to discover that the most important news that I had wasn't there! I had an announcement about the 1980 Indoor WCh being scheduled for West Baden--and it got left out in the late-night final assembly. It seems funny now, but I wasn't laughing much then!

1980 Indoor World Championships

Although much greater detail appears elsewhere about the whole week plus of activity, the following schedule applies to the 1980 Indoor World Championships to be held at Northwood Institute, West Baden, Indiana, from June 20 through June 24, 1980.

June 20: Arrival of teams and supporters.
June 21: Practice flying.
June 22: Rounds I and II, 9 am - 9 pm.
June 23: Rounds III and IV, 9 am - 9 pm.
June 24: Rounds V and VI, 9 am - 9 pm, with Awards banquet after flying finished.

A New Look

Those subscribers whose newsletters are addressed with a paper label instead of a label printed on the newsletter will note a new format:

Joe Blow 0-10
666 Wind St.
Gust City WC 568237599

What this means is that Joe is paid up until he receives a newsletter dated (not mailed during) Oct. 1980. The reason for this is two-fold: first, this will allow my computer to sort for those who are due for a renewal notice; also many of you have been faithfully renewing at the regular time each year, whether you had received all the issues paid for or not. It won't be too long before I will be able to computerize the entire mailing list, and all labels will then be paper labels printed by computer. This is also the first step in making a membership list available to all who want one, as it once was when I had access to an IBM terminal and printer.

1980 NIMAS Postal Meet

It is very discouraging for me to admit that some of the quite sparse results from the 1979 event may be lost in my "office". (That noun applies loosely to a room which alternately threatens to overflow the rest of the house, or cause that part of the house to sink into the ground!) A number of times I have begun to sort through this mess, only to run out of time and end up only creating a small area which is soon buried again, with the painstakingly sorted materials mixed into another stack. So, I will try once more to be sure that everyone is listed--for the next issue. In the meantime, unless someone volunteers to gather the results and tabulate them for me, I cannot be fair and still offer the Postal this year.

LET'S MAKE IT THE BEST ONE EVER!

Elsewhere in this issue you will find examples of Doc Martin's exhuberant approach to design of the best and longest week of Indoor--ever. Not only will West Baden house the 1980 Indoor WCh, but there will be so many smaller contests and events that one will need a scorecard to find out what is going on, and a bushel of uppers to stay awake long enough to avoid missing anything!

The NIMAS ?NART series has been characterized by low assigned manpower needs and a very high level of helpfulness when things needed doing. Even so, we never would have made it without several good people who dedicated themselves to helping run the contest and handle other details. Furthermore, the Indoor WCh must have many people willing to time and do other chores which will make a World Championship what it is. So, if you desire to be a part of the world's biggest model airplane show, send your name, address and phone number to NIMAS, P O Box 545, Richardson TX 75080. Also, the following persons have been designated to assume duties as specified below; you may also contact them if you can do so easily.

General Manager - Hardy Brodersen
Contest Director - Dick Kowalski
Facilities Manager - Don Lindley
Public Relations and Host - Dave Linstrum
AMA and Support Staff - Ray Harlan
and John Worth

WHAT IS THE CEILING AT WEST BADEN?

A few NIMAS members are aware that the ceiling height definition originally made by Bucky Servaites has been called into question. There has been a lot of frantic calling back and forth, lots of discussion and reading of the Rule Book. Finally, there has been a flurry of FF Contest Board activity, at least on the part of Chris Matsuno, the FFCB Chairman. So, let's try to piece it all together.

First, one man (no names, to protect his hide in case some intemperate soul should wish to relieve some frustrations) circulated a letter quoting some early 1900's vintage hype about the building's size) and asking "Is it really less than 100' high?" Well, to begin with, the wording of the existing AMA ceiling height mearurement rule is so specific about any site which has a skylight or other well-defined opening in the top, that it effectively is very vague about a site like the Atrium at West Baden. The rule is very clear about the intent: no model shall be allowed to make use of any unusual openings. Since the Atrium ceiling type isn't specifically covered by the rule, one may be led to make a strict letter-of-the-rule measurement of the ceiling. If, in fact, one allows a balloon to go as high as it will immediately next to the bandstand rim, the measurement is 109'. However, at the bottom of the girder right next to where you made that measurement, the height is only 98' 6", and the bottom of the bandstand disc is only 95' 4".

The rule makes a big deal about the diagonal distance across any opening, and allows an opening with less than a 6' diagonal to go unquestioned. So far, I have not heard of anyone measuring the roof height at some place where the beams are separated by 6'. If you consider the ceiling height at any place where a model can actually fly up and touch the ceiling, there is no doubt at all that the ceiling is less than 100' high. In other words, it is impossible for any model to use more than 100' of ceiling height in the Atrium, unless it is a very precisely aimed helicopter which also manages to escape without hanging up. And, the rule is painfully clear--the flight is to be disqualified if the flight does make use of any unusual opening so as to exceed the ceiling category defined by measurment.

Although I am sorry that my time constraints have been such that I was unable to burden you with this before now, perhaps it is for the best. A number of actions are pending, and I will bring you the latest as soon as some final official action has been taken. Part of the frustration associated with this matter is the fact that the FAI ceiling measurement is completely non-ambiguous: the site is under the 30 meter top of FAI Cat. III. Some of the actions pending would change the AMA ceiling measurement technique (why not adopt the same four ceiling also?

Meanwhile, even if the Official ruling defines the Atrium ceiling to be greater than 100', thereby transforming West Baden from the best Cat. II site in the U.S. to the poorest Cat. III site, we should not allow this to dampen our enthusiasm for our annual meetings. If we are (collectively) so stupid as to allow a mere technicality to spoil that which a few have labored so hard to establish, then we deserve much more misery than could ever be visited upon us by such an action.

IS NOW THE TIME?

During discussions over hosting the Indoor World Championships at West Baden, the question was raised: "Will NIMAS run the meet?" John Worth, with perfect accuracy, noted that NIMAS is only a newsletter. No matter what bonds to NIMAS and each other that we feel, this is an inescapable and undeniable conclusion. No matter that we at long last have an annual meeting and are being considered as an advisory group to AMA's Executive Council, we are, from a functional standpoint, only a newsletter with an editor who has far too little spare time left to do the job right. We simply have no organized group to assume such a task and no previous organizational experience with such activities.

Hardy Brodersen, the man who may have had more beneficial influence on NFFS than any other single individual, offered this suggestion: if all NIMAS members, especially those who might be upset at the above description of our organization, are willing to work, we could become a real organization. We could elect some officials who would be empowered to act for us. Someone from our ranks could assume the job of making a technical report of the 1980 WCh just as was done by NFFS for the 1979 FF WCh at Taft, California. There are so many things that could be done--if we have the will to organize and desire strong enough to see that they get done. In now the time?? If not, will we ever find the right time? Perhaps this type of organization is not what NIMAS members want. From my own viewpoint, NIMAS members could benefit from additional organization, with designated people to handle routine items besides INAV which are not now being done. It is up to you--let's have some feedback!

ENGLISH FAI TEAM CHOSEN

The English FAI Team was chosen at Cardington on Aug. 26-27, 1979, with the following results:

Dave Pym	40:40	36:36	77:16
Bernard Hunt	36:45	35:26	72:11
Laurie Barr	35:36	35:44	71:22
Martin Shepherd	33:19	35:05	68:24
Derl Morley	35:03	30:00	65:03
Geoff Lefever	31:30	33:30	65:00
Ray Monks	32:00	30:33	62:33
Bernard Aslett	31:27	30:19	61:46
Ron Green	30:31	30:19	60:50
Reg Parham	27:27	30:28	57:55

THE 1980 AMA NATIONAL MODEL AIRPLANE CHAMPIONSHIPS

Late word received just as this issue went to press is that the 1980 Nats will be held at three sites in Ohio--Wilmington, Dayton and Cincinnati. RC Pattern, Pylon, Scale and all Control Line events will be held at Wilmington; FF, RC Soaring and Helicopter will be held at Wright Field in Dayton and Indoor will be held at the University of Cincinnati.

CONTEST CALENDAR

CONNECTICUT - Glastonbury
The Glastonbury Modelers will have an indoor flying session at Glastonbury High School Gym, 8 am to 1 pm, Mar.9, 1980 and an indoor contest Apr. 13, 1980 from 8 am to 5 pm. Contest events are IHLG, WWI Peanut, WWII Fighter, Peanut Scale, O.T. Gas Scale, Flying Scale, Tissue Endurance and Pennyplane/Easy B.

FLORIDA - Miami
The contest series by the MIAMA club continues with meets set for Mar. 23, Apr. 20 and May 18, 1980. These meets will be held at the Goodyear Hangar at Opa Locka Airport in Miami. Check with John Martin at 305-858-6363 to confirm site availability.

MINNESOTA - Minneapolis area
The Minneapolis Model Aero Club will hold a Cat. I indoor contest at Burnside Senior High Gym, Noon to 4:30 pm on Mar. 23, 1980. Events: Peanut Scale, Walnut Scale, Novice Pennyplane, and HLG. For more info contact John O'Leary, 11425 Kell Circle, Bloomington MN 55437.

MISSOURI - St. Louis Area
Indoor Contest at the East St. Louis Armory, East St. Louis IL on Mar. 29-30, 1980. Site is AMA Cat. I, and events are HLG, Easy B, Pennyplane, Microfilm Stick, Peanut Scale, Novice Pennyplane and Delta Dart. For more details, contact Jim Bennett, 324 Helfenstein, St. Louis MO 63119, ph. 314-962-5271.

NEW YORK - Locust Valley
Indoor Record Trials are scheduled at Friends Academy, near the intersection of Duck Pond Rd. and Piping Rock Rd. in Locust Valley, L.I., New York. The event is on Mar. 15, 1980, 11 am to 5 pm at the Boy's Gym. Gym shoes are required; the site is approx. 33' at the peak with a 60' x 72' floor.

NEW YORK - New York City
The Columbia Indoor Miniature Aircraft Society has scheduled Record Trials at the Low Library Rotunda at Columbia University, 116th St. and Broadway. Events are set for Mar. 2 and Mar. 16, 1980, 9 am to 5 pm. On Mar. 16 a contest for Manhattan Cabin and Bostonian Cabin will also be held. For more info contact Ron Williams at 212-722-5262.

NEW YORK - Rochester
Indoor sessions at the Kodak Office Auditorium, 343 State St., Rochester, 1st and 3rd Sunday each month, 1 pm to 5 pm. This site has a 26' smooth ceiling; more details can be had from Bob Clemens at 716-392-3346.

OHIO - Akron area
The Cleveland Free Flight Society has scheduled an indoor flying session for the Brookpark Armory (23' ceiling) at Engle Rd. South of Snow Rd. at Rt. 71 on Feb. 22, 1980. A contest will be held at the same site on Feb. 29; both events are for 6:30 pm - 10 pm and the contest will have Easy B/Pennyplane, FAC Peanut, Jetco or Peck ROG, Stock Plan Scraps and Super Modified Scraps. If enough interest is shown, they hope to repeat this format on a monthly basis. Contact Larry Loucka, 5667 Delta Circle, Willoughby OH 44094 for more details.

OKLAHOMA - Oklahoma City
The Sooner Free Flight Society contest series continue at the National Guard Armory, 200 NE 23rd St., Oklahoma City. HLG, Pennyplane, Easy B, Peanut Scale, and AMA Scale are held; times 9 am to 5 pm. Next meet Mar. 16, 1980. Contact Al Bissonette, 6528 SE 15th, Midwest City OK 73110, ph. 405-737-1085.

OREGON - Albany
Indoor contests are planned by the Willamette Modelers Club for Mar. 2 and Mar. 30, 1980 at the 42' ceiling South Albany High School Gym, 3705 S. Columbus St., Albany OR. Contest times are 9 am to 3 pm and the events are: Easy B, Pennyplane, HLG, Old Timer Scale, Earle Moorhead Event*, WWI Scramble* and Beginner's Duration*. *For rules of these events and other meet details, contact Bob Stalick, 5066 N.W. Picadilly, Albany OR 97321, ph. 918-8101.

TENNESSEE - Tullahoma
The Coffee Airfoilers will hold an indoor contest at Motlow College near Tullahoma TN on Mar. 16, 1980, from 8 am to 5 pm, with Indoor Scale, Pennyplane, HLG, Easy B, Peanut Scale.

TEXAS - Ft. Worth/Dallas
Tentative plans for Cat. I indoor contest at Bedford Boy's Ranch, Bedford, Texas on Mar. 16, 1980, Noon to 5 pm. Contact Jess Shepherd at 817-282-3770 for more details and final confirmation. January event yielded two records plus Open Easy B time of 7:35 by Walt Kulzer and HLG time of 0:61.8 by Mike Fedor.

THE LAB

For some new readers who haven't seen it, this column is devoted to reporting on various scientific approaches to our hobby. The subject of hall meteorology is greatly neglected by all but a few indoor fliers. When the chips are down at (for example) the World Championships, the difference between winning and losing may lie in how well the team members can "read" the air and plan a strategy.

A STUDY OF AIR MOVEMENT--LAKEHURST #5

by Ron Williams

The drift, its idiosyncrasies, directions and changes is the subject of endless conjecture and discussion at Lakehurst flying sessions. My background is in the field of architecture but it hasn't seemed to do me any good in anaylyzing the situation until recently. During the last team trials I finally noticed that the ridge vent was open (it was always so) and not only was the light coming in, but so was the wind!

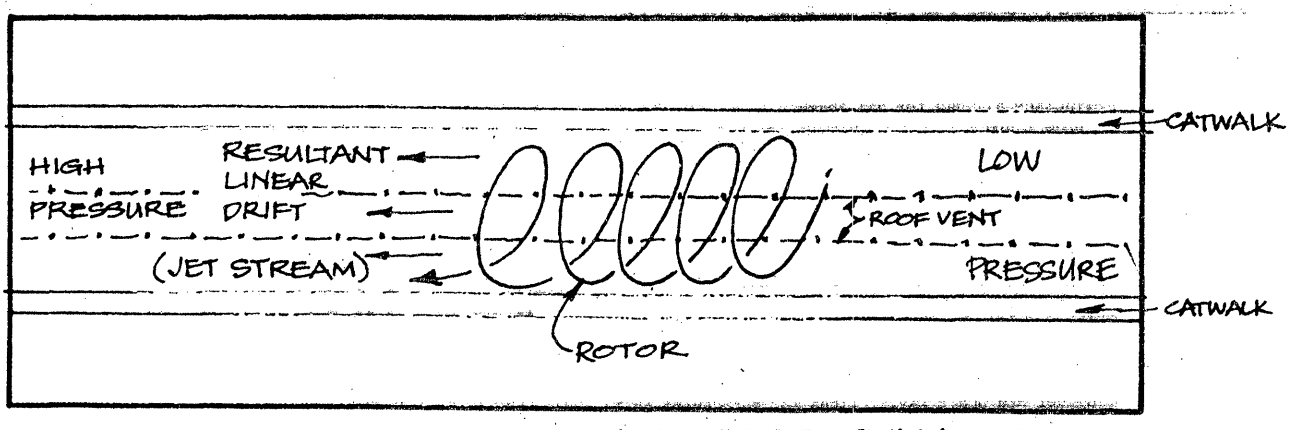
I decided to pay a bit more attention to my plane and took a few mental notes. Later, with pencil in hand, committed the situation to paper and the basic pattern began to emerge. The diagrams outline the simplest aspects of the situation and could be a model for further analysis, such as what effects the assembled group of fliers have on the air movement. (We have found that this is very considerable in the Rotunda at Columbia University.) I'm planning to try some experiments with a bubble machine when I get a chance. I also look forward to diagramming the situation at Akron.

DRIFT AT LAKEHURST HANGAR #5

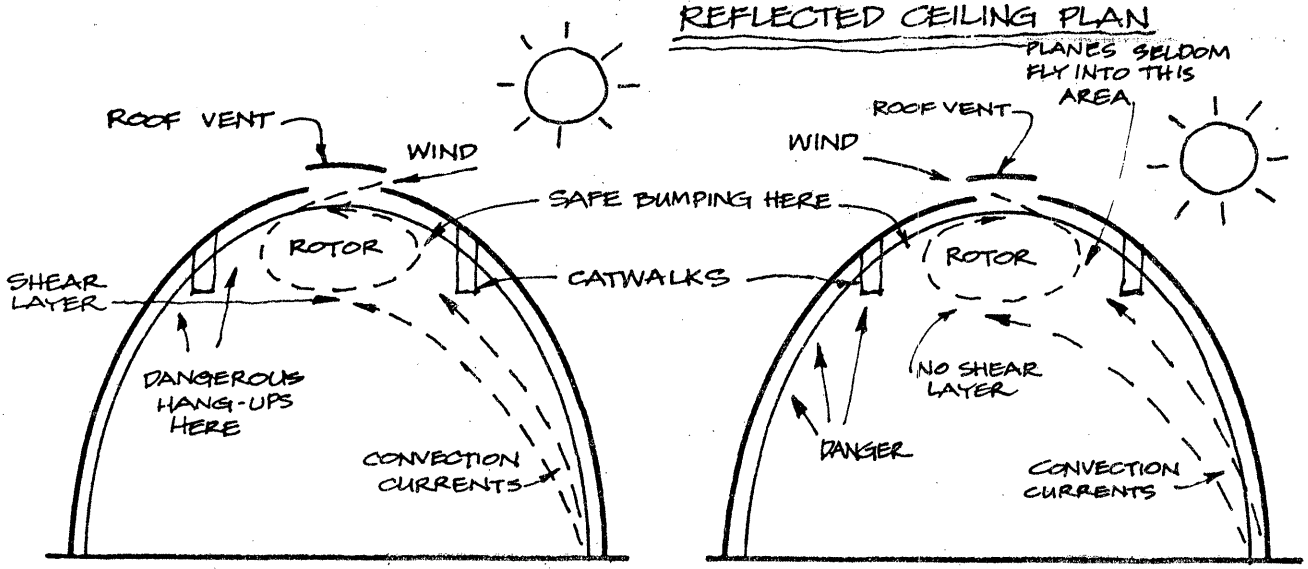
9 AUGUST 1977

NORMAL (PERPENDICULAR) WIND OUTSIDE CREATES NO LINEAR DRIFT INSIDE

QUARTERING WIND (SW)

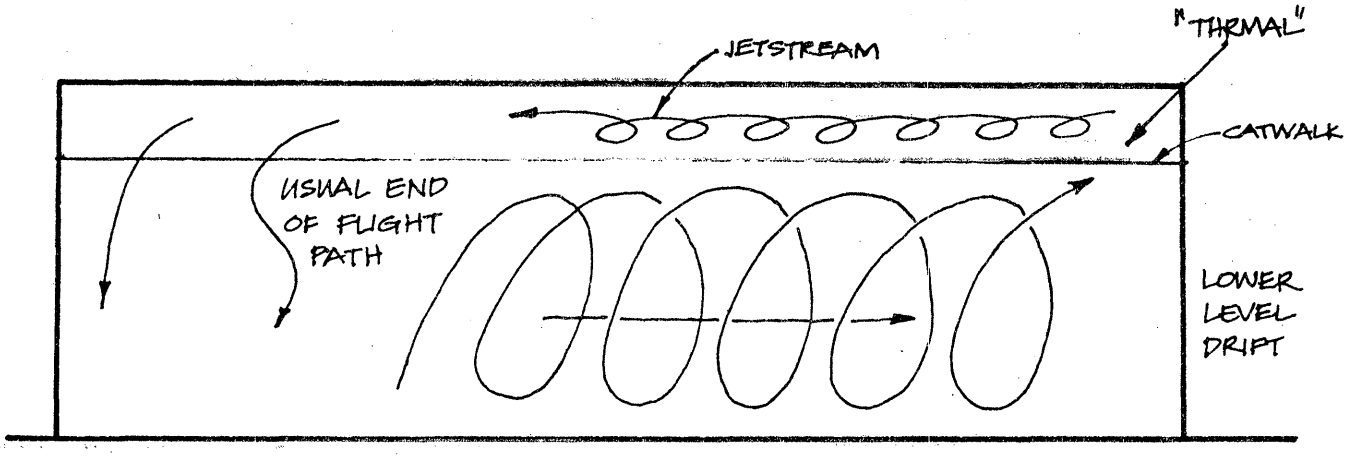


REFLECTED CEILING PLAN



SECTION WIND FROM SSE, S, SW, WEST

SECTION WIND FROM E, NE, N, NNW



LONGITUDINAL SECTION

NEXT STEP: INCLUDE FLYERS AND THIER LIGHTS (HEAT)

NOTE: RELATIONSHIP BETWEEN WIND CHANGES AND DRIFT

WORLD'S GREATEST INDOOR MEET!

(8 DAYS OF INDOOR FLYING - 3 MEETS IN ONE!) ①

JUNE 20-21 = WORLD CHAMPS, JUNE 25 = PEANUT & GRAN PRIX)

JUNE 26-28 = NIMAS VNART

NORTHWOOD INSTITUTE, WEST BADEN INDIANA. U.S.A.

CALENDAR OF EVENTS: EVENT NUMBER ONE: WORLD F1D INDOOR CHAMPS:

Frl. June 20 Check in. Vans ferry teams from Louisville or Chicago Airports.
Sat. June 21 Practice all day for all teams.
Sun. June 22 Rounds 1 and 2
Mon. June 23 Rounds 3 and 4 CONTEST DIRECTOR: DICK KOWALSKI
Tue. June 24 Rounds 5 and 6 Evening Banquet & Prize Giving. Turn in Peanuts on this day before 10:00 AM(unless other arrangements) for Gran Prix Wed.

EVENT NUMBER TWO: FIRST WORLD PEANUT GRAN PRIX CD: BUTCH HADLAND
Wed. June 25: 9 A.M. to 9 P.M. all day peanut meet(See application).

EVENT NUMBER THREE: VNART: 5th NIMAS ANNUAL RECORD TRIALS: CD:BUD TENNY
Thurs. June 26 All day (9AM to 9 PM) The lightweight indoor classes:Cabin, ROG Stick, Paper Stick, FAI Stick, HL Stick, Ornothopter, Autogyro, Helicopter.
Fri. June 27 All day (9AM to 9 PM) The heavier indoor classes: Penny, Novice Penny, Manhattan, Bostonian, Easy B. (Any lighter model can be flown today for record-but not for index- at owner's risk). Turn in scale models today by noon for tomorrows scale day.
Sat. June 28 Glider and Scale Day. Times for each event to be announced at meet commensurate with number of entries we receive. 8 AM to 7 PM
8 PM will be VNART AWARDS BANQUET. SCALE: CO2, Elec., AMA rubber, Peanut Flying Aces type Word War One mass launch event, and ROG Scale Speed event for any Peanut..not just raceplanes. These last two events will be flown to peanut rules same as Gran Prix (AMA Rule 53 in brochure).

AMA RULES APPLY TO ALL ABOVE EVENTS EXCEPT RULES THAT APPEAR IN THIS BROCHURE.

BRING YOUR NO-DOZ, AND HAVE LOTS OF REST BEFORE COMING! YOU WON'T GET MUCH SLEEP.

AIR CONDITIONED MOTEL: Lane's Motel Box 224 French Lick 47432
1-812-936-9919
West Baden Springs Motor Inn. Box 38 West Baden 47469 1-812-936-9995
Plush accomodations: Sheraton Hotel, French Lick Indiana.

FIRST WORLD PEANUT GRAN PRIX June 25 1980 ⑧

Northwood Institute, West Baden Indiana, U.S.A.
Contest Director:Clive(Butch) Hadland, UK
Director of entries, and proxy flying: Mike Arak
10900 SW 61 Ct. Miami, Fla. 33156
Sponsor: MIAMA indoor club AMA 986, Miami Fla.

THE TIME: Proxy entries must send in application form below by MARCH 31, 1980
Models must be presented at Northwood before 10:00 A.m on JUNE 24, 1980. ALL ENTRIES SHOULD HAVE SENT IN ENTRY FORM BELOW BY JUNE 10, 1980.

THE CONTEST: The flying will be from 9:00 AM to 9:00 PM on June 25 1980. Multiple entries are permitted in all classes at $1.00 each, but only your best effort will count. As in the Model Builder contest we will have 5 classes. Pioneer, WW I (1914-1918), Golden Age (1919-1939), WW II (1939-1945),& modern. MIDNIGHT AWARDS GIVING:::

Proxy entries are encouraged. If you need a proxy flyer, check the box on the entry form, and get it to MIKE ARAK by March 31, 1980. We will assign a proxy flyer to your plane, and you can both make the necessary arrangements.
THE RULES: Other side of this sheet has the rules. You can build to a 13" SPAN, or a 9" overall LENGTH.

PLAN AHEAD - A FULL WEEK OF INDOOR - JUNE 20-28 '80
ON PROXY ENTRIES - ALL ARRANGEMENTS FOR ENTRY AND FLYING MUST BE MADE BY THE ENTRANT.

BOSTONIAN RULES:
Wing: Max. 3" chord, 16" span.
Prop.:Max 6" diam.Rubber power
Weight: Min.,7 grams
Overall Length: 14" from prop . bearing. (Or less)
Fuselage: Min. box 1 1/2x 2 1/2 x 3 inches.
No motor sticks.
Windows: 1" sq. Front & both sides.
Rigid & fixed L.G. 3/4" diam.wheels.
R.O.G. unlimited flights.
Charisma factor 1 to 1:1 to be multiplied by 3 best flights.

WORLD INDOOR CHAMPS,COSTS
$ 150.00 for five days & Banquet
Fri. to Tue. night's lodging
Breakfst Sat.,Sun.,Mon.,& Tue.
Lunch " " " "
Dinner Fri.,Sat.,Sun.,& Mon.
Banquet Tue.
These costs are the same for entrants or for supporters,or workers.

WORKERS NEEDED,PLEASE MENTION IF YOU ARE AVAILABLE WHEN YOU SEND IN YOUR ENTRY FORM.

THE VNART

5TH NIMAS ANNUAL RECORD TRIALS

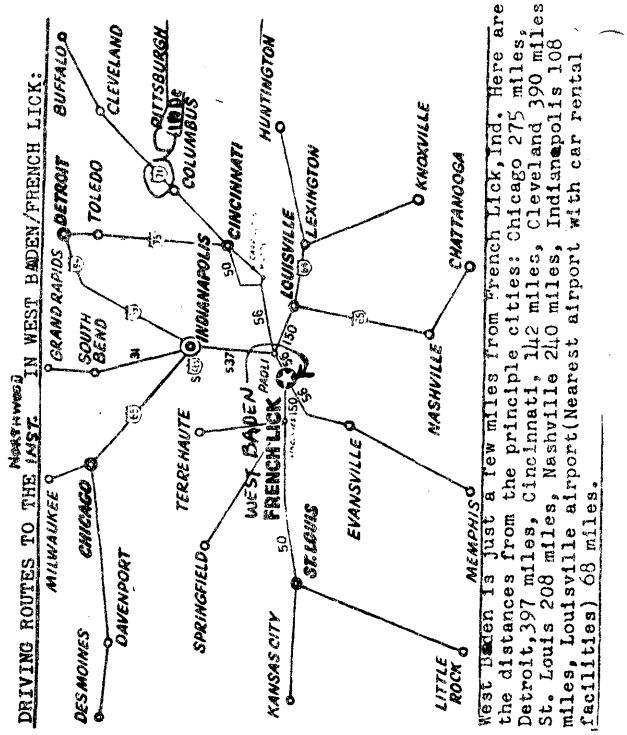
JUNE 26, 27, 28, 1980 ③

NORTHWOOD INSTITUTE; WEST BADEN INDIANA 1-812-936-9971. All the indoor fraternity is well aware of the annual gathering that indoor devotees Here muster. The method of measuring the ceiling height is presently under consideration for no other reason than to be consistant ...AMA & FAI methods of measuring produce different dimensions. The NIMAS "Index of Performance" will be calculated on the list of times printed below. If not CAT II times they are at least "Site Times". We hope this problem will exit.

THE NIMAS RECORD TRIALS: Every type of indoor model is flown and recognised. This is 12 AMA classes, and 7 other classes. Individual trophies to Manhattan, Bostonian, AMA, Elec.; & CO2 Scale, Easy B, Peanut Speed, and Peanut WW I mass launch. All other classes are eligible for famous Index of Performance glass bottom perter Mugs. The "Index" is based on the comparison of how well your best flight compares to the national record.USA. There are no limits on the number of flights you make, and no limits on the number of classes you enter. The schedule on page one of this brochure has all the events listed. AMA rules apply to all classes except the rules that are printed in this brochure.

NORTHWOOD INSTITUTE: The Atrium is a domed room 98' high by FAI measurements, and 108' high by AMA measurements.(Don't ask).The dormatory rooms surround the Atrium. This is an old college, and not plush, or air conditioned. Bring many of the creature comforts you will be wanting with you. There is plenty of activity for the entire family at nearby French Lick.

NEXT PAGE FOR SITE RECORD

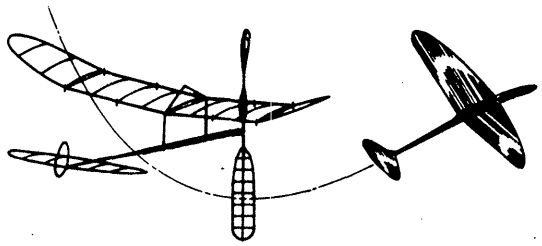


West Baden is just a few miles from French Lick, Ind. Here are the distances from the principle cities: Chicago 275 miles, Detroit, 397 miles, Cincinnati, 142 miles, Cleveland 390 miles, St. Louis 208 miles, Nashville 240 miles, Indianapolis 108 miles, Louisville airport(Nearest airport with car rental facilities) 68 miles.

MORE RULES NEXT TIME!

The Voice of N.I.M.A.S. DEC78/JAN79

INDOOR NEWS and VIEWS



Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

THE 1980 INDOOR WORLD CHAMPIONSHIPS

The following summarizes previously issued information and adds the latest information received from AMA Hq.; the information comes from bulletins circulated by AMA to all countries expected to be interested.

The 1980 Indoor WCh will be held in the Atrium of Northwood Institute, West Baden, Indiana, June 20-24, 1980. The Atrium ceiling is just under 33 m high, and is FAI Cat. III.

Supporter fees are $100, which includes 5 nights lodging beginning June 20, 4 breakfasts and 4 lunches beginning June 21, 4 dinners including June 20 and one banquet on June 24, 1980. All rooms are double occupancy. The entry fee also includes souvenir items and the official program. For supporters who wish to obtain lodging elsewhere, but attend the bnaquet, the fee is $50; otherwise a fee of $25 will allow attendance at the WCh without lodging or banquet.

The Chairman of the Jury is Mr. Ian Kaynes of Great Britain; other proposed members are Peter Allnut of Canada and Bucky Servaites of the United States.

The competitors, their supporters, and others who purchase the complete WCh meal and billeting package will be given first consideration, in that order. The package covers a period beginning June 20 and includes the night of Tuesday, June 24. If, after June 1, there are rooms available at Northwood Institute, rooms will be sold on a piecemeal basis at the discretion of the registration staff.

Meals are served at the cafeteria at the site, and paid for with meal tickets. Meal tickets are obtained in you kit when you buy a competitor or supporter package. Meal tickets may also be purchased by individuals on a cash basis at the cafeteria. The Banquet is available only through the packet or through advance Banquet ticket sales for $25 per person. Meals for the NIMAS events following the WCh (June 25-29) are arranged for through Dr. John Martin, who will be available at the site for your requests.

The Atrium will be open 24 hours daily. Test flying is allowed any time except during competition hours. Caution: Saturday, day and night, is the only official testing day. You may test on Friday, June 20, at your own risk: work will be in progress to drape the beams and prepare the flying site. Testing before June 20 is possible, with special arrangements with the organizer and at your own risk. The site plan apppears below, showing locations of:

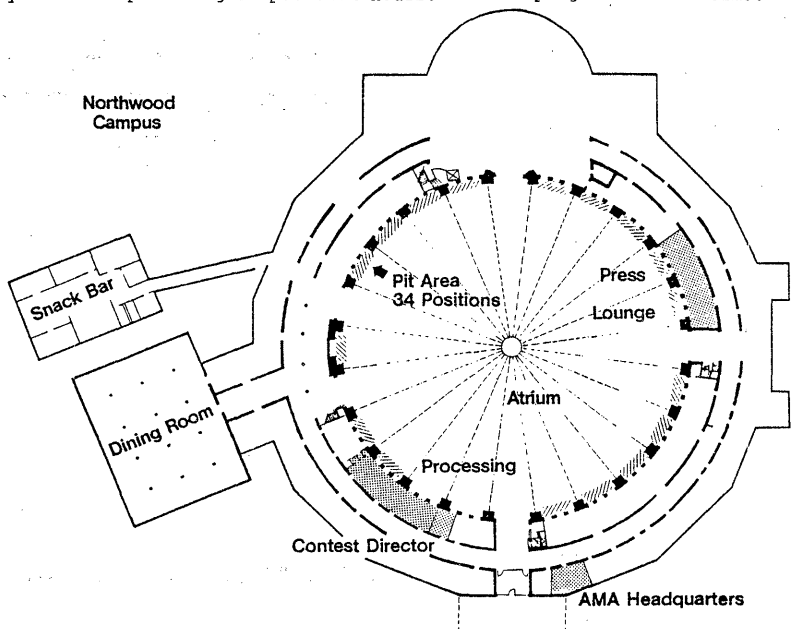
Contest Director
Processing
34 pit areas
Lounge
Press
AMA Headquarters

The pit areas will be around the perimeter of the Atrium, at the wall in the bays between column bases, two competitors per bay. This provides about 18 feet of width, and up to 8 feet out from the wall for two men. Suitable tables and chairs will be provided.

The Processing room has access to the Atrium via three doors. Processing equipment will include an optical measuring system in which the model may be placed either on a stand, or hung. An additional measuring system will be provided in which the span is measured between two hanging marks. Weigh will be measured on a GO-NO GO balance.

This excellent site is limited only in floor space. To make this manageable and as fair as possible to all fliers, there will be an Air Traffic Controller on the floor at all times. It will be his function to disallow a launch at any place on the floor at any time. His judgement will be informed by the air traffic above the selected launch position, and by the safety of the model to be launched and the models already in the air. His determination is final, and will be made in response to a flyer or his Team Manager indicating his intention to place his model in a specific flight circle at a particular time. It will be up to the flyer or his Team Manager to decide upon alternatives.

There will be two timers assigned to each team, 3 men or less, for each country entered. This automatically determines that one team can have only one flight in progress at a time. Two Timers are required for



each flight. The Timers are provided in pairs, with relief personnel in reserve. It should be possible to launch a flight immediately at the conclusion of another flight, without delay. Timers will be required to keep to the side of the floor area and will not be allowed chairs, lounges or other encumberances to the floor area. They may use pillows. Binoculars will be provided and will be used at the option of the Timer, or at the request of the Flyer.

Balloons and other equipment will be provided by the orgainzer. This equipment may be used for steering or for retreiving a model from some part of the architecture of the site. The use of this equipment for retreiving will be only with the permission of the Air Traffic Controller. Rules governing steering will be according to the 1979 FAI Sporting Code, Sec. 1 and 4a.

Official flying: Sunday, June 22; Monday, June 23; Tuesday, June 24. There will be two flights per day: Flying is from 9 am to 9 pm. The first flight of each day must be launched by 3 pm; the last flight each day must be launched by 8:30 pm, including any second attempt.

Weather conditions: In late June the outside temperatures in West Baden usually range from a low of 60° Fahrenheit (15.56° Celsius) at night to 80°F (26.67°C) during the day; the humidity is usually from about 40% to 90%. Inside the Atrium (contest building) the temperature range over 24 hours is about 65°F (18.33°C) to 75°F(23.9°C).

Additional details

In addition to the pit area already described, you may utilize your rooms for repair work. If there is an urgent need we can open additional rooms for major or prolonged repair or model building programs. Some low ceiling space can be unilized for preliminary trim flights (the theatre area - see the South (top) of the site diagram.) A Microfilm tank is provided.

Spectators: No one except the flyers and Team Managers are allowed on the floor, other than Control personnel and Timers. Spectators will be kept behind barriers at the Atrium entrances. They may observe the competition from there or from balcony openings on the second floor, or from the second floor room windows. (Windows must be kept closed, however.)

Photography restricted: No flash or artificial lighting is allowed. For your information, there is very good available light for photographic purposes up to late in the evening. Other photographers have had good results with fast film and long lenses.

Refreshments: A Snack Counter (serving simple food and Beverages) and a Bar (serving beer and mixed drinks) will be open during contest hours.

THE 1980 AMA NATIONAL MODEL AIRPLANE CHAMPIONSHIPS

The 1980 Indoor Nats will be held in the University of Cincinnati Fieldhouse, which has a smooth arched concrete ceiling with maximum height of 64'. The following schedule has been announced for the Indoor events:

Sunday, Aug. 10, 9 am - 2 pm - HL Glider
2 pm - 9 pm - Easy B, Pennyplane
4 pm - 9 pm - AMA Scale, Peanut

Monday, Aug. 11, 9 am - 9 pm - AMA Stick, Cabin, Paper Stick
9 am - 9 pm (by rounds) FAI Stick

FAI INDOOR REPORT

New Program Set

Previous FAI Indoor Program participants recently received details of the program to select the 1982 U.S. Indoor Team. Anyone wishing to obtain a copy of the full report should write AMA Hq and request it. This is a brief summary of the program provisions:

Schedule: 1980 - Unlimited local contests (10 points). One regional contest in each zone.
1981 - Unlimited local contests. One regional contest in each zone. Single site Fianls.

Program Entry: Program entry is accomplished by sending $3 to AMA Hq c/0 Micheline Madison, or by entry at a local meet. The entire qualification process may be accomplished in 1981 if desired. A special provision has been made for fliers who have previously qualified in an Indoor program and live far from a regional meet may (this is still subject to final approval) pay certain fee and penalties and enter the Finals directly.

Model Specs: Wingspan between 20" and 25.6", weight 1 g minimum, 2 g maximum.

Local Contest Specs: 3 entrants min., no limit on local contests entered, $3 entry fee each local meet, all entrants may fly in regional, score total best two of six flights, winning score gets 10 points with other flight totals receiving proportionate points. Best local score only counted at Finals.

Regional Contest Specs: 3 entrants min., 75% of winning score qualifies entrant for Finals, best single regional score counted at Finals, no restriction on cross-zone entry. Score best two of six flights, top score gets 100 points, other scores proportionate points. Entry fee $10, $15 if no local meet entered.

Final Contest Specs: The single site Finals will be conducted over a three day period with three rounds per day. Scoring best two of nine flights, top score gets 1000 points, other score proportionate. Entry fee $15, unless (subject ot approval) entrant lives more than 500 miles from the closest regional contest. Then fee is $35, and 75 points will be awarded. For entrant who flew in local meets, the maximum score entering Finals would be 85; for one who flew in a regional meet, max score on entry is 110. Maximum score for program is 1110 points.

LOG-IN OF NATIONS ENTERING 1980 INDOOR WCh

According to information on hand as of this issue, the following teams are reported to be chosen to represent their countries (finals times shown if known):

GREAT BRITAIN

Dave Pym	40:40	36:36	77:16
Bernard Hunt	36:45	35:26	72:11
Laurie Barr	35:36	35:44	71:22

JAPAN

Yasutoshi Banba (1978 team member)
Suyoshi Yamazaki
Takaji Matsuzawa (1978 team member)

Shigeyoshi Nonaka (tentative team manager)

HOLLAND

Rodenburg (1978 team manager)
Kees Wolthoorn (member previous teams)
Edward Leim (member previous teams)

CONTEST CALENDAR

ARIZONA - Phoenix
This may be too late, but there were plans to hold a Record Trials some weekend in April or May at the NAU dome in Flagstaff, Arizona. The site ceiling wasn't given, but the building elevation of 7000' could be expected to penalize some model classes. Contact Hermann Andresen, 738 E. Palmaire, Phoenix AZ 85050, phone 602-977-8759 for information.

FLORIDA - Miami
The contest series by the MIAMA club continues with meets set for Apr. 20 and May 18, 1980, at the Goodyear Hangar at Opa Locka Airport in Miami. Check with John Martin (305-858 6363) to confirm the date.

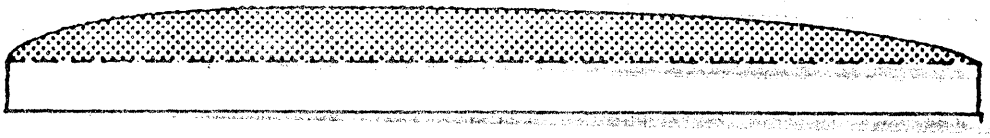
NEW JERSEY - Lakehurst
Present tentative dates for Lakehurst flying season (Hangar 1) are: May 4, May 18, June 6, July 5-6, July 20, Aug. 3, Aug. 17, Aug. 30-31 and Sept. 21. Contact Dan Domina, 6 Meadow Lane, East Windsor NJ 08520, phone 609-448-2840 for site confirmation each time and for more information.

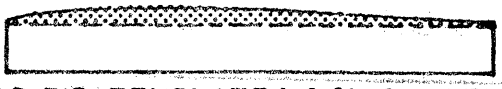
NEW YORK - New York City
The Columbia Indoor Miniature Aircraft Society has scheduled Record Trials at the Low Library Rotunda at Columbia University, 116th St. and Broadway. Events are set for May 18 and June 1, 1980, 9 am to 5 pm. For more info contact Ron Williams at 212-722-5262.

NEW YORK - Rochester
Indoor sessions at the Kodak Office Auditorium, 343 State St., Rochester, 1st and 3rd Sunday each month, 1 pm to 5 pm. This site has a 26' smooth ceiling; more details can be had from Bob Clemens at 716-392-3346.

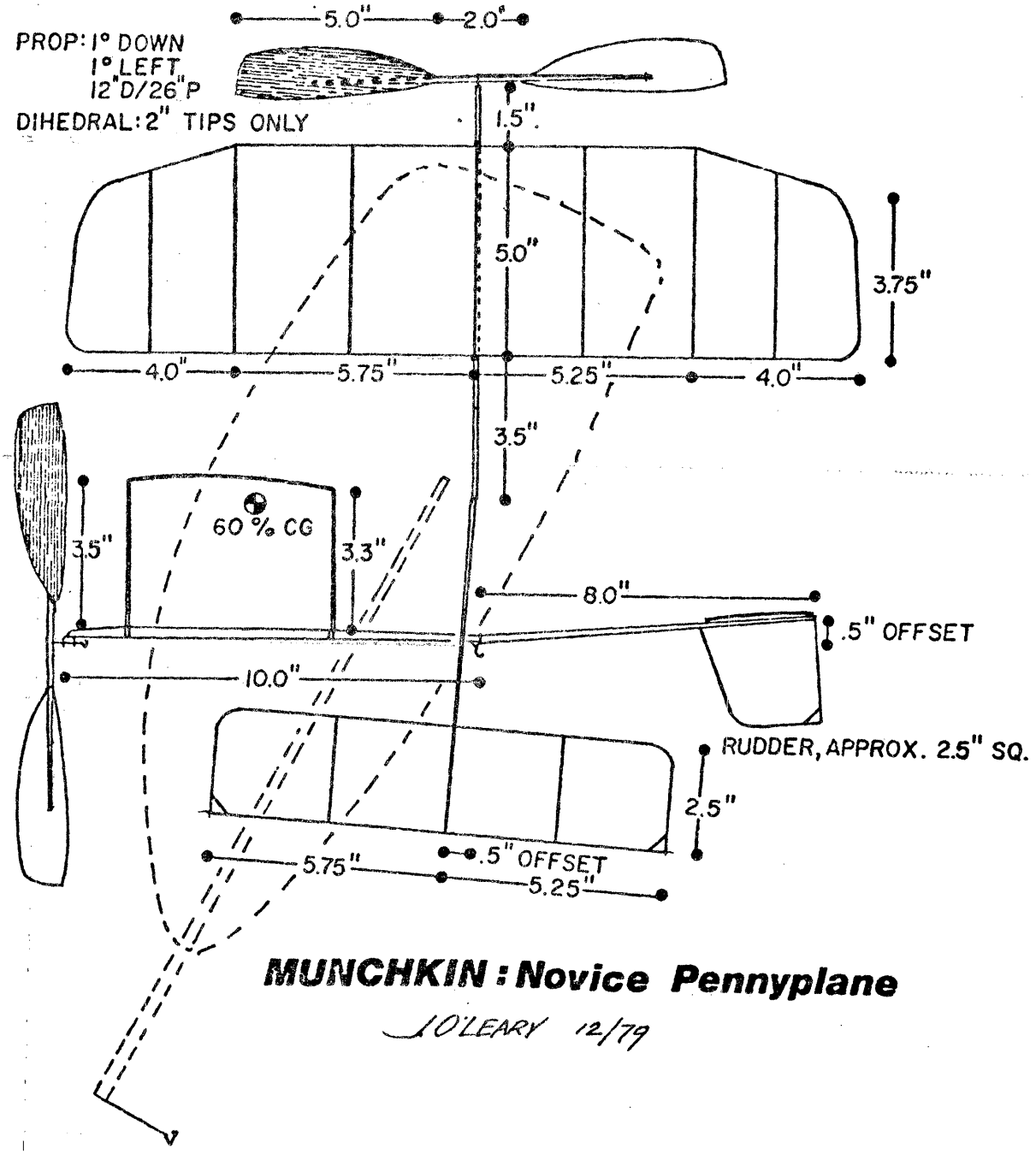
TEXAS - Ft. Worth/Dallas
Cat. I indoor contest at Bedford Boy's Ranch, Bedford, Texas on May 4, 1980, Noon to 5 pm. Contact Jess Shepherd at 817-282-3770 for more details.

WING RIB TEMPLATE: SIMPLEX 5% TO .34 CHORD, SIMPLEX 3% REVERSED .34 CHORD TO T.E.





STAB RIB TEMPLATE: 2% SIMPLEX



MUNCHKIN: Novice Pennyplane

J O'LEARY 12/79

STATE OF THE ART

The model of the month is "Munchkin", a Novice PP by John O'Leary. The drawing is reproduced directly from John's very well done newsletter "The Minneapolis Modeler". The following text was also "lifted" from the same source.

As you can see, "Munchkin" is an eclectic, state-of-the-art design. With the possible exception of the airfoil, there isn't one single innovative feature about this aircraft, and it has many borrowed features: wing tip shape and tip dihedral from Banks and Meuser, the underslung rudder goes back to the '30's, prop shape ala C. Banks, etc. The stab at 30% wing area may be smallish, but according to a N.F.F.S. Symposium report* smaller stabs are allegedly most efficient dragwise albeit less forgiving, stallwise. The airfoil seems to work well in Cat. I, or marginal Cat. II sites, but I've gone to a 4% simplex leading edge, 2% simplex trailing edge, reversed for good Cat. II sites.

The contest record includes a third place at the '78 THNIRT, West Baden (8:51), a third places at the '79 USFFC, Taft (5:49) and many local firsts. "Munchkin's" bigger brother, 7.5 in. wing chord, microlite covered, took third place at the '79 Lincoln Nats. Construction follows current practice. Generally 6 pound balsa was used with the exception of the wing cabane, the prop spar and the motor stick. C-grain was used for motor stick, prop blades, and wing and stab ribs. A or AB grain was used for lifting surface outlines. A Harlan thrust bearing makes things run smoothly up front. The prop was formed on a Jim Jones, 26" pitch, heat resistant fiberglass prop form. The plane builds light and had to be ballasted to bring it up to the required 3.1 grams.

If you are interested in building the Munchkin, I can dig up a blueprint of the wing and stab outlines, or answer any questions. For those of you wishing to try this event, I heartily recommend Bob Meuser's No-Nonsents design and the related article which appeared in MODEL AVIATION about three years ago.

*W. Erbach, 1973 N.F.F.S. Symposium Report

ATTENTION, PEANUT FLIERS!

All you can imagine that you would want to know about Peanut Scale models--and didn't know who to ask! At least, that is what appears in "Peanut Power", a magnificent book by Bill Hannan. It is published by Historical Aviation Album, P O Box 33, Temple City CA 91780, and sells for $7.95 plus $1 postage. This book is very refreshing in approach, and very well laid out to include more topics about Peanuts than I knew could exist. It is filled with superb artwork and photos, but the tone of the book is set by the cover photo. Can you imagine a close-up of an elephant's trunk with a Peanut Scale model perched on the curled-up trunk? This photo, in full color, is so clear that whiskers on the trunk stand out clearly! Even if you don't now indulge in the peanut races, you will enjoy the book.

NIMAS CONSIDERED AS SPECIAL INTEREST GROUP

The AMA Executive Council is planning on how to involve the many modeling special interest groups such as NIMAS and NFFS in AMA affairs as advisory groups. Stan Stoy attended the AMA Executive Council meeting at the 1979 Nats as the NIMAS representative. He also attended the meeting to testify on behalf of holding the 1980 Indoor WCh at West Baden. He made this report of the SIG meeting:

The Special Interest Group portion of the meeting caught me by surprise since its purpose was to come up with guidelines for recognition of Special Interest Groups. My notes show that they were:

1. Membership must be open to all AMA members.
2. A list of members and any officers must be presented to AMA.
3. The organization should have a means of communicating with its members such as through a newsletter.
4. A copy of the By Laws must be presented to AMA. At my request these were defined to be nothing more than a list of purposes.

I think that after reading the latest issue of INAV, the only one of these that will be at all difficult to meet will be the membership list. I say this simply from the point of view of putting such a list in suitable form.

PALEONTOLOGISTS STRIKE AGAIN!

Or--What You Learn by Reading "The Hangar Pilot"

In the October '79 issue, John Martin published the gem shown below:

Archaeopteryx: Flying or Grounded?

It came, Harrison B. Tordoff says, "like a bolt of lightning."

He was looking with a friend at casts of fossil specimens of a small, winged dinosaur called Archaeptoeryx; he had just heard Yale University paleontologist John H. Ostrom describe his controversial theory asserting that the creatures must not have been able to fly. Tordoff's friend, remarking on the specimens, pointed out that they were so well preserved that the asymmetrical shape of the individual feathers was quite obvious. To University of Minnesota's Tordoff, that asymmetry meant one thing: Archaeopteryx could fly.

In the March 9 Science, Tordoff and Alan Feduccia of the University of North Carolina explain their reasoning: The central support that runs the length of a typical feather is called the rachis; on either side the interlocking barbs form a sheet known as a vane. When the two vanes are identical or nearly the same size and shape, they are called symmetrical; when one vane is much reduced, as in the wing feathers of modern flying birds, they are called asymmetrical. The asymmetry is important in the wing's aerodynamics--the narrow leading edge gives each feather an airfoil cross-section. In modern birds, Feduccia and Tordoff say, the degree of asymmetry corresponds to their flying abilities. The feathers of very strong fliers have extremely narrow leading-edge vanes; in poor fliers, the asymmetry is less obvious and the feathers of flightless birds are symmetrical.

When they examined Archaeoptryx specimens, the researchers found that the feathers are "clearly asymmetric with the outer vanes reduced as in modern flying birds." The shape of the feathers "seems to show that Archaeoptryx had an aerodynamically designed wing and was capable of at least gliding." If the Archaeoptryx could not fly, the authors assert, their feathers, like those of modern flightless birds, would have reverted to a symmetrial shape.

The finding counters the controversial theory by Yale's Ostrum, which is based on other structural aspects (and "a paleontologist's viewpoint", says ornithologist Feduccia) and which claims the animals could not fly but instead used their wings to capture insects. Say the researchers: "Any argument that Archaeoptryx was flightless must explain selection for asymmetry in the wing feathers in some context other than flight."

* * * * *

EAST COAST INDOOR MODELERS - 10/28/79 - LAKEHURST - 165'
Hangar No. 1 - CD: Ed Whitten - Scale Judge: Ron Williams

BOSTONIAN - 7.0 grams Minimum Wgt. (CF x total 3 best)

Bob Bender	9.8g	1.070CF	68.3-75.4-80.0	-	239.4 score
Frank Haynes	10.1g	1.040CF	49.5-55.0-56.0	-	166.9 "
Joe Nuszer	7.6g	1.080CF	43.5 x x	-	47.0 "

CF - Charisma Factor All flights - ROG

MANHATTAN - 4.0 grams Min.

John Kukon	4.33g	7:32.0
Pete Andrews	4.63g	7:05.0
Joe Nuszer	4.80g	6:51.0
Don Garofalow	5.07g	5:51.0
Bob Bender	6.56g	5:28.0
Frank Haynes	4.29g	x

AMA HL Glider - 2 flights

Joe Nuszer		93.4
Johnny Kukon	(JR)	75.6
Mike Gilbert	(JR)	47.0
Pat Ciambrello		35.6
Randy Boston		26.1

AMA PEANUT SCALE - HL - Rule #52

Frank Haynes	Lacey M-10	85	static	103.5	sec	-	188
Bob Bender	Martin MO-1	92	"	56.0	"	-	148
Don Garofalow	Cougar	95	"	44.8	"	-	140
Gene Sellers	Fike E	65	"	50.0	"	-	115
Pat Ciambrello	Fike E	71	"	22.0	"	-	93
Brian Sellers (JR)	DeHaviland	58	"	34.8	"	-	93
Randy Boston	Piper Cub	48	"	40.0	"	-	88
Pat Ciambrello	Andreason	70	"	13.6	"	-	84
Don Garowfalow	Lacey M-10	** 36	"	132.8	"	-	76**
Pat Ciambrello	Pietenpol	72	"	x		-	72
Brian Sellers (JR)	Cougar	67	"	x		-	67
Larry Peters	Dayton Wright	37	"	11.1	"	-	48
Mike Gilbert (JR)	Lacey M-10	28	"	16.0	"	-	44

** Don's 'ghost' received .3 scoring factor; all others received 1.0.

* * * *

3. FF PEANUT SCALE ALTERNATE RULES— INDOOR AND OUTDOOR (PROVISIONAL)

1. Applicability. All pertinent AMA regulations (see sections titled Sanctioned Competition, Records, Selection of National Champions, and General) shall be applicable except as specified below.

2. General. Open to any scale model of a man-carrying heavier-than-air airplane of no more than 13 inch wingspan.

3. Documentation: Peanut Scale is an attempt to have an official fun event. These rules encourage a broad spectrum of aircraft types, new and old. Therefore, standard scale documentation may be difficult to obtain. Models may be built from kits, old kit plans,

PEANUT SCALE (ALTERNATE) SCORE SHEET

Total Static Points: ____ Total ____ Place

Name _____ AMA No. _____

Address _____

Type Aircraft _____

STATIC SCORE "Judging Criteria":

A. Workmanship, 5 Points Maximum — [A]

B. Authentic Coloring & Markings: — [B]
Excellent 3
Good 2
Lax 1

C. Authentic Details: — [C]
Many 3
Some 2
Draw on 1
None 0

D. Flying Surfaces: — [D]
All double covered 3
Dbl. wing, single tail 2
All sheet 1
Single 0

E. Type Covering: — [E]
Color doped paper, opaque so structure won't show 6
Clear doped colored tissue 5
Undoped Japanese tissue 4
All sheet balsa or foam 3
Colored condenser or microlite 2
Uncolored cond. or microlite 0
Microfilm ..... –2

F. Landing Gear — [F]
Scale length 3
Slightly enlarged 2
Greatly enlarged, or no photo, drawing or 3-view of original 0

G. Dihedral — [G]
Scale 3
Up to 6 degrees increase 1
Over 6 deg., or no photo, drawing, or 3-view 0

H. Stabilizer Outline: — [H]
Scale 3
Slightly enlarged 1
Greatly enlarged or no 3-view 0

I. Minus Points: Deviations from scale to aid flying performance, i.e., lengthening nose or tail moments, moving wing back, simplifying fuselage cross-section or outline, enlarging rudder, leaving off struts, etc., and all other non-scale aids. — [I –pts.]
Each ..... Minus 2 pts.

J. Bonus Points: — [J + pts.]
Aircraft type: Low wing or canard 1
Biplane 3
Triplane 5
Quadroplane 7
Autogyro 8
Helicopter 9
Flying boat or floats 3

Construction:
Scale number of wing ribs ..... 2 per wing
Scale number of stab ribs 1
Scale number of rudder ribs ..... ½
Hinged ailerons 1
Hinged rudder and elevator 1
Oval or round fuselage cross-sec. 1
Wheel spats or pants 1
3 dimensional pilot figure 1
2 functioning propellers 3
3 functioning propellers 5
Dummy engine nacelle and/or any radial engine ..... 1 ea.

FLYING SECTION:

1	2	3	4	5	6	7	8	9

NO ATTEMPTS — ALL FLIGHTS R.O.G. (Except autogyros and seaplanes)

Total of Best Two Flights ..... → [ ] Equals Flying Points ..... [ ] (Place)

Static Points (1st, 2nd, 3rd, etc.) ..... [ ] Plus Flying Points (1st, 2nd, 3rd, etc.) .... [ ] + Equals Total Points ..... [ ] =

FINAL PLACE: [ ]

magazine plans, commercial plans, homemade plans drawn from old photos, or accurate drawings. Three-view drawings are not required, but are necessary for maximum scale points.

4. Final Placing in contest is determined by giving equal weight to the model's static score, and flying ability.

5. Flying Section: 9 official flights, no attempts. Total of 2 best flights count. Indoor Peanuts should rise-off-ground except float planes, flying boats, and autogyros which can be hand-launched. Plane gets points according to position in flying.

6. Static Section: The "Judging Criteria" on the score sheet is used to determine the static score. Extra consideration is given to heavy, hard-to-trim, and unusual models to keep them competitive. Plane gets points according to position in static section: 1st, 2nd, 3rd, etc. At the discretion of judge, this may be done before or after flying.

7. Scoring: Points earned from flying section, and static section are added. Lowest scores determine better positions. This preserves a 50/50 balance between looks and flying.

8. Ties are decided by giving better position to model with best static score.

9. Unlimited Entries are allowed per entrant, each entered separately. However, only the best one counts. In postal contests, participants submit their best two-flight total time, and their static score from the "Judging Criteria" on the score sheet. Final placing is determined from this data.

INDOOR AMA CEILING CATEGORY II RECORDS

As of November 2, 1979

Event	Age	Time	Held by	Date
ROG Stick	Jr.	9:37.4	Dave Lindley	6/21/79
	Sr.	11:09.0	Richard Whitten	6/2/77
	Op.	17:34.2	Jim Richmond	6/24/78
Paper Stick	Jr.	16:01.0	Mike Van Gorder	6/22/79
	Sr.	19:34.2	Tom Sova	7/25/72
	Op.	24:16.0	Jim Richamond	7/30/76
HL Stick	Jr.	18:21.2	Jimmy Clem	8/6/73
	Sr.	29:31.0	Richard Whitten	7/30/76
	Op.	44:43.0	Jim Richmond	6/21/79
ROG Cabin	Jr.	11:41.8	Gregory Simon	7/27/71
	Sr.	15:42.2	Tom Sova	8/6/73
	Op.	25:19.8	Ron Ganser	6/3/77
Autogyro	Jr.	3:53.6	Dave Lindley	6/23/78
	Sr.	5:20.2	Charles Martin	12/29/75
	Op.	7:15.0	Don Lindley	6/23/79
Helicopter	Jr.	6:20.8	Joel Fonser	4/28/74
	Sr.	4/47.8	Ronald Ganser	8/29/71
	Op.	8:47.6	Dick Obarski	6/23/78
Ornithopter	Jr.	No Record Established		
	Sr.	No Record Established		
	Op.	3:08.0	Al Rohrbaugh	7/23/78
HL Glider	Jr.	2:10.2	Darryl Stevens	8/7/77
	Sr.	2:32.6	Gary Stevens	8/7/77
	Op.	2:40.1	Stan Stoy	6/22/79
FAI Stick	Jr.	18:21.0	Jimmy Clem	8/6/73
	Sr.	29:31.0	Richard Whitten	7/30/76
	Op.	37:52.0	Jim Richmond	6/23/79
Pennyplane	Jr.	11:11.0	Mike Van Gorder	6/22/79
	Sr.	10:03.8	Richard Whitten	6/3/77
	Op.	13:55.2	Cezar Banks	6/22/79
Novice PP	Jr.	11:11.0	Mike Van Gorder	6/22/79
	Sr.	4:41.0	David Nault	1/6/79
	Op.	12:49.8	Walter Van Gorder	6/22/79

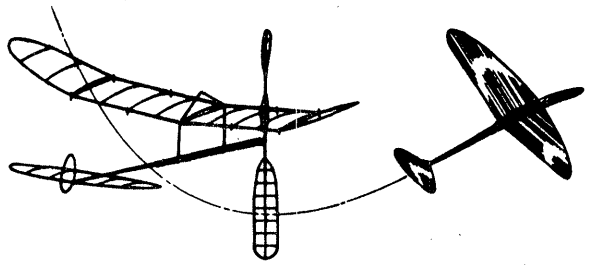
CHANGES TO EASY B RULES

The following information summarizes the recent changes to the Easy B class. Following the usual 'NART format, the changed rules would be employed at VNART. Serious consideration is being given to holding a class for the standard paper-covered Easy B's and another for the new class. The most likely criterium is that of the number of entries; if enough entries are made, we most likely would provide a separate trophy. Note that the new rules are official rather than supplemental, giving national record status to the Easy B class.

Changes to Easy B characteristics:
1. Minimum weight of one gram without rubber motor.
2. Maximum prop diameter of 10".
3. No restrictions on covering material.
4. Monoplane models only.

The Voice of N.I.M.A.S. FEB/MAR·1979

INDOOR NEWS and VIEWS



Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

This Issue

A special effort is being made to get this issue in the mail in time for U. S. members and subscribers to receive their copy before leaving for West Baden. Of course all of you are going to West Baden? Anyhow, the stuff which follows will concentrate on VNART, the WCh and that Super Week. Other stuff is used as filler as needed. Thanks to anyone who contributed material in this issue.

VNART Details

Travel, arrivals, etc: Although many fliers seem to be planning to come via Chicago, it is assumed that most will be arriving at Louisville, KY sometime on Friday June 20. The M.I.A.M.A. club has secured a large van which will make three trips between West Baden and Louisville on June 20, leaving Louisville Airport at 2:00 pm, 6:30 pm and 12 pm. In addition, a regular bus leaves Louisville (downtown, on Muhammud Ali Blvd.) at 12:30 pm for French Lick. The telephone at Northwood Institute is 812-936-9971, in case you are stranded. In Louisville, Burr Stanton, 512-425-1915 is a contact who is helping to coordinate travel to the meet.

Competition and prizes: It will be allowed for one contestant to win two trophies in the Index competition, and one of the other non-Index events. Pewter mugs, suitably engraved, are the prizes for the following:

NIMAS INDEX (all indoor record classes)
Ten mugs, for first ten places.

NIMAS COMPETITION (first place only)
Manhattan Cabin
Bostonian Cabin
Easy B (original event)
Easy B (new rule event)
AMA Scale
Power Scale (CO_2)
Peanut Scale (MIAMA Rules)
Peanut Scale Speed
Rubber Speed
Mass Launch (WWI Peanuts)

Social Activities: The MIAMA Club will be tending an open bar, open for most of the time. Some sort of relatively informal symposium on indoor topics will be hosted by Dave Linstrum. Doc Martin plans to bring his movies of past events, besides filming this one for posterity. No doubt other activities will spring up also. Don't plan on much sleep all week!

EASY B Rules At VNART

In case you didn't notice, trophies are listed for both the old standby Easy B event (same rules as always at XNARTs), plus the new rules which became effective in 1980 for AMA Easy B (an official records class). It should be noted that for the 1981 XNART, the new rules Easy B event will be a part of the INDEX competition. (Since the Nov. 1979 record list is used as a base for the INDEX, there are no comparable times for the new rule models in VNART competition.)

After finally getting an official version of the new Easy B rules, I decided that there was so much difference that it was entirely in order to fly the "old" event also. I thought we instituted the new two-year rules cycle so the Rule Book would be available for the new year (like in January). Instead, my rule book came after June 1, 1980!!

NOTE

The Dec78/Jan79 INAV carried a statement of what I thought the new rules were. Instead, this is really what was passed:

8.2 Easy B Characteristics
a. The projected wingspan, measured perpendicular to the motor stick, shall not exceed 18 inches (45.72 cm).
b. The wing chord shall not exceed 3 inches (7.62 cm).
c. The area of the horizontal stabilizer shall not exceed 50% of the projected wing area.
d. The motor stick shall be solid and made from a single piece of wood. (The tail boom may be a separate piece.)
e. Propeller. The propeller blades shall be constructed entirely from wood, with the following exception: special novice or beginner events can be set up for local contests by permitting the use of commercial plastic propellers, provided advance notice is given in contest announcements.
f. Covering material. There shall be no restrictions on covering material.
g. The event is limited to monoplane models.

TRANSLATION

What the above rule means is that the new rule Easy B can be a solid stick model, microfilm covered, with full bracing, including motor stick if needed. The original proposal which started the change imposed a one gram weight limit, which would have been a somewhat different "ball game" than this rule establishes. OK, so now we have two sizes of Hand-Launched Indoor Stick models, which may well be suitable. After all, this size of model will fit neatly in a box that will fit under any airlner seat, so you have no excuse for not entering at least one event at VNART!!

Stuff From NFFS

NATIONAL FREE FLIGHT SOCIETY
DEDICATED TO THE INTERESTS OF FREE FLIGHT MODELING
NFFS

1980 MODEL OF THE YEAR AWARD WINNERS

F1A	Robin	Mike Fantham (Great Britain)
F1B	Floater	Itzhak Ben-Itzhak (Israel)
F1C	Summerwind	Doug Galbreath
½A Free Flight	Toothpicks	Gil Morris
Large Power	Shocair	Mark Woodrey
Outdoor Rubber	Lanzo Stick	Chet Lanzo
H.L. Glider	Zingara	Paul Lagan (New Zealand)
A/1 Nordic	Tadpole	George Xenakis
Indoor Rubber	Starwalker	Jim Richmond
Indoor Glider	Folder	Stan Stoy
Special Award	Pop Up Stab	Carl Goldberg
Special Award	Hot Stuff	Bob & Bill Hunter
Special Award	Clock Work Timers	John Tatone

****** THIS IS FOR IMMEDIATE RELEASE; print as soon as possible.

Nominations will be open for the 1981 awards until 12/31/80

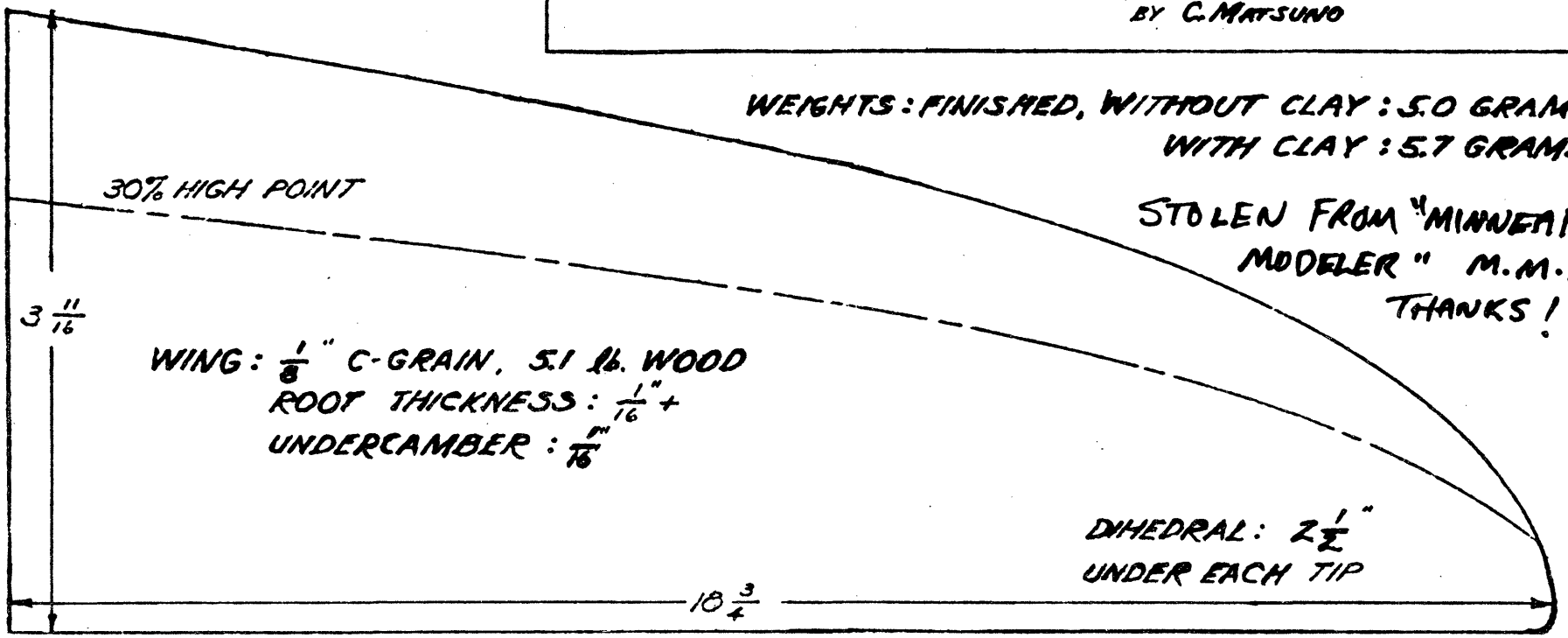
Steve Geraghty
194 Vista Del Monte
Los Gatos, California
U.S.A. 95030

CONTEST CALENDAR

NEW JERSEY - Lakehurst
Present tentative dates for Lakehurst flying season (Hangar 1) are: July 5-6, July 20, Aug. 3, Aug. 17, Aug. 30-31 and Sept. 21. Contact Dan Domina, 6 Meadow Lane, East Windsor NJ 08520, phone 609-448-2840 for site confirmation each time and for more information.

E. St. Louis #15 CATEGORY I HLG

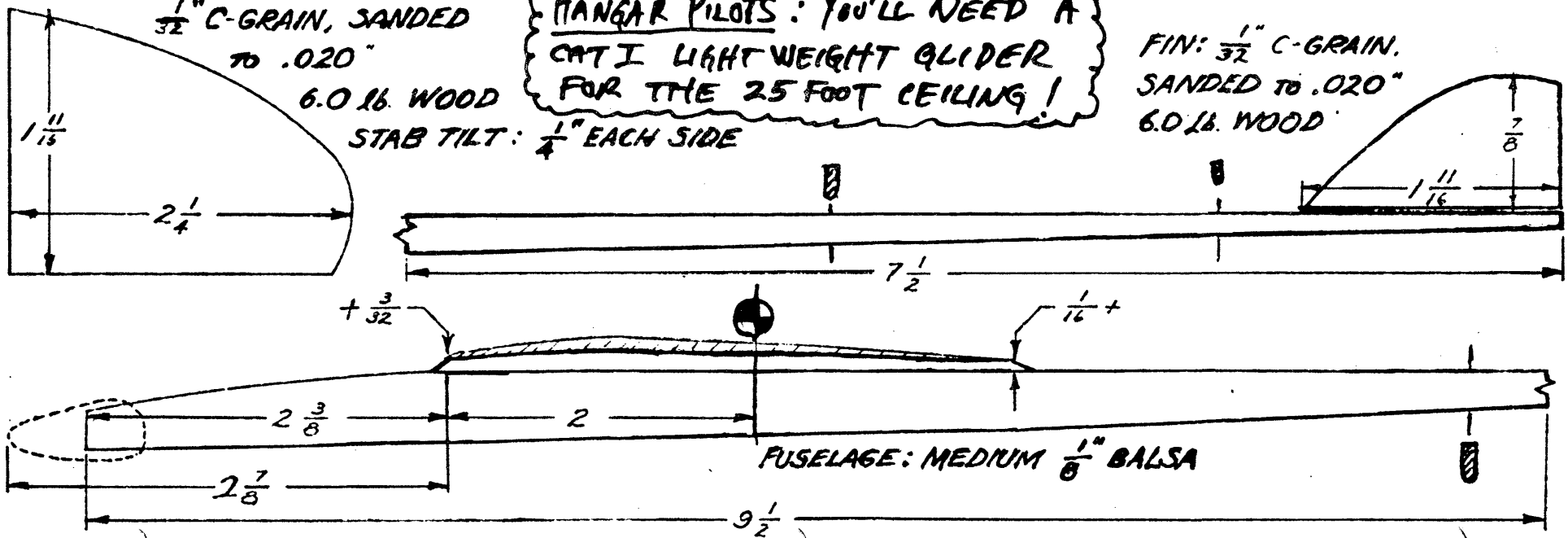
BY C. MATSUNO



1/32" C-GRAIN, SANDED TO .020"
6.0 lb. WOOD
STAB TILT: 1/4" EACH SIDE

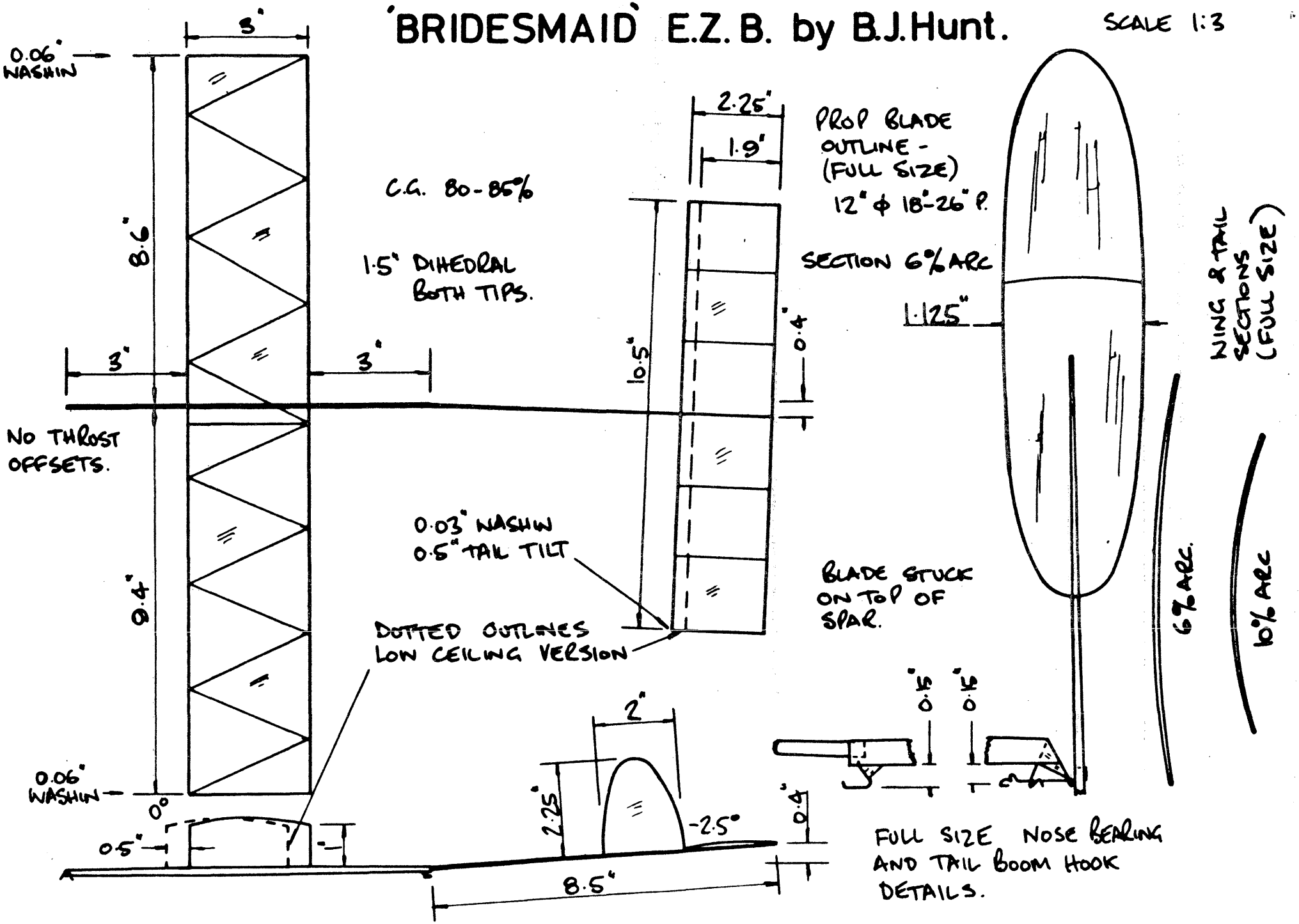
HANGAR PILOTS: YOU'LL NEED A CAT I LIGHT WEIGHT GLIDER FOR THE 25 FOOT CEILING!

FIN: 1/32" C-GRAIN, SANDED TO .020"
6.0 lb. WOOD



'BRIDESMAID' E.Z.B. by B.J.Hunt.

SCALE 1:3



1979 NIMAS POSTAL MEET

So far as I can determine, the following comprises all the entries received for the 1979 NMAS postal meet:

Event	Time (sec)	Ceiling (ft)	Fudge	Score
Novice Pennyplane				
Cezar Banks	517	22.3	1.253	647.8
Clarence Mather	397	22.3	1.253	497.4
Easy B				
Cezar Banks	790	22.3	1.253	989.9
Dick Hardcastle	784.2	31.0	1.063	833.3
David Hagen	823.1	36.0	0.986	811.6
Clarence Mather	603	22.3	1.253	755.6
Junior Easy B				
Mike Archibeque	426	22.3	1.253	533.8

STATE OF THE ART

Chris Matsuno's glider, developed in a Cat. I site in East St. Louis, was somewhat downplayed by Chris since it nearly always comes in second. To put that into perspective, we must realize that first place is usually Stan Stoy!

We have the plan page third-hand, so to speak--Doc Martin published "our" version in THE HANGAR PILOT, after the MIAMA Contest #6 had to be moved to a Cat. I site when the Goodyear Hangar became unavailable. As you can see, Doc took the plans from THE MINNEAPOLIS MODELER, (John O'Leary's neat one), and John acknowledges using TURBULATOR (McDonnell-Douglas FF Club newsletter) as a source. After all that, all of you may have seen it anyway, so why bother?

Chris comments on the glider: "The glider is fairly conventional in construction. The wing is a bit unusual in that some undercamber was sanded in, and then the wing was scored lightly at the high point with an X-acto blade, then cracked and glued to increase the undercamber slightly. This may also make the wing more rigid. The wing halves are symmetrical. Making the inboard wing slightly bigger than the outside wing has often caused me problems in trying to get the glider to turn as tightly as desired, so I have given up on this quite common practice. After gluing the dihedral, the wing is first glued to a small pylon, which is then glued to the fuselage. This is due to laziness. It's a lot of trouble to get the top of the fuselage sanded just right to fit the undercamber while retaining the proper decalage. This method is a bit simpler. The stab is glued to the top of the fuselage. I have never understood why most HLG's have their stabs glued to the bottom of ther fuselage. The stab was built oversize, then cut down to the size shown while trimming. The model has fairly positive stability. The nose is quite short. This seems to improve stability and aids the transition. I neglected to weigh the fuselage before assembly, but would guess that it is made of about 7 to 9 lb. A-grain. Both wings have a bit of washout at the tips--about 1/16" on the left, a bit less on the right. About 1/32" left rudder deflection is used, and the stab TE's are warped up a bit less than 1/32". Launch is straight ahead, about 60 degrees or so up. Best official flight has been 36.8 sec., best two-flight total 72.0 sec. Not Coot-class, but respectable. In pree-Coot days, it would have been AMA record-competitive.

Why fly this when you could do just as well with a Coot (average arms, now)? I guess there's just something psychological about being able to put a HLG right mext to the ceiling. In fact, if my analysis of the max altitude attainable by a Coot vs. a conventional HLG at E. St. Louis is accurate, this HLG has an edge."

STATE OF THE ART

Bernard Hunt is one of those Cardington fliers who have almost pushed the Easy B state-of-the-art out of sight. His "Bridesmaid" design is presented here, freshly extracted from the pages of FFn - FREE FLIGHT NEWS, by Ian Kaynes. Any FF'er who doesn't get this newsletter is missing really top-notch coverage of FF acitivity in England, with a sprinkling of models and articles from the rest of the world. Bernard comments:

E-Z-B is arguably the most popular indoor competition class in this country, both at Cardington and the various low ceiling venues-- there were 22 entries at the last event at Huddersfield.

I started flying the class just two years ago and have built about 20 models in arriving at the design shown here in both high and low ceiling versions. Both models have good contest records with 6 first places and 7 seconds out of 17 contests entered.

The fascination of E-Z-B for me arises from the fact that it is an unlimited weight class in which the achievement of low structural weight offers the prospect of increased duration at the expense of increased flexibility (from the unbraced structure) which tends to make the model difficult to fly. I have reached the conclusion that a relatively stiff (and therefore heavy) model is required for the high ceiling of Cardington to give a good safe climb pattern into the roof but for low ceiling events where the models are very lightly stressed, ultra light weight is the target.

The high ceiling version features a very large, highly cambered tailplane and the use of upthrust (wing and motor bearing at 0° means that in the normal flying attitude there is approximately 3° upthrust) to control the initial climb pattern which is very steep and safe. I use a selection of 12' diameter propellers of various pitches from 18" for cold, wet conditions to 26" for (rare) hot, dry conditions. My best time is 19 1/2 minutes--I suspect with the help of "good" air--but 18 1/2 minutes has been achieved regularly.

The low ceiling version features a smaller tailplane and all round lightweight construction to give a weight in the region of 0.7 grams. The use of "Andrews style" wing ribs and an extra thick spar on the right wing leading edge gives a very stiff wing for its weight which resists tuck-in on launch. The tailboom is made very stiff and the tailplane is highly cambered and very floppy to achieve safe stall and dive recovery. This is necesary to cope with the rather turbulent condidtions near ground at most low ceiling events. I generally use very low rubber weights (0.4 grams) and a high propeller pitch/diameter ratio (2.2:1) to slow down the climb. I have tried bigger diameter propellers (13 1/2" and 15") but found no benefits to offset the inevitible increase in model weight and reduced stability. A useful reduction in weight to 0.65 grams has been achieved on one model using a 6" motor stick which was quite practical with the normal 10" loop of rubber normally employed. My best official times are 9:33 under a 20" ceiling and 11:22 under 33' ceiling without ceiling scrubbing in either case.

Notes

The high ceiling version is drawn but the low ceiling version has the same layout, except that the tailplane is 10" span and 1.9" chord, with the wing posts moved forward 0.5" to maintain the CG poisition. The mich lighter structure is reflected in the following data:

	High Ceiling		Low Ceiling
	(Weights in grams)		
Wing (spars .08, ribs .07)	0.32		0.28
Stick	0.28		0.18*
Boom, fin and tailplane	0.19		0.13
Prop	0.22		0.12
	1.01		0.71
*0.12 for a 6" stick.			
Rubber 17" loop	0.85	10" loop	0.40

Structure (sizes in thousands of an inch)

Prop spar	8 lb. 63x63 to 32x32. square section	5 lb. 63x63 to 32x32 square section.
Blades	4.5 lb. C grain 16 to 10 at tip.	4 lb. C grain 7
Shaft	13 music wire.	10 music wire.
Wing spars	4.5 lb. 72 deep x 30 to 40x30.	4 lb. 72 deep x 30 to 40x30
Ribs	4.5 lb. C grain 60 deep x 16.	4 lb. C grain 40 deep x 16.
Tail spars	4.5 lb. 30 deep x 25.	4 lb. C grain 20x20.
Ribs	4.5 lb. 30 deep x 16.	4 lb. 22 deep x 16.
Stick	5 lb. 200 deep x 100 to 150x60.	5 lb. 190 deep x 80 to 110x50.
Bearing	13 music wire.	10 music wire.
Gusset	5 lb 15 thick.	5 lb. 13 thick.
Boom	4.5 lb. 100 deep x 75 to 40x40.	4 lb. 90 deep x 70 to 40x40.
Wing Posts	8 lb. 63x63 to 32x32.	5 lb. 63x63 to 32x32.
Covering	Micro-X ultra-light condenser paper, stuck Cowgum in petrol.	

APPLICATION OF CYANOACRYLATES TO INDOOR MODELS

by Don Lindley

A recent question from Bud Tenny in News & Views about the application of the cyanacrolate cements (Krazy Glues) in our area of modeling shocked me. I guess it is not unexpected that transfer of technology from one area of expertise might be slow, but it had not occurred to me that there would be a question whether there was any application other than repair of gliders. To preface a discussion of techniques, it might be useful to stand back and take a look at the unique properties of cyanacrolate cements as they apply to our hobby. I will attempt to note only those properties which are markedly different from classic model cement and segregate them into desirable and undesirable categories. This is, of course, dangerous, because properties which would be desirable in one application might be undesirable in another.

Desirable Properties

1. Not affected by most modeling solvents.
2. Fast cure.
3. Will bond plactics, metals, and other unusual materials.
4. Very high strength.
5. High penetration in light indoor wood.

Undesirable Properties

1. Sensitivity to humidity levels during curing.
2. Sensitivity to temperature levels during curing.
3. Difficulty in controlling migration of cement.
4. Plugging of dispenser tube.

I will not touch on the dangers of using the cements, since these are adequately covered in the instructions. Believe!

It might be surprising that I list the fact that cured cement is not affected by most solvents as desirable. I have found that this property allows me to do things which would otherwise be difficult. For instance, small posts can be cemented to microfilm wing and tail structures to support the bracing wires.

If the bracing has to be moved, the model cement on the wires can be softened with thinner without affecting the wing structure or the microfilm because the cyanacrolate acts as a barrier to the migration of the thinner through the wood, and is itself not soluble. Hollow motor sticks and booms can be spotted together on the seams to hold them in position while the seam is cemented with conventional glue. Complex structures can be tacked together in jigs and then cemented with conventional cements off the bench. Post and cabane structures can be built and the wing cemented to them with model cement. Then the wing can be repaired by simply dissolving the conventional cement and removing the cabane and wiring. A vertical post can be cemented to the tail boom at the leading edge of the stabilizer using cyanacrolate and the stab incidence changed without losing the reference of the post to fuselage position. Other applications become obvious as you start using this unique property.

The fast curing properties of cyanacrolates are widely advertised and should bring to mind many applications. However, as noted before, I use this property principally as a temporary joint to align the structure for conventional glues. Why? Because the cyanacrolates are very heavy and our light, porous wood tends to soak up too much. Also, after the wood has become saturated with the cement, its bending characteristics are drastically changed which tends to cause stress concentrations in the structure. Wood saturated with these cements is also very hard to sand without undercutting the adjacent wood parts which have no cement in them. However, when a quick repair is needed to get back into the air at a meet, all bets are off.

The third desirable property noted, bonding unusual materials, is less obvious. Want to glue tiny pieces of teflon wire insulation to your prop shaft to improve the thrust bearing? Want to glue an extension to a bracing wire to give that extra half-inch needed to rig core washin in the left panel? Want to really bond the wire axles to the landing gear of a baby ROG? You're home free. Please note that the surfaces must be surgically clean. A fingerprint on the nichrome wire will give a bad bond. Clean everything with #400 sandpaper and acetone and keep your fingers off until the cement has cured. I can't tie a knot in nichrome, but I can overlap an eigth of an inch and glue it with the same result. I think the weight difference is negligible. Incidentally, for a joint like this, the glue is not dropped on the joint. Both pieces are wetted and then laid together for the bond. Its lighter and easier than to try to control the flowe of cement. An aluminum tube may also be cemented to Vacuformed plastic wheels and cowls.

The penetrating properties of the low viscosity cyanacrolates have been discussed from a negative aspect (weight), but these same properties can be used to an advantage. For instance: instead of using a plywood scab to keep the rear peg hole of a scale model from wearing oversize, simply put a drop of cyanacrolate in the hole and let the wood absorb it. This will harden the wood with less weight penalty than the ply. Similarly, a tap hole in balsa can be hardened in this manner and then threaded like hardwood. A soft propeller spar that causes flutter can be stiffened by just wetting its surface with these cements.

Now to the bad parts. These cements all require a certain amount of humidity to cure. You may find that in an extremely dry house (Chicago in the winter) your glue won't cure. Simple: breathe on the joint just as if you were warping a surface. The moisture in your breath will start the curing cycle. They won't cure in a cold place. Same solution as above unless very cold, in which case a lighted cigarette or pipe held several inches below the joint will kick it off. Another problem is too much humidity. This may waterlog the structure and prevent penetration of the cement. We learned this at Lake Charles last summer. Dry it out with a cigarette before gluing.

Controlling the migration of the cement in critical areas is a real problem. Since it will not travel across water, this can be used to control the flow. Also, limit quantities applied. More on this later.

The single most irritating problem is the tendency of these cements to clog the tiny capillary tube used for application. A wire used to clear the tube will eventually cement itself in place and it will always collect a skin of cement which has to be removed before use. Squeezing the bottle until the tube is clear and then releasing to suck the remaining drops back into the bottle accelerates the hardening of the glue in the bottle. Lately, I've had good luck with rapping the bottom of the bottle on the workbench when I set it down. This accelerates the cement in the tube back into the bottle from its own mass and gives me good results. But buy the extra length of tube and keep it handy.

The most frustrating problem in the use of these cements is getting really small amounts where they are needed without dripping a lot more into your lap (no more comment on that). I believe it was Larry Renger who started me down the right track on solving this problem. He suggested using the eye of a needle to hold the minute drops pulled from a big drop on the bench. This worked, but the eye of the needle got plugged and was too hard to clean. The I came up with a Mark II version which works well for me. Stick the point of the needle into the end of short piece of 1/8" dowel and break the eye in half. This leaves a tiny fork-shaped end on the needle which will hold a really miniscule amount of cement from its own surface tension. When the open end of this fork is pressed against the joint, the cement transfers over. When it gets fouled, it is simply pulled between the teeth (make sure it's dry first, dummy) and the residue peels off. Try it, you'll like it.

I've tried to cover some of the techniques and problems I've discovered. Each of you will have much more to contribute after you've lived with this material for a while. Talk to people in other areas of modeling and engineering. There are literally thousands of new materials and processes waiting to be applied to problems that have been bothering us for years. Have you tried Kelvar bracing, carbon fiber composites, and egg carton styrofoam? Fifty minutes isn't the ultimate any more than thirty was twenty years ago.

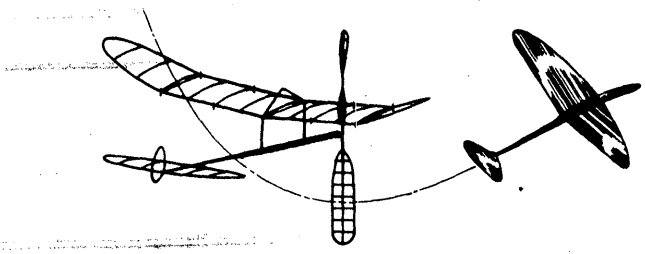
WHAT'S DEADSTICK?

Almost everyone who flies indoor models finds out that "deadstick" means that the motor has unwound to the point where it no longer pulls the model. Hal Crane offers this story illustrating a possible origin for the term:

In 1940 I was at the Grafton, Mass. airport for a lesson when I saw a new 65 hp. Taylorcraft approaching downwind, wheels "down" and deadstick. The wooden prop had stopped horizontally by luck. The proud new owner was lost and out of gas, but he landed downwind with no roll. You see, there was a foot of snow and we were using skis! Original definition: a stopped wooden prop is a dead stick!

The Voice of N.I.M.A.S. APR/MAY·1979

INDOOR



NEWS and VIEWS

Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

INDIVIDUAL STANDINGS

Flier	Country	1	2	3	4	5	6	Total
1. Erv Rodemsky	U.S.A.	9:57	36:23	7:35	24:28	11:37	35:36	71:59
2. Jim Richmond	(Champ)	7:29	32:54	7:56	20:28	36:17	35:12	71:29
3. Rene Butty	Switzerland	35:34	33:24	21:01	34:11	33:23	35:06	70:40
4. Edward Ciapala	Poland	27:03	15:12	26:49	29:46	33:50	35:55	69:45
5. Bernard Hunt	England	31:26	7:50	24:37	34:46	30:44	34:31	69:17
6. Dave Pymm	England	33:04	35:47	14:41	9:52	9:15	32:38	68:51
7. Ray Harlan	U.S.A.	11:36	35:49	11:56	8:33	32:13	10:28	68:02
8. Dieter Siebenmann	Switzerland	11:57	31:20	19:26	34:54	32:25	19:21	67:19
9. Andras Vogel	Switzerland	14:54	34:38	32:06	19:29	24:44	26:46	66:44
10. Pete Andrews	U.S.A.	33:15	11:58	22:37	33:23	30:52	0:46	66:38
11. Laurie Barr	England	35:26	15:37	18:39	30:08	9:27	17:59	65:34
12. Ron Higgs	Canada	29:29	31:43	6:11	26:05	33:41	8:30	65:24
13. Otto Rodenburg	Netherlands	29:57	31:38	33:38	27:52	0:07	0:34	65:16
14. Pentti Nore	Finland	31:50	9:12	21:45	30:47	25:39	31:33	63:23
15. Edmund Liem	Netherlands	13:02	31:00	17:21	30:15	30:44	32:05	63:05
16. Harri Raulio	Finland	5:40	27:42	30:31	27:08	30:53	5:07	61:24
17. Ryszard Czechowski	Poland	7:40	31:11	20:18	12:14	30:23	25:46	61:34
18. Sylwester Kujawa	Poland	9:53	30:12	22:05	28:40	30:58	29:16	61:10
19. Milan Sitar	Australia	0	26:34	1:19	27:18	11:36	32:14	59:32
20. Jack McGillivray	Canada	27:40	9:45	9:12	30:38	12:33	28:19	58:57
21. Carlo Cotugno	Italy	25:41	17:18	9:19	28:17	25:25	30:30	58:47
22. Germano Masciullo	Italy	23:08	26:00	21:19	27:56	28:56	21:24	56:52
23. Takaji Matsuzawa	Japan	27:34	29:42	25:30	6:01	27:16	5:46	57:16
24. Cornelis Wolthoorn	Netherlands	23:48	28:47	22:51	25:27	21:55	25:37	54:24
25. Chris Thomas	Canada	26:19	26:37	19:07	3:19	25:53	13:20	52:56
26. Klaus Nottelmann	West Germany	23:18	13:03	17:28	26:23	26:06	26:06	52:29
27. Yasutoshi Banba	Japan	3:00	19:07	0	24:07	0	27:27	51:34
28. Tsuyoshi Yamazaki	Japan	25:09	24:27	17:55	26:23	5:29	6:17	51:32
29. Marcos Angel Molo	Argentina	14:38	21:36	24:22	9:22	22:46	25:16	49:38
30. Allen Edwards	Australia	21:03	22:05	11:52	15:30	6:53	26:23	48:28
31. Alfred Klinck	West Germany	21:39	23:36	19:25	22:53	10:36	24:14	47:50
32. Nereo Beggiato	Argentina	5:38	18:44	12:31	14:07	28:15	3:26	46:59
33. Edwardo Grippo	Argentian	14:35	21:34	23:55	2:35	20:39	13:32	45:29
34. Timo Forss	Finland	14:32	5:22	21:56	10:49	19:34	3:01	41:30

TEAM PLACINGS

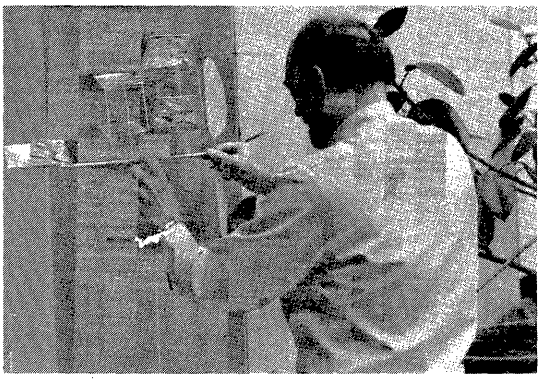
1. U. S. A.	206:39	7. Finland	166:17
2. Switzerland	204:43	8. Japan	160:22
3. England	203:42	9. Argentina	142:06
4. Poland	192:29	10. Italy	115:39*
5. Netherlands	182:45	11. Australia	108:00*
6. Canada	177:17	12. West Germany	100:19*

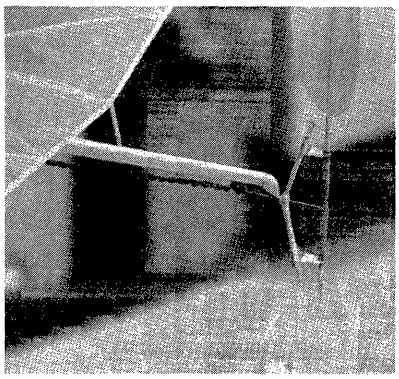
*Two-man Teams

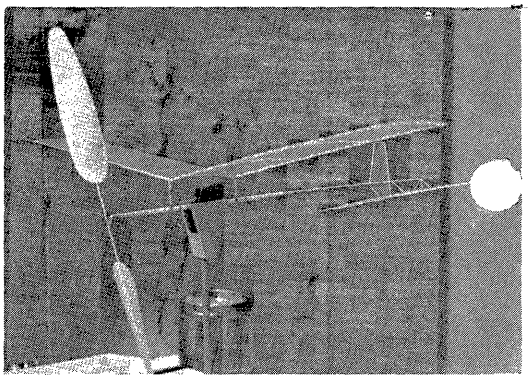
THE 1980 INDOOR WORLD CHAMPIONSHIPS

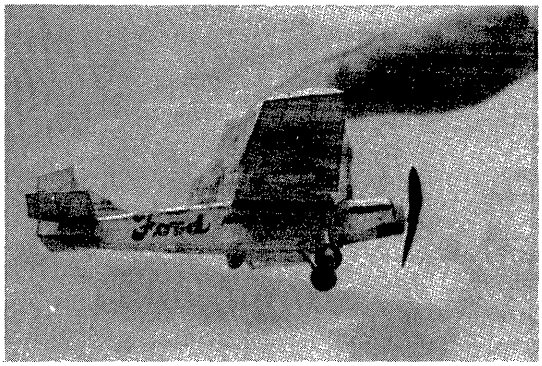
For the most part, everyone began arriving June 20, 1980 for the most exciting and perhaps the most important Indoor World Championships ever held. Fliers from 12 nations, team supporters, AMA officials and many enthusiastic U. S. volunteers settled in to put on what may have been the most harmonious World Championship in the history of the event.

Ian Kaynes of Great Britain, Chairman of the International Jury, noted that the competitors, volunteer timers and the AMA officials had staged an outstanding meet. "All the Jury had to do was view the meet and write a report," Mr. Kaynes said. Normally, the jury resolves protests over official rulings, unsportsmanship conduct of competitors and similar matters which can arise during a World Championship. Other Jury members were Peter Allnut of Canada and Bucky Servaites of the United States. All agreed that one other point was proved by this contest: it is not necessary to fly Indoor World Championships in a dirigible hanger. That is the importantance of this meet, since there is a strong prejudice toward large hangars for world championship caliber indoor flying. Therefore, many countries without dirigible hangars have been reluctant to bid for an Indoor World Championship, and host countries have been hard to find. Perhaps now countries with convention sites having about 100'ceilings will now plan to host future events.





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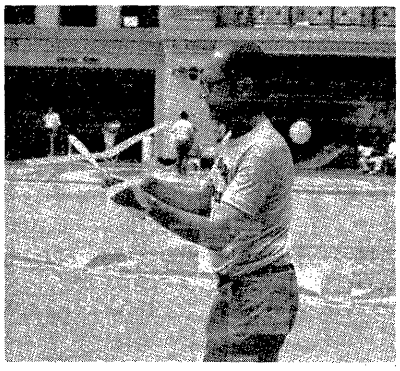
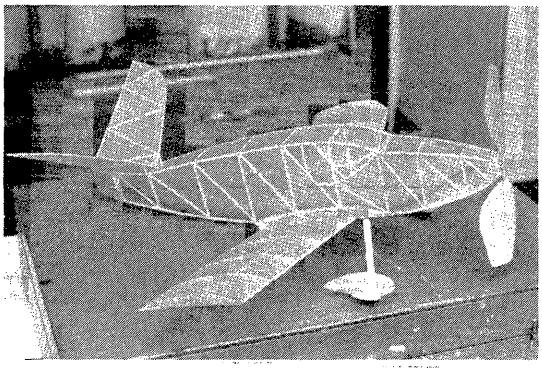
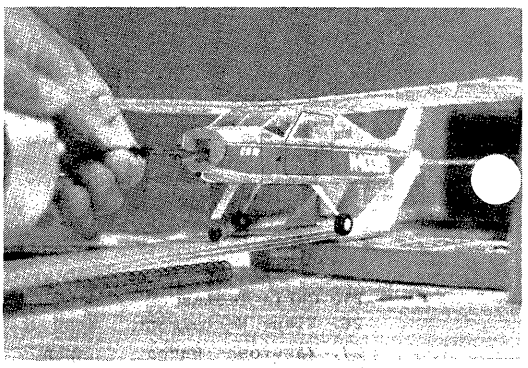
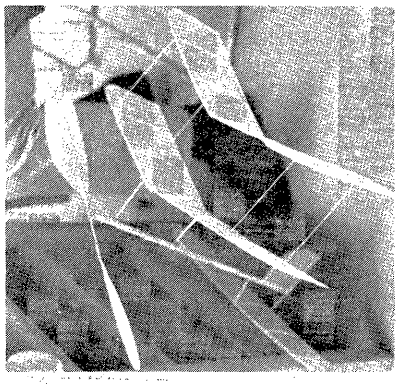
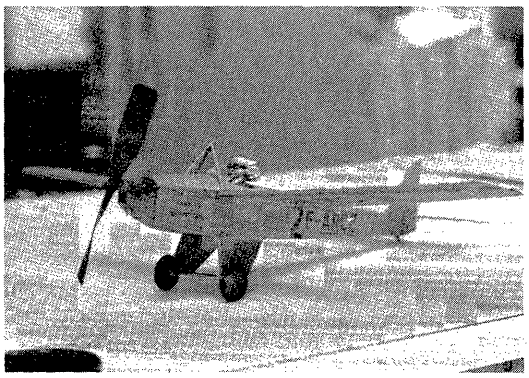
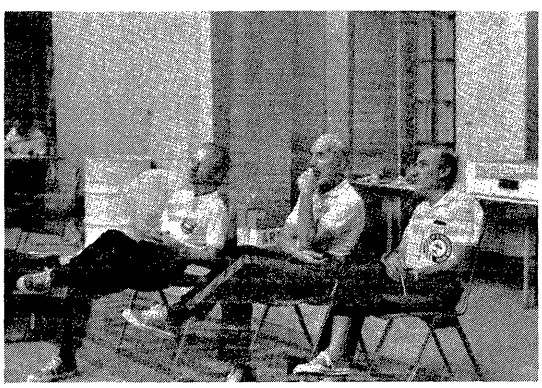


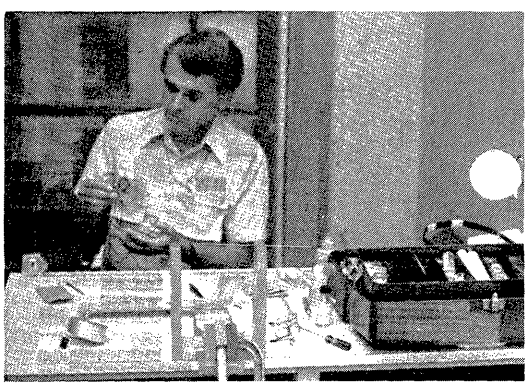


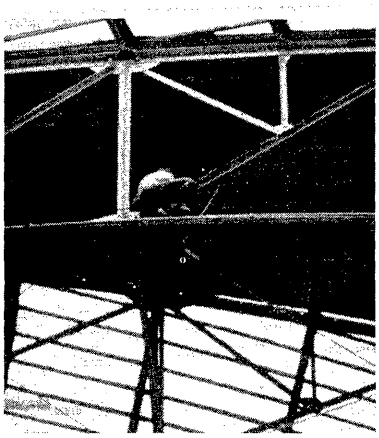
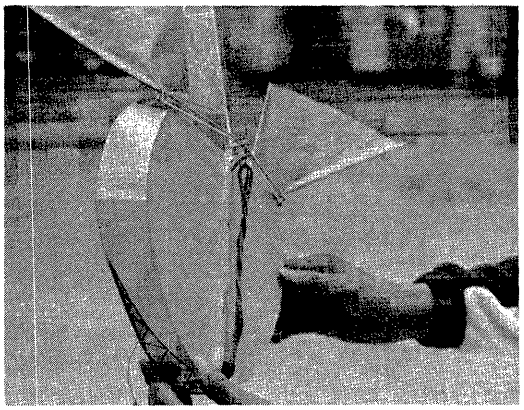
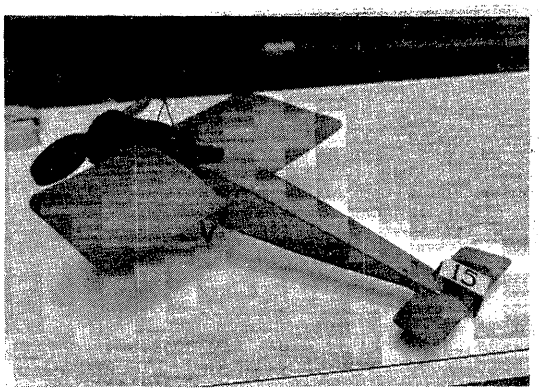
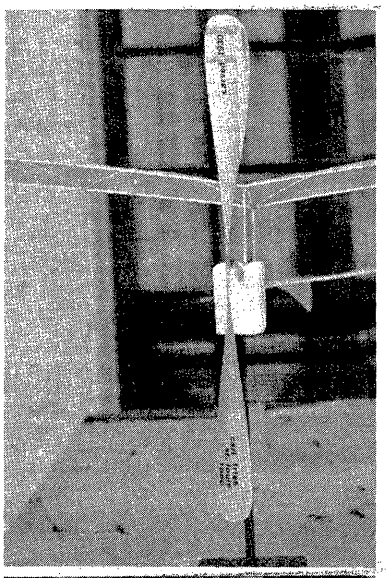
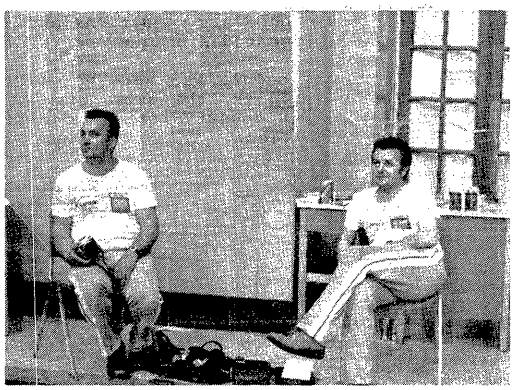
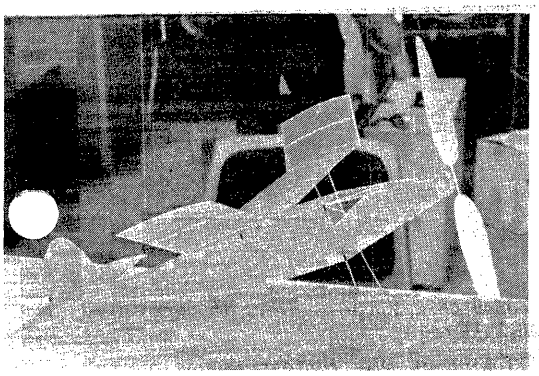


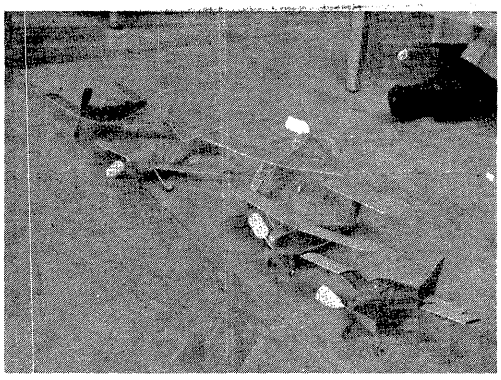


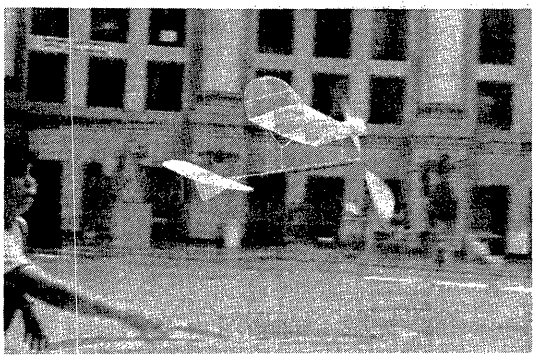
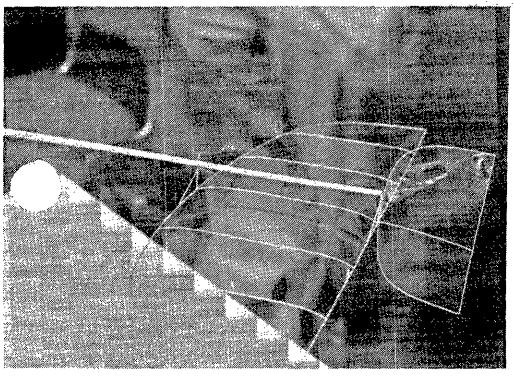


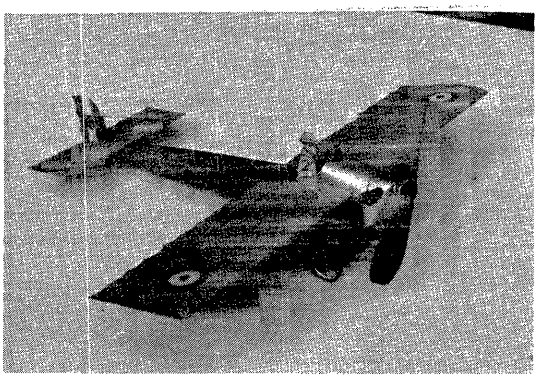








Most of the competitors were enthusiastic over the contest site. "Our" Atrium at Northwood Institute has been accepted as one of the best, if not the best indoor site in the world. The annual NIMAS flying get-togthers have given us the experience needed to handle a WCh at West Baden, and we can be proud of the effort put forth by many NIMAS members and others. Last year, as a number of us reviewed the positive results obtained from shrouding the infamous mushroom, John Martin decided the time was ripe to try for a WCh. He was right!

Those of us who are familiar with the Atrium and the surrounding facilities find it easy to see why the competitors had such a favorable reaction. Those who aren't acquainted with the facilities are also missing a great show every year, not just this year. The competitors and others who attended the 1980 World Championship were immersed in their own particular form of modeling activity 24 hours a day. In particular, those with limited access to good flying sites in their own country found the Atrium's good air conditions and 24-hour-a-day availability represented a unique opportunity.

For many people who were not flying in the WCh, and for their families, the extra time after official flying sessions meant opportunities for bull sessions or other social activities. This meet was certainly a golden opportunity to get acquainted with international visitors.

Right off the bat, this World Championship was different. Despite the facts that this was a U. S. site and the U. S. Team was familiar with the site and the flying conditions, we led the last half of the pack for much of the meet. In fact, not even Jim Richmond, flying to defend his title as World Champion, started out well. Melody Doig made the action summaries summaries shown below; these show that the Swiss and British fliers led until the middle of the last flying period, with the Dutch following in third place until all the fifth flights were in.

Best Two of Two Flight Totals (seconds)		Best Two of Three Flight Totals (seconds)	
Switzerland	9707	Switzerland	11188
United Kingdom	9550	United Kingdom	10739
Netherlands	9492	Netherlands	9972
Canada	9093	Poland	9458
United States	8338	Canada	9093
Japan	7739	United States	8997
Poland	7271	Finland	8896

Best Two of Four Flight Totals (seconds)		Best Two of Five Flight Totals (seconds)	
Switzerland	12163	Switzerland	12228
United Kingdom	12037	United Kingdom	12037
Netherlands	10845	United States	11731
United States	10514	Poland	11180
Canada	10346	Netherlands	10773
Poland	10030	Canada	10598
Finland	9438	Finland	9931

The British fliers have always done well, but 1980 was only the second year for Switzerland to have a full team entered. Poland and Canada have also done well in recent WCh competition. The early poor U. S. showing gave rise to anxiety for both the U. S. team members and the spectators. Jim Richmond had noted on Saturday (final practice day) that it is always easier if one has a good start, since any other standing results in clouded thinking about flight and competition strategy. So, for whatever reasons, the U. S. team had to play "catchup" for much of the meet.

To a limited extent, weather played a part in the early contest results. The weather was slightly cooler than normal for that time of the year, and Day One conditions were not quite ideal. There was a big scare on Day Two, when it began raining before official flying began. For a while, it looked as if the whole day could be scuttled, but about mid-afternoon the front slipped past and the fourth flights were made in nearly normal conditions. Day Three was the warmest of the three and the U. S. had a chance to catch up.

Time dragged on that afternoon for almost everyone. Rodemsky's fifth flight, was involved in a collision just as it began to show promise of repeating his earlier 36+ time. Pete Andrews' sixth flight stalled to the floor twice, ending his chances for a better flight. Harlan's sixth needed steering; he caught the model from the wrong side of the motorstick, and tangled the prop in the balloon string. Scratch two. Erv's second attempt on his fifth, fouled, flight also needed a steer and got caught. Erv's last flight was all we had left.

Meanwhile, Jim Richmond's last two flights had pulled him from near last place to first; he was World Champ one more time. He had to worry a lot for about three hours over whether he would keep the title; six fliers had some chance of beating him.

After quite a wait, Rodemsky prepared to fly. He had almost solved the launch stalling problems that his models had shown on previous flights, and the model went almost too high. He needed about 33 1/2 minutes to boost the U.S. score high enough to win the Team title, and just over 34 minutes would make him World Champion. The model seemed bent on hanging, as it drifted close to every possible obstacle. Meanwhile, two other excellent competitors chose to fly and there had been some concern about possible collisions. One of these competitors developed a minor problem and withdrew to repair. Ciapala (Poland) got off a clean launch and his model passed Erv's model safely on its way to an excellent flight.

Finally Erv's model was low enough to be out of danger. At last, applause marked the time as Erv's model, still hanging on, brought the U. S. total into the winning slot. At this point, the model looked as if it might go all the way, and finally it did. Erv Rodemsky, on his first team billet, had won it all. That is, he had all the marbles if he could keep them! Ciapala's flight was still looking good, with enough altitude to perhaps win first place. In addition, there was a good chance that Czechowski, a former World Champ himself, might get a really good one. Czechowski's total was not enough to expect him to take first place, but really good flights by both Ciapala and Czechowski could still get the Poles another team championship. Besides, both Hunt and Pymm had one flight left.

One by one, the flights went off and came down. When it was over, Rodemsky was World Champion, Richmond was second, and the U. S. had finally won the Team Championship (the C. S. Rushbrooke Memorial Trophy) again. Erv had also logged the longest single flight, so he took home the Ernie Kopecky Memorial Trophy too. After all that, the banquet was an anticlimax. Not only was this one of the finest Indoor Championships ever, it certainly was the most suspenseful!

The smooth functioning of this contest is due to the leadership of Hardy Brodersen (contest manager), and Dick Kowalski's calm CD'ing. Ed Stoll and Al Rohrbaugh led a cast of dozens of volunteer timers who worked long hours. Bob and Gloria Champine worked long and hard to tabulate all the scores, checking and re-checking as needed. Your editor had the honor to serve as Air Traffic Controller, assisted by Reg Parham of England. Our job was to regulate the model launching in such a way as to assure that no collisions were the direct result of an unwary launch. We felt that those relatively few collisions which did occur cound not have been forseen. That is, virtually all collisions took place at altitudes near the very top of the air space. Due to the tendency of models to center themselves while they were near the top, the "soup" of models constantly thickened as long as the models were able to cruise at the top. Once any model started down, it seemed pretty safe.

It should be noted that regulation of model launch times is not new. Hungary used a rigid policy of no more than four models airborne at one time at the 1966 WCh. This meet was for 90 cm unlimited weight FAI models, and the site was a 98' cube! In view of a very successful meet for seven teams, something would have been very wrong if we couldn't fly twelve teams in more than three times the cubic volume!

One personal observation: this contest had a very large proportion of fliers who were unable to control their models at launch. I'm not sure why this happened, but it made for grey-haired traffic controllers! When we would OK a launch from a given spot (we did not tell a flier when or where to launch; we only OK'ed their choice of launch site and time), it was with the expectation that the model would have a "normal" launch trajectory. Models that did not often caused a near miss during flight launches! It was the general consensus of most observers that this one model characteristic is very easily controlled, and we were disappointed to see such a

large number of world-class fliers who didn't.

It is usually very interesting to note model design trends at World Championships, and this was no exception. Each of the two teams that led the pack for four rounds introduced an important new technology for indoor duration flying. Bernard Hunt and Dave Pymm used torque-controlled variable-pitch propellers, and the Swiss flew models greatly resembling the Archaeopterix design flown two years ago by Dieter Siebenmann. This model design, with two "generations" of development, had been refined to the point of having performance potential beyond the normal indoor model design trends. While it may seem far-fetched to refer to a design refinement as "new technology", I believe that this trend can be developed to a point of dominance in international competition.

The new Swiss models sported a smaller stabilizer with much higher camber in comparison to the original. In fact, the new stabilizers had higher camber than the wing. Siebenmann credited this idea, or at least his reasons for using it, to an obscure aerodynamics study published many years ago. It may be some time before we have a discussion of the new Swiss models' aerodynamic setup, but several flight characteristics were apparent. Many critically trimmed indoor models will stall and tail-slide away from an obstacle, losing altitude which may not be regained. Further, in low-level turbulence (at either launch or touchdown), these same models will also have drastic reactions to the rough air. The Swiss models climbed "on rails" and settled slowly, in level attitude, when striking an obstacle or encountering low-level turbulence. Some observers noted that these models were landing with more turns than is usually expected for long and consistent flights such as those logged by Rene Butty, who placed third overall. Rene sheepishly acknowledged that they still were trying to determine the optimum rubber size! How much more time could have been made under these same conditions? Also, it is worth noting that Andreas Vogel (9th place) had a Swiss torque-variable prop which was somewhat lighter than the ones flown by Hunt and Pymm, but he didn't get it zeroed in soon enough to use in the Championships.

The British models were mostly standard except for shorter moment arms (needed to compensate for the heavier propeller). These models were specifically designed to accomodate the lower ceiling height of the Atrium (just under 100', compared to over 160' for their home site at Cardington). The two added dimensions of flight trim--maximum high pitch and selection of proper cruise torque values in the motor--were sorted out by Hunt and Pymm in time to get 5th and 6th places overall. This is very good performance for a new technology! While torque-variable propellers have been tried before, Pymm and Hunt used computer simulations to greatly speed model development, and they acknowledged that other fliers before them had been close to good results.

The rest of the models flown, with one exception, were quite normal in design practice, with many good flights logged by fliers from around the world. Otto Rodenburg, from the Netherlands, had models inspired by the Swiss designs, but he hadn't quite gotten them zeroed in. Of the standard models, Jim Richmond, Ray Harlan and Erv Rodemsky had the best flying ones.

I feel that the countries with no high ceiling sites at all (Argentina and Australia) are to be congratulated. Although these countries did not do well in the overall standings, these fliers worked very hard to adapt their models to this "high ceiling" (in comparison to 6 meters that the Argentina fliers have, for example), and their results speak well for their competitive spirit.

A personal note: It was a very great pleasure for me to be able to attend this contest, and I congratulate each and every competitor for the outstanding spirit of sportsmanship and gentlemanly conduct each displayed. It made my own job a pleasure instead of the nightmare it could have been without this outstanding conduct.

****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

This Issue

The material in this issue deals almost entirely with the events of the only (to date) full week of indoor activity ever to occur. Even so, not all the results from that week are here; the Peanut Grand Prix results I have were such poor copies that, without a better background in what actually occurred, I can't decipher exactly how to report the results. Perhaps by the next issue John Martin will have reported the Grand Prix in "The Hangar Pilot", or will have given me a more readable set of results and enough background to report the event. I took many pictures, expecially close-ups of scale details, but I didn't have the overall action in hand.

To top that off, when I started to paste up all my comments along with the photos, there was about seven pages of stuff! Consequently, the report of West Baden 1980 will cover two complete issues, probably separated by about two weeks. This move will also give me space for some three-views and other info related to the BIG week of Indoor.

THE PICTURE STORY

Page 2, Column 1
1. Cezar Banks trims his biplane Pennuplane, but no flight times were recorded.
2. Ford AT-7 scale model, owner/flier (proxy entry??) not known.
3. John Triolo's "Better Fly"; earlier versions would not, but this one flew nicely if not long enough.
4. Mike Clem with his Right Flier; winner of INDEX scoring and placed 4th against all comers.
5. Three really nice gentlemen from Argentina; (l-r): Marcos Molo, Nereo Beggiato and Edwardo Grippo.

Page 2, Center Column
1. Close-up of torque-variable prop on Easy B model. No visual differences from FAI props except size.
2. Mr. Micro-X, Lew Gitlow, comes out of retirement to fly a bunch of nice models.
3. Obviously enjoying himself, Erv Rodemsky receives the C. S. Rushbrooke Memorial Trophy from AMA President Earl Witt.
4. Turn this one 90° clockwise to see Hardcastle's Pennyplane--no center posts! Clever wire bracing held top wing in place even in full-power launches.
5. Edmund Liem, Holland, with his 2nd place Pennyplane.

Page 2, Right Column
1. Top Easy B by Otto Rodenburg of Holland. Underslung stab has very small area, and adjustable incidence.
2. Ouch! Mike Van Gorder had a bike accident, still wound'em tight enough to win place in INDEX.
3. Neat Tri-Pacer Peanut by Bob Clemens; winding stooge wound accomodate everyhing up to Wakefield models.
4. Farman Moustique by Bill Hannan; Peanut Scale model had individual, detailed spark plugs!
5. Here's Bob Clemens at work; Scale is his bag and he flew several Peanuts and AMA Scale models, also had 3rd place Bostonion.

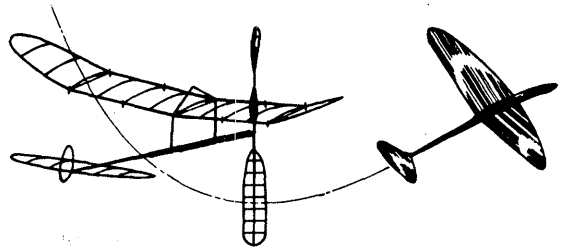
Page 3, Left Column
1. Finland's Team (l-r) Timo Forss, Pentti Nore, Harri Raulio. Harri and Pentti flew on previous teams.
2. Moraile Soulnier, by Butch Hadland. Model is very light in spite of completely opaque paint job. Very pretty model.
3. Top Manhattan Cabin by Walt Van Gorder. Walt is a really intense competitor, also got 2nd in Easy B.
4. XNART "regular", Dick Obarski, gets off an Easy B.
5. Close-up of Swiss tail feathers. Note very high camber; adjustable stab. Tail boom unplugs to give very compact model boxes.

Page 3, Center Column
1. Our HERO! Roy White saved dozens of models a day by taking casual strolls in the iron-work. Much credit also to Mike Stoy, on other end of safety line.
2. Oldest living prop! Carl Fries carved this one under a shade tree in 1930's. Recently restored; still can power a model very nicely.
3. Erv's model coming down on the string; Erv on right, Pete Andrews helping and Warren Williams praying. Hal Crane photo.
4. Carlo Cotugno (l) and Germano Masciullo prepare an official flight. Italian Team members several years.

Page 3, Right Column
1. Bottom view of Japanese "fun" ornithopter. A close look will reveal teeth and eyeball; model flew, just barely, with fish-flutter movement of vanes.
2. Two of Polish Team; Kazimierz Lapinski (l), manager and Edward Ciapala.
3. Bostonion line-up for "charisma" judging; models are rated in comparison to each other and a multiplier between 1.0 and 1.1 is used to enhance flight time for total score. Models by (l-r) Tony Sutter, Triolo "Better Fly", Triolo "'Nother Thing", Bob Clemens and Terry Mrakava.
4. Jeff Everson heaves his Pennyplane.
5. Another Hannan Moustique; also with sparkplugs.

The Voice of N.I.M.A.S. JUN/JUL·1979

INDOOR NEWS and VIEWS



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****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

This Issue

Here is a lot more stuff on the biggest modeling week there ever was. John Martin came through with a good report on the Peanut Grand Prix, and there is at least one plan (I haven't tried to fit it all together yet, so I'm guessing) from the Big Show. I do know that the cost of two pages of photos (last issue) was a real shocker! I hadn't tracked film costs, and the plates had gone up also. Anyway, most of the pertinent stuff is here, and any other snippets will dribble in.

The Next Issue

So far (several weeks after the Nats), I have zero Nats results, and only a few comments from one or two guys who flew there. Any results you care to send will be greatly appreciated!

A Terrible Oversight!

Sometimes it is possible to do your job too well! At the 1980 Indoor World Champs, Don Lindley and his crew were in charge of the site facilities--all the special arrangements pertaining to the building and any extra equipment such as helium, balloons, and the extra string of lights around the mushroom. Since nothing went wrong, nobody (including all the reporters and myself who wrote about the meet) noticed. Don, I am sorry we all took your efforts for granted. You and the others did a terrific job! Of course, we could not miss the almost constant efforts of Roy White and his anchor man Mike Stoy as they retrieved many models from the clutches of the West Baden iron, but just to set the record straight, the rest of the crew was John Martin, who handled food and housing. In addition, Burr Stanton served as volunteer contact man at Louisville, Kentucky, and Charlie Sotich coordinated transportation from Chicago, the other major arrival point.

THE FIFTH NIMAS ANNUAL RECORD TRIALS (VNART)

That idea whose time has come--annual NIMAS get-togethers-really came along in 1980. With both a World Championship and the Peanut Grand Prix happening in the same week as our meet, we really had a show! As usual, the site was the Atrium of Northwood Institute, with some of the same people attending as in past years, but many new ones also came.

Besides the usual group of "regulars", we had other people attending: contestants, officials, volunteer timers from the WCh and the Grand Prix also made it a week to remember. By the time all the Peanut Scale models had flown in the Grand Prix, many people had been submerged in their favorite sport/hobby for six days, and had barely gotten started! Of course, not all the officials, teams and helpers from the Championships and Grand Prix stayed for VNART; some left muttering about short vacations, etc. Some people just have no stamina!

Anyway, with fliers from six countries ready to fly their numerous models, VNART got under way. What do you say about an indoor meet where flying of some sort goes on 24 hours a day, and where flights are made in all the official AMA classes and numerous unofficial ones? Someone flew in at least one these events: AMA Stick, FAI Stick, A ROG, ROG, Paper Stick, HLG, Pennyplane, Novice Pennyplane, two classes of Easy B, Helicopter, Ornithopter, Autogyro, AMA Cabin, Manhattan Cabin, Bostonion Cabin, rubber powered and CO_2 powered AMA Scale, Peanut Scale, Peanut Scale Speed, and Mass Launch (WW I Peanuts). As usual, some of these events had had only one or two entrants trying for record times, and some of had as many as fifteen entrants. We sorted out all this activity by using the NIMAS Index scoring.

Index scoring pits the contestant's times against the current AMA record classes for that event by computing the ratio of the flight time and the record time. For example, if the flight does not exceed the the record, a typical score might be .997; a record breaking flight might have a score of 1.045.

Since some model classes don't have national record status, such as indoor scale, the models are flown normally--against each other--as usual. Similarly, models which might have a record class if they were official events, such as Manhattan Cabin models, also are flown in direct competition. So, the total VNART results are a mixture of Index points and "real" times or scores. Obviously, the Index results can represent a great mix of model types, and since Junior record times may be relatively low compared to Open times, Juniors often win many of the Index prizes. It has become traditional for the NIMAS prizes to be handsome engraved pewter mugs, which certainly stand out on trophy shelves!

As an example of the variety of Index winners, here are the 1980 winners:

Flier	Age	Model	Time	Score
Mike Clem	(Jr.)	Pennyplane	12:07.4	1.084
Dave Lindley	(Jr.)	Autogyro	4:08.4	1.064
Lew Gitlow	(Op.)	Helicopter	9:12.2	1.054
Dave Lindley	(Jr.)	A ROG	10.02.4	1.0405
Mike Van Gorder	(Jr.)	Novice P/P	11:00.4	1.043
Mike Van Gorder	(Jr.)	Paper Stick	16:25.2	1.025
Stan Stoy	(Op.)	HLG	2:43.4	1.021
Mike Clem	(Jr.)	Paper Stick	16:12.6	1.012
Dick Obarski	(Op.)	Paper Stick	24:14.0	.998
Dick Hardcastle	(Op.)	Pennyplane	13:53.0	.997

Each of the other events (direct competition) had only a first place mug, so here are the other winners:

Peanut Scale Speed-Martin Varney, Owl Racer, 22.47 mph
AMA Rubber Scale - Butch Hadland* - 160.7 pts.
AMA CO_2 Scale - Butch Hadland* - 172.0 pts. Peanut Scale - Butch Hadland*
Manhattan Cabin - Walt Van Gorder - 9:39
Bostonion Cabin - John Triolo - 2:55.6
Botched B** - Dick Hardcastle; 19:01
Real Easy B** - Otto Rodenburg* - 19:32

*Foreign contestants as follows:
Otto Rodenburg - Netherlands
Butch Hadland - United Kingdom

**The new AMA record class for Easy B received much unfavorable comment, with the general idea that the rule created something that ought not be called "Easy B"; the most printable names for the event were Bungled B or Botched B. To avoid maligning a certain insect, the CD chose to log the event as Botched B. In the same vein, "Real Easy B" used the original rules unchanged.

The outcry against Botched B notwithstanding, several microfilm-covered, fully braced new rule Easy B's were flown, even by those who were decrying the desecration of the Easy B event as we knew it. Never mind! Otto Rodenburg's really nice Easy B easily outflew the Botched Bs. Early predictions suggested that a winning Botched B time could be as high as 25+ minutes, so one can presume that either the Botched B fliers really didn't get into the competition, otherwise, the event is challenging enough that the models will have to develop more to beat the real Easy B models.

With three days of 9 am to 9 pm flying, and all-night test flying and informal competition, it would take a book with several authors to tell the whole story. These items come to mind:

The Real Easy B event was to be a "shootout" between top U.S. fliers and the visitors; with a spread of 1:24 between 1st and 5th, it certainly was!

1. Otto Rodenburg - Hollad - 19:32
2. Walt Van Gorder - U.S.A. - 19:10.4
3. Yasutoshi Banba - Japan - 18:54.0
4. Dave Pymm - England - 18:46.0
5. Bernard Hunt - England - 18:08.2

Hunt and Pymm used torque-controlled variable-pitch propellors on their Easy Bs, similar to those used on their F1D models during the World Champs competition (5th and 6th individual placing).

A replay of WCh competition--in the VNART FAI Stick class-the top three fliers were Bernard Hunt (U.K.), 36:47; Dave Pymm (U.K.), 35:42; and Rene Butty (Switzerland), 35:32. Hunt was the only one of these fliers who bettered his WCh score (34:46). This was one event was another battle between VP props and the sophisticated Swiss design. We will see both these arrpoaches again!

Manhattan Cabin and Bostonion Cabin--both brainstorms of Ed Whitten--are very similar events in that both types of model require a "box" of certain dimensions to be part of the fuselage crosssection, and both classes have a minimum weight specification and maximum flying surface and propellor dimensions. Bostonion is both heavier and smaller, with an element of appearance judging included. That is, all Bostonion models in a contest are judged against each other for "charisma"; the resulting charisma factor, between 1.0 and 1.1, is multiplied by the flight score for final score. In comparison: the top Manhattan time was 9:39 vs. 2:45 for Bostonion. Bostonions are supposed to be pretty; Manhattans just fly well.

HLG was a one-sided battle again; Stan Stoy, flying his folding wing machine, placed in Index by besting his winning time from 1979 by a few seconds; Bernie Boehm made his usual flawless demonstration of classical HLG style and technique to finish 22 seconds behind. Note: this is no put-down of either Stoy or Boehm! Stoy has proven to all his own expertise with the non-folding machines, and it should be a real battle if both were flying either folding or non-folding gliders.

VNART's Peanut replay saw many of the same really neat Peanut models in another battle; the two AMA scale events were hard-fought and colorful. One comment worth of note: Hadland's win of both AMA and CO_2 Scale was with the same model. It was balanced with the CO_2 engine, trimmed to match with the rubber motor and prop, and initially test-flown with rubber. Later, the CO_2 engine and prop (on a separate noseblock) was substituted. This was a big model--20" span, and again proved that the Lacey is hard to beat.

Depending upon your viewpoint, the Peanut Scale Speed event was hilarious or a sacrilege. Props were clipped, rubber motors were doubled in size, and other mayhem was committed in the name of competition. The race course started on a table, and ended at a line 80' away. Starting with a (supposedly) no-push take-off, some models wandered a bit, others did well. Butch Hadland's Peanut Lacey showed obvious reluctance to race; it swerved first one way and then the other, shearing one wing or the other on the closest obstacle. Finally in a massive protest of such indignities, the model whipped a hard 180° turn and sheared both wings as it tried to hide in an open drawer of a nearby table!

As usual, three Juniors (Mike Clem, Dave Lindley and Mike Van Gorder) dominated the Index competition. Don Lindley noted during the awards ceremony that all three would "graduate" to Senior class for the 1981 XNART; it is time for more Juniors to appear!

It should also be noted that Mike Clem and Mike Van Gorder won in spite of handicaps. Mike Van Gorder came to the meet with a bandaged and splinted right hand; he experienced a bike accident the weeek before. Then, soon before his winning flight, Mike Clem was winding a big motor for his Right Flier biplane when the torque meter blew up and pieces of the torque rod and pointer draped themselves around the bone of his right middle finger. After some ice treatment, Mike decided to forego a trim to a nearby medical clinic in favor of continuing to fly.

Although Dennis Jaecks observed the WCh and flew in one of the after-midnight sessions (times over his record time), he did not stay for VNART. Perhaps his schedule will permit him to fly next year. His model activity has been dormant for a while, but he says he was inspired by seeing the WCh.

Doc Martin's 24-hour bar always had a good attendance and one wonders if some people ever slept!

It was a pleasure for me to meet Bill Tyler and Wally Simmers, both of whom attended this VNART. Both flew good looking models, and Wally threw HLG's like a youngster. He complained about being an "old man", but I wish I could throw a glider that hard! In the old-timer category, Carl Fries had a carved wooden prop dating from 1930. He had restored it to like-new condition, and flew it on one of his models. There are not many contests where one of the props is older than the contestants!

Dave Linstrum organized some sort of recreation for each night. Your editor was invited to display his ignorance, and recapped a research paper from an early NFFS Symposium on predicting model altitude by analysis of model performance and torque curves. Butch Hadland gave a really good symposium on Peanut Scale building and flying (proved his credentials later by winning most of the Peanut events). Other events included slide shows on Junior activity (Roger Wathen) and some info about the man-powered crossing of the English Channel.

The Grand Finale of VNART was to be the Mass Launch, held after the banquet. At last word this reporter had, three bold models were to appear. Later, a burst of applause from the somewhat dark Atrium confirmed the launch --but how do you judge a mass launch???

PAPER STICK	
Dick Obarski	24:14.0
Rick Doig	22:19.0
Ron Ganser	20:25.0
Dick Hardcastle	19:20.0
Chuck Markos	17:25.2
Mike Van Gorder	16:25.2
Mike Clem	16:12.6
Tony Sutter	14:34.8

PENNYPLANE	
Dick Hardcastle	13:53.0
Edmund Liem	13:16.4
Larry Loucka	12:12.6
Mike Clem	12:07.4
Gordon Wisniewski	11:58.0
Mike Van Gorder	11:40.0
Charlie Sotich	11:36.0
Warren Williams	11:33.4
Walt Everson	10:23.8
Tony Sutter	9:50.2

FAI STICK	
Bernard Hunt	36:47
Dave Pymm	35:42
Rene Butty	35:32
Cezar Banks	35:31
Bernard Aslett	34:00
Yasutoshi Banba	31:44
Otto Rodenburg	31:29
Jack Carter	29:50
Cornelis Wolthoorn	29:35
Edwardo Grippo	28:21
Dick Hardcastle	27:48
Ron Ganser	27:36
Chuck Markos	23:22
Edmund Liem	21:44
Nereo Beggiato	5:08

MANHATTAN CABIN	
Walt Van Gorder	9:39.0
Ron Ganser	8:55.0
John Jriolo	8:43.0
Tony Sutter	5:29.2
Chuck Markos	4:42.6

NOVICE PENNYPLANE	
Cezar Banks	11:56.0
Walt Van Gorder	11:11.4
Mike Van Gorder	11:00.4
Warren Williams	10:43.0
Douglas Barber	9:43.0
Mike Clem	8:26.6
Tony Sutter	8:15.0

REAL EASY B	
Otto Rodemburg	19:32.0
Walt Van Gorder	19:10.4
Yasutoshi Banba	18:54.0
Dave Pymm	18:46.0
Bernard Hunt	18:08.2
Dick Obarski	17:35.6
Jerry Skrjanc	15:54.0
Bob Mullins	15:21.0
Marge Koschutnik	15:16.4
Lew Gitlow	13:50.2
Robert Skrjanc	12:39.0
Tony Sutter	11:42.0
Gordon Wisniewski	11:17.4

BOTCHED B (New Rule Easy B)

Dick Hardcastle	19:01.0
Jerry Skrjanc	16:50.0
Shitioshi Nonaka	15:17.0
Dick Obarski	13:26.4
Douglas Barber	12:17.0

HLG (Juniors)	
Brian Fulmer	1:52.2
Bradley Bulmer	1:18.5
(Open)	
Stan Stoy	2:43.4
Bernie Boehm	2:21.8

BOSTONIAN CABIN	
John Triolo	110.87 sec
Terry Mrakava	121.98
Bob Clemens	110.87
Tony Sutter	93.15
John Triolo	84.14

AMA SCALE (rubber)

	Model	Scale	Flight	Total
Butch Hadland	Lacey M-10	93.0	67.7	160.7
Phil Cox	Vagabond	86	57.3	143.3
Floyd Miller	ITOH	75	57.3	132.4
John Adams	Vickers Vincent	75	57.3	132.3
John Martin	Alco	81.5	50.0	131.5
Hopkins	Waterman	80	41.2	121.2
Marcos Molo	Stormovik	72	47.2	119.2
Louis Varney	F.W. 152	67	44.8	111.8
Mike Collins	Eastbourne		22.1	

AMA SCALE (CO_2)

Butch Hadland	Lacey M-10	93	79.0	172.0
Bob Clemens	Jabaro	83	75.5	158.5
Phil Cox	Aeronca	92	32.6	124.6
Carl Hedley	Moustique	43	59.4	102.4

PEANUT SCALE

Butch Hadland	Lacey M-10	4th	4th	8 pts.
Marcos Molo	Santos-Dumont	5th	3rd	8 pts.
Bernard Aslett	Waterman	2nd	9th	11 pts.
John Martin	Cessna	6th	5th	11 pts.
Briggs	Farman	1st	12th	13 pts.
Bernard Aslett	Nesmith Cougar	11th	1st	13 pts.
John Martin	Ansaldo	8th	6th	14 pts.
Harvey Hopkins	J-3 Cub	12th	7th	19 pts.
Harvey Hopkins	Waterman	10th	11th	21 pts.

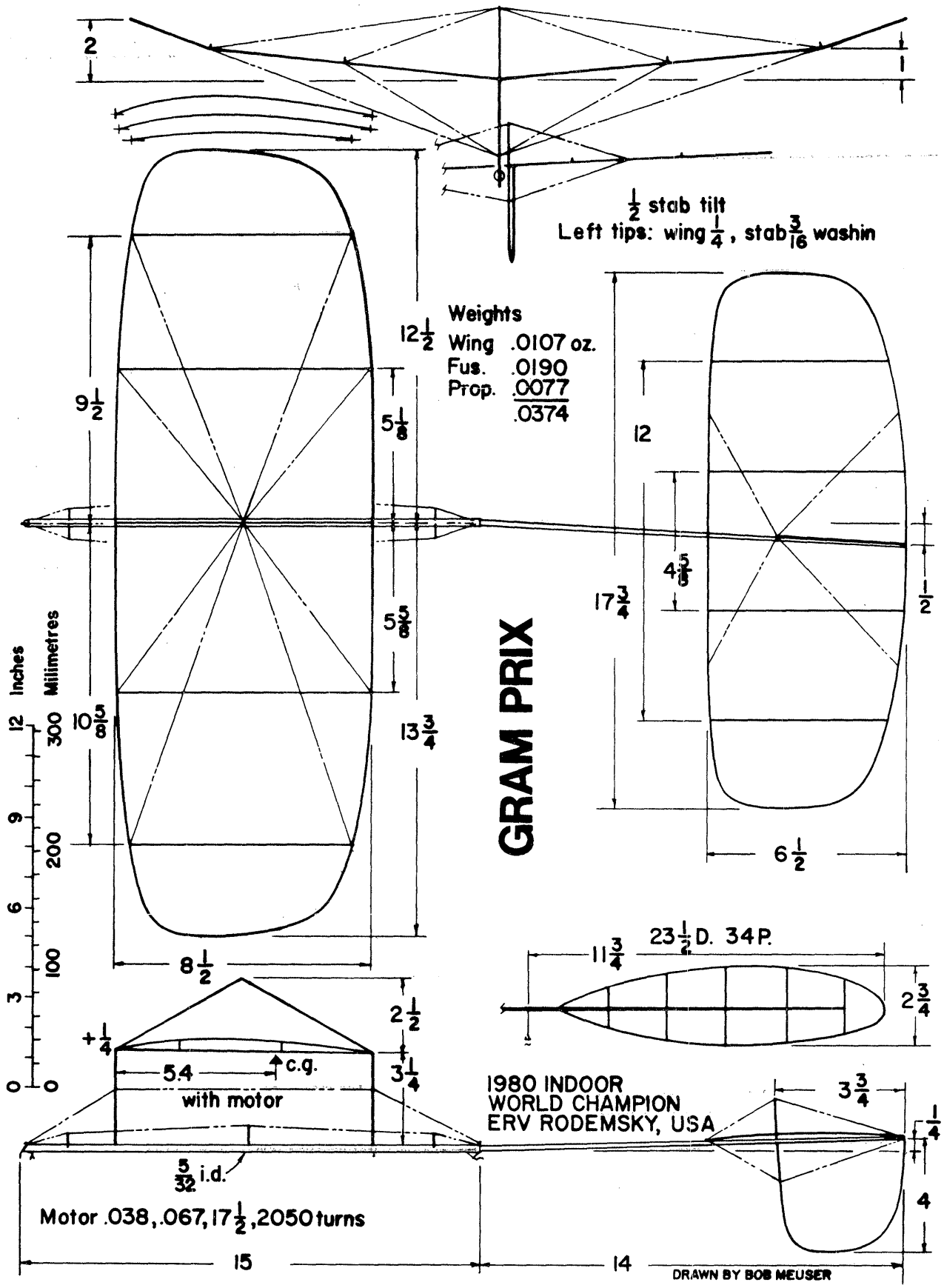
CONTEST CALENDAR

FLORIDA - Miami area

The MIAMA club has scheduled their winter sessions at the 28' Miami Dade South College. Contest events no longer include HLG and Paper Stick and have added Old Time Baby ROG using the 1930 ALMA rules:

Motor stick 8" max, rubber loop 10" max, two wheels 1/2" dia. min that turn, paper covered.

Call 858-6363 to confirm these dates on the day before the meet: Oct. 19, Nov. 16, Dec. 14, 1980 and Jan. 18, Feb. 15, Mar. 15, April 19 and May 17, 1981.


2
1
½ stab tilt
Left tips: wing ¼, stab 3/16 washin
Weights
Wing .0107 oz.
Fus. .0190
Prop. .0077
.0374
12½
9½
5⅛
5⅝
10⅝
13¾
8½
12
4⅝
17¾
½
6½
GRAM PRIX
Inches
Millimetres
12
9
6
3
0
300
200
100
0
+¼
2½
3¼
5.4
c.g.
with motor
⅝ i.d.
Motor .038, .067, 17½, 2050 turns
15
14
11¾
23½ D. 34P.
2¾
3¾
¼
4
1980 INDOOR
WORLD CHAMPION
ERV RODEMSKY, USA
DRAWN BY BOB MEUSER

HOW IN THE WORLD DID THAT HAPPEN?

A number of us were shocked when we discovered what the new Easy B rules were. How can the reasonably elaborate AMA rules-making procedure go so far astray? I'm not entirely sure, but part of it was total neglect on our part. The past 18 months have been very hectic for me, but in retrospect, not so hectic that I couldn't have taken time to read my copy of MODEL AVIATION. All the proposed rules, cross proposals, etc., were printed there for all AMA members to read. If we did, no one said anything or made any comments about the new Easy B rule to the FF Contest Board member from their AMA District. As a result, the FFCB members had to vote as best they knew how. As a former FFCB Chairman and Dist. VIII FFCB member, I can tell you that it's a very lonely thing to have to vote on rules proposals with no guidance from the members of your District. In some cases, I was able to see the guys from the FT. Worth-Dallas area and poll them in person. However, that left the rest of Texas and all the other five states in District VIII without a voice on the rules they would have to fly by.

Since I'm trying to straighten up and do this job right, I promise to try to alert all of you to future rules changes as they come up. However, that won't get the job done! Even if you like every pending proposal outlined below, you can't just keep quiet. It may well be that someone else in your District really hates the new proposal that you like. If he writes to your FFCB man and tells him waht a bad rule it is, that may be the only input your FFCB man gets. Since he is supposed to vote according to the wishes of fliers in his District, you may lose out because you kept still. Speak out, or don't gripe about the new rules!

The following brief comments outline the rules proposals currently being considered by the FFCB; only those rules which affect Indoor are covered:

FF-82-1 Adopt FAI Ceiling Categories and FAI Ceiling Measurement procedure.

FF-82-2a Adopt FAI Ceiling Measurement procedure. (if FF-82-2a passes):

FF-82-2b Keep current AMA rules rather than wipe the slate clean and starting over.

FF-82-4 Eliminate Easy B event.

FF-82-7 Eliminate present Pennyplane event and replace it with present Novice Pennyplane event.

FF-82-9 Eliminate present size limitations on IHLG.

FF-82-12 Redefine Easy B so the model has 18" x 4"-maximum wing, 18" max length, solid stick and boom, paper covered, 1/2 penny weight, stab area 50% of wing max, same prop as current (1980) rules, wood strut wing bracing permitted.

FF-82-13 Create new B Stick class with same sizes as in FF-82-12, except no covering, bracing, weight limits. (Event to be provisional for trial.)

Now that you know about these proposals, you need to know what's next. The FFCB's Initial Vote phase must be completed by December 1, 1980, so time is already fairly short to give input to your FFCB rep. Here's who you write:

District	
I	Henry Struck, RFD 2, Hamburg, Old Lyme CT 06371
II	Bradley Bane, 60 Lkae Ave. Lyndonville NY 14098
III	Rudy Kluiber, 2021 Lakeland Ave., Lakewood OH 44107
IV	Joe Boyle, 219 Shenandoah Rd., Hampton VA 23361
V	Bonny Jenkins, 3112 E. Haines Rd., Memphis TN 38118
VI	Chris Matsuno, 8576 Ginger, St. John, MO 63114
VII	Phil Klintworth, 715 Rutgers, Rochester MI 48063
VIII	Mark Valerius, 2302 Pomeran Dr., Houston TX 77055
IX	Jerry Murphy, 2432 Astron, Colorado Springs CO 80906
X	Joe Norcross, 413 Cameron, Hanford CA 93230
XI	Ernie Linn, 16558-121st Ave.,SE, Renton WA 98055

FAI INDOOR REPORT

New Program Set

Previous FAI Indoor Program participants recently received details of the program to select the 1982 U.S Indoor Team. Anyone wishing to obtain a copy of the full report should write AMA Hq and request it. This is a brief summary of the program provisions:

Schedule: 1980 - Unlimited local contests (10 points). One regional contest in each zone.
1981 - Unlimited local contests. One regional contest in each zone. Single site Fianls.

Program Entry: Program entry is accomplished by sending $3 to AMA Hq c/O Micheline Madison, or by entry at a local meet. The entire qualification process may be accomplished in 1981 if desired. A special provision has been made for fliers who have previously qualified in an Indoor program and live far from a regional meet may (this is still subject to final approval) pay certain fee and penalties and enter the Finals directly.

Model Specs: Wingspan between 20" and 25.6", weight 1 g minimum, 2 g maximum.

Local Contest Specs: 3 entrants min., no limit on local contests entered, $3 entry fee each local meet, all entrants may fly in regional, score total best two of six flights, winning score gets 10 points with other flight totals receiving proportionate points. Best local score only counted at Finals.

Regional Contest Specs: 3 entrants min., 75% of winning score qualifies entrant for Finals, best single regional score counted at Finals, no restriction on cross-zone entry. Score best two of six flights, top score gets 100 points, other scores proportionate points. Entry fee $10, $15 if no local meet entered.

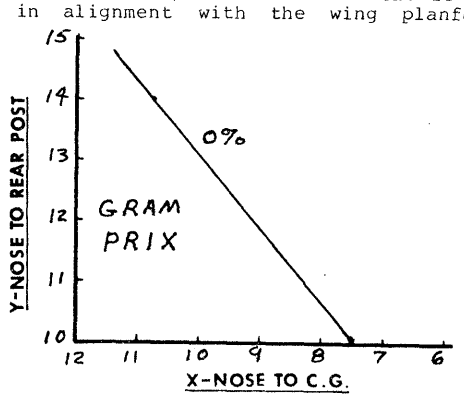
Final Contest Specs: The single site Finals will be conducted over a three day period with three rounds per day. Scoring best two of nine flights, top score gets 1000 points, other score proportionate. Entry fee $15, unless (subject ot approval) entrant lives more than 500 miles from the closest regional contest. Then fee is $35, and 75 points will be awarded. For entrant who flew in local meets, the maximum score entering Finals would be 85; for one who flew in a regional meet, max score on entry is 110. Maximum score for program is 1110 points.

STATE OF THE ART

For years I have been trying to get a three-view of Erv Rodemsky's models--any of them! Take a good look at the plan page, since it may be another ten years before you see another one.

Part of the story behind this model, and Erv's big win at the WCh, is the number of different designs that Erv makes. Erv has an extremely active design talent which works overtime; he can hardly wait to try out the next idea he gets. This led to Joan's comment "Erv's hobby isn't building models--he builds jigs!" A number of us were kidding Erv at the WCh when we saw that he had three totally different models out on stands for most of the meet. Shortly before his winning flight, I asked him "When you win this meet, which of these designs will you claim is responsible?" His reply was: "This way I can publish three designs!"

Although the wing planform is less distinctive on Gram Prix than on other Rodemsky designs, there are a number of interesting features. First, note that the wing airfoil tapers drastically in thickness from the wing root to the tips. This was an attempt to reduce tip drag without giving up area or creating a structure of unusual shape which is harder build. Note also the 23 1/2" prop diameter and dual stick bracing. The motor stick has a conventional V-post bracing system, but there is also a removable single-wire brace which attaches permanently to the wing posts and hooks over the thrust bearing in front and an extension of the rear hook. Finally, note that the offset boom sets the angle of the rudder, but that the stab is attached so it is in alignment with the wing planform.



This is a report on one part of the trilogy of the last week in June 1980 at West Baden, Indiana - "The World's Greatest Indoor Meet." The other two parts - World Championship FID meet (which the USA won) and the V NART - 5th NIMAS Annual Record Trials - have been reported, more or less in detail, in various publications.

The 1st World Peanut Gran Prix was the world's first 24-hour contest, an event even the most stout-hearted contestant did not go the full time. (Martin, Brown, Sotich, Molo, Adams, and a few others got in at least 20 hours. We need a bit more training to go the full route.)

More than 60 airplanes from 6 countries comprised the 1st World Peanut Gran Prix, many of them proxy flown. Boy, did we have FUN!! We said this thing was going to be the best indoor meet in the history of indoor flying, and more than 200 people will tell you -- IT WAS. What do you do for an encore? I'm glad I was there for those memorable 9 days in June.

Old Doc spent most of his time off the floor, running the indoor social center, CLUB MIAMA, with its contribution to Icarus House - the retirement complex for old indoor modelers.

My impressions of the week: Always several planes in the air day or night, always a discussion group buzzing away on the atrium floor.

The contrast of the serious, nervous world of FID competition with the later relaxed, carefree peanut and V NART competitors. The incredible bad luck - for 2 days - of both Jim Richmond and Erv Rodemsky until their breakthrough on the final flight of the final day. A Hollywood script finish - a Jack Armstrong, Buck Rogers, All-American Boy finish - almost too corny. The precision and thought behind the Swiss team effort, the magnificent long sleek beauties with the completely interchangeable parts. The imaginative variable-pitch props of the British team. The lack of disharmony, NO PROTESTS! The revelation that smaller sites can be excellent for World Class meets. The Linstrum contribution: talks after dinner, movies in the theatre, informal symposia, TV coverage with informed, cogent dialogue that keeps popping up, at odd times, on national TV. Not "look at these guys playing with kid toys," but a 5-minute piece with torque meters, rigging and ballooning techniques, variable props and a fine interview with Erv Rodemsky.

After all the excitement of the World Champs, the Peanut contest seemed very relaxing. While proxy pilots were opening boxes, Butch Hadland and his crew of Jack Niederhauser and John Adams tackled the judging of more than 60 airplanes. Mike Arak supervised the proxy entries - some of which did very well in the final standings, and at 9:00 a.m. the flights began. Timers and Scorers included Roger Wathen, Jose Tellez, Paul Tryon, Don Lindley, Russ Brown and Walt Van Gorder. Two features contributed to the many flights logged: (1) Multiple entries were permitted in all classes (but only your best entry counted); and (2) after your official series of 9 flights (best 2 count), you could re-enter the same plane for a buck.

We had 11 entries in Pioneer, 5 in WW I, 22 in Golden Age, 5 in WW II and 22 in Modern. Because of low warplane entries, we are combining WW I and WW II planes in one class ("Warplanes" - no liaison or personnel planes) and are adding a new class (Weirdo) - that includes multi-engines, amphibian and flying boats (no cubs on floats), autogyros, helicopters, triplanes and quadraplanes.

The rules used were the AMA alternate provisional rules that balance flying and looks by giving each a 50/50 balance. Bernard Aslett of England built two models - each to a different philosophy. His Waterman gosling Racer was as super-detailed as any scale model I've ever seen and, because of all the detailing, was a bit on the heavy side. His Nesmith Cougar was a feather by comparison, and sacrificed some details for lightness. The Cougar flew 2:28 to win the high time trophy and finished 8th in Modern.

Bernard's Waterman had the second best scale score and finished 2nd in Golden Age, behind Bill Hannan's Moustique.

Here are some notes on Bernard's remarkable Waterman Racer: Wing had excess of 250 pieces of .013 balsa, sliced ribs, hollow box spars, laminated outline. Engine (42 pieces) .010 aluminum sheet rocker arms, cowl held by a buckled belt, full complement of instruments in dash. Fuselage longerons .050 sq. covering, black japanese tissue and black enamel. Propeller: 6-1/2" diameter, 6" pitch. Finished weight, with ballast, 6.8 grams. Did 41 sec. R.O.G. Power: .100 x 15" loop.

Some details on Aslett's Cougar: Higgins Ink sprayed condenser paper covering. Prop is 6" diameter and 10" pitch bent sheet blades around a 4" diam. can. Wt. 2.5 gm. plus 0.5 gm. ballast. Power: 20" loop of .050. Best time so far: 3:15.

The top scale point trophy went to Paul Briggs for his super-detailed 1910 Farman Monoplane. Although it didn't fly too well, the scale portion of the score brought him a 3rd in Pioneer.

RESULTS:
(P) = Proxy

PIONEER CLASS - (3 didn't fly)
Butch Hadland's beautiful Morane Saulnier clipped wing racer was complete to a map mounted on the dash. It won 1st over the 14-BIS of Argentina's Marcos Molo. The Pioneer class seemed to have the most detailed, but the poorest flying, models in any class.

	Entrant	Plane	Static Score	Rank	Flight Score	Rank	Total	Country
1.	Butch Hadland	Morane Racer	293.2	2	1:09	3	5	UK
2.	Marcos Molo	14-BIS	232.5	4	1:38	1	5	Argen.
3.	Paul Briggs	1910 Farman	301.5	1	:29	7	8	UK
4.	John Martin	14-BIS	211.2	6	1:25	2	8	USA
5.	Mike Arak	14-BIS	256.	3	:19	8	11	USA
6.	Benno Sabel(P)	1919 Clerget	217.5	5	:33	6	11	W.Germ.
7.	Benno Sabel(P)	Bleriot Canard	115.3	8	1:09	3	11	W.Germ.
8.	Marcos Molo	Demoselle	199.5	7	:59	5	12	Argen.

WORLD WAR I - (2 did not fly)
Jim Miller's detailed little Bristol Scout beat out Doc Martin's Ansaldo in this battle of biplanes.

1.	Jim Miller	Bristol Scout	226.8	1	1:14	2	3	USA
2.	John Martin	Ansaldo SVA-3	137.5	4	1:30	1	5	USA
3.	Paul Briggs	Fokker D-8	216.	2	:27	4	6	UK
4.	Mike Colling	Siemens	141.	3	:28	3	6	UK

GOLDEN AGE - (5 didn't fly)
Bill Hannan won this very popular class (proxy flown by Charlie Sotich), over Bernard Aslett and Jim Miller. Golden Age and Modern have the finest flying Peanuts, and are the most popular classes.

1.	Bill Hannan(P)	Moustique	220.5	2	1:31	2	4	USA
2.	Bernard Aslett	Waterman Racer	299.	1	1:21	5	6	UK
3.	Jim Miller	J-3 Cub	170.5	6	1:33	1	7	USA
4.	John Martin	Cessna A-W	172.2	5	1:25	4	9	USA
5.	Bob Clemens	Avro 560	208.	3	1:03	7	10	USA
6.	Roger Aime(P)	Yellow Canary	138.	12	1:26	3	15	France
7.	Jack Little(P)	Ford 2-AT	192.	4	:27	12	16	USA
8.	Bob Clemens	Waterman Racer	165.7	7	:38	11	18	USA
9.	John Martin	Bonzo	140.	11	:56	8	19	USA
10.	Don Lindley	J-3 Cub	120.	15	1:21	5	20	USA
11.	Paul Briggs	Waterman Racer	135.	13	:56	8	21	UK
12.	Carl Hedley	Moustique	105.	16	1:09	6	22	USA
13.	Bill Warner(P)	Cycle plane	161.5	8	:16	15	23	USA
14.	Tony Sutter	Pietenpol	146.2	10	:17	14	24	USA
15.	Walt Everson	Jungmeister	152.2	9	:11	16	25	USA
16.	Bill Criss	Bellanca	90.	17	:49	10		
17.	Dan Walton(P)	Cessna C-37	127.	14	:20	13		

WORLD WAR II - (2 did not fly)
Mike Arak's museum quality Liaison Piper YO-59 nosed out Chu swift Peck P-51 Mustang.

1.	Mike Arak	Piper	247.5	1	:48	2	3	USA
2.	Chuck Marcos	P-51	161.	3	:58	1	4	USA
3.	Jack Little(P)	Barracuda	185.5	2	:06	3	5	USA

MODERN - (4 did not fly)
Here's where the flight times were really fantastic, 'cause EVERY FLIGHT in this meet was rise off ground (R.O.G.) and anything over a minute is sensational! Jim Miller's little Vagabond outscored Jack McGillvary's biplane and Butch Hadland's famous Lacey M-10.

1.	Jim Miller	Vagabond	192.	3	3:16	3	6	USA
2.	Jack McGillvary/Isaacs	Fury	185.2	4	2:19	5	9	Canada
3.	Butch Hadland	Lacey M-10	262.5	1	1:39	10	11	UK
4.	Gordon Roberts(P)/Ole	Tiger	202.5	2	1:41	9	11	USA
5.	Gordon Roberts(P)/Fike	E	157.5	7	2:19	5	12	USA
6.	Bob Clemens	Bede-4	174.2	6	1:56	8	14	USA
7.	Jim Pulley	Lacey M-10	129.5	11	3:02	4	15	USA
8.	Bernard Aslett	Cougar	116.25	15	4:23	1	16	UK
9.	Dan Walton(P)	Ord Hume	140.	9	1:39	10	19	USA
10.	Walt Everson	Found	81.25	18	3:38	2	20	USA
11.	Carl Hedley	Vagabond	140.	9	1:21	14	23	USA
12.	Bob Peck(P)	Cougar	119.	14	1:39	10	24	USA
13.	Mike Colling	Ganagobie	150.	8	:44	18	26	UK
14.	Tony Sutter	Ganagobie	120.2	13	1:33	13	26	USA
15.	Walt Everson	Found #2	58.5	19	2:03	7	26	USA
16.	Chas. Roth(P)	Lacey M-10	129.	12	1:10	15	27	USA
17.	Bill Criss	Cougar	102.	16	:52	16	32	USA
18.	Mike Colling	Quail	95.	17	:45	17	34	UK

Engraved glass-bottom mugs were awarded to 1st and 2nd place in each class, and 3rd place Peanut plaques were donated by Bob Peck, who also was generous with lots of merchandise and his Peanut kits. Bill Hannan also contributed several of his Peanut Power books and a vintage Flying Aces. We also received merchandise donated by Micro-X (Jerry Skrjanc) and rolls of contest rubber from FAI Supply Company. THANKS TO ALL OF THESE CONTRIBUTORS!!

If there was a trophy for the Grand Peanut - which there wasn't - it would have been won by Butch Hadland's Lacey M-10 that finished 3rd in Modern class. I'll let you figure it out!! It had the best marks for static score and flight time of the 50 planes that flew from England, USA, Canada, Argentina, France and Germany.

The Miami Indoor Aircraft Model Association was very pleased at the response to their event and plan to make this an annual 24-hour event.

At 5:00 a.m., there were still some contestants staggering around the Atrium but none lasted until the 9:00 a.m. finish. Better luck next year!!

Sixty-three pilots gathered at the Awards Banquet that night - V NART and Peanuteers. Hadland & Paul Briggs outdid each other at convulsing diners with their jokes. At the end of all the food and festivities, someone moved that the meet be extended one more week. On a voice vote, the motion passed unanimously and then, sadly, we all went home. Boy, did we have FUN!!!

SWIPED ANOTHER!

The material below appeared in EL TORBELLINO, the newsletter of the San Diego Orbiteers, which is ably edited by Howard Haupt.

Indoor Tips From The World Championship

by Warren Williams

1. Winder ratio from 10 to 20 to one. The English team used 10 to 1 exclusively and they took 15 to 20 minutes to wind their models - thus preventing the rubber from overheating. They also used very short loops and wound to max turns. 50% of the time they would break the rubber. They claimed it was due to the hot weather.

2. Most of the Europeans used a torque meter--winder holder--platform for transporting or transferring wound rubber to model.

3. Most modelers used "O" rings; some rubber, but most were made from 1/16" ID nylon tube sliced. The English use a brass rod for hanging and cooking their nylon "O" rings at 250° until the nylon turns clear and transparent, then remove they quickly before they melt. This process rounds off the sharp edges.

4. Non-slip rubber tie--Tie a loose knot of thread, loop loose knot around the two ends of the rubber, secure thread loop and tie. Glue V end of rubber with Hot Glue. Secure both ends of rubber by squeezing together. Tie rubber loop back of glued ends and run knot up to end.

5. Shrinking condenser paper: wet newspaper and place condenser paper on top. Turncondenser paper over and wet other side. Dry paper over hot iron and flatten with hand.

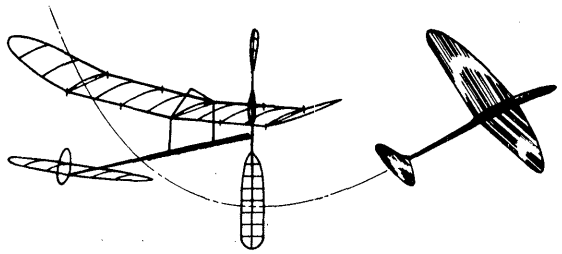
6. Curing microfilm: Use 5% acetone and 95% water; spray onto sheet of microfilm. (Cezar Banks also notes that the 5% acetone solution is good for loosening tight film.)

7. Patch--use small rubber tube to suck up paper backing after attaching patch.

8. Straight boom seams--tack glue fat end with thread --roll thread around tube to close seam--tack glue seam--remove thread and finish gluing seam.

The Voice of N.I.M.A.S. AUG/SEP·1979

INDOOR NEWS and VIEWS



Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

This Issue

This issue has a new look, because it is being produced on a new word processor system I have access to. At the time this is being written, I may not have settled exactly on the print wheel to use and on the exact text format. So, like a chameleon, INAV may shift slightly for a while. Eventually, I will acquire the necessary hardware to produce INAV entirely at home, which should go a long way toward speeding up production and reducing the late issue problems.

On the subject of late again, this issue was delayed by an extraordinary spurt of long work hours, compounded by several fruitless searches for materials, both camera-ready and raw material, which had been misplaced during the general scurry to find all the back issues. Some day!!

Another new look: your mailing labels. Just as a reminder: all labels are now paper labels, printed fresh for each mailing on a word processing system. A typical label appears below:

Joe Blow 0-10
666 Wind St.
Gust City WC 77777

The number in the upper right-hand corner means that Joe's membership expires with the issue dated October 1980 (not an issue mailed that month). The change from just the number of a month appearing in the label is to make it easier to handle membership lists both now and in the future when the entire list will be computerized. Actually, this machine is a computer, and when my home computer system is operational I will be able to transfer the lists directly to the new computer.

A Friend Passes On

I recently received a letter from Dorothy Gonzoph with the bad news that Ted had died on August 12, 1980 of cancer. Ted was active in the Denver area for many years, and served from the start on the FAI Indoor Committee. I knew him as a gentleman and an enthusiastic and innovative modeler. One of his last hopes was to be able to attend the 1980 Indoor WCh at West Baden, but he was simply too ill to stand the trip. Those of us who knew him will miss him.

The Bureaucrats Strike Again!

In recent months, some issues sent to overseas addresses have been returned to me with the note that international mail regulations require mail to be enclosed in an envelope. Therefore, overseas issues will need to be folded to fit a small envelope. Any other scheme will produce an item too heavy to mail with one stamp (the ones which go by air mail.) In fact, I may have to search very hard to find a source of envelopes light enough so that an envelope plus one issue is not over one-half ounce in weight!

New Rates For INAV

It was mentioned in a recent issue that printing costs have risen significantly. A rough guess, without wading through ledger sheets for the past 18 months or so, has been that the extra costs built into NIMAS membership fees to service various NIMAS services has been carrying the ball, since there has been no time to perform those services, hence no costs have been incurred. Not only that, but some savings have accrued from sending double issues, which saves some postage costs.

By now, the "rough guess" method is sounding a warning that expenses are beginning to outstrip income. Therefore, beginning with the renewal notices which accompany this issue, NIMAS membership fees will go up to $4.50. Overseas air mail subscribers will also see an additional increase in postage rates when the new US international mail rates go into effect.

AMA Elections

All AMA members should have received their ballots by the time this issue is received. As usual, I hope that each member will avail himself of the opportunity to vote in this election. I will make no recommendations regarding the VP races; I have been too far out of touch with the Executive Council membership lately. Besides, I really have no business suggesting anything for other than District VIII! However, Homer Smith is both a FF'er and an excellent administrator, with years of experience in every facet of AMA business. I commend him to you.

A Correction!

The plan for Erv Rodemsky's WCh winner (JUL/AUG '79 INAV) showed a motor stick diameter of 5/32", the correct diameter is 5/16".

More On Easy B

Tom Vallee wrote to chide me for using the term "botched B" in reference to the new rule Easy B models. He noted that the FFCB members had doubtless done their very best, especially in view of the relative vacuum they have had to work in, rather than being given good feedback from the indoor community. I can certainly relate to that point of view; my own FFCB experience was also pretty much in a similar vacuum. However, we must also remind ourselves and the FFCB that one basic item of consideration for any rules proposal is that no models should be made obsolete if this is at all possible. Instead, the FFCB made obsolete all models all over the world, in the most popular single indoor model class ever developed! Not only that, but this action was taken on the eve of a World Championship, where models from all over the world would be gathering to participate in the VNART event to follow the WCh.

It can be argued that the Contest Board did not require Easy B models to be covered with microfilm and use external bracing; however the effect is the same if these features are not specifically ruled out. For, most certainly, those models built using microfilm and bracing will indeed trounce other models which do not. Even if we note that paper covered Easy B models made higher times than the new rule models at VNART, we must also note that at Earl Hoffman has flown one of these new rule Easy B's for 26:07, and the point is proven. For more on Easy B and other rules matters, please see the section on AMA Rules Proposals below.

The Back Issue Situation

The text below is taken from a letter responding to one of the more patient NIMAS'ers who hadn't received the back issues that he had requested some time back. It sort of explains why no one had received requested back issues until very recently. Now that this item is beginning to move, wait a few weeks. If you are still waiting for your back issues, drop me a card and remind me, since I may not have found your original letter. Also please remind me which issue your subscription began with.

I'm sorry that I have taken so long to answer your letter, and to find time to do something about getting the back issues situation in line. The problem is that the back issues were scattered all over the office in boxes and file drawers, etc. In turn, this made the problem one of finding one block of time in which about 10 sets of loose pages from various issues could be collated into a stack of complete issues, then collating individual issues into stacks of back issues. Thank God not all issues needed collating!

Not only did my own schedule have to find the time, but that time had to dovetail with the schedule of the girl who helps me with the newsletter each month. Last Saturday, it all came together; we started at 9:30 am and I took her home about 4:45 pm, after working steadily all day long. We took half an hour for lunch, but otherwise, we only took two five minute breaks!

So you see that I wasn't just goofing off--the whole job had to be done in one pass, because, if we had ever stopped, the problem of storing the partially assembled and collated issues far exceeded any other problem.

Now, all that is left is to find out the postal rates and how they will let me send up to 20 ounces of paper in one package! If I can't do it any other way, I may have to box them and send them by UPS. So, I should be getting your back issues, along with those for other disgruntled people, on the way. After that, I will have lots more shelf space in the office!

More Contest Rules Proposals

The rules proposals sketched briefly below are in addition to the ones mentioned in the Jul/Aug'79 INAV. As before, you should contact the Free Flight Contest Board member in your AMA District and tell him how you want him to vote on each proposals.

FF-82-14 Eliminate Junior, Senior and Open age levels for AMA memberships and substitute Novice, Sportsman and Open. The new competition categories would be based on skill levels, and the contestant would select the skill category he would enter for each class at a contest. Only one Nationa Record would be established for each class.

FF-82-15 Prohibit structural bracing in Easy B. Note: this applies to the current "new rule" Easy B.

FF-82-21 Require indoor ROG classes to take from a position of at least two points touching. This restores the original provision which was dropped inadvertently when the General section of the Rule Book was up-dated.

FF-82-22 Adopt FAI definition for official/unofficial flights.

FF-82-23 Use best single flight for record purposes in FAI Indoor class.

FF-82-24 Use FAI steering rules for AMA contests.

FF-82-25 Allow of unlimited number of models in AMA indoor competition classes.

FF-82-26 Clarify competition rules for FAI Indoor models flown in AMA competition.FF-82-27 Adopt FAI definition for end of flight.

FF-82-28 Record only nearest whole second for Indoor Rubber model flights.

Indoor Nats Planning

Among the flurry of letters mentioned in the Nats report elsewhere were a number of letters circulating between a number of concerned NIMAS and AMA officials. Many of these letters dealt with making a positive, well planned approach to the 1981 Indoor Nats. A number of these people also are current Nats Committee members. One result of all this is that much soul-searching has already taken place and meetings have been held which may already have defined that the 1981 Indoor Nats may be held in conjunction with SNART (Sixth NIMAS Annual Record Trials). We can probably look forward to almost as big an event as we had at West Baden in 1890!!

SNART Announcement

The material reproduced below was furnished by Johm Martin in time for the last issue, but there was no room. In light of the announcement elsewhere about the strong likelihood of having the Nats as a part of our show, this material will probably be revised somewhat. So hang tight and we'll see what develops.

World Peanut Gran Prix and SNART

** PLAN AHEAD **

Now is the time to start looking forward to participating at the Second World Peanut Gran Prix on June 26, 1981, in West Baden, Indiana. We prefer you to show up for the fun, but if you can't make it, be sure to send a proxy entry (or more). We have given a lot of thought to this aspect of the meet and are trying to improve methods of shipping, flying and returning these precious models. In addition, we want everyone who participates to have a souvenir of the meet, and COMPLETE results so he can see how he and his friends fared, and can improve on his weaknesses for subsequent contests.

The classes of model are slightly different for '81:

Category I Pioneer - up to World War I

Category II Warplanes - combined WW I and WW II aircraft, excluding liaison, sky cyles & personnel planes that were very similar to civil aircraft (You KNOW the ones we mean!)

Category III Golden Age - between the Wars (I and II)

Category IV Modern Age - after World War II

Category V Weirdo - this includes multi-engined planes, flying boats (not cubs on floats), amphibians, auto gyros, helicopters, triplanes or quadraplanes (NO canards, pushers, or flying wings, unless they are also one of the above categories). The reason for excluding the latter weirdos is - they fly too well.

Planes entered in the Weirdo class can also be entered in its other class - pioneer, modern, etc.

As most hangar pilots know, you can enter more than one plane in any category, but only your best effort counts.

The meet itself is the only 24-hour meet ever scheduled - The Peanut Le Mans, the 24 Hours of Peanut, the 2nd World Peanut Gran Prix (choice of any 2 titles).

Here is the complete schedule for the 1981 indoor meet at West Baden, Indiana:

SNART (6th NIMAS ANNUAL RECORD TRIALS)

1. Wednesday, June 24 - 9 to 9 - "Heavier" indoor models - Penny and Novice Penny, Easy B -old style and new, Manhattan Cabin, Bostonian.

2. Thursday, June 25 - 8 to 8 - all lighter indoor classes - all HL stick types, ROG stick and cabin, helis, Orno. & Auto. 9 P.M. - Banquet & SNART Index awards - Bud Tenny CD

3. Friday, June 26 - Glider and Scale Day - 7 a.m. to 8 p.m. - alternate times all day for gliders and scale models - this worked well last year. AMA, CO_2, Peanut Scale, Peanut Speed, Mass Launch Peanut Events.

4. 8 p.m. June 26 to 8 p.m. June 27 - the 24-hours SECOND WORLD PEANUT GRAN PRIX. Saturday, 9 p.m., Scale and Glider Awards Banquet.

If you think it a bit premature to have all these plans, you are wrong. Model builders are the worst procrastinators I have ever seen. I'll bet many will be staying up late next June 25, trying to finish a peanut for the contest. You now have all snowy winter long to search through your files of 3-views and build that super scale job you have always planned on building. What devilishly clever weirdo will you concoct? What long-flying modern, what battling warplane? By the way, PLEASE get them finished in time to do lots of trimming. After a few trim sessions, you may get it flying real well, or realize that this turkey should be decommissioned (stepped on).

We here at MIAMA Hq. are working up a detailed application form, complete with many helpful hints as to how to pack your proxy with minimal chance of breakage. If you feel you will be entering next year's (1981) SNART and the 2ND WORLD PEANUT GRAN PRIX, send for your application and entry form NOW. You may not get it right away, 'cause we are still adding information, but it will get to you soon. Last year, we had over 60 airplanes from six countries.

WRITE TO:

DR. JOHN MARTIN - MIAMA
3227 Darwin Street
Miami, Florida 33133

NATIONAL FREE FLIGHT SOCIETY

DEDICATED TO THE INTERESTS OF FREE FLIGHT MODELING

NFFS

May 29, 1980

PRESS RELEASE PRESS RELEASE PRESS RELEASE

The National Free Flight Society has announced the recipients of the Free Flight Hall of Fame Award for 1980. These noted individuals have in many ways contributed to the development and continuity of free flight model airplane activities throughout the U.S.A. and the world. The Society is proud to recognize their achievements.

Louis Garami (Deceased)
Innovator of many model building techniques and designer of many small models.

Ben Shereshaw
Developer of the famous Bantam engine and designer of many esthetically pleasing model airplanes.

Henry Cole
A rubber model proponent who created designs that performed exceptionally and helped set the standard for others to follow.

James Cahill
A world renown rubber model designer/builder. 1938 Wakefield winner with his famous Cloudhopper design.

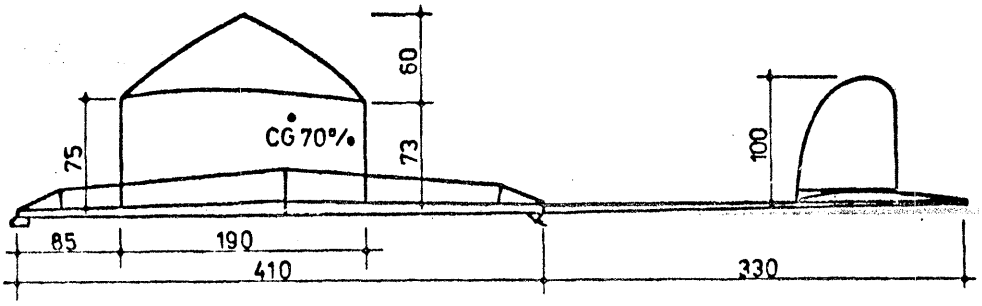
Wallace Simmers
Provided handlaunch glider and rubber model designs that are still popular today. A manufacturer of model kits/supplies to all phases of modeling.

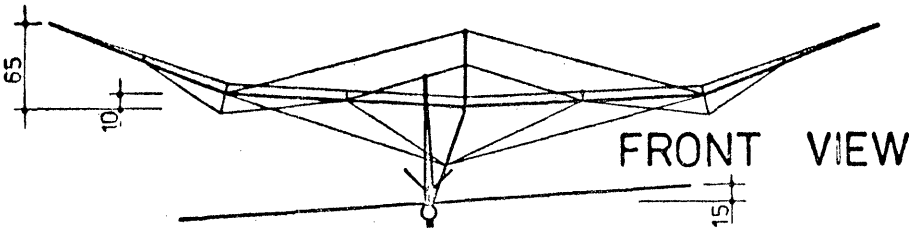
Awards banquet will be held by NFFS at the University of Dayton Student Union Dining Hall, August 12, 1980 at 7:30 P.M.

A. J. Italiano

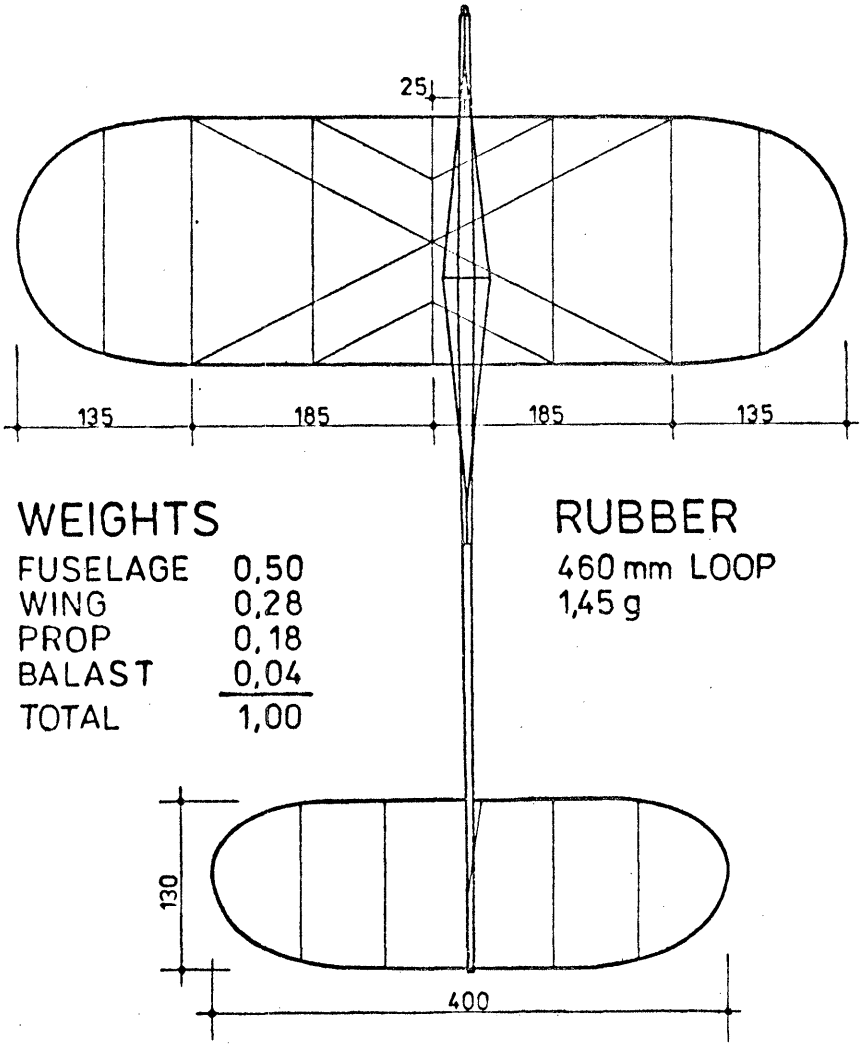
A. J. Italiano, Chairman
NFFS Hall of Fame Award Committee

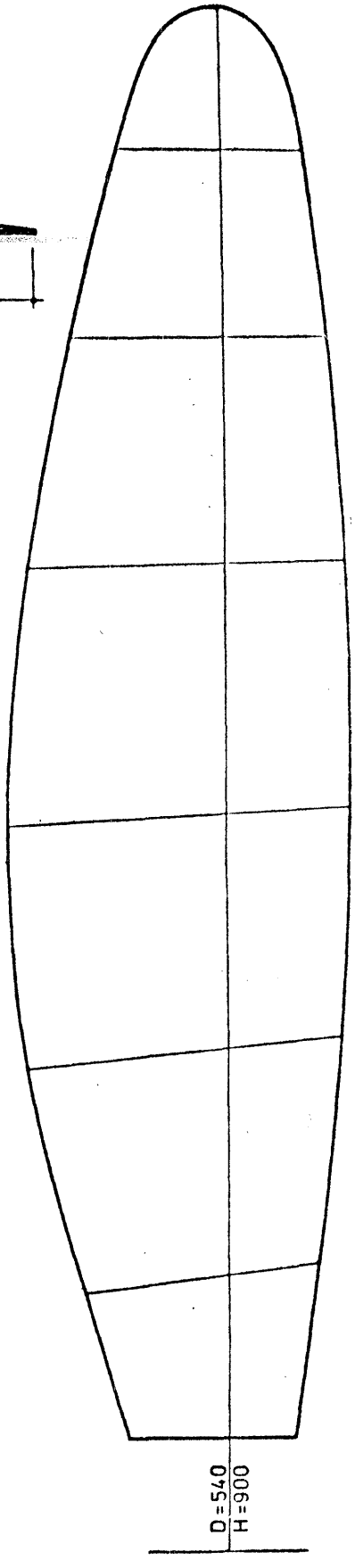
IN AFFILIATION WITH THE ACADEMY OF MODEL AERONAUTICS





FRONT VIEW





WEIGHTS

FUSELAGE	0,50
WING	0,28
PROP	0,18
BALAST	0,04
TOTAL	1,00

RUBBER

460 mm LOOP
1,45 g

FAI 1 GRAM

SYLWESTER KUJAWA
POLAND

the general competition experience. Much was made of the very high heat and humidity enjoyed (?) by the contestants. With the realization that no one can control the weather, we must make allowances for that part of the experience. However, there was also an almost bitter taste left by circumstances which left a number of strings, chains and other hang-up makers in the ceiling. These were finally removed on the second day, too late to avoid the unfortunate massacre of mike ships from the day before. It is impossible for me to get the whole story, since there are so many sources; there was a very clear pattern of poor advance planning associated with the event. The officials who came to run the event apparently did an almost superhuman job of trying to overcome this early lack, but there was too much to accomplish.

On a brighter note: if you are an AMA member and get MODEL AVIATION, Clarence Mather's excellent report in the Dec.'80 MA (page 56) is well done and leaves a much better taste. Also, see below comments about advance planning for the 1981 Indoor Nats.

Indoor AMA Stick	
Junior	
Dave Lindley	16:09.2
Mike Clem	9:13.5
Bradley Fulmer	7:25.7
Senior	
Susan Brown	4:52.8
Open	
Clarence Mather	28:29.8
Dick Hardcastle	25:06.1
Dan Domina	23:34.2
Bill Shailor	22:22.0
Ed Stoll	21:42.5

Indoor Paper Stick	
Junior	
Dave Lindley	14:08.0
Mike Clem	8:08.5
Paul Loucka	6;54.6
Senior	
Billy Carney	4:46.5
Susan Brown	4:38.0
Open	
Dick Obarski	17:47.8
Dan Domina	16:10.0
Dan Belief	15:58.8
Ed Stoll	15:15.8
Charlie Sotich	14:23.4

Indoor Cabin	
Junior	
Paul Loucka	10:00.0
Dave Lindley	7:21.0
Bryan Fulmer	4:15.2
Senior	
No flights.	
Open	
Larry Loucka	19:04.5
Bill Shailor	18:54.8
Ron Ganser	17:29.4

Indoor FAI Stick	
Junior	
Dave Lindley	22:04.0
Mike Clem	11:42.0
David Brown	7:14.7
Senior	
Susan Brown	9:22.8
Open	
Clarence Mather	51:00.0
Dick Hardcastle	47:36.0
Manny Radoff	45:17.0
Dan Domina	44:04.0
Bill Shailor	42:17.0

Indoor Pennyplane	
Junior	
Mike Clem	9:21.2
Aaron Markos	8:38.6
Mike Van Gorder	8:30.6
John O'Reilly	8:27.2
Paul Loucka	7:49.1
Senior	
Curtis Link	7:34.5
Susan Brown	4:54.3
Draycott Hooke	1:10.5
Open	
Dick Hardcastle	11:26.4
Jim O'Reilly	10:32.8
Gordy Wisniewski	10:24.6
Larry Loucka	10:19.7
Ron Ganser	10:06.5
Walt Van Gorder	9:48.5

Indoor Easy B	
Junior	
Mike Van Gorder	12:31.3
Mike Clem	9:21.2
Carl Linstrum	7:02.0
Bryan Fulmer	6:36.1
Bradley Fulmer	5:24.4
Senior	
Susan Brown	5:07.6
Billy Carney	4:57.5
Draycott Hooke	0:55.2
Open	
Walt Van Gorder	16:44.6
Dick Obarski	15:58.0
Dick Hardcastle	15:52.9
Clarence Mather	13:52.9
Ron Ganser	13:17.5

Indoor Hand-Launch Glider			
Junior		Senior	
Bryan Fulmer	0:84.7	Curtis Zink	0:61.0
Mike Clem	0:80.1	Draycott Hooke	0:42.6
Brad Fulmer	0:75.8	Jeffrey Carr	0:36.0
Open			
Stan Stoy	2:02.8		
Bernie Boehm	1:48.0		
Chuck Markos	1:45.1		
Rudy Kluiber	1:44.2		
Paul Shailor	1:43.9		

FLY BOSTONIAN!

It has been requested that more information on the Bostonian event be made available. So, I will welcome *any info that anyone cares to share with us.* Just below, I have reproduced from Ed Whitten's STAR SKIPPERS newsletter the latest rules. I can also say that, having to run Bostonian at VNART, I have made a few observations about the event. I found that those

RED FACE TIME!

One more case of operating-typewriter-before-engaging-brain: I recently referred to Lew Gitlow as "Mr. Micro-X", and Lew rightly complained. I haven't heard from Jerry Skrjanc; dunno if he didn't notice or just isn't speaking! This was dumb-dumb-dumb, and I apologize to both Lew and Jerry.

Just to set the record straight, and to confirm any rumors you may have heard, Lew is back in the indoor business, but not as Micro Dyne. He has returned to the indoor supplies business as Indoor Model Supply, P O Box C, Garberville CA 95440, ph. 707-923-3500. Send him 50¢ to get a catalog; he has lots of supplies, plus some very good-looking kits with well detailed plans and selected wood.

CONTEST CALENDAR

CONNECTICUT - Glastonbury

The winter flying session/contest schedule set up by the Glastonbury Modelers is as follows:

Flying sessions on Dec. 21, 1980 and Jan. 11, Feb. 8, and Apr. 12, 1981, 8 am to 12:30 pm. Contest on Mar. 8, 1981, 8 am to 5 pm. Contest events are WWI Peanut Scale, WWII Fighter Scale, Peanut Scale, Scale, OT Gas Scale, Easy B/Pennyplane, Tissue Endurance, HLG.

Contact George Armstead, Jr., 89 Harvest Lane, Glastonbury CT 06033 ph. 203-633-7836 for more details about event times and rules.

FLORIDA - Miami area

The MIAMA club scheduled winter fly-in sessions at the 28' Miami Dade South College, as previously announced. The ceiling at this site is 29' 7" to the girders. Contest events no longer include HLG and Paper Stick and have added Old Time Baby ROG using the 1930 ALMA rules:

Motor stick 8" max, rubber loop 10" max, two wheels 1/2" dia. min that turn, paper covered.

Call 858-6363 to confirm these dates on the day before the meet: Dec. 14, 1980 and Jan. 18, Feb. 15, Mar. 15, April 19 and May 17, 1981. In addition, the following sessions at the Goodyear hangar have been added, thanks to special arrangements by Mr. Glenn Key, of Goodyear: Dec. 7, 1980 and Jan. 4, Feb. 1, Mar. 1, April 5 and May 3, 1981. Confirm these dates same as the others mentioned above.

MISSOURI - St. Louis

Sessions sponsored by the Thermaleers and the McDonnell Douglas FF Club have been set for the Market St. Armory, 3600 Market St., St. Louis, on Dec. 14, 1980 and Jan. 18, Feb. 15, Mar. 15, and April 5, 1980. These events use both the normal AMA age categories and Stay Stoy's skill level classes for alternate meets. The meets with skill level classes use records ratio (similar to the NIMAS Index scoring), while the AMA-type meets use regular age classifications. Contact Bob Klipp at 867-6106 for more details.

NEW YORK - New York City

Indoor record trials have resumed at the Low Library of Columbia University, which is a circular building of just over 100' ceiling height. No HLG's allowed, due to large amounts of glass surrounding the flying area. Flying hours are 9 am to 5 pm, on Nov. 30 and Dec. 14, 1980. Contact Ron Williams, 214-722-5262 for more details

OKLAHOMA - Oklahoma City

The Sooner Free Flight Society has commenced another Winter Indoor Series of sessions, with meets set up on Nov. 23, Dec. 28, 1980 and Jan. 25, Feb. 22 and Mar. 22, 1981. The Feb. 22 date is a contest and all the others are fun fly events. Flying schedule is 9 am to 11 am - HLG; 11 am to 5pm - Pennyplane, Easy B, Peanut Scale (turn in models early for judging). For competition purposes, the Easy B activity uses the old rules rather than the 1980 rules. Contact Al Bissonnette, 6238 SE 15th, Midwest City OK 73110, ph. 405-737-1085 for more details.

THE NATS STORY

The results below have been taken from AMA's results listing in the Dec.'80 MODEL AVIATION. No one was able to furnish me a copy of the newsletters circulated at the Nats, so this is all there is. Sorry 'bout dat!

I received several letters regarding conditions at the Indoor Nats, and all were uniformly negative about

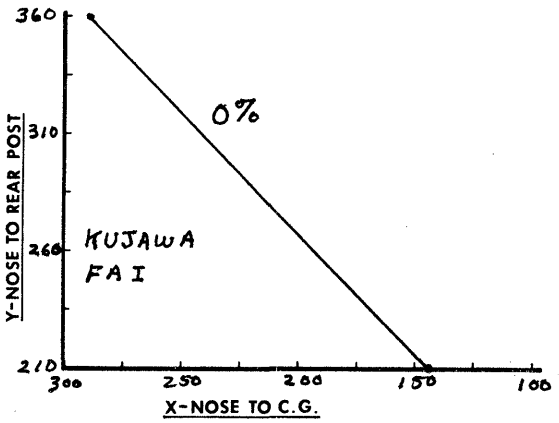
five entries at VNART were all good-looking designs, and most seemed to fly well. The concept of "charisma" judging is innovative, and could well make the difference in placing after the models are developed enough to approach the best theoretical times the class is capable of (whatever that is!). For my own personal activity, I probably will not build Bostonian, since I have far too little building time as it is. But I do welcome such experimental classes, and this one is fun to watch.

The "Current" Bostonian Rules

1. Maximum projected wingspan(s) 16".
2. Maximum wing chord(s) 3".
3. Maximum propeller diameter 6".
4. Power limited to one or more rubber motors.
5. Minimum weight without rubber motor(s) is 7 grams.
6. Maximum overall length is 14" measured from the front of the propeller bearing.
7. Fuselage must contain a theoretical "box" measuring 1 1/2" x 2 1/2" x 3" or larger, the longerons of which must both support the motor(s) and form, or exceed the box requirement. No motor stick allowed. Fuselage must have a forward windshield and a window on each side, each of which must equal or exceed 1" square area.
8. Landing gear must be fixed, with two or more minimum diameter 3/4" wheels, and rigid enough to support the model to a hand-glided landing.
9. ROG take-offs are required on all official flights.
10. Charisma Factor: The judge rates each model depending upon how the model appeals to him, based on construction neatness, scale-like details, uniqueness of design, etc. A 1.0 to 1.10 rating is used. Two or mode models may be given the same rating. The models are not rated against each other, but against the 1.0 to 1.10 scale.
11. An unlimited number of official flights are allowed, with the total in full seconds of the best three flights multiplied by the Charisma Factor.

STATE OF THE ART

The model of the month, by Sylwester Kujawa, set a Polish national record earlier this year. Aside from the details shown on the plan, I can only comment on the unusual prop. The design concepts were checked out with observations using threads to show airflow directions as the prop turned under load. The resulting air flow patterns are reflected in the skewed rib angles near the prop hub. I was unable to find out the reason for the blade truncation near the hub, and it was also not clear if the test results revealed any significant increase in prop efficiency. The CMOS chart, computed at 0%, appears below. Flight trim was set at +14% margin.



NEWS FROM AROUND THE WORLD

MANHATTAN and BOSTONIAN Contest March 16, 1980, sponsored by CIMAS & LIAMAC, CD Ed Whitten, at Columbia U, NYC, 105' Low Library Rotunda.

MANHATTAN - 4 g min wgt

1) Sal Cannizzo	"Skyscraper Too"	4.4 g	8:11.0	(7:43, 7:18, 7:04)
2) Don Garofalow	"Metro-gnome"	5.2 g	7:20.2	(7:00, 6:29, 6:07)
3) Bill Tyler	No. 2 model	5.4 g	6:50.0	(5:09, 4:16, x)
4) Frank Haynes	-	4.3 g	6:33.0	(6:29, 5:36, 4:46)
5) Joe Nuszer, Sr.	No. 2 model	4.8 g	6:10.5	(x x x)
6) Bill Tyler	No. 1 model	5.3 g	5:56.0	(5:56, 5:11, 3:53)
7) Pete Andrews	"Pete's Plane"	5.1 g	5:43.9	(5:15, x x)
8) Joe Nuszer,Sr.	No. 1 model	5.0 g	4:18	(4:11, x x)
9) David Aronstein	-	4.5 g	2:47.0	
10) Bob Bender	-	Hung up on string on test		
Bill Sinram	-	Model smashed by heavy Bostonian.		

Notes: Sal's model, a Triolo design, is very possibly the best constructed Manhattan the CD has seen. 8:11.0 is a new Columbia high time. David Aronstein is a Junior age modeler.

BOSTONIAN - 7 g min wgt - 1.0 to 1.1 Charisma Factor x 3 Best ROG

1) Joe Nuszer,Sr.	-	7.0 g	CF 1.065	374 total	- 398.3
2) Bill Tyler	-	7.1 g	CF 1.030	346 "	- 356.4
3) David Aronstein	-	7.0 g	CF 1.020	245 "	- 249.9
4) Randy Boston	"Suzy"	11.0 g	CF 1.050	197 "	- 206.9
5) Bill Sinram	"Not Yet"	9.8 g	CF 1.080	165 "	- 178.2
6) Bob Bender	"Rebel"	11.1 g	CF 1.070	76 "	- 81.3

Notes: A weight close to 7 g, not the Charisma Factor,made the difference. Very possibly we should go back to the 10 g minimum and raise the Charisma Factor to move these models away from endurance and more towards scale.

NEWS FROM CHINA

Huang Yong-Liang of Shanghai is somewhat the John Worth of China. Ed Whitten met him way back in 1945 at the end of WWII, and flew models with him and his clubmates in Shanghai. (See the February 1980 issue of M.A.N. for additional news on aeromodeling in China.)

In a letter dated 12/7/79, Mr. Huang writes Ed that he has been assigned again to his 'Model Airplane Laboratory'...(the lab had been destroyed during the 'Cultural Revolution'). The letter continues.....

"Our FAI FF W/C team came back home in the middle of October. All of us deeply appreciated the efficient work in the W/C, especially the warm friendship of your people and the competitors of other countries. We are not satisfied with our contest results; we should fly a little better.

"The 1980 FlD W/C will be held in Indiana, USA. We can't participate in this contest due to some technical and financial reasons. But we are planning to participate in the 1980 Control Line W/C in Poland.

"In November I participated in the 1979 Shanghai Indoor Model Contest and Record Trials as head official delegate from the National Sports Committee. The contest results were better than before. Twelve contestants broke the existing National Record of 10:05 (ceiling height between 15 and 30 meters). The new National Record is now 17:23. The results of the first six contestants follows:

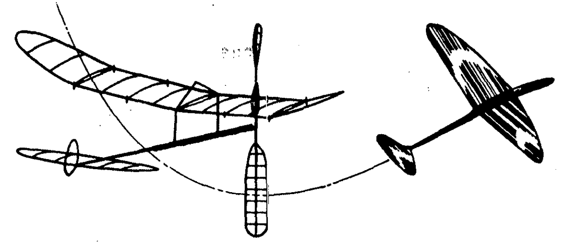
1) 卢秀森	LO Sao-Sum	11:45 - 17:23	-- 29:08
2) 张阴旺	CHEUNG Yang-Wong	13:31 - 13:08	-- 26:39
3) 刘鸣皋	LIEU Ming-Gao	13:14 - 12:44	-- 25:58
4) 周文斌	CHOW Mun-Ban	11:41 - 12:36	-- 24:17
5) 张伟豹	CHEUNG Wai-Pao	12:51 - 11:12	-- 24:03
6) 朱进平	CHU Jen-Ping	10:31 - 11:26	-- 21:57

(Note: Ed used an old Yale system to translate the characters of the names; the new Chinese system of Romanization is different.)

The Voice of N.I.M.A.S. OCT/NOV ·1979

INDOOR NEWS and VIEWS

Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080



****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

This Issue

I'm sure that many of you are having the same problem that I have--cash flow. In order to maintain my household, an increasing amount of time must be devoted to developing more cash income. For that reason, it has been very difficult to find time or energy to work on this issue. As a result, there may be some material which is outdated, due to my having entered material on a catch-as-catch-can basis over the past couple of months. I have been optimistic in previous issues about when the next one is coming; I guess I can no longer develop optimism until some change allows a more relaxed approach to writing this newsletter.

Addendum

The paragraph above was written when I had really expected to be able publish an issue before Easter. After an office move, some of the material for this issue took an extra time to get off the ground. So, it has been longer than that, and now this issue has become a crash effort to get last-minute SNART news before it is totally too late. Also, I managed to bypass the cross-proposal deadline of May 1, so the rules coverage is simply a report. I will try to get some cross proposal info into the next issue, so you will at least know what others did along that line. If it fits, I will repeat the address list of AMA FFCB member addresses. Overseas issues will not have the entry blank info mentioned, as this is set up for the fifth page (cover sheet).

The Last Issue

The last issue contained remarks about weight of air mail issues to other countries. It finally proved necessary to print the last page of the that issue on very light paper in order to meet the 1/2 ounce weight limit! Not even a couple of months removal from the problem will allow me to view the trials of mailing that issue as anything except a nightmare. I had already searched and found envelopes which should have been appropriate, only to find that the envelope plus the newsletter was too heavy! I had to spend a couple of hours printing addresses on the envelopes to eliminate the weight of a label, then re-print the last page on very light paper to make the weight limit. The result of all this activity is that there can no longer be doubled-up issues, since this produces an overweight product. This becomes an added factor in ultimately getting the date on the newsletter to match the age of the news inside!

Hal Crane Passes Away

I am sad to have to report that Hal Crane passed away on January 21, 1980. The apparent cause of death was ventricular fibrillation, but Hal's activity at the time was not revealed. Hal was a diligent and frequent reporter of indoor activity, and a friendly, helpful flier on the field. In addition, he spark-plugged the indoor activity in the Hampton VA area, with particular emphasis on making site arrangements. At one time, he compiled an index of INAV articles, with some cross referencing. He also contributed model design articles to INAV. Indoor flying and modeling in general is poorer for this loss, and I feel a very deep sense of regret for the loss of a very good friend.

FAI INDOOR REPORT

Except for a memo from FAI Committee Chairman Jim Richmond (shown below) there has been almost no news input from the current Team Selection Program.* However, except for whatever events have been held in the past two months, the chart below summarizes the program results.

*Last-minute bulletin: It appears that the Santa Ana Hangar has been committed as available for the Team Selection Finals over Labor Day weekend this year.

1982 INDOOR TEAM SELECTION PROGRAM

3/10/81

	CHICAGO LOCAL APR 12, '80		DETROIT LOCAL MAY 18, 1980		WEST BADEN LOCAL JUNE 26 1980		WILLIAMSBURG VA. LOCAL AUG. 1 1980		AKRON REGIONAL SEPT. 2 1980		COW PALACE S.F.CA. LOCAL NOV. 8 1980		SANTA ANA REGIONAL NOV. 15-16 1980		PROGRAM POINTS
	TIME	POINTS	TIME	POINTS	TIME	POINTS	TIME	POINTS	TIME	POINTS	TIME	POINTS	TIME	POINTS	TO DATE
OBARSKI	40:54	10.00							74:43	81.13					91.13
HULBERT	39:34	9.68							75:13	81.67					91.35
DOIG	27:24	6.65	28:02	8.95	54:38	8.18			69:23	75.33					99.11
LOUCKA	7:20	1.80							64:43	70.27					72.07
STOLL			31:19	10.00											10.00
BRODERSEN			18:45	5.99											5.99
BANKS					66:48	10.00							67.05	100.00	110.00
TRYON					56:54	8.52									8.52
GANSER					55:10	8.26			63:47	69.25					77.51
CARTER					54:03	8.09			42:59	46.67					54.76
BELIEFF							45:30	10.00							10.00
PLATT							42:47	9.41							9.41
CRANE							37:00	8.13							8.13
RICHMOND									92:06	100.00					100.00
HARLAN									86:44	94.17					94.17
VAN GORDER									59:35	64.69					64.69
ROMAK											51:18	10.00	64:00	95.40	105.40
GIBBS											51:17	10.00	50:19	75.01	85.01
HAGEN											45:51	8.94	63:50	95.16	104.10
GITLOW											41:47	8.15	49:58	74.48	82.63
WILLIAMS, W.													48:55	72.92	72.92
RANDOLPH					55:08	8.83							56:20	83.98	92.81
MATHER					62:28	10.00							61:38	91.88	101.88
FAYKUN					44:45	7.16							63:12	94.21	101.37
CALLIAU					58:03	9.29							57:13	85.29	94.58
HOFFMAN					54:53	8.79									8.79
HAUPT					20:05	3.22									3.22
CHILTON	27:33	10.00													10.00
CLEM, J.	16:30	5.96	11:05	8.09											14.05
CLEM, M.	15:24	5.57													5.57
TENNY	8:42	3.08													3.08
GANSLEN	7:17	2.62	10:50	7.91											10.53
KULZER			13:42	10.00											10.00
	BEDFORD. TX LOCAL 12-14-80		BEDFORD. TX LOCAL 2-1-81		SANTA ANA LOCAL 2-15-81										2938-66

WEST BADEN IS AGAIN Cat. II!!!

Thanks to the good offices of Chris Matsuno, we now know that the "emergency proposal" has passed 6-3. This proposal solved the West Baden problem along with perhaps a few more somewhat similar problems in this manner: it adopts the FAI method of ceiling measurement while retaining the AMA ceiling height categories. This has the effect of preserving the big records shakeup which occurred as a result of the original FFCB finding which re-classified all previous West Baden records as Cat. III.

Editorial Remarks

With regard to the original FFCB action mentioned above: In case any of you are still upset over the original action, shut up and go away! Although I disagreed with the FFCB reasoning in classifying West Baden as Cat. III (my reasons were published earlier in INAV), the only official voice is that of the FFCB acting in response to a request for a ruling.

The degree of acrimonious debate, innuendo and personal attacks on Chris Matsuno which came out after that ruling is a shameful. Chris Matsuno is an honorable gentleman in every sense, and he scrupulously followed all FFCB regulations exactly as he interpreted them. In one particular, he and I differed in this interpretation, and he was completely open to my viewpoint and incurred extra work and effort in dealing with me. Our rules can be in no better hands than Chris', regardless of the level of actual indoor experience he or other members of the FFCB may have.

There has been considerable commentary over the idea of creating a special Indoor Contest Board. Speaking as a former FFCB Chairman, I can assure you that there is so much extra work associated with CB activity that I would strongly counsel against it. At

least, let's give the existing system a fair trial--follow my previous exhortations for one full rules-making cycle and see how much better it turns out. Indoor fliers (as a class) gave the FFCB so little support and feedback during the last rules cycle that it is a wonder we fared as well as we did! I pledge to continue giving as much space as possible to rules activity, and to be as timely as possible with the coverage. In light of that pledge, note the additional rules coverage elsewhere in this issue.

THE CURRENT EASY B PROPOSAL

Tom Vallee is the author of the Easy B proposal which passed initial vote in the FFCB. The text of this proposal is as follows:

FF-82-12-Easy B Specifications. This proposes to redefine Indoor Easy B model characteristics as follows: a) Paper covered monoplane; b) Maximum projected wingspan of 18 in.; c) Maximum wing chord of four in.; d) Motor stick of solid wood, maximum length of 10 in., tail boom of solid wood; e) maximum length of model 18 in., excluding rudder; f) Minimum weight of model equal to 1/2 the weight of a U. S. copper penny (approx. .055 oz.); g) Stabilizer area not to exceed 50% of projected wing area; h) Simple wood strut braces at 45 degrees to the vertical wing supports are allowed; i) Propeller characteristics same as existing 19.8.2.e. Thomas Vallee of Laurel MD wants to restore Easy B to a beginner's event (p.13, para. 19.8).

Tom's logic for proposal: "Our Easy B proposal is simply an attempt to define the Easy B in such manner that a novice of reasonable talent can build an Easy B close to competitive weight and still have a flyable model.

Hopefully, having had the fun of building and flying a flyable light weight ship, our novice will be encouraged to continue. That's our goal! It's that simple! This doesn't mean that the experienced flier can't have a lot of fun with this type model--I hope they would."

SURVIVING RULES PROPOSALS

The material immediately below was reproduced and edited from a list in Bill Mathews' newsletter FFLIAR; the original list included all pending proposals, but only those which survived remain. On a space-available basis, the text of these proposals will be reproduced in INAV. I will endeavor to present the proposals in the order of highest priority, selecting those which impact model specifications first. The deadline for cross proposals to these proposals is May 1, 1981, so your input to the rules process should be sent off well in advance of that date.

FF 82-1 **Drop AMA Indoor ceiling height categories and adopt the FAI categories. Logic: Will make more flying sites available and will provide more record categories.**

FF 82-2a **Change Indoor ceiling height measuring methods to the same methods used to measure FAI Indoor sites. Logic: FAI measuring is much simpler and more realistic.**

FF 82-9 **Eliminate size requirements for Indoor HLG.**

FF 82-12 **Redefine Easy B to make it easier to build and fly, as was the original intent of the rule. i.e., a paper covered monoplane with simple wood strut bracing. Logic: Present rule allows microfilm covering, and fine wire bracing for wing and motor stick - allowing too advanced models.**

FF 82-15 **Insert an additional paragraph in the Easy B rules stating that structural bracing is not permitted.**

FF 82-21 **Add a definition for ROG takeoff to the Indoor section of the rules so that changes in the Outdoor rules will not affect Indoor rules in the future.**

FF 82-22 **Eliminate current definitions for official and unofficial flights in Indoor Rubber events and replace with current FAI Indoor rules.**

FF 82-23 **Clarify scoring for record purposes for FAI Indoor. Current rule states record should be best 2 out of 6 flights. Proposer wants rule changed to "best single flight of a series".**

FF 82-24 **Replace current AMA rules for steering in Indoor Rubber events with FAI international steering rules.**

FF 82-25 **Eliminate maximum number of models requirement in Indoor Rubber events. Contestant could have 3 mid-airs on his first 3 attempts and be eliminated because he has destroyed all 3 of his models.**

FF 82-26 **Clarify flying rules for FAI Indoor flown at AMA sanctioned contests. Change Section 19, par. 3 to "FAI Indoor model-specifications, flying rules, and scoring rules are the same..."**

FF 82-27 **Change definition of the end of a flight in Indoor Rubber so that it matches FAI international Indoor rules.**

FF 82-28 **Change timing accuracy for Indoor Rubber events from nearest 1/5 second to reducing the flight time to nearest whole second. Brings AMA events into line with FAI.**

FFCB

District	
I	Henry Struck, RFD 2, Hamburg, Old Lyme CT 06371
II	Bradley Bane, 60 Lkae Ave. Lyndonville NY 14098
III	Rudy Kluiber, 2021 Lakeland Ave., Lakewood OH 44107
IV	Joe Boyle, 219 Shenandoah Rd., Hampton VA 23361
V	Bonny Jenkins, 3112 E. Haines Rd., Memphis TN 38118
VI	Chris Matsuno, 8576 Ginger, St. John, MO 63114
VII	Phil Klintworth, 715 Rutgers, Rochester MI 48063
VIII	Mark Valerius, 2302 Pomeran Dr., Houston TX 77055
IX	Jerry Murphy, 2432 Astron, Colorado Springs CO 80906
X	Joe Norcross, 413 Cameron, Hanford CA 93230
XI	Ernie Linn, 16558-121st Ave.,SE, Renton WA 98055

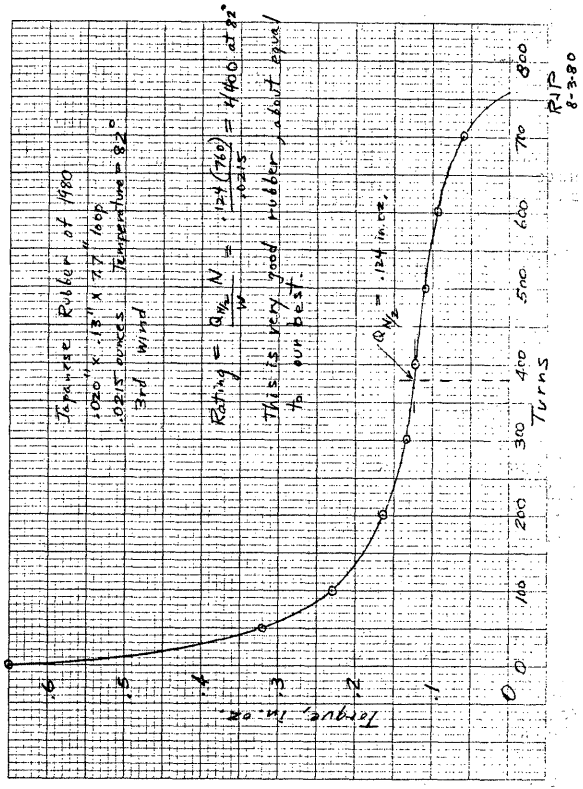
STATE OF THE ART

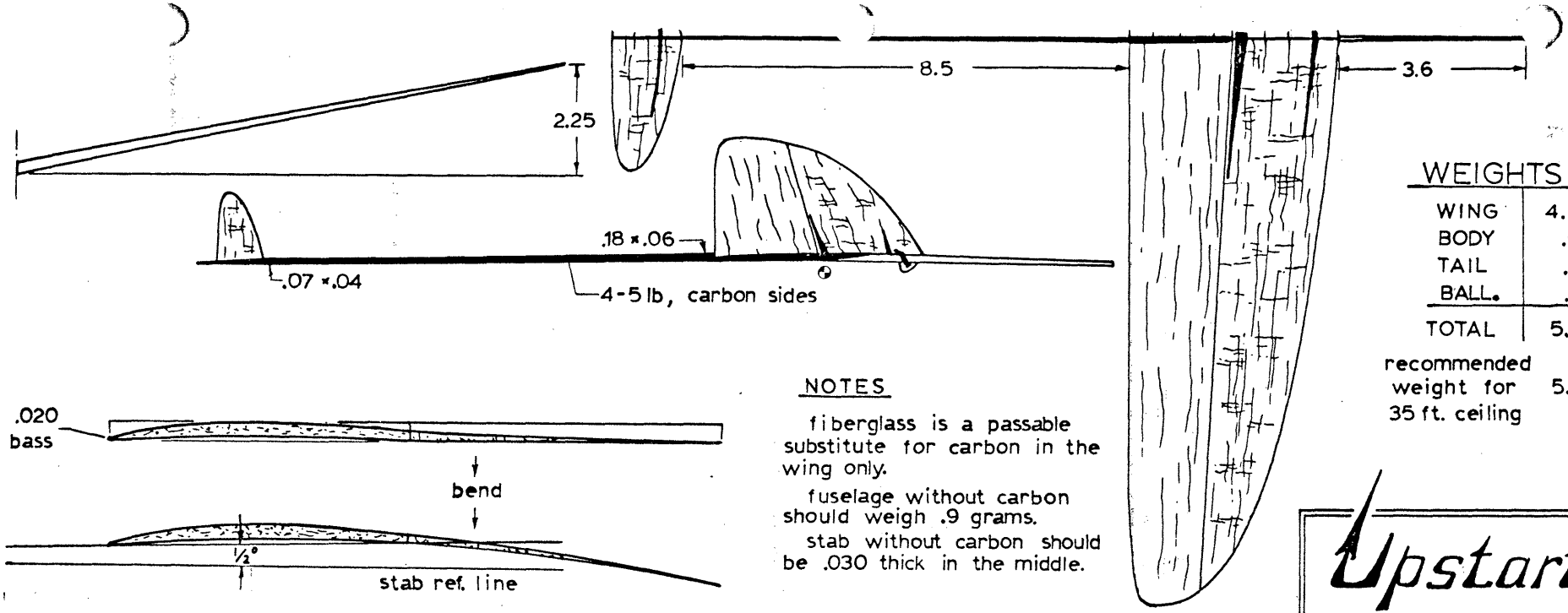
Mark Drela is an unusual young man, as those who know him can attest. He avidly seeks out new methods and materials, and the ususal result is a new standard of performance for whichever type of model he is currently developing. One example of this is his record-holding UPSTART 4, shown on the plan page. This Cat. I HLG looks a lot like most other Cat. I HLGs we see, until you look closely.

This class of glider is difficult to build to the proper weight for the ceiling, due to limitations in the structural materials available. Mark's approach to this problem is to use carbon fibers for equal structural stiffness at equal or less weight. All the details are there, which should give you a good idea what kind of airplane it takes to do really good times in 35' ceilings.

THE LAB

Rubber testing remains one of our more important types of activity to "improve the breed", and Bob Platt is one of the more consistent practitioners of this particular art. After the 1980 Indoor WCh, Bob managed to obtain a sample of the rubber used by the Japanese team, and he ran some tests. One of his curves is shown below (assuming it isn't too light to show up). Bob's assessment of this sample is that is is about as good as the best available here.





WEIGHTS (gms.)	
WING	4.70
BODY	.60
TAIL	.10
BALL.	.10
TOTAL	5.50
recommended weight for 35 ft. ceiling	5.70

NOTES

fiberglass is a passable substitute for carbon in the wing only.

fuselage without carbon should weigh .9 grams.

stab without carbon should be .030 thick in the middle.

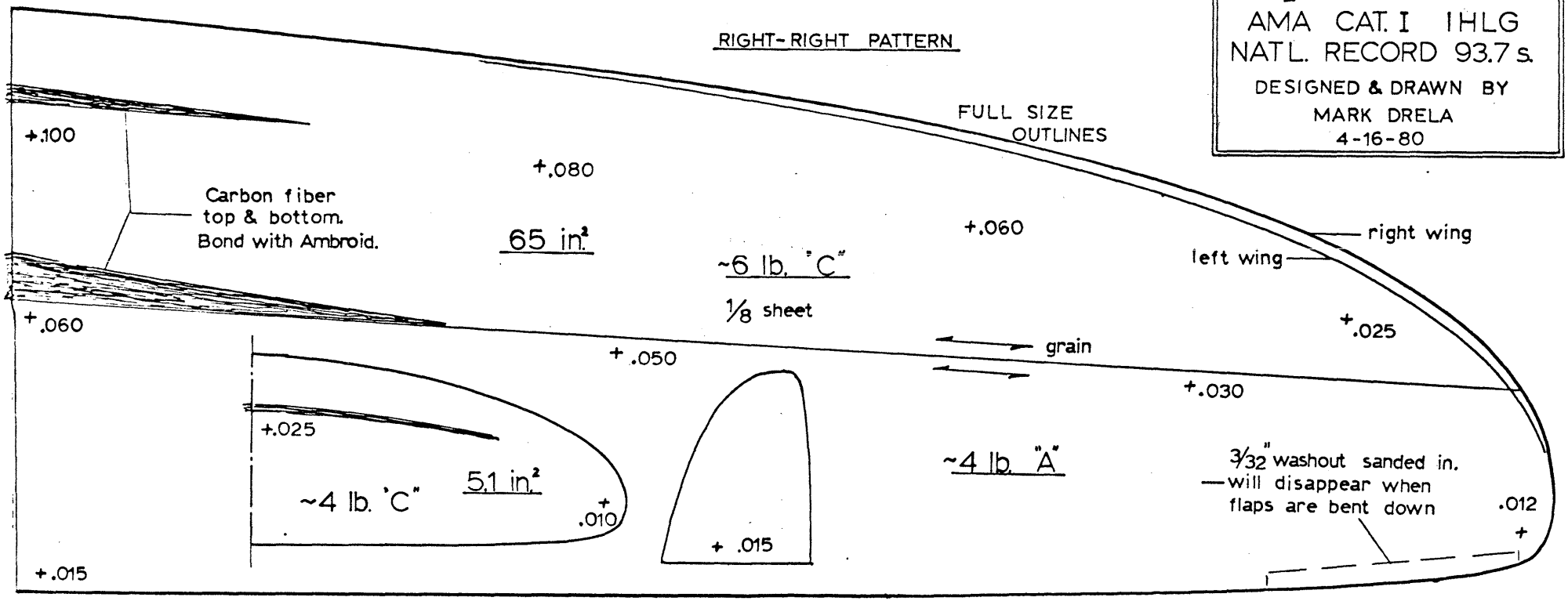
Upstart 4

AMA CAT. I HLG
NAT'L. RECORD 93.7 s.

DESIGNED & DRAWN BY
MARK DRELA
4-16-80

RIGHT-RIGHT PATTERN

FULL SIZE OUTLINES



THE ANNUAL INDOOR EXTRAVAGANZA:
JUNE 23-27 1981
AT WEST BADEN, INDIANA
THIS YEAR - 1980 - FOUR (4) MEETS IN ONE WEEK!

This is the sixth year that the National Indoor Model Airplane Society returns to West Baden for their favorite annual attempt to set records, to see old friends and to make new ones, and to just have fun. Most indoor modelers all over the world are now aware of the food, flying and comraderie to be had at Northwood Institute, due, particularly, to the 1980 World Champs Meet held there last June, followed by the SNART Record Trials, and the First World Peanut Grand Prix.

This year there is another unique FIRST. The first time the AMA indoor NATS has been held at a separate time and place from the "main" NATS. Indoor modelers, for a long time, have felt this would be a good idea. Not that we are snobs, but that ideal indoor sites are rare, and recent NATS indoor sites were far from ideal. Details of the AMA part of this full week of indoor flying are obtainable from AMA Hearquarters. Please send them an SASE BEFORE MAY 31. This is their cut-off date.

MIAMA JUNE 26 1981 (10)

SECOND ANNUAL WORLD P-NUT GRAN PRIX

24 HOURS OF FLYING!

Open to all modelers around the world....All nations, ages, and sexes, either in person, or with your model flown by proxy.

THE CONTEST will be from 7:00 PM Fri. June 26 to 7:00 PM June 27 followed by an awards banquet and a midnight awards ceramony.

There are 5 classes of peanuts, (I) PIONEER (Up to WW I), (II) Warplanes (Combined WW I & WW II aircraft excluding liaison, sky cycles & personnel planes that were civil aircraft of the period...You KNOW the ones we mean) (III) Golden age (Between WW I & II) (IV) Modern (After WW II) (V) Weirdo, This new class includes multi-engined planes, flying boats (not Cubs on floats) amphibians, autogyros, helicopters, triplanes, or quadraplanes. NO canards, pushers, or flying wings unless they are also one of the above weird types. (Planes entered in Weirdo class can also be entered in its other class... Pioneer, Modern, etc.)

AWARDS: There will be engraved glass bottom mugs for Ist, 2nd, & 3rd, a Grand Peanut, Best static score, Best flight score, and some Flying Aces Type mass launch event awards. ALL ENTRIES will receive a souvenir and complete results down to umteenth place, so you can improve for next year.

(11) TO ENTER: All entries, Whether you will be at West Baden's NORTHWOOD INSTITUTE, Indiana, or whether you are sending a proxy entry, or whether you will be present to do some proxy flying of other entries, please send in the entry with your entry fee to Mike Arak, 10900 SW 61 Ct. Miami, Fla. 33156, USA. PLEASE SEND IN ENTRY BY MAY ~~15~~ 31, 1981 Don't put this off because it seems so far away..You have lots to do before then! Make out check to MIAMA ;Dr.John Martin

FLY! FUN!

WHEN WE RECEIVE YOUR ENTRY AND FEE YOU WILL GET AN INSTRUCTION SHEET CONTAINING: (1) Methods of safely packing your proxy, (2) Flight check list to aid your proxy flyer get the best from your model, (3) A SELF-SCORING judging sheet...(Yep, you rate yourself), and return aircraft post-contest instructions. Build your model to AMA rule 59, (page 82, rule book). This permits either a 13" span, or a 9" overall length peanut. A copy of these rules will be included when your entry is received.

THE SNART:

Most everyone will be glad to [illegible] the ceiling height controversy has [illegible]en resolved, and the FAI method of measuring height has been adopted officially by the AMA. West Baden..height 98', Cat II. In the record trials (June 24-26) every type of indoor model is flown and recognised. This is all 12 AMA classes, and 7 other unofficial types. You will be scored according to your "Index of Performance" in the 12 official classes, which is a comparison of how well your best flight compares with the national record. Individual trophies to Manhattan, Bostonian, Scale (AMA and CO 2, and Peanut -Rule 59) Easy B old rule, (New rule is under "index"), Peanut speed, and possibly some "Flying Aces" type mass launch events. All classes NOT named are in the "Index" event, and are eligible for the famous glass bottom pewter mugs. There are no limits to the number of flights you make, and no limit on the number of classes you enter. AMA rules apply to all classes except the rules printed in this brochure.

NORTHWOOD INSTITUTE , West Baden Indiana, 1-812-936-9971 is an old college, and not plush, or air conditioned. Bring many of the creature comforts you will be wanting with you. There is plenty of activity for your entire family at nearby French Lick.

AIR CONDITIONED MOTEL: Lane's Motel, Box 244, French Lick 47432
1-812-936-9919
West Baden Springs Motor Inn Box 38 West Baden 47469 1-812-936-9995
Plush Accomodations: Sheraton Hotel. French Lick. Indiana

SNART CALENDAR OF EVENTS: 12 HOURS OF FLYING PER DAY

TUE - JUNE 23	CONCLUSION OF AMA NATS.......	AMA LUNCH PD.	-->	8:00 PM - NIMAS-NATS BANQUET
WED June 24	ALL 'HEAVY' MODELS - MANHATTAN BOSTONIAN, PENNY, NOVICE PEN. 'OLD' EZB. 9:00 AM.....	LUNCH 1 TO 2	....9:00PM	5-6 DINNER
THURS JUNE 25	BY 10:00 AM TURN IN ALL SCALE MODELS - FOR FRI + SAT EVENTS ALL "LIGHT" MODELS - 7:00AM -		---> 7:00PM	8:00 PM SNART BANQ.
FRI JUNE 26	GLIDER + SCALE DAY 9:00 AM -------		.. 9:00PM	5-6 DINNER
FRI NITE 7:00 - START P-NUT G.P	SAT ALL DAY - JUNE 27 WORLD P-NUT G.P. #2		7:00 END 24 HRS. W.P.G.P.	8:00 SAT. PEANUT BANQ.

SNART ENTRANTS - BRING STOP WATCHES, + BE PREPARED TO HELP - VOLUNTEERS NEEDED!

NOTES:

The AMA portion of WEST BADEN WEEK..June 19 to June 23...includes the AMA NATS, and the FAI Regional Team Trials. Send to HQ for details. AMA activity terminates after lunch on Tue., June 23. Dinner that evening is an AMA awards banquet sponsored by NIMAS for those who wish to have their NATS trophies presented at an old fashioned type awards dinner.

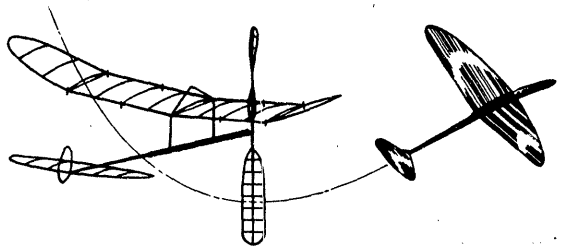
The NIMAS awards banquet will be on Thurs. night when the INDEX OF PERFORMANCE mugs will be awarded.

Friday June 26 will be glider and scale day with these events alternating all day long. Awards for these flyers on Friday night, and after dinner the 2nd World Peanut Grand Prix gets going...for 24 hours!!

We hope to have the Club MIAMA cash Bar open, and fill the evenings with symposia, movies, and bull sessions.

The Voice of N.I.M.A.S. DEC·1979

INDOOR NEWS and VIEWS



Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

****NATIONAL INDOOR MODEL AIRPLANE SOCIETY****

This Issue

When two people made camera-ready reports available before I had all the Nats and SNART results typed, it became very advantageous to go ahead with this issue and get some of the results out sooner instead of making you wait until all results were ready. So, thanks to Charlie Sotich and John Martin for the coverage from the Peanut Speed Event and the 2nd World Peanut Grand Prix which appear below. That leaves the Nats report and the rest of the SNART report (including pictures from all three events) for next issue.

Need a Pen Pal?

Francesco Falanga, P O Box 58, 70100 Bari Italy, has just subscribed to INAV and wishes to corresond with any architect who are also aeromodellers. Can you oblige him?

A Great Idea!

A number of people have been nagging at me to update the masthead date to more nearly correspond with the real-life date represented by the issue. I guess that if you see the 1981 Nats results published in an issue dated Dec. 1979, it does seem more like a science fiction prediction than news reporting! Anyway, whenever I would hear from one of these "industrial-strength" Nags, I would pose the question: "Suppose I do bring the masthead date into line with reality, and I get behind again, how do I handle that?" Ed Whitten (ranked as #2 in nagging frequency) recently replied: "Stop dating the issues and start numbering them. Do the bookkeeping in terms of issue numbers instead of by month and year. Make a sub good for 12 issues instead of a year."

Right on! The three problems I had were: (1) Each "slippage" would result in needing to re-translate the records into a new "last issue" month for each subscriber and change all the records, both on the master records and on the address masters; (2) Justifying the financial records so that money comes out even with the number of issues obligated (without this, it would be impossible to know when the expenses had begun to outstrip income); (3) Whenever I make a mistake in dates, or double-mail an issue, or do anything to upset the dating scheme, it is almost impossible for someone to be sure they have a complete set of issues when they look back. Thus, I get requests for issues that may never have existed.

The new scheme solves all of those problems, and will actually make the record keeping and financial analysis slightly easier than before. So, the next issue, which would have been the Jan. '80 issue, will be numbered (either #1, or #xx, depending on how many have been published in the past 20 years). Let's assume that it is #1, and your subscription was due to expire with the Mar. '80 issue. The label on this issue looks like the first example below, while the label on the next issue will be like the second example. More important, the masthead date will be the current month and year, instead of Jan. '80. Whether or not you manage to decipher the label to tell when your subscription expires, I will continue to send a warning note with the issue which represents the end of your subscription. Rejoice, ye mighty Nags! Thanks for chipping away at a problem which bothered me as much as it did you!!

Joe Blow 0-3
2837 Breeze Ave.
Gust XA 55555

Jim Sneak #3
3333 Quiet Lane
Stealthy ZZ 73739

Results From NIMAS Index Competition

For those who haven't heard, the NIMAS Index Competition is a system where any and all AMA model classes are flown in the same competition with each other. This is possible because each model is flown against the national record for the model class and age group of the flier. Each flight is divided by the national record time, yielding a number (hopefully) greater than 1.0. Each flier's score is then compared, with the highest score winning. One of the originally unforseen things about this scheme is that a Junior or Senior quite often wins first place, since these records are usually somewhat lower than the open records, in comparison. Another side effect of this type of competition is that a great many records are broken and re-broken each year.

You might expect that, given the freedom to fly your "best" class, rather than a class picked out in advance by the CD, can be at least a psychological benefit. To a certain extent, this is true. However, it often is the case that your strongest event may not be the best one for you to fly. If the record is quite high for your strongest event, but you have a model fitting a class with a low record, it may be easier to get a high Index score in the second event. Note in the chart below that Mike Van Gorder did just that, and won two handsome pewter mugs!

This year, in spite of having considerable previous activity in the site, there were fifteen fliers who exceeded either the existing national record, or else broke a mark set at the meet. Note in the list below that Juniors and Seniors won the top five places, with an Open flier first appearing in sixth place. Here are the top fifteen winners, with engraved pewter mugs being presented through tenth place):

Name	Model Class	Age	Flight Time	Index
Mike Van Gorder	Easy B	Sr.	14:54.0	1.6284
Chad Curth	Ornithopter	Jr.	00:25.7	1.6042
Mike Van Gorder	Novice Penny	Sr.	10:26.8	1.3990
Paul Loucka	Indoor Cabin	Jr.	15:07.8	1.2935
Robert Skrjanc	ROG Stick	Jr.	10:48.8	1.2627
Walt Van Gorder	Easy B	Op.	21:36.8	1.1974
Dick Hardcastle	Easy B	Op.	21:28.0	1.1893
Mike Clem	Pennyplane	Sr.	11:48.8	1.1739
Dennis Jaecks	Pennyplane	Op.	15:01.4	1.0793
Cezar Banks	Pennyplane	Op.	14:55.5	1.0722
Dave Lindley	Pennyplane	Sr.	10:20.3	1.0274
Dick Hardcastle	Pennyplane	Op.	14:08.6	1.0160
Jim Richmond	ROG Stick	Op.	17:42.4	1.0078
Lew Gitlow	Ornithopter	Op.	3:09.1	1.0061
Cezar Banks	Novice Penny	Op.	12:51.9	1.0027

****FAI INDOOR REPORT****

Program Winding Up

A recent memo from Committee Chairman Jim Richmond contained the chart reproduced below, listing the results at that time, except for the Lakehurst Regional. By the time you receive this, the Denton TX Regional will also be completed, with only a short time until the Akron Regional.

Jim noted that, even now, it was not too late to enter the program, provided you can enter at Akron. This is possible because the Akron meet will be both a local and a regional meet, so that you could enter and compete in one of each before the Labor Day Finals, now fairly firm for Santa Ana. If you need to enter at Akron, be sure to call Bill Hulbert at 216-864-8030 to get your name on the roster for entry to the site.

In other comments, Jim noted that Romania is considering a bid for the 1982 WCh, but that if this does not happen, we have unofficial word that England will host the meet at Cardington.

Finally, after the Finals, there will be a confirmation vote for the members of the FAI Indoor Committee and an election for the next Chairman of the Committee. A list of the present Committee members is shown below.

Your indoor committee is as follows:

District I — Ray Harlan*, 15 Happy Hollow Rd., Wayland, MA. 01778
District II — C.V. Russo 143 Willow Way, Clark, NJ 07066
District III — Bucky Servaites* 7660 Duf'ield Circle, Centerville, Ohio, 45459
District IV — Bob Champine* 205 Tipton Rd., Newport News, Va. 23606
District V — Jim Richmond* 5371 Lanford Springs Ct., Lilburn, Georgia, 30247
District VI — Al Rohrbaugh 1415 Jewel Ct., Ft. Wayne, Ind. 46825
District VII — Dick Kowalsky* 32823 Gloede Dr., Warren, Mi. 48093
District VIII — Bud Tenny Box 545, Richardson, Tx. 75080
District IX — Stan Chilton 300 S. Main St., Wichita, Ks. 67202
District X — Erwin Rodemsky* 2433 Hastings Dr., Belmont, Ca. 94002
District XI — Dave Hagen 19957 S. Redland Rd., Oregon City, Or. 97045

*Past or present chairmen.

1982 INDOOR TEAM-SELECTION STATUS

Contestant	Akron Regional 9/2/80 time/points	Santa Ana Regional 11/15-16/80 time/points	West Baden Regional 6/21-22/81 time/points	Santa Ana Regional 6/21/81 time/points	Lakehurst Regional 7/4-5/81 time/points	Denton, Tex Regional 7/26/81 time/points	Akron Regional 8/1-2/81 time/points	Points from best Local	Progra Points to dat
Banks		67:05/100.0						10.00	110.00
Belieff								10.00	10.00
Brodersen								5.99	5.99
Calliau		57:13/85.29	68:28/100.0					9.29	109.29
Cannizzo								9.64	
Carter	42:59/46.67		42:25/61.95					8.09	70.04
Chilton			65:14/95.28					10.00	105.28
Clem, J.								10.00	10.00
Clem, M.								10.00	10.00
Crane								8.13	8.13
Doig	69:23/75.33							10.00	85.33
Domina								10.00	10.00
Faykun		63:12/94.21						7.16	101.37
Ganser	63:47/69.25		39:52/58.23					8.26	77.51
Ganslen								8.48	8.48
Gibbs		50:19/75.01		81:10/100.0				10.00	110.00
Gitlow		49:58/74.48						8.15	82.63
Hagen		63:50/95.16						8.94	104.10
Hardcastle			55:50/81.55						81.55
Harlan		86:44/94.17							94.17
Haupt								3.22	3.22
Hoffman			65:39/95.89					8.79	104.68
Hulbert	75:13/81.67		62:53/91.85					9.68	101.53
Kulzer								10.00	10.00
Loucka	64:43/70.27							1.80	72.07
Mather		61:38/91.88		78:57/97.26				10.00	107.26
Obarski	74:43/81.13		59:11/86.44					10.00	96.44
Platt								9.41	9.41
Radoff								9.43	
Randolph		56:20/83.98		55:18/68.13				8.83	92.81
Richmond	92:06/100.0								100.00
Romak		64:00/95.40						10.00	105.40
Russo									
Shailor								5.62	5.62
Shepherd								9.85	9.85
Stoll			58:37/85.61					10.00	95.61
Szymula			55:06/80.48						80.48
Tenny								3.08	3.08
Tryon			63:17/92.43					8.52	100.95
Van Gorder	59:35/64.69								64.69
Williams, W		49:55/72.92							72.92

NATIONAL FREE FLIGHT SOCIETY

DEDICATED TO THE INTEREST OF FREE FLIGHT AEROMODELING

NFFS

Nominations for the 1982 10 Model of Year Award are being accepted until January 1 1982.

Please send your nomination along with good cogent reasons why it sould be considered. Send to:

Gil Graunke
15260 Heather Hill Dr.
Brookfield, WI 53005

Nominations for the 1982 Free Flight Hall of Fame Award are requested. Please submit by January 1, 1982 along with a detailed description of their contribution to the Free Flight community on the whole. Send to:

A. J. Italiano
1655 Revere Dr.
Brookfield, WI 53005

Thanks for your assistance.

Sincerely,
Tony
A. J. Italiano

MORE ON CYANACROLATE

Some time back, there was some commentary about use of cyanacrolate (Hot Stuff and Super Glue) type of adhesives for indoor modeling. Don Lindley's "how to" article followed (Jun/Jul '79 INAV); the following comes from David Rollin, describing how he used cyanacrolate glue for almost everything on his Easy B. Between these two articles, about all that is missing is a close study of the weight added by our regular glues compared to cyanacrolates!

"HOT STUFF" Your Easy B!

by David Rollin

This letter is in response to your request for experiences in using cyanacrolates in indoor modeling. I am just beginning, and have built only a couple of Peck Peanut kits and one Micro-X E Z Bee. My other modeling experience is with towline gliders and R/C sailplanes. "Hot Stuff" is used by our club (Western Lake Superior Flying and Hiking Society) for reinforcing balsa noseblocks in peanut scale models, both around the bearing hole to keep it froom loosening, and to toughen the edges which mate with the fuselage. I have also used it to attach windshields--holding the clear plastic in position and applying several small drops of glue to the joint. The glue spreads by capillary action, and I have had no problems with loosening.

My E Z Bee was built entirely with "Hot Stuff", except for the bearing hanger which was attached with a small dab of 5 minute epoxy. The condenser paper was also attached with "Hot Stuff" by the following method (illustrated below).

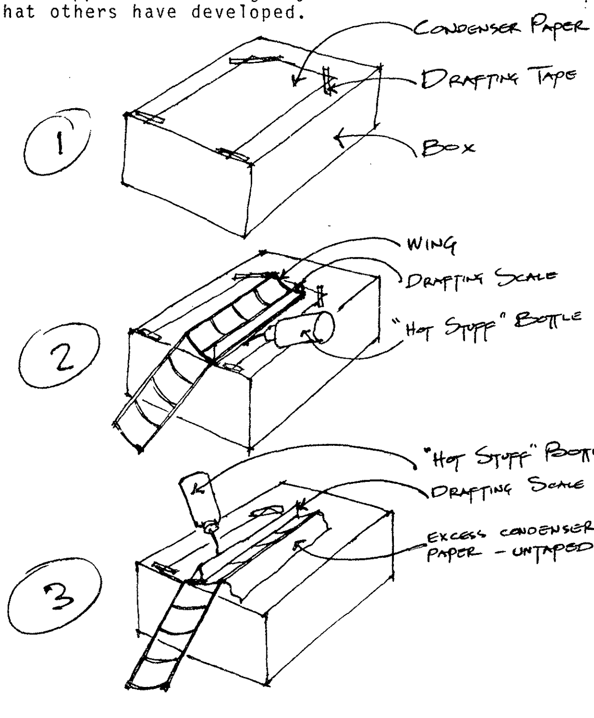
1. Tape a somewhat oversize piece of covering to a flat box with drafting tape at the corners, making sure there are no wrinkles.

2. Position the wing upside down on the covering with the trailing edge held in continuous contact (weight it down with a drafting scale or siMilar item). Touch glue at several points along the trailing edge; glue will flow into the joint by capillary action.

3. Allow the glue to set up, untape the two corners of the covering at the trailing edge, and remove the weight. Roll the wing forward on the airfoil, lifting the trailing edge until the leading edge is in contact with the covering. Check for wrinkles. Weight the keading edge down and apply glue as before, this time gluing the ribs also. Allow the glue to set up, untape the remaining corners, and trim off the excess covering. Repeat for the other wing and the tail surfaces. This E Z Bee has proved to be very durable.

I have also used "Hot Stuff" to reinforce the leading edges and tips of the prop blades, and the leading edge of HLG wings.

I hope to hear from other builders about their experiences with new materials, and as a beginner, I would appreciate seeing any other ideas and techniques that others have developed.



THE SECOND WORLD PEANUT GRAND PRIX

Boy, did we have FUN !! Everybody flew like Moody's Goose ! The Second World Peanut Grand Prix at West Baden was the second time that a model meet was held for 24 hours. (The first time was last year.) Commencing at 7:00 PM on June 26, and finishing on June 27 1981 at 7:00 PM we feel that, for the first time, everyone had time to get in all their flights,or did they? This event has supplanted the MODEL BUILDER Peanut Proxy Contest as the premier Peanut event of the year as this contest drew 79 models from 5 countries....next year we are going to apply for International Sanction!!

M.I.A.M.A. was the host club (Doc Martin ,Pres.), and we would like to thank MIKE ARAK, who was the Proxy Flying Chairman, and to BUTCH HADLAND who was CD for the second year in a row, and who also did very well in the meet. Once again, the atmosphere at the Peanut meet was relaxed and enjoyable, and the feeling of good FUN was in evidence.

Observations on the meet: There were far fewer proxy entries than entered. Mike Arak is worried thatthere is a back room at Northwood Inst. that is full of boxes of peant planes. We can't understand what happened to all the planes who put up $5.00 to enter, and then didn't. I guess we need a longer advance time to inform folks about the meet.....so here is your notice: Start building NOW 'cause the THIRD PEANUT GRAND PRIX will be held at West Baden on the 25th of June 1982!! As before it will be 24 Hrs. and will finishonJune 26 at 7:00 PM. BUTCH HADLAND promises to return as C D., and, as mentioned, we plan to have a WORLD SANCTION out of Paris,France!!

A lot of thought was given to the Proxy Flying portion of the meet, and Mike provided packing and shipping instructions to the antrants, as well as an outline of flying instructions to the Proxy flies. All those who heeded his advice had no breakage on shipping, but a few did NOT heed his advice...Their planes arrived squashed. Fortunatly the Proxy fliers were compassionate, and DAVE LINDLEY, and MARTIN VARNEY, to name just two, spent many hours rebuilding their Proxy plane.

The rules controversy.."To ROG or not to ROG"did not materialize as the rules require all planes to ROG except the Weirdo class, which can be hand launched. All planes easily ROG'd. Outdoors, with a brisk breeze blowing, this would NOT be the case.

As to the special awards...JIM MILLER scored HIGH TIME, which is the best two flight total of nine flights. He had 218.3 with his Piper Vagabond. The best static score was DAVE KIEFER with 315.8 points for his PITTS SPECIAL biplane. Hadland had had 351 on his impeccable Monocoupe, but failed to put up a qualifying flight. The Best Proxy Flier was MARTIN VARNEY....The Best Junior was Stephany Sanford, with Melanie Sanford recording the best Jr/Sr time, and LIZ getting high static points. All with Lacey M-10's.

TONY SUTTER, with a beautiful little Heinkel HE 100 , not only won "WARPLANES" but won "GRAND PEANUT" as the Heinkel had best static score, AND best flight time in its catagory for a perfect score of two points!

Weirdo had only 3 entries, and Pioneer 4. Warplanes had 11 planes, and there were26 in Golden age, and 35 in Modern. I don't understand that distribution. The following results list only the planes that posted flights:

REFLECTIONS: The Club MIAMA cash bar was going strong again..this time run by Gloria Szymula..serving hot and cold snacks along with the Erlanger. The Entire West Baden Security and Maintainance staff as regular customers.

The Clothes-line Art Exhibit by Heather and Susan Arak featuring original Art about indoor models. The price was right...20 cents for a signed original. Some of the titles: "Oh, Darn, My Manhattan is caught in the rafters", "I fly indoor and I love it", "Rats, my rubber broke"? Also available at this booth was the new taste sensation drink..The Heather Wall Banger. Try one next year.

Considerable discontent about the AMA portion of the week... This time the sitewas NOT the problem, but the utilization of it. Poor allotment of time was the major complaint, and inadequate staffing ran second. There may, or may not be a separate indoor Natsnext year depending on the results of the Questio naire all contestants were to answer.

Bobby Skrjanc set up a "Peanut Repair Center", and was busy restoring the beat up remains of crashed peanuts. He repaired a limp wing on my Junkers Stratoplane, and had it flying better than ever.

There were many MIKE ARAK contrived mass-launched events for merchandise all during the 24 hours of Peanut. The sight of at least 20 Peanuts in the air at once can't be forgotten. The levity, banter, and laughter. The sight of Millard Well's Plastic Solar Challenger, and Butch's over 2 minute CO2 flight. All the Kit Laceys.. Doc's hourley shouts about the time remaining..."23 HOURS"! Wells and Doc were the only two flyers who madeit all through the night until 8:30 next morning..Then breakfast, a nap, and back to peanuts.

CHARLIE SOTICH'S great new innovation that makes a "Peanut Speed" competitor outof any peanut model, not just the raceplanes. Two laps around 2 balloons 20 feet apart from an ROG take off(YES; WE SAID ROG)completes the course. 12,13,14 seconds was good,and single didget times are possible. NOT as easy as it sounds, but GOOD FUN! This was the first time this event was held but it has GREAT POTENTIAL as a club event in any gym or barn in USA. We will fly this as a MIAMA club event this season. Write to Charlie Sotich for the rules, and the formulation of the balance between scale points, and speed. At any rate, if you can build a peanut plane, and can't build it light enough to be competative in the Peanut Scale event....try Peanut speed,'Cause it's weight may make it FAST.

In Summary...We had FUN; FUN; FUN like the gal who's Daddy took her T-Bird away.

26 Entries
8 Did not Fly

GOLDEN AGE:1.Phil Cox (Proxy Varney)Miles M-18(206.2)6 Static,2 flite(72.5)(51)8 PtsUSA
2.Jim Miller.Piper J-3(189) 12 Static, 1 Flight (70.0)(80.5) 13 PtsUSA
3.John Martin,Cessna A.(201) 7 Static, 8 Flite,(45.0)(49.0) 15 PtsUSA
4.Alfred Genther,Fokker F-7A(210)Swiss,4 Looks ,12 Flite (30.6)(35.8) 16 Pts SWISS
Proxy, Adams & Niederhauser
5.Bob Clemens,Merc"Gosling"(200) 8 Looks, 8 Flight(44)(44) 16 PtsUSA
6.Bob Clemens,Avro 560(199.7)9 looks,7 flight(46.0)(49.0) 16 PtsUSA
7.Phil Cox,Proxy Varney,Fokker F-II(208)5 Looks,13 Flite(25.6)(34) 18PtsUSA
8.Mike Arak,Caudron Lightplane(292)1 looks,18 flight (10)(12) 19Pts USA
9.Mike Arak,Piper YO-59(280.5) 2 looks,17 Flight (16.2)(17.8) 19 Pts.USA
10.J. Martin,Dayton Wright(188.5)13 Looks,6 Flite (53)(48.1) 19 Pts.
11.Walt Everson,Waco SRE(178.7)16 looks,4 flight(60)(60) 20 Pts.USA
12.Dave Kiefer,Waco SRE(184.25)14 Static,9 Flight(39.4)(45.6) 23 PtsUSA
13.Walt Everson,Taylorcraft(112.5)19 Static, 5 Flight.(42.7)(1:07.7) 24 Pts USA
14.B.H.Kennenell(Proxy Lindley)Timm (198.2)10 Looks,15 Flight(27.2)(23) 25 Pts.AUST.
15.Carl Hedley,CNA,PM-1(183.7)15 Looks,11 Flight (35.0)(40.0) 26 PtsUSA
16.John Martin,JunkersJU-49,177,17 looks, 9 Flight(47)(38) 27 Pts USA
18.Millard Wells,Pietenpol(95.7)20 Static,14 Flight(24)(28) 37 Pts.USA
DID NOT FLY:Martin VarneyFolkert's Toots(80) Dan Kilgore Elias Airsport(231)
Millard Wells,Monocoupe (219) Bob Clemens Pacific Racer(192) Paul McIlrath Bonzo(150)
Don Lockwood, Bonzo, and Dayton/Wright,Carl Hedley Luton Minor(183.5)

MODERN CLASS: (35 Entries)

1. Mike Arak, Lacey M-10(300) 2 Static,10 flight (69.0)(73.0) 12 Points USA
2. Butch Hadland,Lacey M-10(300) 2 Static,11 Flight (69.8)(72.0) 13 Pts UK
3. Dave Kiefer, Lacey M-10(238) 5 Static, 9 Flight(72.1)(72.6) 14 Pts USA
4.Jim Miller,Piper Vagabond(182) 17 Static,1 Flight(114.3)(104) 18 Pts USA
5.John O'Donnell,Fike E(191.75) 14 Static,5 flight (90)(101) 19 Pts UK
6.Bob Willey Fike E (236) 6 Static, 14 Flight (59.6)(16.2) 20 Pts USA
7.Dave Kiefer Pitts Special (315.8) 1 Static,22 Flight (35.3)(35.4) 23 Pts USA
8.Pat Ciambrello,Davis DA-2A(198.2)11 Static,12 Flight (66)(67.8) 23 Pts Usa
9.Liz Sanford (JR)Lacey M-10(140.2)20 Static,3 flight (99)(100.4) 23 Pts USA
10.Carl Hedley, Lacey(232.5) 7 Static,17 Flight (54)(63.1) 24 Pts USA
11.Stef Stanford (SR) Lacey M-10(140.2)20 Static, 4 Flight(99.2)(98.5) 24 Pts USA
12.Melanie Stanford(Jr)Lacey (131.2)22 Static, 2 Flight (101.2)(105.2) 24 Pts USA
13.Bob Clemens (Bede IV 192) (192) 13 Static, 13 flight (61)(62) 26 Pts USA
14.Dave Kiefer,Ganagobie (210) 9 Static,19 Flight (44.4)(41.6) 28 Pts USA
15.Tony Sutter,Lockspeiser(246.1)4 Static, 25 flight(20.0)(23.0) 29 Pts USA
16.Curt Sanford,Lacey (130),23 Static, 6 Flight (94.6)(96.1) 29 Pts USA
17.Walt Mooney, Found (206),10 Static, 21 Flight (39.0)(39.0) 31 Pts USA
18.Walt Everson,Found (96.2),25 Static, 7 Flight (75)(73) 32 Pts USA
19.Mike Gilbert,Lacey (117.5)24 Static, 8 Flight (71)(74) 32 Pts USA
20.Millard Wells,Monocoupe (219.4) 8 Static,24 Flight (24.7) 32 Pts USA
21.Millard Wells,Andreason (195) 12 Static, 26 Flight(20)(19) 38 Pts USA
22.Millard Wells,Solar Challenger(189) 15 Static,24 flight(29)(32) 39 Pts USA
23.Millard Wells,Nesmith Cougar(186) 16 Static,23 Flight (32)(38) 39 Pts USA
24.Earl Hoffman,Vagabond,(123.0)23 Static ,18 Flight (95.6) Only one. 41 Pts USA
25.Brian Varney (JR) Cougar(75) 27 Static,15 Flight (61)(60) 42 Pts USA
26.Ted Gonzoph (Proxy Flown Posthumos)Lacey (90.5)26 Static, 20 Flight 46 Pts USA (41)(40)
27.Millard Wells,Andreason BA-7(147) 20 Static,27 Flight (11)(21) 47 Pts USA
28.Millard Wells,Ganagobie (179) 18 Static, 29 Flight (14) 47 Pts USA
Did Not Fly: J Bates, Old Ironsides (144), Martin Varney,Ipanema(168.6)
Lloyd Wood,Moraine(196), Don Lockwood(Fike 115), Mike Gilbert,(Lacey 117.5)
Joe Koch,Penna.(Currie Wot 125..would not R.O.G.)Wrecked and rebuilt by Bob Wells.
Dan Kilgore, Fike E (212),

WEIRDO CLASS:
1. Bill Hannan...Helicopter.G I Papillon (342) 1 Static, 2 Flight (15.8)16.5) 3 Pts USA
2. John Martin.Nieuport Triplane(250.5) 3 Static ,1 Flight 4 Pts USA
3. Lloyd Wood, Twin Mustang(267.75) 2 Static,3 Flight 5 Pts USA

PIONEER CLASS: 1. Butch Hadland, Moraine Salnier (340) 1 Static, 2 Flite (46.8)(47.6) 3Pts. UK
Proxy, Varney 2. Koch, Blackburn Mono (191.25) 4 static, 1 flight (1:26)(1:28.2) 5Pts. Germ.
3. Bob Clemens, Nieuport IV (243) 2 Static, 4 flight (29)(30) 6Pts. USA
4. John Martin, 14 Bis (231.4) 3 Static, 3 Flight (44.0)(43.0) 6Pts. USA

WARPLANES: 1. Tony Sutter, Heinkel 100 (280) 1 Static, 1 Flight (59.0)(32.7) 2 Pts USA
(11 Entries) 2. John Martin, Nieuport 17C (253.5) 3 Static, 2 Flight (46.2)(41.3) 5 Pts USA
3. Mike Arak, Fokker E III (268) 2 Static, 5 Flight 7 Pts USA
4. John Martin, Nieuport Triplane, (250.5) 4 Static, 4 Flight (23)(20) 8 Pts USA
5. John Martin, Ansaldo SVA-3 (156.2) 5 Static, 3 Flight (42)(43) 8 Pts USA
Did not fly: Jim Miller, Bristol Scout (203),
6. Lloyd Wood, F 82 Twin Mustang (267.75) 3 Static, 6 Flight (16.8)(15.2) 9 Pts USA
Did Not Fly: Martin Varney, Zero (121)
Dan Kilgore, Loening Kitten (210.5)
Walt Everson, P-51 Mustang (112.5)
C.E. Roth, Taube (182)

THE 1981 SNART PEANUT SPEED EVENT

The 1980 VNART peanut speed event required the models to ROG from a table top and fly across a finish line 88 feet away. This required the models to be readjusted for this event if they were trimmed to fly in a circle for the regular peanut duration event. Some of the 1980 entries had a lot of trouble getting across the finish line even though it was 200 feet wide. Hardy Broderson suggested that the models fly a circular course around a single pylon. The model would be timed for two laps. The idea of a circular course was interesting to many peanut flyers but they thought the course should have a minimum diameter. A twenty foot diameter was decided on for the big SNART Contest at West Baden and it proved to be a good compromise.

Two X's made of masking tape were placed twenty feet apart on the floor of the Atrium. Helium filled balloons rose up about 40 feet from the center of each X to mark the end points of the course. When the models crossed the line determined by the two X's the stop watches started. After two full laps around the course the watches stopped. This is a very easy event that can be handled by one person in any suitable flying site.

Kurt Sanford's Lacey M-10 was the first one to try the course. It took a couple of tries for him to find the proper launching spot and direction to make a successful flight without cutting either pylon. Although the models were all adjusted to turn, they all were set up to climb and this obviously is not the way to get the top speed. Some of the models were trimmed to fly with more down thrust or a more forward CG position to hold the nose down. Last year's straight course winner, Martin Varney, was able to hold the climb down for most of his flights and was able to make some very fast laps, 6.82 seconds to go the 125 feet, 8 inch course. On several of his attempts, his Folkert Toots' wheels touched down beyond the starting line to void his flights. Both Varney and Sanford made use of the evening hours prior to the contest to do some test flying so they were both prepared to fly on the day of the contest.

While the calculated flying speeds may appear very slow, it should be noted that they were calculated on the basis of the model traveling 2 laps in a twenty foot diameter circle. The models must really fly in larger circles to miss the lines going up to the balloons. The torque of the motor drops off considerably after the take-off so the model just slows down after about a half lap. After 1½ laps many slowed down very rapidly when they started to climb.

You might keep this Peanut Speed event in mind for the winter months when you want a change from the routine that will stir up some interest among those modelers who can't make a 4 or 5 gram model.

RESULTS OF SNART PEANUT SPEED EVENT - JUNE 26, 1981

Pilot	Plane	Best 2 Lap Time	Avg. Speed	Speed + ½ Scale Points
1. Martin Varney	Folkert Toots	6.82 sec.	12.56 mph	26.66
2. Millard Wells	Little Butch	14.33	5.98	20.73
3. John Martin	Dayton Wright Racer	13.20	6.49	20.39
4. Kurt Sanford	Lacey M-10	12.41	6.90	19.90
5. Paul McIlrath	Wittman Bonzo	21.87	3.92	14.42
6. Don Lockwood	Fike Model "E"	25.03	3.42	12.17