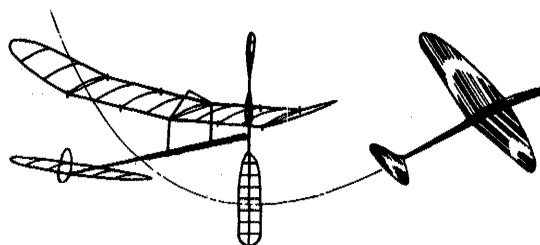


# INDOOR

## NEWS and VIEWS

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



#3

### \*\*\*NATIONAL INDOOR MODEL AIRPLANE SOCIETY\*\*\*

#### This Issue

This issue is mostly filled with additional input resulting from the F1D rules proposal made by Erv Rodemsky in Issue #2. I had hoped to get this issue out before Christmas, so I could return seasons greetings to those of you who sent us cards. Now, I've even missed the New Year greetings!

Reaction to Erv's proposal has been extremely volatile, and a great amount of copy has resulted. If possible, I will present all that material in this issue, with overflow and additional material to follow next month. It has been a fascinating time, watching this issue grow; my major surprise is just what a diverse group of fliers agree that some change is needed. It was no surprise to note the extreme diversity of opinion which has been expressed regarding the actual solution of the problem!

#### HELP!

Dan Domina requests help in obtaining an address which works for Roberto Raders Valle of Mexico. Every address he has tried so far has been rejected by the Mexican Postal Service! Dan's address is 6 Meadow Lane, East Windsor NJ 08520. Thanks!

#### 1982 INDOOR WORLD CHAMPIONSHIP

I received an unofficial report from after the Fall CIAM meeting to the effect that Romania will host the 1981 Indoor World Championship in the Salt Mine in September, 1982. Normally, the Fall CIAM meeting immediately before the year of the World Championship is the meeting which sets an event, so we can be reasonable sure that this is the final word on the event. Once or twice, we have been at this point and difficulties forced a change, but let's hope!

#### FAI PROPOSAL FOLLOW-UP

Issue #2 presented a proposal by Erv Rodemsky to change the specifications of the FAI F1D model class (FAI Indoor) to a smaller wingspan with a rubber weight limit. As might be expected, this proposal has generated a strong reaction from almost everyone who has commented. Some have overwhelmingly approved; Argentina and Japan in particular have voiced strong support. Others have been strongly opposed; Still others have generated alternate proposals. Much of this issue will be devoted to airing such comments. It should be noted that the major purpose in airing the proposal has been to generate ideas and commentary for Erv, hopefully with copies to INAV for publication. Unfortunately, even though I gave Erv's address earlier in the issue, I got to pass on a number of comments. In addition, a number of people sent comments here, and all these will be aired on a space available basis. In order to help those who couldn't find it in issue #2, Erv's address is: 26 Warm Springs, Irvine CA 92714.

Now, having read many of these comments, there needs to be some clarification. In the first place, the proposal has not been formally submitted to any rules-making body. Rather, it was aired in as many different publications as possible, in order to generate as much thought and commentary as possible, in advance of some contests set to try the design in actual competition. So, if any other impression was given by the release in INAV, I apologize to anyone who became overwrought at the thought of a proposal going out without any review. In fact, I believe ALL proposals should have similar exposure and trial before ever being submitted to a rules-making body.

The next thing to note about this proposal is that Erv has built and tested a model which meets the rules he proposed. As might be expected, he has made the discovery that 3/4 gram is a better motor weight. That report appears elsewhere in this issue.

#### FAI INDOOR REPORT Indoor Committee Activity

Cezar Banks was chosen as the Most Improved Flier, to receive the Pete Andrews Trophy. Ray Harlan has accepted the post of Chairman of the Team Selection Committee, replacing Jim Richmond.

#### Foreign Teams Chosen

Thanks to reports in Free Flight News and also letters received, the following information reveals the team membership for some of the countries expected to compete in the Salt Mine next September.

#### GREAT BRITAIN

Besides picking a new team, the British Finals produced a possible Cat. IV World Record - Laurie Barr's 41:11; it is also a new national record. The results below are the summation of two events at Cardington.

Laurie Barr	38:50	41:11	80:01
Dave Pymm	38:08	38:57	77:05
Bernard Hunt	35:56	35:06	71:02

#### HOLLAND

The Dutch Indoor Nats was also the Team Finals; the event was flown in the 747 maintenance hangar on Schiphol Airport on Sept. 10, 1981 with excellent conditions including very light drift.

Otto Rodenburg	27:35	31:28	59:03
Kees Wolthoorn	26:11	26:54	53:05
Wim Beekmeyer	23:18	26:55	50:13
Edgar Leim*	22:34	24:32	47:06

\*Team Manager

#### WEST GERMANY

German fliers are acutely aware of the problems of current F1D designs in small sites, to the extent that the German Finals (conducted in a 25 meter hall) were flown by fliers who have routinely used ballasted half-motors for testing. The top four fliers are listed below, with the fourth flier named as alternate. (Only two-flight totals were given.)

Kurt Vogler	73:46
Helmut Jacob	67:42
Alfred Klinck	65:48
Rainier Lotz	54:44

#### CONTEST CALENDAR

##### FLORIDA - Miami

Indoor contests at Opa Locka Blimp Hangar: Sundays, 9 am - 5 pm; Jan. 10, Feb. 14, Mar. 14, Apr. 11 and May 9, 1982. Fly-ins at Miami Dade South: Sundays, 9 am - 5 pm; Jan. 17, Feb. 21, Mar. 21, Apr. 18 and May 16, 1982. For more details, contact John Martin, 3327 Darwin St., Miami FL 33133. Call 858-6363 Friday before meet for confirmation.

##### KANSAS - Overland Park

Indoor sessions at the Westport Roanoke Community Center, 3601 Roanoke Rd, Overland Park KS. Flying sessions: Jan. 16 and Feb. 14, 1982. Contests on Mar. 14 and Apr. 14, 1982. Contact Roger Schroeder, 4111 W. 98 St., Overland Park KS 66207, ph. 648-4265 for more details.

##### MINNESOTA - Minneapolis Area

The Minneapolis Model Aero Club has scheduled indoor contests at the Burnsville High School Gym, 600 East Highway 13, Burnsville MN, beginning at 1 pm on Jan. 17, Feb. 14, Mar. 21 and Apr. 18, 1982. Events will be HLG, Pennypine, Easy B, Peanut Scale and Walnut Scale. Contact Jack O'Leary, ph. 612-888-0638 for more details.

##### MISSOURI - St. Louis

Indoor contests at the St. Louis Armory, Jan. 17, Feb. 14, Mar. 14, and Apr. 4, 1982. Contact Jim Bennett, 324 Helfenstein Ave., St. Louis MO 63119 for more details.

##### NEW YORK CITY - Columbia University

Indoor contests at Low Library Rotunda, Columbia University, NYC, 9 am - 5 pm, Jan. 10, Jan. 24, Feb. 7 and Feb. 21, 1982. Jan 24: Pennypine/Manhattan; Feb. 7: 9.3 gram Bostonian/Peanut Speed; Feb. 21: Santa Ana Stick contest. For more details, contact Ron Williams, 212-722-5262.

##### TEXAS - Bedford

Indoor contest at Bedford Boy's Ranch, Bedford Texas, Jan. 9, 1982, 5:30 pm - 10:30 pm. For more details, contact Jess Shepherd, 2713 Summit View, Bedford TX 76021, 817-282-3770.

## AN INCREDIBLE ADVENTURE!

This tale begins begins at West Baden, during the 1980 Indoor World Championships. The Japanese Team had found an excellent site for their practice--the Nagoya Trade Center in Nagoya, Japan. Their first concern over this site was to determine if the site was suitable for a World Championship. The scheme they devised to test the site was elegant--hold a class F1D contest and invite world-class fliers to participate in a full-scale test of the site. So, they invited Ray Harlan, Cezar Banks, Bud Romak and Erv Rodemsky to participate in the F1D contest, and also invited Stan Stoy along to demonstrate his "folder" HLG. With that as a preamble, the following report by Cezar Banks appeared in EL TORBELLINO, the newsletter of the San Diego Orbiters:

### Nagoya Cup '81

Did you in your wildest dreams think when you first started gluing sticks together that it would one day lead to a magic stay in a far-off land? Expenses paid, yet, and just to fly model airplanes? Well, hang on, because it just happened to five American indoor modelers.

Who would do such a thing, you ask? The Japanese, that's who. And do it in mind-blowing style, to boot. Would you believe an awards ceremony with a 20-piece band, 50pom-pom girls, speeches by real dignitaries (no flunkies here) and Japan-wide TV coverage? Couple this with the Nagoya Trade Center: 110-ft. domed ceiling, 450-ft diameter floor--a site with definite World Championship potential, and you begin to get the picture. Organization and execution were in the Japanese tradition; i.e., nothing left to chance, everything pre-planned and designed with your comfort and well-being in mind. The minor aberrations which crop up in any contest were dealt with swiftly, and with great energy. More than once, Japanese fliers dropped their own activities to aid the visiting Americans. Perhaps this had some bearing on the results, as we placed 1-2-3-4 in F1D. But make no mistake, the Japanese are coming! Models are beautifully constructed; there is great and growing interest in Japan which was given a further PR shot in the arm by this meet. Modelers are generally younger than the U.S. crop, and it is just a matter of a bit more experience and time before they become top rank.

But back to the meet. When ready to fly, one would gently and slowly walk his "mike" ship over to the official's table. The officials having seen you coming would have your card ready. As if by magic, not one but two timers would appear, no yelling or pleading. Then on to the processing room to check span and weight followed by the slow walk to the model stand, this whole process recorded for posterity by countless clicks and flash pops. Oh, how grand to make like a celebrity, if only for a little while!

After winding, hooking up, picking a spot and launching, if all looked well, one could lie down in a lounge chair and wait it out while (are you ready for this?) the P.A. system wafted out soothing music. Not quite like dying and going to heaven but close, my friends, close.

Mornings were given over to events like Pennyplane, EZB, ornithopter, Japanese Class A, and hand-launched glider. Here the athletic Stan Stoy, demonstrating his "folder" to high crowd interest, cranked up and broke Ron Wittman's 1973 world record with flights of 89.6 and 93 seconds. Lots of yelling and back pounding after that display!

I was the only American with Pennyplanes and managed a first in both PP (12:07) and NPP (10:21). Not great times, but good enough.

Here's the round-by-round picture in F1D, flown Saturday and Sunday P.M. I had it locked up 'til Ray Harlan put together two beauties in rounds 5 and 6 to take first, but that's what competition is all about, isn't it?

Pos.	Round Entrant	1	2	3	4	5	6	TOTAL
1	Harlan	31:10	32:30	28:50	33:40	34:28	34:47	69:15
2	Banks	34:33	30:17	33:53	13:41	31:48	29:41	68:26
3	Romak	2:16	32:03	30:32	26:16	34:03	11:41	66:06
4	Rodemsky	7:45	13:44	29:00	33:48	31:13	8:53	64:59
5	Mitsuzawa	17:49	28:05	22:43	17:42	20:10	27:55	56:00
6	Yamazaki	18:23	24:28	23:54	17:07	6:23	18:01	48:22
7	Ichiyama	23:04	22:47	20:18	23:48	-	-	46:52
8	Nonaka	23:28	2:40	22:37	-	-	-	46:05
9	Otagiri	-	-	-	-	-	-	44:56
10	Bamba	-	-	-	-	-	-	44:54
11	Sawada	-	-	-	-	-	-	28:45

### Remembrances and Reflections

1. The Stan Stoy launch: starting out at nothing; sync-ing up body and mind with a slight wobble in the throwing wrist,

then unleashing with a shotputter's grunt. The folded wing creation looks ugly duckling spiraling up, but magically transforms at agogee into a graceful soaring gull.

2. Contest eve banquet at Japan's Central Broadcasting Corp. lodge in Nakashima Hot Springs: Nonaka, Japan's guiding force in Indoor, loosening up the crowd by singing a Japanese ditty. Banks trying to follow suit by solo singing "China Night" in Japanese. No voice, but good courage. Followed by whole American team treating Japanese hosts with "I've Been Working on the Railroad." Rodemsky is loudest and on key. He's the only one. Everyone applauds anyway. Strange, decorative foods spread out on banquet tables, not all of it recognizable. "Hey, try this one, Romak, not bad!"--a wary smile, "No thanks, I'll stick with the chicken and shrimp, but you go ahead." We do, our palates sometimes happy, sometimes not. Everyone pours fine, mellow Japanese beer into your glass, keeping it full. Soon, private conversations break out all over. Seems everyone in Japan speaks at least some English.

3. Tokyo demonstration in school gym the following Tuesday: three TV networks show up. We are all interviewed. The standard questions: "Why do you pursue this (meaning strange) hobby?" We all give differing non-standard answers. They seem delighted. It's shown all over Japan that evening. Jim Kagawa, the U.S. Team Manager, introduces us to a tiny, old, bright-eyed man. Turns out that he is Kiro Honjo, now 81, former Mitsubishi engineer and a designer of the WWII "Betty" bomber. We all have an animated luncheon discussion with him, complete with sketches on napkins. He centers the talk on muscle powered airplanes and hang gliders. Later, he expresses wonder and appreciation of Stoy's folder. That evening, its another banquet and more gifts. Gifts, gifts, everywhere! It must be a national mania, but what a nice one! How can we ever repay?

4. Is Tokyo expensive? Is the Pope Polish? I watch with interest as Romak nonchalantly swings for an \$80 lunch tab for three at the Imperial Hotel. No dessert and no wine, either. Just beer. Romak shrugs it off. Fine French cuisine, though.

5. Thursday evening, Romak and I are invited to dine with Banba, his parents, and his wife and daughter, who all drive in from their chicken farm three hours away. We are lucky to have George Honda of L.A. (who is staying with the Banbas) as interpreter and life of the party. Everyone orders Kobe char-broiled beef except George and I, who opt for traditional sukiyaki; raw egg and all. I wonder how many eggs Banba will have to sell to pay for this feast.

--- Cezar Banks

### COMMENTS ON ERV RODEMSKY'S F1D PROPOSAL

Alfred Klinck (member 1980 German Team): If I think of the difficulties I had with my box in the USA, if I think of the many times my models have already been in danger under the ceiling and all the other difficulties you have with a F1D ship, I readily agree with Erv's proposed rule change. I would even go further than he does, namely go down with the wingspan to 55 or even 50 cm and with the area to 1000 cm<sup>2</sup>. The only thing I would not propose is the length restriction, although a length restriction of the box would certainly be reasonable! I must say that all this is my personal opinion and I don't know if my German comrades agree with me - and which is more important - and with the World Champion. But there is no doubt that something has to be done because performances have become so marvelous that there are no halls anymore which are sufficient for an only mediocre F1D, not to speak of the good ones. I don't know if the opinion of one whose only ambition it was to not be last at the WCh is of any importance, but I have really been thinking the problems over and I must say that the only way is to limit the performances and to make the class easier if you don't want it to become something for ten people over the whole world.

Walt Van Gorder: I would offer these comments on Erv's proposal: From my own experience, limited as it is in FAI, I think he makes some strong points; the models have become almost ridiculous in size for the weight. Only a very few people are able to get good enough wood to build to the weight. I really like the idea of everyone being restricted as much as possible to make the competition as close as possible. As for the rubber restriction, I think it is OK. They fly Wakefield and Coupe with limited rubber, so why not? On the other hand, I guess that no matter what you do the best fliers and builders will probably still get to the top, one way or another.

### EAST COAST INDOOR MODELERS: The Lakehurst F1D Stick

1. Limit the span to a 50 cm monoplane.
2. The minimum weight without rubber motor shall be one gram.

### 3. No Touch Rules

A. A penalty of one minute shall be deducted from the flight time for every time the model's parts touch the ceiling or ceiling girders in the ascent phase of the flight.

- a. A determination of what parts of the flying site structure constitutes the ceiling and ceiling girders shall be made by the contest director and fliers before the contest.
- b. Steering the model on ascent will be permitted one time for possible better centering.
- c. Creating an air disturbance with a balloon to keep a model from touching will cause the flight to be terminated as it can jeopardize another model.
- d. If in its descent the model drifts to one side, it may be balloon steered to safety without a penalty.

Comments on Lakehurst F1D Stick (Manny Radoff): I believe that the no touch rule is the answer to the destruction problem that has eluded us for 20 years. It is a most significant proposal and the way to go. I cordially recommend its consideration by interested F1D competitors. Coincidentally, John Triolo and Bill Tyler independently suggested the no touch rule. Bud Tenny experimented with such a rule in Texas, but nothing evolved. And now, "it is an idea whose time has come." (ED. Note: My experimentation with no-touch actually was a world-wide informal contest which simply allowed fliers to compete via INAV listings for the best no-touch time. Erv Rodemsky and I have kicked around the no-touch idea for several years. It was and is my contention that this gives a far closer test of model capability than any other rule; Erv contended that it would be difficult to administer from the standpoint of deciding just what constituted a "touch". Neither Erv nor I had the wit or genius to subtract time increments as a penalty for touching. This provision may well be the salvation of what I feel is an elegant idea. We still must define "touch" (the ECIM proposal does not address this), but surely we can do so in a common-sense manner!

1/2 FAI STICK (Jack Carter): Now that Erv Rodemsky has opened the F1D rules to reevaluation with his "Santa Ana Stick"....I would like to propose a "1/2 FAI Stick" as a second possibility for consideration. It would have these specs: Wingspan, max...50 cm (19.685");...50 cm (19.685"); Weight, min... .708 g (.025 oz.) This model, which might have a wing area of 115 sq.in., length of 24" and prop diameter of 17.5", might be capable of 40 minute flights. It would support all of Erv's down-sizing reasons for change plus one more; namely, this size will coincide with the maximum size which surveys show can be handled effectively by beginners and intermediates! This is of vital importance if we wish to increase FAI participation by removing all non-essential obstacles.

And who can foretell, if FAI were to adopt the "1/2 FAI Stick" specs...the various national academies, such as AMA, might do likewise in several less demanding weight classifications as - .030 and .040 ounces. Then we would have a more attainable goal for aspiring fliers...as well as a preplanned/straight-line "experience track" from national to international competition levels!

#### SUGGESTED ALTERNATE FAI PROPOSAL (Tom Vallee)

The FAI proposal outlined below is a constructive alternative to the Rodemsky proposal published in INAV and Model Aviation.

1. Span 50 cm ( 19.68 inch ) MONOPLANE
2. Weight 1 gram ( .035 ounce )
3. Max model length = 65 cm ( 25.590 inch ) excluding propeller
4. No mechanical gadgets ie gears or variable pitch prop devices.
5. NO OTHER RESTRICTIONS

The proposal above has the following advantages.

- i It is simple, straight forward and fair.
- ii Processing is easier, with simple go/no go gauges.
- iii It is more fair. It does NOT create a severe and unfair supply problem through a rubber weight rule!
- iv Performance will be reduced BUT NOT CRIPPLED by a smaller model with a higher wing loading.
- v It will be somewhat easier to build and fly.
- vi It will be truly easier to fly in small rooms and allows smaller model boxes.

I believe a majority of FAI fliers would prefer to fly under the present rules. However, on the world scene U.S. FAI fliers have only one vote. If we must have a rules change, we should search for a fair alternative to the Rodemsky proposal. I feel the proposal above is that fair and reasonable alternative.

#### 2ND ALTERNATIVE FAI PROPOSAL

1. Span 50 cm ( 19.68 inch ) MONOPLANE
2. Weight 1 gram ( .035 ounce )
3. Max wing chord 16 cm ( 6.299 inch )
4. Max stab chord 13 cm ( 5.118 inch )
5. Max model length = 65 cm ( 25.590 inch ) excluding propeller
6. No mechanical gadgets ie gears or variable pitch prop devices.
7. NO OTHER RESTRICTIONS

The proposal above shares the advantages of the first alternative proposal, but is somewhat more restrictive. The effect is that of a scaled down 65 cm model. Processing is more difficult but can be accepted. Either format is a reasonable alternative to the Rodemsky proposal.

If a majority of FAI fliers want a smaller FAI model with reduced performance, which will fit in a smaller box, we will have a rules change. I suggest that in formulating such a proposal, one should first seek to do no harm.

The Rodemsky proposal with its rubber weight rule, creates an extreme and inherently unfair rubber supply problem by aggravating an already severe problem. Processing of models is complicated. Model performance is crippled. In real terms, competing seriously becomes more difficult.

The suggested alternative of a no hit rule has the problem of being almost impossible to enforce fairly. There is also the possibility of unfair home site advantage to fliers more familiar with a particular room.

Both would harm low ceiling record attempt work in this country, one by setting a low cap on performance, the other by limiting competition to perfect top of the category rooms.

Let's have a vote to see if change is really wanted!! If the rules must be changed, we should seek a reasonable format which does not have harmful side effects.

#### 60 CM. REVISITED

By the time you read this the world's first 60 cm. contest will no doubt be history. There are at least six local fliers preparing for the event December 27. Reactions to the proposed rules range from wildly enthusiastic to violently opposed. Most people feel that 1/2 gram motors are too small. I started flying my first ship on old 1/2 F1D motors (3/4 gram) and this seems just about right. The very first flight on my 60 cm. was 17:30, the next 21+ dead stick 50' in the air; so I'm sure that on a good day, with the right prop and rubber cross section, we can approach 30 minutes. But, the big plus was FUN. I could wind wire-tight and the 10" motor stick showed no strain, did a couple of barrel rolls on the way up and was a handling dream.

So far, the strongest opposition to my proposal has been from Dan Domina. His counter proposal is to increase the present weight rule to 1.2 grams. The obvious result of this would be for the models to grow even larger and out of proportion. As Dan admits, the large models built right on one gram "Gives them the winning advantage, but they pay the price of fragile models." If you simply raise the weight, the models will be FRAGILE—10" chord 36" long tandums that will spend even more time rafter banging. As the past 10 years have proven, A WEIGHT RULE WITHOUT SIZE LIMITS SIMPLY MAKES BIGGER MODELS. Without motor limitations, they will spend even greater time in the girders.

A valid criticism is that of processing problems. I maintain that it's easier to figure areas on a few durable models than to build boxes full of critical ships. Processing at the flying site can

be done on an honor basis. I can't believe that a serious competitor would deliberately build oversize if he knew he were subject to close scrutiny in the event of protest. Virtually all other FAI classes have much more restrictive rules than what has been proposed. A simple go-no go balance can easily take care of model and motor weighing.

Several flyers suggested max chord lengths to make figuring areas simpler. There is nothing to prevent a designer from using square outlines if he so chooses, but why make it a "one design?" This proposal admits as much latitude as possible to experiment with design while maintaining a size and weight that is practical. As Mr. Monaka of Japan has commented, these rules should encourage five times as many competitors as they now have.

Our friends in England have also criticized the proposal with particular emphasis on the "no gadget" rule, but that is understandable since they have been successful in developing the variable pitch prop. Domina has made a plea that any FAI rule change proposal be approved by the contest board and a majority of past participants. This could constitute a major change in AMA if not CIAM policy and would affect all classes of FAI competition. The present system prevents stagnation of rule development. Need I point out that nearly everyone in the U.S. was opposed to the one gram weight rule and the U.S. voted against it; however, it has been a great help in making F1D more popular worldwide.

The major problem we face is that those who have access to the best materials and have learned how to build competitive ships are most likely to want to maintain the status quo. But, the very existence of the sport depends upon interesting new people. Larger, weaker models with tricky gadgets is NOT the way to do it!

It has never been my intention to have the F1D rules changed in time for the 1982 World Championship. My proposal was for contests on the local level to try the new concept. That is the only way we can find out if the idea has any merit. Laurie Barr is opposed to changing F1D, but has said perhaps it would make an interesting additional event. There is a tremendous jump from Pennyplane to F1D; so why not have some contests for this intermediate class and IF the majority of those competing want to change F1D, then we will all be better off with more practical models. The present breed of models is like beating your head with a stick—it feels so good when you stop!

I would like to remind everyone that the reduction from 90 cm. to 65 cm. was to make more flying sites suitable and reduce the box size; but, rules that encourage big, light models that do not fit the flying site only tends to destroy the sport.

If you've been dreading those big sheets of film, the lack of 3# balsa, the need for a truck to transport boxes, hung up and collapsed models, then try 60 cm. You can spend your time improving aerodynamics and getting the most out of a piece of rubber. Let's all try to keep indoor alive and growing!

ERV RODEMSKY

#### CO<sub>2</sub>: ANOTHER FACET OF INDOOR FLYING

By Bill Hannan

Doubtless those who follow Aeromodeller magazine will be aware of the growing interest in CO<sub>2</sub> powered indoor duration flying in England. A parallel activity in both England and the U.S. is indoor flying scale models with this type of engine, which offers cleanliness, simplicity and quiet operation.

The advent of the new Brown Jr. A-23 "Peanut" engine has made flying in small sites a much more practical proposition than it had been with larger units, and it is interesting to note that Bill Brown, himself did much of his test-flying indoors.

Weighing less than 1/4 ounce, this delightful engine will fit in a Peanut, but is easily capable of flying much larger models, such as the Bostonians recently

flown by the San Diego Scale Staffel club. Prompted by Walt Mooney, an informal contest was arranged, and results were encouraging, with winning times between one and two minutes. Some entries were simply hasty conversions from existing rubber-powered Bostonians, but a few were constructed especially for the meet.

Additional development should yield longer durations as builders become more familiar with the different parameters. For example, an unanticipated consideration was the effects of trapped heat in an indoor site, which causes the power of CO<sub>2</sub> engines to increase as the models near the ceiling. Creative solutions to this and other problems should keep modelers intrigued with this fresh aspect of indoor flying.

#### POPULAR MODEL CLASS

Bill Tyler reports that the 35 cm model class is really going great at East Coast flying sessions. He offers the following comments on 35 cm models: They are fun, and fly just like miniature FAIs. I did 24:50 at Lakehurst, with the model not fully wound, and the weather wasn't all that good. Given a good day in the right place, they ought to do 30 minutes. The biggest problem is handling torque when the model is fully wound. Despite 1/2" wing offset, I've had to add a tab on the inside wing, which seems to work OK. Using a constant chord wing shape also helps—you gotta get area at the inside tip. I'm flying 13" props, 84 sq.in. (6" chord), with 9.5" stick, 10" boom and a 40% stab. They weigh between .015 and .018 oz., and seem to hold together OK.

#### HINTS AND KINKS

Two By Vern Hacker

Many hobby shops have very small channel brass strips for model railroad use. If a very fine slot is cut at an angle across the strip, a tiny mitre box is the result. Prop spars can be cut very uniformly for center splices if you follow these techniques: keep the spars marked for proper orientation, and cut them with a single edge razor blade. Always pull the blade toward the acute angle of the mitre for consistent cuts!

Vern also suggests that prop spar center splices be made with Elmer's Glue. Then, when wrapping the joint with tissue and normal glue, the joint stays together instead of soaking apart as sometimes happens.

#### TORQUE ROD DESIGN

The chart below, furnished by Charlie Sotich, shows the design parameters for torque meter elements for a large variety of music wire sizes. The figures are shown for full scale torque reading at 360° rotation of a torque element of diameter in inches shown in the first column, length in inches shown in the second column, and torque in inch-ounces in the third column.

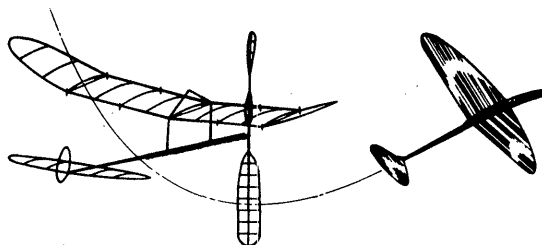
DIAMETER	LENGTH	TORQUE
0.00400	1.88	0.016
0.00500	2.36	0.031
0.00600	2.83	0.054
0.00700	3.30	0.086
0.00800	3.77	0.129
0.00900	4.24	0.183
0.01000	4.71	0.251
0.01100	5.18	0.335
0.01200	5.65	0.434
0.01300	6.13	0.552
0.01400	6.60	0.690
0.01500	7.07	0.848
0.01600	7.54	1.029
0.01700	8.01	1.235
0.01800	8.48	1.466
0.01900	8.95	1.724
0.02000	9.42	2.011
0.02100	9.90	2.328
0.02200	10.37	2.676
0.02300	10.84	3.058
0.02400	11.31	3.474
0.02500	11.78	3.927
0.02600	12.25	4.417
0.02700	12.72	4.947
0.02800	13.19	5.517
0.02900	13.67	6.130
0.03000	14.14	6.786
0.03100	14.61	7.487
0.03200	15.08	8.235



# INDOOR

## NEWS and VIEWS

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



# 4

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

### This Issue--A New Look

Some of you have been aware that I have been planning to assemble a word-processing system at home. Not only do I do a lot of free-lance writing, but this step allows me considerable freedom in planning and executing various issues of INAV. As a result of a lot of hard work and investment of time and money in a home system, I have finally reached the point where I can do the whole process at home. Some recent issues have been composed at home and printed at work. The final link in the chain was this printer, which is not quite a "letter quality" device, but I believe that you will be able to read its output satisfactorily. My only alternative was to wait for a printer with the print quality you have been enjoying, but the price is over five times as much. So, if things work out as I plan, INAV will get back on-stream sooner, because my time will be used more efficiently.

### Beware - If You Ask...

You may get what you ask for! For some time now, a number of people have been saying there should be a separate Contest Rules Board for Indoor. During the Jan. 31st AMA Executive Council meeting, the Council established just such a Board, and directed that it be implemented within 60 days. Since that time, a number of things have occurred. Some people expressed concern over this action and AMA President John Grigg declared a moratorium on this action until it could be reviewed at the next Council meeting. Now, there is doubt in other people's minds that he has the power to do that. In the meantime, a slate of 21 possible candidates for the 11 AMA District offices has been presented to the Executive Council, with recommendations for possible candidates for Chairman of the group.

In view of the seemingly inept handling of Indoor rules in the past, why are there some reservations on the part of some people? There are a number of reasons, and some of those are outlined by Don Lindley, elsewhere in this issue. However, for those who have not thought about it, the new Board will have two strikes logged before they start. First, the entire Board, including the Chairman, will be unacquainted with current rule-making policy and procedures. Not only will they be dealing with rules proposals, but they must learn how the rules are to be processed. Second, given the immediate past history of Indoor Rules, the Board will be "under the gun", so to speak. So, I certainly hope that those who have been vocal about the need for an Indoor Contest Rules Board will volunteer to serve on this Board if they are needed!

### Money Troubles!

In times past, overseas subscribers have paid in either U. S. dollars or in local currency such as Pounds, Marks, etc., and I have been able to make the necessary currency exchange with no problem and little or no loss. A recent exchange transaction would have come down at 40% discount, due to a change in the way my bank handles such transactions. Therefore, I must require that all subscription payments be made in U. S. dollars or by checks drawn on U. S. banks.

### 1982 INDOOR NATS

Despite the exceptional success of the 1981 Indoor Nats (largest Nats entry in several years and the first Indoor Nats to break even financially), the AMA Nats Executive Committee has scheduled a unified National Model Airplane Championships to be held in Lincoln, Nebraska, Aug. 1-8, 1982. More details later.

### BIG BASH AT WEST BADEN!

Elsewhere in this issue you will find entry blanks for various events to be held during Indoor Week at West Baden (June 13-20, 1982). In addition, since the Indoor Nats will not be held at West Baden (see announcement elsewhere in this issue), the National Free Flight Society is hosting a Class AAAA indoor meet the first part of the week. Actually, the contest is being jointly sponsored by NIMAS, NFFS, IMAC and the Chicago Aeronauts; the idea came from NFFS officials.

The Big Week breaks down this way: June 13 - arrival and practice flying. June 14-16 - Class AAAA Indoor Contest; June 17-19 - VIINART; June 18-19 - III World Peanut Grand Prix. The NFFS contest will hold events for Paper Stick, Easy B, Manhattan, Bostonian, Straight-line Indoor Speed, Pennyplane, Novice Pennyplane, FAI F1D, Indoor Cabin, Indoor Stick, HLG, Peanut Scale and AMA Scale.

VIINART will have the usual format of NIMAS Index for competition between various AMA record class endurance models, plus separate classes for other model classes not covered by AMA records, and a separate class for HLG. Finally, the III World Peanut Grand Prix will have classes for Pioneer, Warplanes, Golden Age (between WW I & WW II), Modern and Wierdo Peanuts. The actual event is scheduled during the 24-hour period starting 8 pm June 18 and running until 8 pm June 19. In past years, Indoor Week participants have had opportunity to partake of two banquets, and this year is no exception.

### FAI INDOOR REPORT

#### Team Selection Program Set

The 1982/83 Indoor Team Selection Program (to pick a team for the '84 WCh) has been set, with essentially the same features as the 80/81 program. Issue #5 will contain a full account of the program details; the major change is that a Northwest Regional zone has been added to accommodate the growing interest surrounding the domed sports stadium at the University of Idaho. More later!

### CONTEST CALENDAR

#### FLORIDA - Miami

Indoor contests at the Opa Locka Blimp Hangar, Sundays, 9 am to 5 pm; Apr. 11 and May 9, 1982. Fly-ins at Miami Dade South, Sundays, 9 am to 5 pm; Apr. 19 and May 16, 1982. For more details, contact John Martin, 3327 Darwin St., Miami FL 33133. Call 858-6363 Friday before meet for confirmation.

#### KANSAS - Overland Park

Indoor contests at the Westport Roanoke Community Center, 3601 Roanoke Rd., Overland Park KS. Meets scheduled on Mar. 14 and Apr. 14, 1982. Contact Roger Schroeder, 4111 W. 98 St., Overland Park KS 66207, ph. 648-4265 for details.

#### MINNESOTA - Minneapolis Area

The Minneapolis Model Aero Club has scheduled indoor contests at the Burnsville High School Gym, 600 East Highway 13, Burnsville MN, beginning at 1 pm on Mar. 21 and Apr. 18, 1982. Events will be HLG, Pennyplane, Easy B, Peanut Scale and Walnut Scale. Contact Jack O'Leary, ph. 612-888-0638 for more details.

#### MISSOURI - St. Louis

Indoor contests scheduled at the St. Louis Armory, Mar. 14 and Apr. 4, 1982. Contact Jim Bennett, 324 Helfenstein, St. Louis MO 63119 for more details.

NEBRASKA - Beatrice/Seward

Indoor Fun-Fly at the Seward Senior High School, Seward Nebraska, 10 am to 5 pm, Apr. 4, 1982. Indoor Contest in Beatrice, NE, 10 am to 5 pm, May 9, 1982. Events: Peanut Scale, AMA Scale, One Design EZB, HLG, Bostonian West. Contact Joe Ed Pederson, 734 N. First St., Seward NE 68534, ph. 402-643-6290 for more details and maps.

TEXAS - Bedford

Indoor contest at Bedford Boy's Ranch, Bedford, Texas, March 27, 1982, 5:30 pm to 10:30 pm. For more details contact Jesse Shepherd, 2713 Summit View, Bedford TX 76021, Ph. 817-282-3770.

MORE ON INDOOR CONTEST BOARD

420 Tupelo  
Naperville, Il. 60540  
Feb. 11, 1982

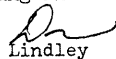
Dear Bud,  
Per our conversation this date:

A Matter of Some Importance

by: D.J. Lindley

The AMA Executive Committee has seen fit to grant us the privilege of acting independently on our own competition rules. Whether or not we merit this recognition and authority or whether we even want it is not the point. The fact is, we have it. We now have no scapegoats to punish when we feel mistreated. To quote Pogo, "We have met the enemy and he is us". Let's make sure we don't blow this one on our first use of our new muscles. Let's not try to win the war with our first volley, or we will surely wound a lot of our own people. I strongly suggest that we try for an annual meeting of as many of the competition indoor fliers as possible to discuss and refine rules proposals before they are cast in concrete and we suffer a two-year session of griping about rules which no one seems to have supported. First: I suggest that we meet one evening each year at West Baden, Indiana during the firmly established Indoor Week. If the Nationals is a more desired location, I can accept that. However, it is my experience that much more can be accomplished in the relaxed atmosphere of the Indoor Week format. From this meeting, we should be able to form an Indoor Advisory Group to represent our interests to the Executive Council and the Nats Executive Committee. We should also work out a relationship with the present NIMAS body to either support it and use it or look for an alternative. Second: We must now work out the rules-making procedures which in the past we have left to others. The Easy Bee and Peanut Scale rules problems are typical of the methods which we have used in the past. There is no such thing as a uniform set of rules under which these events are flown indoors in this country at this time despite the fact that they have both been in the rule book for several years. We now have two new events for intermediate microfilm creeping in with little or no uniformity in the rules under which they are being flown. Bostonian is another example of an event for which you have to prepare a different model depending on which area of the country wish to fly in. Let's use Indoor Week to fly these events and discuss sound rules proposals for them. Why don't we start out by flying Erv Rodemsky's 50 cm. airplane, the East Coast 35 cm. ships and anyone else's proposed intermediate class in a mixed bag at West Baden so that we can evaluate the designs and get a better idea on where to go? If we can't agree, let's keep trying until we can get a consensus and stick with it. I don't propose that this approach will get rid of all the dissention, but at least we'll all have an opportunity to see what others are doing and intelligently discuss alternatives. If a large enough number of us are willing to put out the effort to demonstrate and compare our ideas in a real flying situation, we might even be able to come up with some reasonable rules under which all can compete. After all, this is what we keep telling each other we're trying to do.

Hang in there,

  
Lindley

FAI RULES FOLLOW-UP

This issue continues to present ideas and comments from all over, and to bring the latest news of the rapidly developing concept of new rules for the FAI F1D event. As you will see, the discussion and development has taken a slightly different tack from where it appeared to be going after reading the reports in Issue #3.

INTERMEDIATE CLASS INDOOR MODEL

by Erv Rodemsky

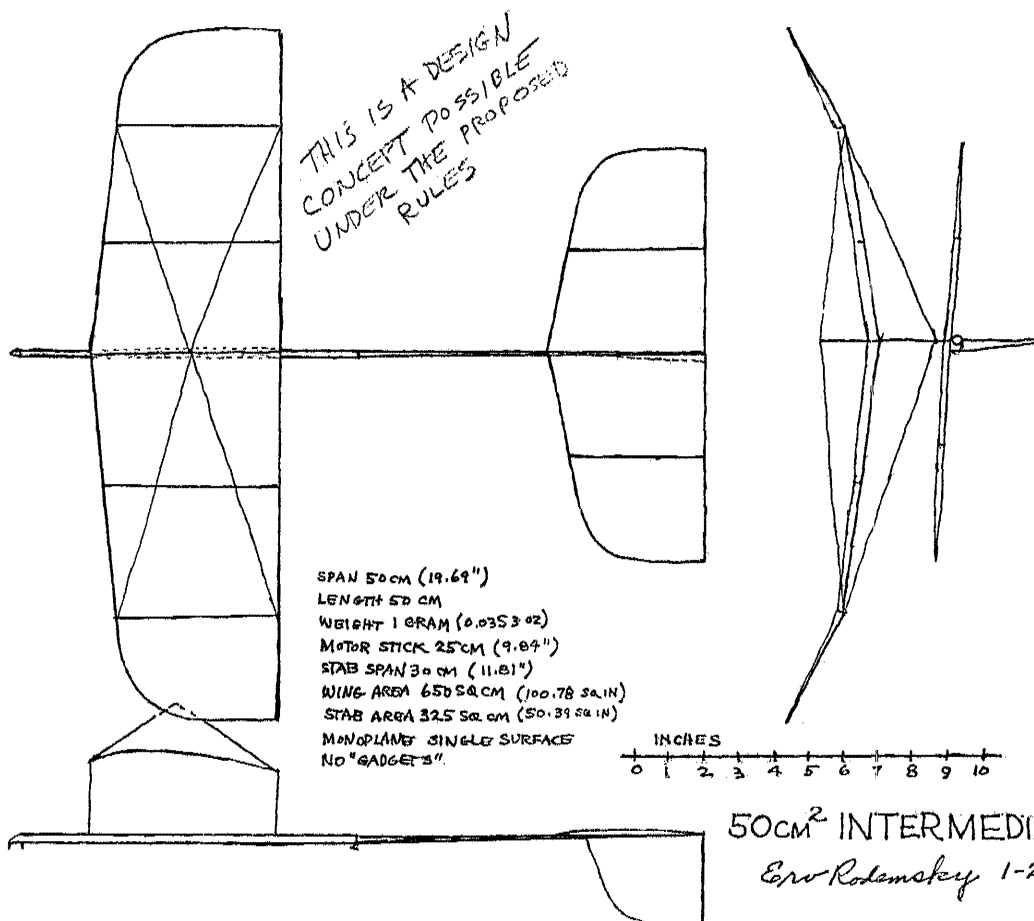
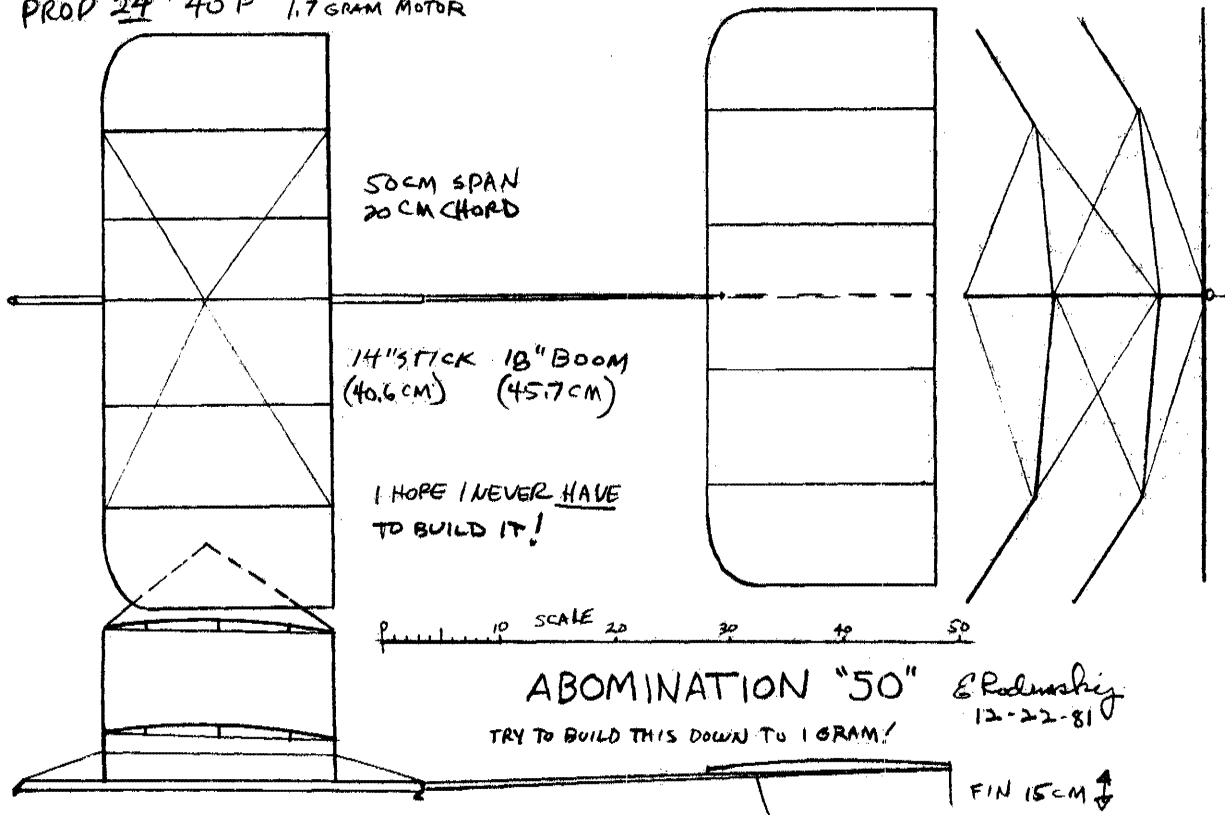
After a great deal of correspondence, talking, thinking and flying, I've come to the following conclusions: There must be a great deal of pent-up feeling about rule changes for indoor models based on the amount of reaction generated by my original proposal for a 60 cm. model. The intent was to have a series of contests to prove the feasibility of the changes suggested. There have been some rather specific and unpleasant recommendations as to what I can do with my new rules! But, the consensus seems to be that we should leave F1D alone and establish a new international class somewhere between Easy B and F1D.

With sincere apologies to those who are in support of the original 60 cm. class, especially those who have built and flown the models and are even more enthusiastic about 60 cm., a great number of people feel that a new permanent class should be different enough that the change is meaningful. Also the rules should plug all loopholes that might allow ingenious designers to create monstrosities. It's been said that larger models are easier to adjust and fly. That's fine for those with easy access to a dirigible hangar, but all the reasons for the original size reduction in F1D are still valid. Some have pointed to 35 cm. as an easy to transport class; but without weight and area restrictions, they are EXTREMELY difficult to build and handle. When the models get too small, they suffer from the toy syndrome. There is a hue and cry for SIMPLE rules with freedom of design; but when loose rules produce models that require exceptional materials, skill and handling, then the rule should be more restrictive. If there is a choice between simple rules and simple models, I'll take the simple models every time! Most people are content to use proven designs in all well-established classes anyway, so what's wrong with specifying dimensions and weights that will assure practical models that are FUN to fly?

Traditionally, with unlimited weight models, the high aspect ratio wings had a span greater than overall length. Adoption of the one gram rule caused wing chords to grow in order to keep wing loading low. There is no doubt that the Swiss approach with long tail booms would be most efficient with a total area (wing and tail combined) rule; but if the are to fit in the smallest box, removable tails will be required. We don't need that complication for an intermediate event. So, if the wing area and span restrictions produce a reasonable aspect ratio, then the overall length need not be more than the wingspan. Designers will use a very small stabilizer in order to get the wing as large as possible if the total area concept is used. This makes the models more difficult to trim, especially with the high power burst used on these smaller, stronger ships. So, contrary to the 60 cm. total area rule, I suggest that a wingspan of 50 cm. and an area limit 650 sq. cm. (100.77 sq. in.) be used. To prevent tandem wings, the stabilizer should have a span of 30 cm. (11.81") and an area of 325 sq. cm. (50.39 sq. in.). Although restrictive, these rules still allow freedom of planform. Some have suggested that a maximum chord would simplify processing. Very true, but the all models would have square wings. Compliance with the rules should be on the honor system unless a protest is filed. In that event, the contestant would submit full-size drawings of his projected areas. If the surface is too big, he may be required to poke a hole in it!

Another of the 60 cm. rules that may be inappropriate for the intermediate class is the rubber weight limit. We have been using .75 gram motors quite successfully in our low-key 60 cm. flying, but it's obvious that under tough contest conditions the tightly wound motors with consequent high breakage would make processing an unacceptable burden. A good no-touch rule may be the solution if it can be used fairly. This can be at the discretion of the contest director. In any case, our stick length should be imposed if motor weight is not specified. Rafter banging will be a real problem with these stronger models, so let's try this "no touch" rule: In the event the model strikes the "ceiling" as defined by the contest director, a penalty will be subtracted as follows: 10 sec. first, plus 20 sec. second, plus 30 sec. third, etc. Multiple strikes within a 15 second period will count as one hit. The model must change direction

PROP 24" 40 P 1.7 GRAM MOTOR



or the propeller make solid contact for a hit to be counted. If contact is slight enough to be in question, then no hit will be recorded. This rule will require very careful attention of the timer and may well lead to hard feelings if the penalty causes a loss of time, but most people will agree that a flight that never touches is superior to rafter banging.

There have been suggestions to count high single flight (assuming a no touch) and to eliminate steering or limit it to the last half of the flight. These things can be done on a local level and, if proven practical, later on be incorporated into future rules changes. For the present time, this seems to be the best set of rules for an additional indoor event:

#### 50 Sq. Cm. Intermediate Indoor Model

1. Projected wingspan 50 cm. (19.69) max.
2. Length (excluding propeller) 50 cm. max.
3. Model weight at least one gram.
4. Wing area 650 sq. cm. (100.78 sq. in. max.
5. Stab span 30 cm. (11.81" max.
6. Stab area 325 sq. cm. (50.39 sq. in.) max.
7. Motor stick from front of thrust bearing to rear hook 25 cm. (9.84") max .
8. All surfaces covered on one side only.
9. Propellers will have two blades with no in-flight mechanically adjustable parts.
10. Multi-wing area will be cumulative (650 sq. cm. maximum).
11. Models must conform to the intent of simplicity. If in the opinion of the contest director a builder has incorporated porated any gross new technology, the model will be declared illegal.

There is no such thing as a perfect set of rules, although I believe the above is the best compromise possible with the experience accumulated so far. Perhaps with more flight and contest experience, additions or modifications may be in order. Although there have been a great number of ideas put forth, I wish to give special acknowledgement to those contributed by John Triolo and Dan Domina\*. It's my hope that enough experience with this class can be gained so that a formal proposal may be submitted to the CIAM by the end of the year.

Erv Rodemsky  
26 Warmspring  
Irvine CA 92714  
Phone 714-857-0277

\*Dan Domina wishes to stress that he does not approve of changing the rules, in spite of having made suggestions toward this proposal.

THOMAS F. VALLEE  
444 HENRYTON SO.  
LAUREL, MD. 20810

Dear Bud,

I would like to comment on your initial favorable comments in INAV concerning no hit rules. I agree that they worked fine for an informal competition using postal fudge factors for different ceiling heights. No hit rules for head to head FAI competition and attempts on absolute category records create BIG problems. Please consider the following points.

No hit rules are almost impossible to enforce fairly. Consider that you can't reasonably allow any steering during the climb phase. Reason, steering inhibits climb. If you allow it, steering would almost be mandatory, turning the competition into a steering contest. Furthermore, there is a period of several minutes when it is difficult to determine if a model has stopped climbing. In serious competition, the winning models will climb very close to the ceiling and stay there for some time. Often it will be difficult to tell if a model has actually touched or merely stalled or settled in turbulence near the ceiling. This throws a heavy burden on both contest management and contestant. Serious disputes will be common! Finally the event will become more difficult since long no hit time is the mark of the extreme expert!

Rodemsky's call for a rubber weight rule is also a matter for grave concern. First, because it creates an extreme and inherently unfair supply problem. Second, because it makes the event much more difficult, not easier as claimed.

The area rule presents serious problems for processing. Under the pressures of FAI competition, competitive models will be right at the maximum allowed area. Due to the flexible nature of indoor models, there is no guarantee that model surfaces will conform exactly to plans or tissue outlines traced from plans. Erv's suggestions for weighing of tissue outlines at a contest or preprocessing are totally inadequate. You must have rules which can be easily enforced. You need a simple go no go test for the model itself at the contest! This implies a maximum chord which is easily tested.

I'm not a diehard blindly opposed to change. However, change should be constructive, not destructive. Any new rules should be easy to understand, easy to implement and enforce fairly and contain no harmful side effects.

#### EXAMPLES OF BAD SIDE EFFECTS ARE:

1. Rules which are overly complex.
2. Rules which can't be enforced.
3. Rules impossible or difficult to enforce fairly.
4. Rules which are unfair because of unnecessary supply problems and/or unreasonable operating conditions.

The Rodemsky proposal, by itself, or a combination of it and the no hit idea fail on all four points. They would create grave problems for FAI competition in general. Adoption of either idea would be an absolute disaster for low ceiling record attempt competition with FAI models in this country. Why? It's simple, either idea would limit low ceiling record attempt work to perfect top of the category rooms. Very few people have access to perfect rooms. Such rules stifle competition.

When I speak of low ceiling rooms, I'm thinking of the 20 foot high school gyms and auditoriums and small armories which are potentially available in just about any town in the country. You can do some very rewarding flying in such rooms! In promoting indoor and indoor FAI in this country, our biggest problem is the fixed idea that you must have access to a dirigible hanger in order to fly indoor models seriously! If we wish to develop more indoor flyers, we should encourage serious flying in these small rooms. The recent adoption of FAI ceiling categories opens possibilities for serious low ceiling record attempt work almost anywhere in the country. I would hate see this potential destroyed by the harmful side effects of an extreme rules proposal.

My personal bias is as follows. I'm seldom able to attend the big meets but have kept active by competing for low ceiling national records. I've had some modest success which has been most pleasing. The local flying site has a ceiling of just under 19 feet (5.72 meters). Adoption of the Rodemsky proposal or no hit rules would force me out of serious competition for Cat I FAI stick records. The reason, under these rules, I would have to have access to a perfect top of the category room to compete.

I hope the above comments will give a new perspective on SOME of the complex questions raised by the various rules proposals.

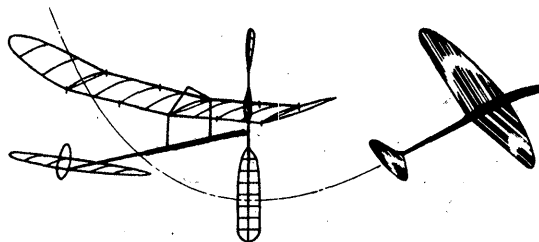
#### WRAPUP ON F1D

The next issue hopefully will wrap up the discussion on F1D/Intermediate model rules changes. In the meantime, the plan page shows two model sketches by Erv Rodemsky. The tandem biplane sketch shows a startlingly effective way to explore loopholes in rules proposals, while the other simply shows Erv's concept of his composite proposal in this issue. For the loopholes, imagine the most extreme design you can, then fit it into the rules if you can. The tandem biplane was Erv's approach to the designs permitted by the original East Coast 50 cm proposal (outlines in Issue #2). Try this on any new rules you see—it helps put things into perspective!

# INDOOR

## NEWS and VIEWS

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



# 5

### \*\*\*\*NATIONAL INDOOR MODEL AIRPLANE SOCIETY\*\*\*\*

#### This Issue

After trying for some time to fit in all I wanted for this issue, I find it more desirable to use the necessary space for Dieter Siemenman's F1D model, then build the rest of the issue around it. So, even though I wanted to finish the F1D rules thing, there will be a small amount left for next time. Also, special rules for the United States Indoor Championships have been deferred until the next issue.

#### M.A.N. STRIKES OUT!

A recent announcement in MODEL AIRPLANE NEWS told of an editorial decision to carry no more Free Flight news or articles; presumably, this also means that their backlog of FF and Indoor articles will be scrapped or returned to the authors for possible placement in other magazines. If this disturbs you, perhaps a letter to the magazine would be in order. One thing for certain is that FF will not prosper readily without magazine coverage, so we have one less avenue of reporting.

#### UNITED STATES INDOOR CHAMPIONSHIPS

Indoor Week at West Baden kicks off with the USIC, which is a prototype for NFFS-sponsored indoor contests to be held any year that the Indoor Nats is not held in a high ceiling (or, presumably, in a site deemed to be suitable for truly national caliber contest). On Sunday, June 13, practice flying is scheduled all day. The remainder of the schedule is as follows:

Monday 6/14 Tuesday 6/15 Wednesday 6/16

Hours			
9-1	Manhattan	Pennyplane	(turn in scale 8-10)
	Bostonian	Nov. Penny	HLG (all morning)
1-6	Easy B	F1D*	All Scale, (flying
	Paper Stick	Indoor Stick	ends at 5 pm)
		ROG Cabin	
6-9	Intermediate Microfilm		NFFS Banquet 7 pm, Guest Speaker
	Class Demo**		Dr. Paul McCready

\*F1D flown in rounds beginning at 1:20, 2:40, 4:00, 5:20, 6:40, 8:00

\*\*This demo is a special invitation by CD Don Lindley for each flier with a rules proposal to bring a model fitting his proposal and to fly all such models in direct competition.

#### CONTEST BOARD ACTION

##### Indoor Contest Board Formed

It was determined that no moratorium on Executive Council action was possible, so the Indoor Contest Board has been formed with the following members:

- Dist. I - Ray Harlan, 15 Happy Hollow Rd., Wayland MA 01778.
- Dist. II - Pete Andrews, Bogota Royal Apts., #A-11, 100 River Rd., Bogota NJ 07603.
- Dist. III - Walt Van Gorder, 5669 Victory View Lane, Cincinnati OH 45238.
- Dist. IV - Don Scrull, 941 Kimberwicke Rd., McLean VA 22102.
- Dist. V - John Martin, 3327 Darwin St., Miami FL 33133.
- Dist. VI - Chris Matsuno, 8576 Ginger Dr., St. John MO 63144.

Dist. VII - Richard Doig, 6 Canary Hill Dr., Pontiac MI 48055.

Dist. VIII - \*Bud Tenny, P O Box 545, Richardson TX 75080.

Dist. IX - Stan Chilton, 300 S. Main, Wichita KS 67202.

Dist. X - Clarence Mather, 3860 Ecochee Ave., San Diego CA 92117.

Dist. XI - Dave Hagen, 19957 S. Redland Rd., Oregon City OR 97045.

#### \*CHAIRMAN

Well, fellows—that's the crew! We stand ready to do our best to promulgate indoor rules which will be both fair and popular, but we will have to have YOUR help! When rules proposals are published, it is up to you to let us know how YOU feel about the various proposals. A couple of years ago, indoor fliers as a group left the FFCB in the dark on some proposals, and none of us liked what happened. Just because you now have the Indoor Contest Board, don't assume that your representative can read your mind! Not only can he not do that, it probably is not ethical or legal! So, sound off!

#### FAI INDOOR REPORT

##### Summary of FAI Program Provisions

The competition schedule for the 1982/1983 Team Selection competition calls for an unlimited number of local contests and one regional contest in each zone during both 1982 and 1983, with a single-site Finals to be held in 1983.

Program entrants must have a current A.M.A. license and a \$5 FAI stamp. Program entry is \$3, which may be paid to A.M.A. HQ or at a local meet. You may enter as late as 1983. The models to be flown must have wingspan between 20" and 25.6", and weigh between 1 and 2 grams without motor.

Local contests must have a minimum of three entrants and scoring is on the best 2 of 6 flights; the winning score is awarded 10 points with other scores awarded proportionate points; the best local contest score is counted. If no local contest is entered, a \$15 fee is required to allow entry into a regional contest.

Regional contests also require a minimum of three entrants; the regions are: East (NJ), Southeast (FL), Midwest (OH/IN), Southwest (OK), Mountain (CO), West (CA) and Northwest (ID). Regional entrants must score 75% to be eligible to enter the Finals, with the best regional score to be counted. Scoring is on best 2 of 6 flights, with top score being awarded 100 points. A regional entry fee is \$10; a \$35 fee is charged if no regional is entered, but this provision is available only to prior finalists who live more than 500 miles from the closest regional meet; 75 points will be awarded.

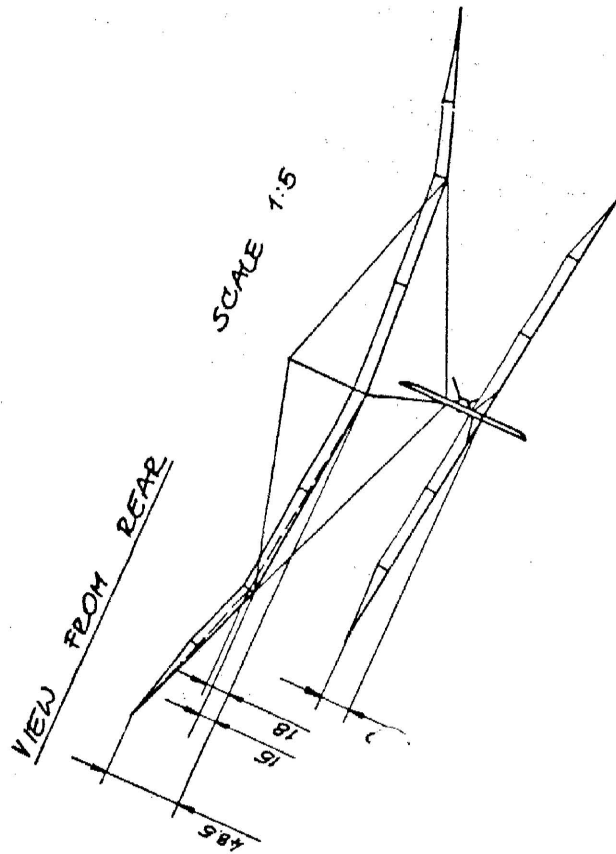
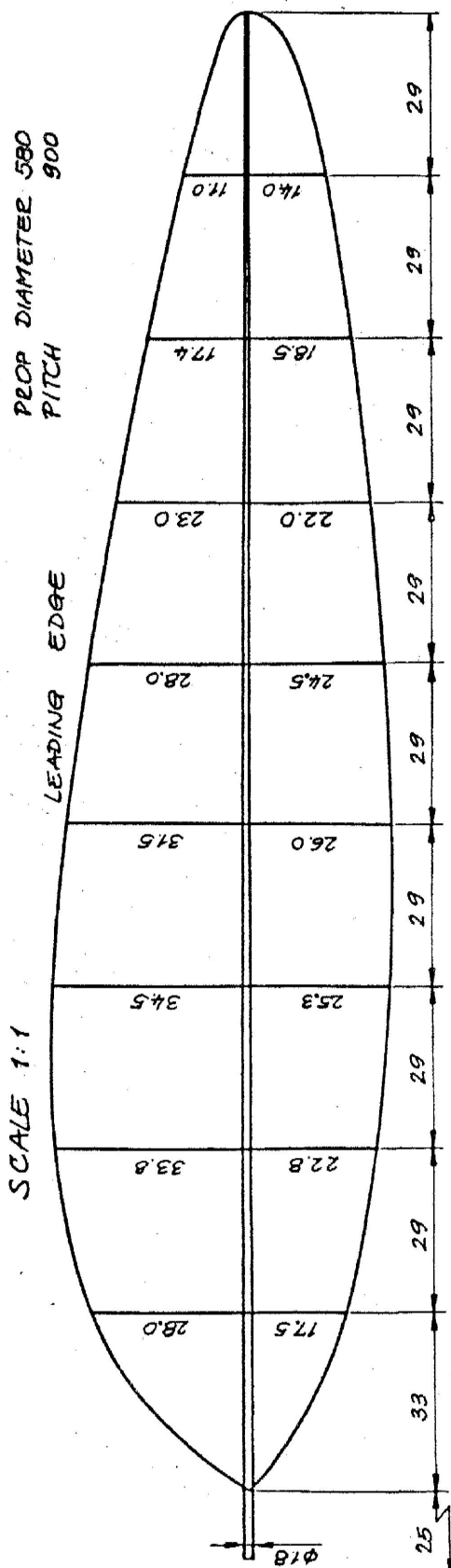
The Team Selection Finals will be conducted over a three-day period with three rounds per day. Scoring is based on the best 2 of 9 flights, with top score being 1000 points. The Team is selected by adding each flier's points from local, regional and Finals, and the maximum score is 1110 points. Finals entry fee is \$15, and some travel assistance may be available to those who won first (received 100 points) at a regional meet; the amount of assistance will be determined by the Indoor Team Selection Committee based on the funds available.

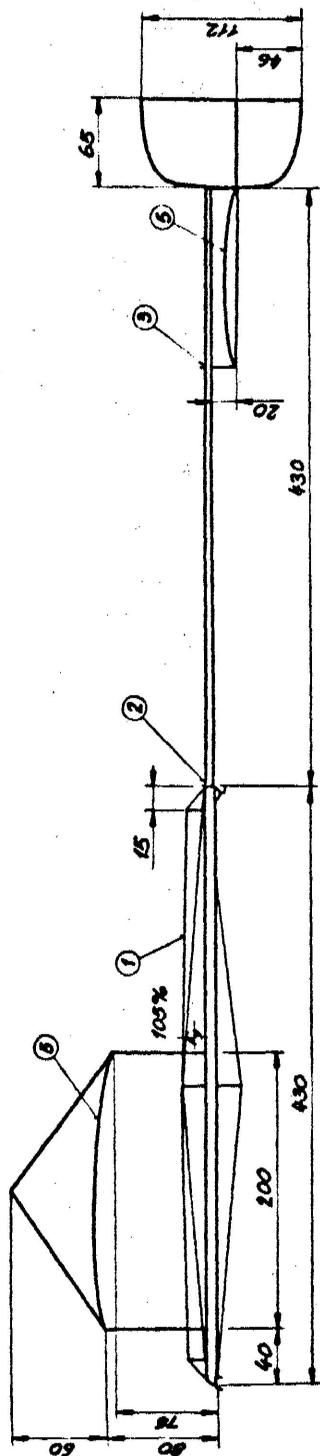
#### CONTEST CALENDAR

##### FLORIDA - Miami

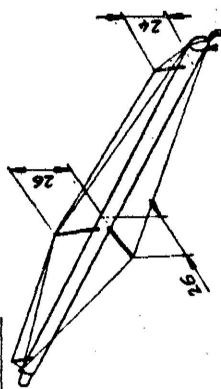
Two sessions are left in the MIAMA spring indoor season: the May 9 contest at the Opa Locka Blimp Hangar and the May 16 Fly-in at Miami Dade South. Both sessions run 9 am to 5 pm; contact Dr. John Martin, 3327 Darwin St., Miami FL 33133 for more details. Call 858-6363 on Friday before meet for confirmation.

WEIGHTS (GRAMS)	
WING	0.30
STAB + BOOM	0.23
PROP	0.18
MOTOR STICK	0.31
TOTAL	1.02

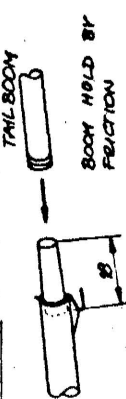




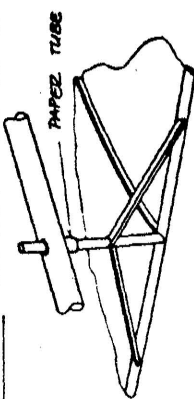
DETAIL 1: BRACING OF THE MOTOR STICK



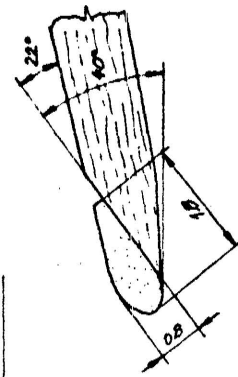
DETAIL 2: CONNECTION MOTOR STICK - TAIL BODY



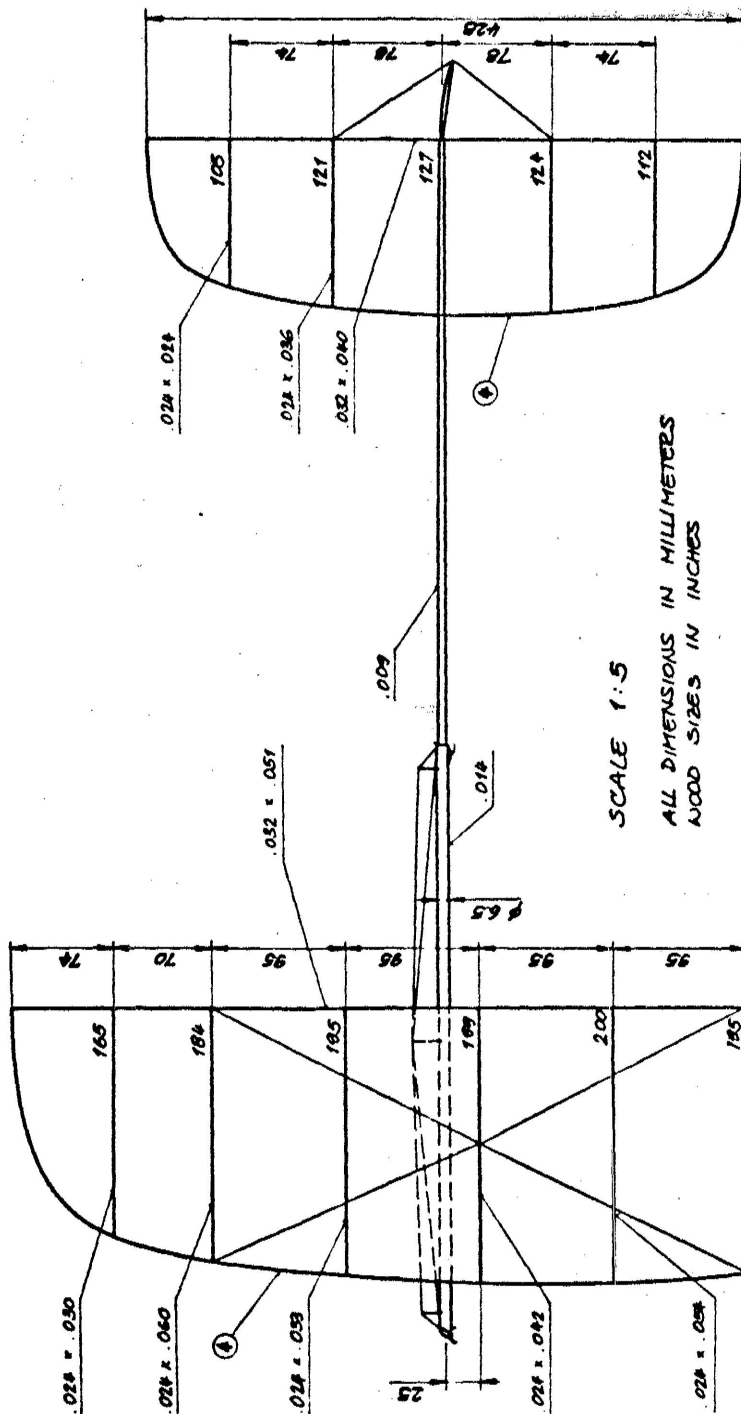
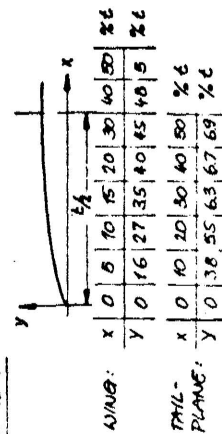
DETAIL 3: TAIL PLANE TRIM DETAIL



DETAIL 4: LEADING EDGE LUNG SPARS



DETAIL 5: AEROFOILS



SCALE 1:5  
ALL DIMENSIONS IN MILLIMETERS  
WOOD SIZES IN INCHES

F1D BY  
DIETER SIEBENMANN

BACILLUS

AUG '80 xed



#### NEBRASKA - Beatrice

Indoor contest in Beatrice NE, 10 am to 5 pm, May 9, 1982. Peanut Scale, AMA Scale, One Design EZB, HLG, Bostonian West. Contact Joe Ed Pederson, 734 N. First St., Seward NE 68534, ph. 402-643-6290 for more details and maps.

#### NEW JERSEY - Lakehurst

April 25 - Contact Pat Ciambrello, ph. 215-845-4590 for information and confirmation. East Coast Indoor Modelers tentative dates set for a number of meets beginning in June; contact Dan Domina, ph. 609-448-2840 for confirmation and information. ECIM meets include two record trials, FAI locals, FAI regional and a big contest.

#### NEW YORK - New York City

Events at Columbia University: Bostonian/Embryo contest, April 25; Peanut Jamboree, May 2; Pennyplane/Easy B contest, June 6, 1982. For more info contact Ron Williams, ph. 212-722-5262.

#### NEW YORK - Long Island

Contest at Long Beach on May 16, 1982 and contest at Cantiague on June 13. Both meets sponsored by Grumman; CD is John Carbone; both contests will have HLG, Peanut Scale, HL Stick and Easy B. Also, the Long Beach meet will have Pennyplane, and the Cantiague meet will have Manhattan Cabin. Contact John Carbone, 304 Oakwood Rd., Huntington, L.I. NY 11746 for details.

#### TEXAS - Bedford

Indoor Contest at Bedford Boy's Ranch, Bedford, Texas, May 15, 5:30 pm to 10:30 pm. HLG, Pennyplane/Easy B and Peanut Scale. Call Jess Shepherd, 2713 Summit View, Bedford 76021, ph. 817-282-3770 for more details.

#### F1D/INTERMEDIATE COMMENTARY

The following comments were squeezed out of previous issues by space and timing considerations, and are presented here to help complete the picture of what international feelings on the matter of F1D rules changes were as of (approximately) INAV #3.

#### Laurie Barr (Chairman of Britain's FFCB):

Now that the current best F1D models are so large and at one gram somewhat fragile, I expect the deafening sound of breaking motor sticks will push the call for rules changes even harder, after Slanic. I am already sure my existing ships will not be strong enough to take fully wound motors, as many others will find to their cost if they don't have suitable models for the unusual cold and hard-to-climb conditions.

Although I was originally against a rule change having just got some competitive models together (having joined the 40 Minute club), I got to analyze my feeling about flying F1D in harsh competition, and the fact is that it is too much agony. It no longer is the fun event it used to be and you are dead right, it is related to how long the model stay up in the danger area in the roof of most high sites; it is also a product of how light they are.

A smaller, heavier model, maybe with rubber weight restrictions will solve the problem, and I am now sure, will make the event more popular! However, I have some provisio's-

I don't think you should limit the length; as the Swiss have shown, you can pack existing models real small if you want to. In order to not make it a one design contest which would be the death of our discipline, why limit the span or tail area? I agree with you that any conformity to area rules can be on an "honour" basis subject to spot checks and/or processing the winning model.

As for no-touch rules, it's just not practical. You can't fly at Cardington (most of the time) without steering out of danger, and the current rules we use prevent abuse. I see no reason why one should not be able to save a model in danger due to position. With tougher ships it would be easier. Also, think of the consequences of no steering at (for example) West Baden with the air full of models.

In short, my proposal would be: max. combined area 200 sq. in.; min. weight 1g.; max. rubber weight 3/4 g.; present FAI rules to continue; competitor to furnish outline templates for processing at contests.

#### ANDRAS REE (Hungary):

In my opinion, the Santa Ana Stick is a well-considered proposal; it must be tried, modified if necessary and accepted as WCh formula as soon as possible.

#### DIETER SIEBENMAN (Switzerland):

My rule proposal is this: Min. span 50 cm; Min. weight 1 g; Total combined area 10 sq. dm. A very important point: the rule change should come at the end of 1982 so new contests in 1983 can use the new rule, and those who propose rules should build and fly models to the rule for testing the rule.

#### STATE OF THE ART

This report is long overdue, for which I apologize. However, the various copies of the plan which I had suffered from poor contrast, particularly in the printed material. I was not able to make legible copies for INAV, but I finally got one which I believe will give the details legibly. So, at last we have a look at Dieter Siebenmann's "Bacillus"!

The outstanding characteristic of this design is the in-flight stability it has. One of the models flown by the Swiss Team at the 1980 WCh was climbing when another model collided with it in the tail boom area. It was not possible to tell, by watching the Swiss model, that anything had happened. It kept climbing serenely, while the other model staggered off before recovering! In the past, such high dynamic stability has been considered detrimental to the goal of high duration, but Dieter has created a model with very high potential. In fact, the Swiss Team almost won the WCh, and they never really found an optimum rubber size!

#### THE ELUSIVE FORTY MINUTE CLUB

The material presented below was compiled by Bob Gibbs; he invites you to help correct any oversight on his part. The listings are for official flights at officially sanctioned activities; the information represents the best effort only, by individual and class.

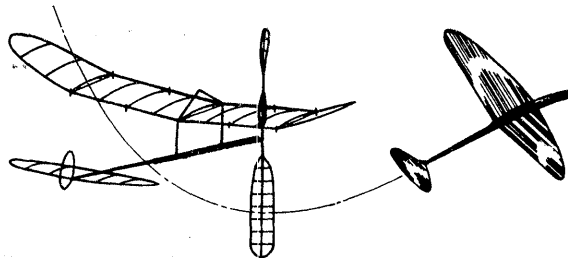
Name	Country	Time	Class*			Year	Site
			1	2	3		
Richmond, Jim	US	52:14	X			1979	Akron
Kowalski, Dick	US	50:41	X			1976	Akron
Richmond, Jim	US	47:23		X		1980	Akron
Harlan, Ray	US	47:13		X		1980	Akron
Rieke, K. H.	FRG	45:40	X			1962	Cardington
Redlin, Carl	US	45:17	X			1962	Cardington
Andrews, Pete	US	44:59		X		1979	Akron
Randolph, Bob	US	44:50	X			1972	Santa Ana
Mather, Clarence	US	44:44	X			1974	Santa Ana
Hacklinger, Max	FRG	44:20	X			1961	Cardington
Kopecky, Ernie	US	43:42	X			1963	Santa Ana
Banks, Cezar	US	43:35		X		1981	Santa Ana
Cummings, Frank	US	43:28	X			1963	Santa Ana
Atwood, Bill	US	43:17	X			1963	Santa Ana
Plotzke, Ron	US	42:53	X			1969	Lakehurst
Domina, Dan	US	42:25		X		1979	Akron
Romak, Bud	US	42:01	X			1965	Moffett
Romak, Bud	US	41:59		X		1981	Akron
Richmond, Jim	US	41:45			X	1969	Lakehurst
Gibbs, Bob	US	41:35		X		1981	Santa Ana
Finch, Tom	US	41:27	X			1963	Santa Ana
Champine, Bob	US	41:23	X			1963	Santa Ana
Rodemsky, Erv	US	41:23		X		1979	Akron
Stoll, Ed	US	41:21	X			1963	Santa Ana
Mather, Clarence	US	40:54		X		1974	Santa Ana
Draper, Ron	UK	40:44	X			1962	Cardington
Pym, Dave	UK	40:40		X		1980	Cardington
Bilgri, Joe	US	40:37	X			1965	Santa Ana
Nonaka, S.	Japan	40:36			X	1978	Cardington

- \* Class 1 - FAI 90cm or AMA-D  
2 - FAI 65cm - 1 gram  
3 - FAI 65cm - no weight requirement

# INDOOR

## NEWS and VIEWS

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



# 6

### \*\*\*\*NATIONAL INDOOR MODEL AIRPLANE SOCIETY\*\*\*\*

#### This Issue

Again, we have some effort to catch up, so some items in this issue may be dated. However, there are also up-to-date results of Indoor Week, except for photos and results of the Peanut Speed events. I expect to have the speed results by next issue (I didn't realize until typing time that these results were missing). Also, if anyone has photos I could use, they haven't sent them yet!

#### INDOOR CONTEST BOARD REPORT

##### Rules Proposal Form

Much noise has been made in the past regarding the lack of a special contest board for Indoor; I was somewhat apprehensive about the new ICB being overwhelmed by a flood of proposals. To date, there has been only one, but the lack of proposals may come from one of two possibilities: you guys don't know HOW to make proposals, OR everything is OK. If all is OK, don't feel that you have to make proposals! If you do have an idea on improving the rules or adding a new event, here's how:

1. Discuss your ideas with other fliers to see if others feel as you do. Assuming you find even minimal agreement, discuss your ideas for solving the problem with them and arrive at a solution. If possible, try your ideas in competition.
2. If you are trying to fix an existing event or rule, study the pertinent parts of the Rule Book and identify the parts which must be changed, and compose the alternate wording which you propose.
3. Use the Rule Proposal form which appears on page 5 (U. S. issues only) and send the proposal to A.M.A. Hq. (postmark deadline Sept. 1, 1982 for new proposals). Note that there is a place for co-signers; do you see why I suggested you find others to agree with you?

#### "Old" ICB Business

How can a new contest board have old business?? Well, A.M.A. President John Grigg sent a directive for the ICB to decide whether we should review the FFCB rulings regarding how to handle the existing indoor records which (theoretically) should have wiped out by the change in ceiling height measurement methods. Also, there used to be three A.M.A. ceiling categories; adoption of FAI ceiling measure was accompanied by adoption of the four FAI ceiling categories; how do you apportion the records?

A very short time ago, ICB members received a ballot requesting the following disposition of the records dilemma, with the following options:

1. Keep the records or wipe them out.
2. If the records are kept, determine the FAI ceiling category for the site and re-assign the records accordingly, (assuming the time has not been exceeded already).
3. Move A.M.A. Cat. I records to FAI Category II and start FAI Cat. I with a clean slate; similarly, move the other A.M.A. records up.

In addition, it was discovered that the FFCB had not accounted for the FAI Cat. X FAI records, and these are in the process of being defined. In the same rules cycle that the ceiling measurement changes were made, the Easy B model was redefined, and the pre-existing records were not scrubbed but listed anew. On the current ballot, the ICB has options to keep the records if the models (as flown)

meet the current rule, or to scrap the records as has been the practice in the past.

O.K., Folks! The ICB represents YOU! Let them know how they should vote--contact your District ICB representative. You can find their addresses in INAV #5 or in the COMPETITION NEWSLETTER section of MODEL AVIATION.

#### RULE BOOK ERRORS!

When the current Rule Book was reprinted this year, it apparently was completely re-typeset. If so, this introduced a random number of errors which may or may not be quickly noticed. One such error is that the old familiar A R.O.G. (Rise Off Ground Stick Model) has a maximum of 300 sq. in. area! So, use the Rule Book with caution and check suspicious passages with a previous Rule Book.

#### UNITED STATES INDOOR CHAMPIONSHIPS

The U. S. Indoor Champs was held in the Atrium at Northwood Institute, West Baden, Indiana, June 14-16, 1982. Tony Italiano, C.D. for the meet, had this to say:

We had a really nice U. S. Indoor Champs! There were 63 contestants entered, and there was lots of cooperation and plenty of professional flying. Paul MacCready was terrific at the banquet.

No problems developed. If we hold it again I will alter the schedule of events slightly to allow more time for the popular events. It was lots of work and time consuming but I had fun all the way!

#### Contest Results

<b>Open HLG 9 Entrants</b>		<b>Senior HLG 4 Entrants</b>	
Bernie Boehm	128.6	Bryan Fulmer	104.6
Bob Larsh	119.0	Bradley Fulmer	97.8
Stan Stoy	95.2	Kris Warmann	91.8
Wally Simmers	93.6		
Bill Schlarb	92.6		
<b>Open Paper Stick (21)</b>		<b>Junior HLG 2 Entrants</b>	
Jim Richmond	25:38	Paul Loucka	80.6
Ron Ganser	25:11	Dave G. Brown	45.2
Ed Stoll	23:29		
Dick Obarski	23:09		
<b>Open Easy B (27)</b>		<b>Jr./Sr Paper Stick (4)</b>	
Gerald Skrijanc	20:43	Dave Lindley	15:15
Stan Chilton	20:31	Paul Loucka	10:50
Walt Van Gorder	20:19	Dave G. Brown	7:46
Cezar Banks	17:40		
Dick Hardcastle	17:36		
<b>Jr./Sr. Peanut Scale (4)</b>		<b>Open Peanut Scale (22)</b>	
Bradley Fulmer	142 pts.	Jack McGilvray	199 pts.
Bryan Fulmer	131	Ken Groves	192
Brian Varney	107	Jim Miller	183
Dave G. Brown	48	Bob Clemens	142
		Keith Fulmer	140
<b>Bostonian (9)</b>		<b>Manhattan Cabin (11)</b>	
Jack McGilvray	648 pts.	Chuck Markos	9:57
Martin Varney	328	Larry Loucka	9:50
Bob Clemens	298	Walt Van Gorder	8:40
Terry Mrakava	294	Bob Larsh	8:28
John Loribiecki	235	Dick Obarski	7:11
<b>Senior Pennyplane (3)</b>		<b>Open Pennyplane (17)</b>	
Dave Lindley	11:30	Walt Van Gorder	11:34
Kris Warmann	10:42	Jerry Skrijanc	11:30
Mike Clem	3:34	Bob Warmann	10:45
		Dick Hardcastle	10:42
		Gordon Wisniewski	10:23
<b>Junior Pennyplane (3)</b>		<b>AMA Scale (12)</b>	
Paul Loucka	11:05	Jack McGilvray	177.0 pts.
Robert Skrijanc	7:46	Ed Stoll	171.5
Dave G. Brown	3:37	Ken Groves	166.0
<b>Jr./Sr. AMA Scale (2)</b>		Jim Miller	155.5
Kris Warmann	87.5 pts.	John Martin	149.5
Dave G. Brown	65.5		

Open Indoor Stick (14)			
Jr./Sr. Indoor Stick (4)		Jim Richmond	32:54
Dave Lindley	17:43	Rick Doig	31:24
Paul Loucka	14:51	Paul Tryon	29:32
Mike Clem	13:58	Dan Belieff	29:28
		Chuck Markos	26:39
FID Stick (18)		R.D.G. Cabin (5)	
Stan Chilton	63:16	Rick Doig	22:54
Jim Richmond	63:05	Ron Ganser	18:25
Ed Stoll	59:06	Larry Loucka	16:49
Dick Obarski	58:33	Tony Sutter	16:02
Paul Tryon	57:15		
Peanut Speed (6)		Open Novice P/P (19)	
Martin Varney	185 pts.	Cezar Banks	11:43
Millard Wells	134	Walt Van Gorder	11:32
Terry Mrakava	70	Bernie Boehm	10:22
		Chuck Markos	10:09
		Gordon Wisniewski	9:44
Junior Novice P/P (3)		Senior Novice P/P (2)	
Paul Loucka	11:12	Mike Clem	9:28
Brian Varney	6:38	Kris Warmann	6:05
Dave G. Brown	3:27		

### THE THIRD WORLD PEANUT GRAND PRIX

It is hard to improve on a good thing, but it happened again. This 24 hour Grand Prix was the best yet--Boy, what planes, what flying, what insomnia, what FUN! From 7 pm June 18 to 7 pm June 19 we flew and flew. It is hard to wreck 73 planes in 24 hours, but we tried.

This year the scale part of VIINART was flown concurrently with the Grand Prix. Extra events--Jim Miller's Flying Aces Lo-Cal Scale, Martin Varney's Kit/Plan Scale and Charlie Sotich's Peanut Speed and Unlimited Speed events provided plenty to do--even if we did have 24 hours to do it in. As usual, with a few minutes remaining, we still had a few trying to get in their last flights.

M.I.A.M.A. was the host club and Doc Martin was C.D. this year with Mike Arak as Proxy Chairman. The field was larger, better looking and better flying than ever before. The proxy entries, from five nations, were particularly fine and well trimmed. Of 73 entries only a dozen didn't or couldn't fly. This year you could R.O.G. or hand launch, with a 10 second bonus for R.O.G. This plan worked very well. The proxy planes arrived in much better shape than usual. The judging tables were a beautiful sight--four triplanes, three twin-engined jobs, three autogyros, one annular ring and almost as many biplanes as monoplanes. First places were won by a canard biplane, a twin motor, an autogyro, a biplane and a Fike. How's that for variety? How did that Fike get in there?

We thank the two moguls of indoor supply, who were there--Jerry Skrijanc and Lew Gitlow, for donating many kits and supplies both for the Peanut Grand Prix and for the M.I.A.M.A. Junior program. Also Jack Little for his donation of his Aircraft Yearbook reproductions.

After all this you would think we would be satiated with models and flying. Instead, the atmosphere inspired all of us to do better next year, and most of us are probably back at the drawing board right now. Remember the second week in 1983--PLAN AHEAD!!

Mike Arak's 38th birthday coincided with the awards banquet and our dessert was his big birthday cake. Earlier, a profile model flew in the Atrium towing a large Happy Birthday banner behind it.

### GRAND PRIX RESULTS

General Note: Scores are designated thus: (static score) time+time.

#### Pioneer Class

The Pioneer is always a good class; we had more of them this year. They are hard to trim, and hard to get duration with. The 14-bis is the Lacey of this class.

1. John Martin; 14-bis	(211.25)	60.0+58.0
2. Ranier Lotz/Bigge; 14-bis	(206.4)	66.0+69.0
3. Mike Arak; Chiribiri	(256.5)	6.0+7.0
4. Ken Groves; Tabloid	(176.0)	58.8+57.0
5. Tom Sutter; Annular	(205.0)	17.2+25.0
6. Jim Miller; Ponnier	(190.9)	48.0+52.4
7. Bob Clemens; Nieuport IV	(163.8)	57.7+58.1

### Warplanes (I & II)

Combining WWI and WWII didn't seem to hurt this class, although the older models seem to do better.

1. Dave Kiefer; Sopwith Tripe	(306.0)	32.2+50.0
2. Jack McGilvray; SE-5	(234.0)	108.3+106.0
3. Mike Arak; ???	(326.61)	20.1+20.6
4. John Martin; Nieuport 17	(253.5)	17.0+22.0
5. Tony Sutter; Heinkel 100	(195.5)	53.3+54.1
6. Alfred Genter; Douglas A-26	(258.0)	3.0+3.0
7. Walt Everson; P-51	(159.9)	54.7+52.0
8. Bill Hunter; Fokker Tripe	(224.0)	19.3+16.4
9. Stephen Oxley; Hellcat	(232.0)	2.5+2.0
10. Jack Little; M. Saulnier n	(211.2)	3.0+2.6
11. C. E. Roth; P-51	(142.5)	35.0+35.0
12. Millard Wells; P-38	(175.0)	14.0+0

#### DID NOT FLY:

Tony Sutter; Zero, (156.0)

\*Blame John Martin; he scratched it out!

### JUNIORS

1. Mike Escalante; Bristol Scout	(292.5)	37.0+37.0
2. Chris Scott; Martinside S-1	(195.2)	25.0+25.0

### Golden Age

The planes from the between-the-wars era make ideal Peanuts. Jack Little's reproduction of three-views of both planes and motors from the 1929 Aircraft Yearbook was donated by Jack as awards, 76 3-views and 31 of engines of the period. (Send \$11 to him at Littlecraft, 1414-B Brewster Ave., Redwood City CA 94062).

1. Alfred Genter; Bucker BU131	(283.5)	53.0+47.0
2. Bob Clemens; Farman Moustique	(207.0)	54.7+53.4
3. John Martin; Dornier Merkur	(182.0)	75.0+101.0
4. Millard Wells; Winnie Mae	(216.0)	44.6+45.4
5. Bill Hannan; Autogyro,	(322.0)	20.3+19.9
6. Warren Shipp; AVRO 612 Gyro	(285.2)	29.0+30.0
7. Millard Wells; Curtis Tripe	(192.0)	44.6+45.4
8. Jim Miller; Piper Cub	(170.5)	89.9+72.0
9. Phil Cox; Buttercup	(165.7)	71.0+74.0
10. Walt Everson; Jungmeister	(180.0)	42.0+37.2
11. Millard Wells; Micro-Velez	(120.0)	122.2+122.0
12. Millard Wells; Wee-Bee	(64.0)	134.0+155.0
13. Jack Little; Fairchild 24	(189.0)	3.0+12.0
14. Phil Cox; Drurine T.	(176.0)	35.4+0
15. Millard Wells; Huntington H-12	(61.6)	76.5+72.0
16. Walt Everson; Waco E	(161.0)	35.0+37.8
17. Bill Criss; Bellanca	(119.0)	29.5+29.2
18. Jerry Skrijanc; Moustique (no documentation)		171.0+175.0

#### DID NOT FLY:

Bob Clemens; AVRO 560	(199.5)
John Martin; Cessna A-W	(172.2)
Kalinan	(163.1)
Mitsubishi Tripe	(143.5)
Phil Cox; Miles M-18	(151.2)
Walt Everson; Taylorcraft	(335.0)

### Modern Class

This year we removed the Fikes and Lacey's from this class (with no objections) and the results were quite different--a twin motored job was first! However, Volksplanes and Vagabonds are moving in.

1. Jack McGilvray; Yugoslav 45T	(222.4)	117.0+112.0
2. Jim Miller; Piper Vagabond	(192.0)	113.3+112.0
3. Lou Leifer; Volksplane	(162.5)	74.8+82.0
4. Seigfried Glockner Fred	(176.4)	67.0+77.0
5. Jim Miller; ITDH	(136.0)	126.5+126.5
6. Dave Kiefer; Pitts	(319.5)	38.8+38.2
7. Mike Arak; Vagabond	(271.4)	38.3+40.0
8. Bob Clemens; BD-4	(147.6)	72.5+78.5
9. Bill Criss; Cougar	(136.5)	58.0+63.0
10. Millard Wells; Vagabond	(74.7)	74.0+66.0
11. Bill Hunter; Vagabond	(124.0)	58.2+56.2

#### DID NOT FLY:

Jack McGilvray; Volksplane (145.6)

#### JUNIOR:

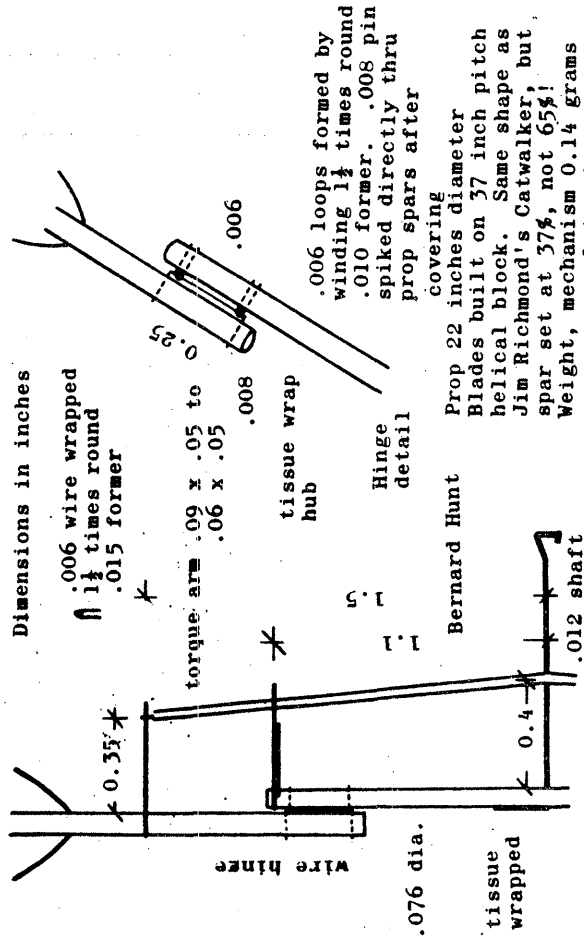
Brian Varney; Cougar	(147.0)	66.0+0
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NOTE: Check the times in this class: well over one minute is very common and over two minutes can be done. Remember when a 35 second flight was considered sensational? These are not ghost ships!

is the 0.12 gram weight penalty of our mechanism. It is possible (with difficulty) to build FLD's down to 1.0 grams with this penalty but the models are less robust than normal and very large models such as those flown by the Swiss would very probably be overweight. Another problem is the length of time it takes to set up the propellers for optimum performance with so many variables to specify, viz: basic propeller pitch, top and bottom stop torque values, rubber thickness, rubber weight and turns backed off.

The key to more widespread use of variable pitch propellers for indoor is the development of lighter mechanisms. Some good ideas were put forward at West Baden and we will be trying these out but we would welcome other people's thoughts on the subject. Bernard Hunt can be contacted at: 4 Ashfield Avenue, Skelmanthorpe, Huddersfield, West Yorkshire, England.

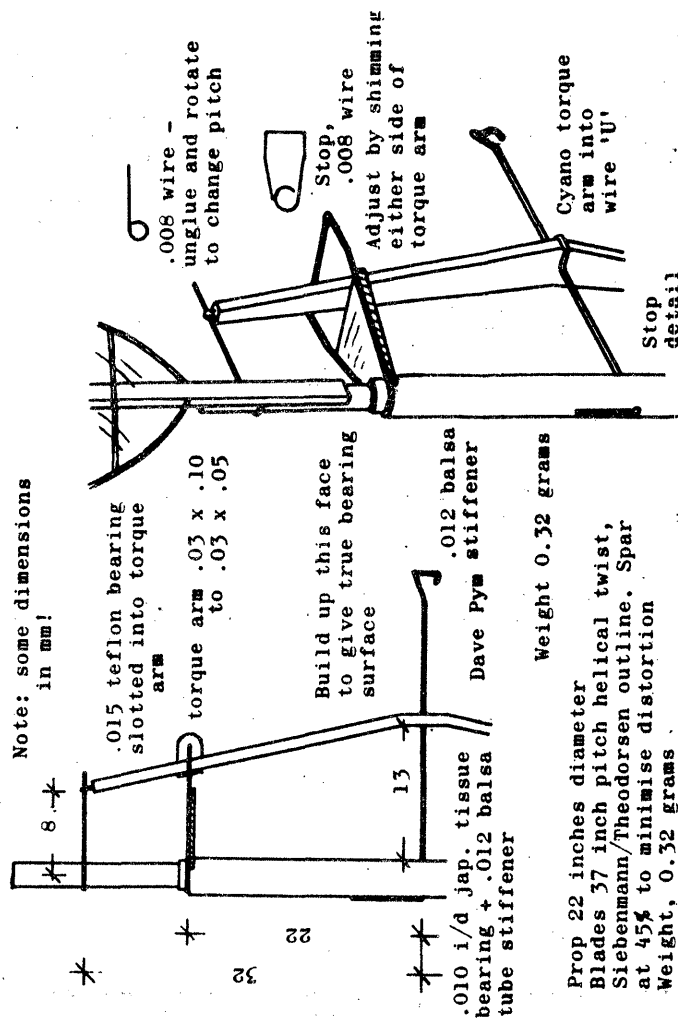
**THE MECHANISM:** the following explanation of the mechanism may be helpful. The torque of the motor opposed by the drag of the propeller blades causes the piano wire between the torque arm and the propeller hub to twist. This twist multiplied by the mechanical advantage of the torque arm/propeller lever system causes the blades to rotate through a much larger angle. The maximum and minimum rotation of the blades is limited by the wire stops attached to the propeller hub. The rate of change of pitch (or more accurately, angle) with torque depends on the thickness of the shaft/torque wire and the mechanical advantage of the torque arm/propeller lever system but 3 to 5 degrees per gram-cm is optimum. The bottom stop is used to prevent 'reverse thrust' of one or both propeller tips which can take place if too much negative rotation occurs - in practice the minimum usable pitch is about 25 inches.



Blade rotated +10 degrees at 11.0 gram-cm on top stop  
- 4 degrees at 7.0 gram-cm on bottom stop

**SETTING-UP PROCEDURE:** (values quoted are for a 22 inch diameter propeller, 1.2 gram rubber weight).

1. Assemble the propeller to give a pitch of about 52 inches at the top stop position with a torque value of about 13 gram-cm (small triangular wedges are used to hold the torque arm against the stops while checking/setting the propeller pitch on a pitch checker).



Prop 22 inches diameter

Blades 37 inch pitch helical twist,

**Stevemann/Theodorsen outline at 45% to minimise distortion**

Weight, 0.32 grams

Blade +5 degrees (44 inch pitch) at 9.0\* gram-cm top stop  
-10 degrees (25 inch pitch) at 6.0 gram-cm bottom stop

\* This value proved to be too low and it was necessary to compensate by reducing the motor weight to lg.

2. Cement shims (we use standard thickness shims, colour coded) to the high pitch side of the torque arm to reduce the top pitch to 40 to 50 inches according to conditions and ceiling height.
3. Test fly the model (usually half motors and ballast) and repeatedly adjust the top stop position by removing/adding shims, re-setting the propeller pitch to its original value after each adjustment by ungluing and re-setting the prop levers until the torque value at the top stop setting corresponds to the cruise torque for the chosen propeller pitch. This means that the torque arm is on the top stop for the whole of the climb portion of the flight.

### Wierdo Class

A lot more interest was shown in this class; some are able to get these unorthodox ships flying. It sure is great to see a little twin, or autogyro or helicopter actually flying, not just staggering around. The autogyros actually R.O.G.'d with a two man crew; one held the plane and released it after the other spun the rotor. There were all kinds of innovation and new techniques.

1. Warren Shipp; AVRO 612 Gyro	(285.2)	27.0+31.0
2. Bill Hannan; Autogyro	(322.0)	22.0+22.8
3. Dave Kiefer; Sopwith Tripe	(306.0)	22.0+27.0
4. Jack McGilvray; Yugoslav Twin	(222.4)	72.0+79.0
5. Millard Wells; Curtis Tripe	(192.0)	36.6+39.2
6. Alfred Genter; A-26 Twin	(258.0)	3.0+2.5
7. Bill Hunter; Fokker Tripe	(224.0)	17.1+17.5
8. Tony Sutter; Annular	(205.0)	17.8+25.0

### Lacey/Fike

Since we created a separate class for these models we didn't see as many--last year these ships won 9 of 1st places in Modern. Note the times.

1. Ken Groves; Fike	(261.0)	118.0+123.8
2. Jim Miller; Lacey	(236.0)	109.0+131.0
3. Butch Hadland; Lacey	(274.5)	59.0+57.0
4. Don Lockwood; Fike	(176.0)	80.5+77.5
5. Don Lockwood; Fike	(124.0)	63.1+74.5

### VIINART Scale Day

These flights were made while the last half of the Grand Prix was winding down, and lots of black coffee was being downed.

### AMA Scale Class

1. Jack McGilvray; SE-5	84.0 static +90 =	174.0
2. Ken Grover; Jungmeister	86.2 st. + 74.9 =	161.1
3. John Martin; Alco Sport	76.0 st. + 66.7 =	133.4
4. Ken Groves; Fike E	76.0 st. + 45.0 =	128.2
5. Tony Sutter; Dumont 14-bis	58.5 st. + 60 =	118.5
6. Bob Clemens AVRO 560	82.0 static + 36.3 =	118.3
7. Jim Miller Lacey M-10	78.6 st. + 23.5 =	102.1

### CO2 Scale

Bob Clemens got his old French Airliner--Farman Jabiru--flying better than it ever did before, and it was perfectly programmed for the Atrium--all the way to the top and a smooth glide down. Phil Cox's huge Wittman Buttercup looked like a 1/4 scale outdoor R/C job beside the other entries, but it flew beautifully to second place.

1. Bob Clemens; Jabiru	90.8 static + 90 =	180.8
2. Phil Cox; Buttercup	82.0 static + 84 =	166.0
3. Bob Clemens; Porterfield	90 st. + 37.7 =	127.7
4. Mike Arak; Lacey M-10	79.8 st. + 29 =	108.8

### Special Events

Martin Varney of the Calumet Modelers offered an event that should appeal to younger modelers if there are any (I'm kidding). The only documentation needed in Kit/Plan Scale is the printed plan from any publication or kit; nothing else. Simple, huh? Few magazines in the 30's, 40's or 50's that didn't have a rubber scale plan, plus the zillions of kits produced over the years.

1. John Martin; Curtis Robin	1:23
2. Millard Wells; Voyager	1:15
3. Bill Criss; Cougar	0:58

Bill Miller introduced the Flying Aces event: Low-Cal Scale. This is a profile model of 16" span and remarkable flying qualities; a very simple, low pressure event.

1. Lou Leifer; Fike	3:53
2. Walt Van Gorder; Pilatus Porter	3:15
3. Charley Sotich; Pilatus Porter	2:45

### Special Awards

Best Proxy fliers: Scott & Lindley for their autogyro R.O.G. technique.

High Time: Millard Wells for his 2 1/2 minute flights on his Wee Bee.

Best Static Score: Mike Arak's Nieuport 17 at 326.6 points, just beating out Hannan's autogyro at 322.0.

Best Achievement: Jack McGilvray's remarkable twin engine Yugoslav 45T. The hand-carved props rotated upward and away from the mid line. The 12" loops of rubber were enclosed in nacelles no longer than 4 1/2"; the best flight was 1:57 on 1500 turns! The model was tissue covered and air brushed, weighing about five grams. It astonished everyone who saw it fly.

GRAND PEANUT: Warren Shipp's AVRO Gyro.

NOTE FROM JOHN MARTIN: I hope that all these results didn't bore you, but they don't bore me. You never see this type of contest reporting or all the contestants listed in the "big" important magazines. You never know what model was flown, or see a breakdown of score, time, etc. The results from a big scale meet with many contestants are usually very brief; if you don't like this kind of reporting, we can save a lot of space!

### VARIABLE PITCH PROPS FOR INDOOR MODELS

This material has been reprinted from Free Flight News; it is the long-awaited report by Bernard Hunt and Dave Pymm on their 1980 WCh props.

Our interest in variable pitch propellers started with the news that the 1980 FID World Championships would be held in West Baden, USA, with its relatively low (96') roof (we had qualified for the British Team the previous summer). From the times which had been achieved at West Baden, we had doubts as to whether our normal Cardington models would be competitive, so we studied alternative propeller designs, both by computer simulation and practical experiment to try to improve low ceiling performance.

We considered the options of (a) fixed pitch propellers; (b) conventional flaring propellers (i.e. propellers where distortion of the blade occurs under load); and (c) variable pitch propellers. For the last option we looked at variable pitch operated by aerodynamic forces and by torque, but experiments with EZB showed that torque operation offered more precise control. The simulation indicated that for an FID model under a 96' ceiling there was a 16% duration advantage over the best fixed pitch propeller and perhaps a 10% advantage over a flaring propeller (it was not possible to simulate flaring propellers with confidence as the forces and distortions are complex). The advantage of the variable pitch propeller increased as the ceiling height reduced.

The practical propeller design was arrived at after a lot of experimentation mainly with EZB's where the expected big increase in time was realized; a best time of 14:19 (DP) under a 20' ceiling was recorded where the previous hall record was 11:22.

The mechanism was based on one used by Jeff Annis (see NFFS Symposium Report, 1973, pp 93 et seq.) with the addition of upper and lower stops to limit the pitch change and using a very much greater rate of pitch change with torque. We consider that both these features are essential to obtain any advantage except under very low ceilings.

Two problems encountered are worthy of note. First, friction in various parts, usually the main hinge/tube bearing or between the torque arm and the rear member of the stop caused the mechanism to stick at too high pitch (usually at the top stop)--this was overcome by careful attention to all fits. Second, if the rear bearing face of the torque arm is not square with the shaft, then unstable oscillations of the propeller can build up particularly at low torque/pitch.

We both used variable pitch propellers exclusively at the 1980 World Championships to place 5th (BJH) and 6th (DP) and in the NIMAS record trials held immediately after the World Championships an official time of 36:47 was achieved (BJH) which turned out to be the best time of the week.

Although we believe variable pitch propellers offer the potential for improved performance for all but the very highest ceiling sites, they are not without disadvantages. Most significant (cont. p. 3)

# INDOOR

## NEWS and VIEWS

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

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

### This Issue

The last issue was NOT a complete report of Indoor Week except for Rubber Speed as I indicated in this space; the NIMAS Index winners got squeezed out along with other stuff I hoped would be there. So, this material is presented along with the Nats results and whatever else I can squeeze in! There will not be a photo issue this year, since no one has sent pix for that purpose. However, you can see really good photos and a complete report by Bob Clemens in the Oct. '82 MODEL AVIATION.

### Blades For Sale

For some time, Jim Jones has been seeking out sources for GOOD single edge razor blades for model building. He now has a shipment of Gillette Blue Blades, made on special order. He is selling them at 50 blades for \$9, postpaid. In all likelihood, when these are gone there will be no more. The reason is that Gillette won't accept another small orders; next time, the minimum order will come to \$7,000! So, unless there is some way to raise that much, there ain't no mo! We all owe Jim a vote of thanks for his support, and I suspect that he isn't making enough to cover his trouble!

### Help West Baden

For many years now, Northwood Institute has been a good friend of indoor modeling. Yes, we pay for the services we receive there, and our presence there gives their food service school clients to practice on. However, the total package comes for far less than they COULD have charged, and most of us would have gladly paid more to fly in that site.

All who have flown there also know of the ever-present need for repairs and restoration for that building, and Northwood has an ongoing program of repair. It behooves us to help them, in a sense of enlightened self interest. I will donate at least \$25 toward their current restoration project, and urge each of you to do the same. Make the check out to "West Baden Springs Hotel Restoration", and send it to Northwood Institute, West Baden IN 47469.

### Dick Black Series

Several years ago, N.I.M.A.S. had a good friend named Dick Black who, even though physically handicapped, made contributions to modeling far beyond those made by most of us. After his death, a small fund was raised in his honor which was used to help start a series of slide-tape shows on different topics of indoor modeling. There were only two such shows actually created; one on balsa wood selection and one on building techniques. Only lack of time prevented more of the shows from being created; it takes a great amount of time to assemble slides and generate the narrative.

Those same two shows are now in the keeping of Roger Schroeder, 4111 W. 98 St., Overland Park KS 66207. He will loan these to any club for \$1.75 postage and packing. A member of Roger's club has transcribed the original reel-to-reel tapes onto cassette, so that either type of tape is available. Roger recommends these shows as good, and helpful for new builders.

### Surviving Indoor Rules

In case any of you haven't seen the Rule Book or haven't heard, here is a recap of the Indoor Rules which changed, effective Jan. 1, 1982:

1. Indoor ceiling height is to be measured with the FAI method, i.e., measure the height of a 15 m. diameter circle impressed on the bottom of the pri-

mary structure for the roof. This will change the ceiling category of a number of U. S. sites.

2. Adopt FAI ceiling categories for A.M.A. records. This possibly has the effect of negating all of the previous records in all classes. I say possibly because there has been some controversy over this concept, and this has already been considered by the FFCB. The matter may or may not be referred to the Indoor Contest Board.

3. Most people have heard that the Easy B rules have changed back to essentially the same as before the highly unpopular rule which created microfilm covered Easy B models. I will reserve further comment until I see what is in the new Rule Book.

4. Flight times will be recorded as the nearest whole number of seconds. (presumably not HLG???)

5. An unlimited number of models may be used in each event.

6. An official flight now follows the FAI definition for official flights, and similarly, the FAI definition of end of flight applies.

7. A.M.A. steering rules are replaced by FAI steering rules.

### FRANK ZAIC DOES IT AGAIN!

Ever since the 1930's, Frank Zaic has been publishing books on all aspects of free flight modeling. It is probably difficult to estimate Frank's beneficial influence on free flight design and his encouragement of methodical experimentation and flight testing to improve free flight modeling.

Frank's latest book is a complete collection of model airplane articles, hints and ALMA (the fore-runner of A.M.A.) news as published in AMERICAN BOY magazine between September, 1927 and August, 1934. This one source may well have been the most important source of modeling information and one of the most influential factors in the high level of model airplane activity during the time after Lindberg's famous flight. This book is a "must" for anyone who has even a faint interest in the early development of our sport. Order the book from Model Aero Publications, Box 135, Northridge CA 91328; the cost is \$9.

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### 40 MINUTE CLUB UPDATE

No matter who compiles modeling statistics, or how carefully it is done, something will surely be left out! So, the following names need to be added to the list which appeared in INAV #5:

NAME	SITE	TIME	MODEL
John Triolo	Lakehurst-1975	40:06	"300"
Richard Doig	Akron-1981	40:13	F1D
Laurie Barr	Cardington-1981	41:11	F1D

### NFFS AWARDS

The National Free Flight Society chose Jim Richmond's Paper Tiger II and Mark Drela's Upstart HLG as two of the Top 10 Models of the Year.

The 1982 NFFS Free Flight Hall of Fame awards went to the following modelers: Lawrence Conover,

Joe Elgin, Gordon Light, Gerald Ritz, Leon Schulman and Ray Arden (deceased). All except Ray Arden have been or still are well-known fliers and competitors; Ray invented the glow plug and designed the Atom and Arden engines, which will be familiar to many NIMAS members if they will admit to it! For myself, the Atom was before my time, but I have owned and flown (in FF models) both .099 and .19 Ardens. Perhaps the loss of those classic engines helped convert me to Indoor!

#### PEANUT SPEED RESULTS (U. S. Indoor Champs)

So that those who weren't there can better picture the events, the rules used at the U. S. Indoor Champs for the two Peanut Speed events were as follows:

#### UNLIMITED RUBBER SPEED:

1. Models must be rubber powered and propeller driven.
2. Models must start from an unassisted ROG launch from a 3-point sitting position.
3. Model to be timed for two complete laps around two pylons set 20 feet apart.
4. Flights will be disqualified if the model touches the pylon or the ground after crossing the starting line.
5. The timer will stand in line with the two pylons. Timing starts when the model crosses the line determined by the two pylons and ends when it crossed the line after completing two laps.
6. Timepieces must be able to time to 1/100 of a second.
7. The shortest time to complete two laps will determine the winner.
8. There will be no limit to the number of models or launches.

#### PEANUT SPEED:

The Unlimited Rubber Speed rules apply except for the following changes:

1. The models are limited to Peanut Scale models.
2. The models' scores will be determined as follows: SCORE = 1000/time + scale points, where "time" is the time in seconds for the to fly two laps and "scale points" is the score obtained using AMA alternate rule 59 for judging Peanut Scale.
3. The highest score will determine the winner.

#### RESULTS

#### PEANUT SPEED

<u>Flier</u>	<u>Time</u>	<u>1000/Time</u>	<u>Scale Pts.</u>	<u>Total</u>
Martin Varney	5.94	168.3	16.5	184.85
Millard Wells	8.77	114.02	20	134.02
Terry Mrakava	19.80	50.50	19.5	70.50

#### UNLIMITED SPEED

#### FLIER

#### Time (2 laps)

Martin Varney	5.49
Hardy Brodersen (unofficial)	6.86
Brian Varney	8.60
Chris Matsuno	9.91
Ron Ganser	12.25

#### VIIINART Results

#### PEANUT SPEED

#### FLIER

#### Time (2 laps)

Martin Varney	5.41
Chuck Markos	10.08

#### UNLIMITED SPEED

Brian Varney	8.67
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#### VIIINART INDOOR RECORD TRIALS (Index)

<u>Name</u>	<u>Event</u>	<u>Time</u>	<u>Index</u>
Dave Lindley	Pennyplane	14:36	1.24
Paul Loucka	AMA Stick	20:52	1.14
Paul Loucka	FID Stick	20:49	1.13
Bobby Skrijanc	Paper Stick	17:57	1.09
Cezar Banks	FID Stick	39:27	1.04
Stan Chilton	Easy B	20:40	.992
Stan Chilton	Paper Stick	26:34	.969
Jerry Skrijanc	Pennyplane	14:12	.945
Dick Obarski	Paper Stick	24:35	.896
Walt Van Gorder	Easy B	18:23	.882

#### RESULTS FROM THE 1982 INDOOR NATS

#### INDOOR STICK

#### JUNIOR

1 DAVID G. BROWN	, STONE MT, GA	6.20
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#### SENIOR

1 MICHAEL CLEM	, DALLAS, TX	15.16
2 BRADLEY FULMER	, MISHAWAKA, IN	6.03
3 SUSAN B. BROWN	, STONE MTN, GA	4.49

#### OPEN

1 DAN DOMINA	, EAST WINDSOR, NJ	30.03
2 EARL N. HOFFMAN	, CARPINTERIA, CA	25.33
3 DANIEL G. BELIEFF	, SILVER SPRIN, MD	24.43
4 PAUL F. TRYON	, HAZELWOOD, MO	22.43
5 D ERBACH	, MANITOBA, MB	19.19
6 RICHARD GANSLER	, DENTON, TX	16.43
7 WALTER ERBACH	, LINCOLN, NE	15.00

#### FAI STICK

#### JUNIOR

1 DAVID G. BROWN	, STONE MT, GA	14.51
2 CARL LINSTRUM	, JACKSONVILLE, FL	14.39

#### SENIOR

1 MICHAEL CLEM	, DALLAS, TX	33.37
2 SUSAN B. BROWN	, STONE MTN, GA	9.08

#### OPEN

1 DAN DOMINA	, EAST WINDSOR, NJ	57.19
2 EARL N. HOFFMAN	, CARPINTERIA, CA	55.55
3 DANIEL G. BELIEFF	, SILVER SPRIN, MD	51.10
4 PAUL F. TRYON	, HAZELWOOD, MO	45.53
5 RICHARD GANSLER	, DENTON, TX	19.37

#### PAPER STICK

#### JUNIOR

1 DAVID G. BROWN	, STONE MT, GA	6.50
2 MELANIE A. SANFORD	, DALLAS, TX	0.11

#### SENIOR

1 MICHAEL CLEM	, DALLAS, TX	10.26
2 BRYAN FULMER	, MISHAWAKA, IN	9.14
3 BRADLEY FULMER	, MISHAWAKA, IN	6.42
4 SUSAN B. BROWN	, STONE MTN, GA	4.39

#### OPEN

1 DANIEL G. BELIEFF	, SILVER SPRIN, MD	18.19
2 DAN DOMINA	, EAST WINDSOR, NJ	17.30
3 C A. SOTICH	, CHICAGO, IL	15.56
4 D ERBACH	, MANITOBA, MB	10.59
5 WALTER ERBACH	, LINCOLN, NE	6.33

#### INDOOR CABIN

#### JUNIOR

1 MELANIE A. SANFORD	, DALLAS, TX	1.02
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#### SENIOR

1 BRADLEY FULMER	, MISHAWAKA, IN	3.29
2 BRYAN FULMER	, MISHAWAKA, IN	2.05

#### OPEN

1 DAN DOMINA	, EAST WINDSOR, NJ	20.56
2 ROBERT J. DUNHAM	, TULSA, OK	14.47
3 R J. DUNHAM II	, TULSA, OK	12.07
4 D ERBACH	, MANITOBA, MB	12.05

#### INDOOR HLG

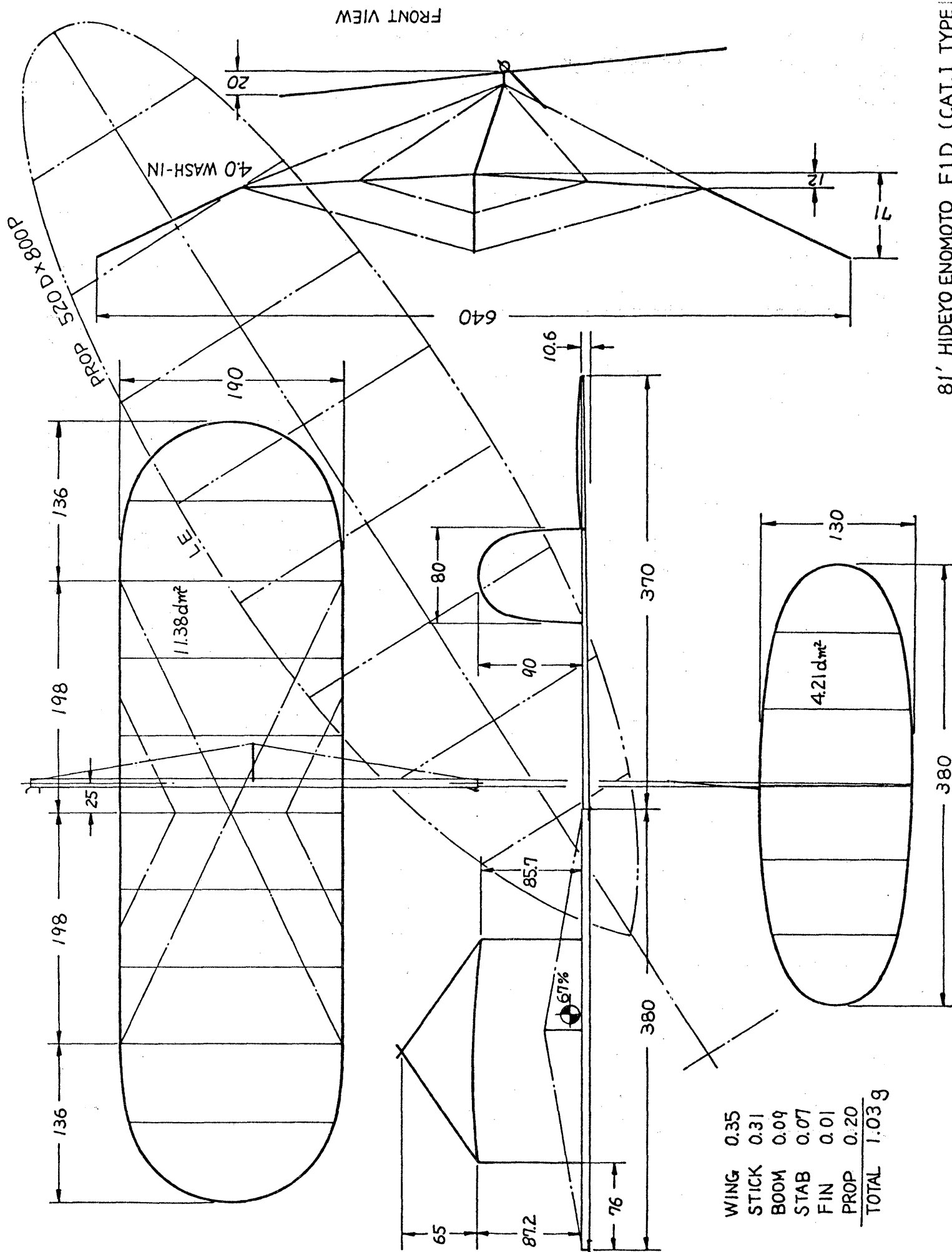
#### JUNIOR

1 AARON MARKOS	, DEERFIELD, IL	69.20
2 ERIC M. VAUGHAN	, EDMOND, OK	58.20
3 DAVID G. BROWN	, STONE MT, GA	41.60

#### SENIOR

1 BRYAN FULMER	, MISHAWAKA, IN	88.20
2 MICHAEL CLEM	, DALLAS, TX	83.60
3 BRADLEY FULMER	, MISHAWAKA, IN	76.20
4 DRAYCOTT HOOKE III	, MOUNTAINHOME, PA	72.20
5 DAVID A. HOOKE	, MOUNTAINHOME, PA	63.20
6 THOMAS NORELL	, ROCHESTER, MN	58.80
7 JASON TRYON	, HAZELWOOD, MO	56.40





81' HIDEYO ENOMOTO F1D (CAT.I TYPE)

OPEN

1 A L. VAUGHAN	, EDMOND , OK	92.20
2 R J. DUNHAM II	, TULSA , OK	90.60
3 STANLEY L. STOY	, MARYLAND HEI, MO	90.00
4 DAN DOMINA	, EAST WINDSOR, NJ	89.20
5 MIKE STOY	, BREMERTON , WA	86.00
6 DANIEL G. BELIEFF	, SILVER SPRIN, MD	54.40

PENNYPLANEJUNIOR

1 MELISSA L. GROEBE	, LISLE , IL	8.90
2 DAVID G. BROWN	, STONE MT , GA	4.20
- MELANIE A. SANFORD	, DALLAS , TX	NO SHOW

SENIOR

1 JOHNS O'REILLY	, WICHITA , KS	8.33
2 THOMAS NORELL	, ROCHESTER , MN	7.26
3 MICHAEL CLEM	, DALLAS , TX	6.57
4 BRYAN FULMER	, MISHAWAKA , IN	6.45
5 BRADLEY FULMER	, MISHAWAKA , IN	6.29
6 SUSAN B. BROWN	, STONE MTN , GA	5.28

OPEN

1 G J. WISNIEWSKI	, GREENDALE , WI	11.03
2 EARL N. HOFFMAN	, CARPINTERIA , CA	9.41
3 C A. SOTICH	, CHICAGO , IL	9.10
4 LEWIS G. GROEBE JR	, LISLE , IL	8.07
5 ROBERT E. OPPEGARD	, CIRCLE PNS , MN	7.24
6 JAMES B. OREILLY	, WICHITA , KS	7.17
7 WILLIAM BAKER	, NORMAN , OK	6.42
- RICHARD GANSLER	, DENTON , TX	NO SHOW
- A J. ITALIANO	, BROOKFIELD , WI	NO SHOW
- JOHN P. OLEARY	, BLOOMINGTON , MN	NO SHOW

EASY BJUNIOR

1 CARL LINSTRUM	, JACKSONVILLE, FL	6.35
2 DAVID G. BROWN	, STONE MT , GA	5.33
3 MELANIE A. SANFORD	, DALLAS , TX	1.12

SENIOR

1 BRYAN FULMER	, MISHAWAKA , IN	9.22
2 BRADLEY FULMER	, MISHAWAKA , IN	9.14
3 MICHAEL CLEM	, DALLAS , TX	7.34
4 THOMAS NORELL	, ROCHESTER , MN	5.34
5 SUSAN B. BROWN	, STONE MTN , GA	4.58

OPEN

1 EARL N. HOFFMAN	, CARPINTERIA , CA	14.27
2 G J. WISNIEWSKI	, GREENDALE , WI	12.38
3 D ERBACH	, MANITOBA , MB	11.33
4 WILLIAM BAKER	, NORMAN , OK	9.26
5 RICHARD GANSLER	, DENTON , TX	9.19
- JOHN P. OLEARY	, BLOOMINGTON , MN	NO SHOW
- ROBERT E. OPPEGARD	, CIRCLE PNS , MN	NO SHOW

PEANUT SCALEJUNIOR

1 MELANIE A. SANFORD	, DALLAS , TX	131.00
2 DAVID G. BROWN	, STONE MT , GA	114.00
3 ARCHIE W. ADAMISIN	, TAYLOR , MI	100.00
4 CARL LINSTRUM	, JACKSONVILLE, FL	95.00

SENIOR

1 BRADLEY FULMER	, MISHAWAKA , IN	143.00
2 BRYAN FULMER	, MISHAWAKA , IN	142.00
3 THOMAS NORELL	, ROCHESTER , MN	137.60
4 SUSAN B. BROWN	, STONE MTN , GA	65.00

OPEN

1 WILLIAM BAKER	, NORMAN , OK	163.00
2 KEITH FULMER	, MISHAWAKA , IN	152.00
3 BOB WILLEY	, LINCOLN , NE	142.00
4 J CURTIS SANFORD JR	, DALLAS , TX	125.00
5 PERRY E. PETERSON	, LINCOLN , NE	124.00
6 EDWARD A. BATES	, LINCOLN , NE	123.00
7 PETER A. BROWN	, STONE MTN , GA	72.00
- JULIO DEL CASTILLO	, QUINCY , IL	NO SHOW

AMA SCALEJUNIOR

1 MELANIE A. SANFORD	, DALLAS , TX	120.24
2 DAVID G. BROWN	, STONE MT , GA	116.05
3 CARL LINSTRUM	, JACKSONVILLE, FL	113.29

SENIOR

1 SUSAN B. BROWN	, STONE MTN , GA	76.99
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OPEN

1 DAN DOMINA	, EAST WINDSOR, NJ	163.00
2 J CURTIS SANFORD JR	, DALLAS , TX	129
3 BOB WILLEY	, LINCOLN , NE	126
4 WILLIAM BAKER	, NORMAN , OK	101.75
5 PETER A. BROWN	, STONE MTN , GA	91.06
- PERRY E. PETERSON	, LINCOLN , NE	NO SHOW
- L A. WOOD	, FLORISSANT , MO	NO SHOW

STATE OF THE ART

This month we offer a tribute to a flier and a type of flying which isn't emphasized much--World Record attempts. Tom Vallee is one of the more persistent practitioners of this art, and furnished the following information about the man who took his own record.

The model plan is of the current Cat. I World Record holder: the model flown by Hideyo Enomoto of Japan. The time is astounding for a Cat. I ceiling--25:24. The following comments were made by Mr. Enomoto:

The history of Japanese indoor planes is not so long. Our leader, Mr. Nonaka, who was the pioneer of Japanese Indoor, started to fly indoor models with a few members in 1970. I made my first micro-film F1D model in 1973 when I was 18. We had our first F1D Category I official time trial meet in May, 1976. 15:58, the record set by Mr. Nonaka, was the best flight.

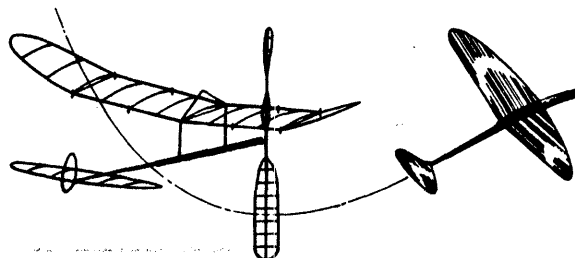
We have very few gymnasiums or hangars available for Cat. III or IV, so I decided to challenge the Cat. I record. We found a good gymnasium which has an almost flat ceiling of 7.95m height at Yoyagi, Tokyo. Last year I happened to fly my model for 23:48 at another gymnasium and Mr. Nonaka arranged the official time trial meet at Yoyagi gymnasium on Feb. 3, 1981. Mr. Banba (national champion in 1977, 1979, 1980 and 1981) and I (national champion in 1978) challenged the record. There was an opening about 10 cm wide between the partition wall and the floor, so I pasted a long strip of paper under the wall, and this was very effective in stopping the draft. I prepared two models and made 5 flights as follows:

Date: Feb. 3, 1981

Place: 1st gymnasium of Seishonen Sogo Sports Center (23.2m x 34.6m x 7.95m).

1. Model weight 1.01g  
Rubber 42 cm loop, 1.32g ('78 Pirelli).  
Number of turns 1600  
30 seconds later, the wing was broken by steering.
2. Model Weight 1.16g  
Rubber 42 cm loop, 1.5g  
Number of turns 1400  
Record 23:00
3. Model and rubber Same as second flight.  
Number of turns 1500  
Record 23:59  
I steered the model one time.
4. Model weight 1.03g  
Rubber Same as first flight.  
Number of turns 1600  
Record 24:03  
Just after the start, the model stalled, so I tried again.
5. Model and rubber Same as fourth flight.  
Number of turns 1620  
Record 25:24  
I banked the model slightly to the left at the start to prevent the stall. It took about 30 or 40 seconds to climb to the ceiling. The prop hit the ceiling vigorously. 18 minutes later, the prop was still hitting the ceiling often, and the model started sinking slowly. I steered the model with a 7.2m fishing rod 3 or 4 times during the flight.

# INDOOR



#8

## NEWS and VIEWS

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

### 1982 INDOOR WORLD CHAMPIONSHIPS SLANIC, ROMANIA

NAME	COUNTRY	1	2	3	4	5	6	TOTAL
1. Aurel Morar	ROM	33:04	20:57	24:17	00:14	36:56	18:32	70:00
2. David Pymm	GB	31:49	09:06	01:55	08:06	35:39	34:10	69:49
3. Jim Richmond	USA	31:34	27:39	29:55	36:37	22:08	00:00	68:11
4. Laurie Barr	GB	33:27	29:51	31:29	32:03	18:28	00:33	65:30
5. Aurel Popa	ROM	29:45	26:44	32:47	15:32	09:53	32:17	65:04
6. Cezar Banks	USA	29:54	28:45	01:25	32:59	23:45	28:51	62:53
7. Nicu Bazman	ROM	24:54	18:14	27:04	31:07	24:49	31:39	62:46
8. Andras Rea	HUN	26:10	31:10	27:22	00:00	30:15	00:00	61:25
9. Dieter Siebenmann	CH	14:34	22:01	28:01	11:13	23:42	33:28	61:19
10. Tsuyoshi Yamazaki	JPN	29:15	29:40	06:33	31:38	19:45	15:45	61:18
11. Sylwester Kujawa	P	29:21	26:53	29:40	23:24	10:39	30:50	60:30
12. Rene Butty	CH	27:33	00:28	16:44	28:53	31:17	28:13	60:15
13. Bernard Hunt	GB	14:09	28:15	30:16	26:38	28:15	29:57	60:13
14. Edward Ciapala	P	27:22	23:03	14:32	22:20	31:09	13:50	58:31
15. Yasutoshi Bamba	JPN	22:51	27:47	16:57	26:35	27:57	14:40	55:44
16. Kurt Vogler	FRG	20:55	21:32	15:27	00:08	28:44	26:23	55:07
17. Ratko Iovric	YU	21:03	25:36	24:10	20:40	29:10	24:19	54:46
18. Stanislaw Siarko	P	25:07	22:36	28:10	21:38	20:52	26:24	54:42
19. Pentti Nore	FIN	25:44	14:42	28:28	00:00	24:10	22:30	54:12
20. Leif Englund	FIN	14:50	01:50	15:36	28:12	22:06	24:48	53:00
21. Jack McGillivray	CDN	07:22	24:15	23:20	16:25	27:15	10:25	51:30
22. Oton Velunsek	YU	13:57	21:48	25:16	22:27	25:55	23:21	51:11
23. Otto Rodenburg	NL	13:49	16:42	24:10	23:14	26:55	23:12	51:05
24. Cornelis Wolthoorn	NL	25:36	11:58	25:29	00:22	23:57	21:36	51:05
25. Erv Rodemsky	USA	34:10	02:55	16:06	12:18	09:40	07:47	50:16
26. Carl Schueler	CDN	14:43	13:30	19:54	24:38	18:17	23:02	47:40
27. Giacomo De Angelini	I	17:48	27:06	18:33	13:48	20:20	13:55	47:26
28. Antal Egri	HUN	21:05	19:30	14:40	25:41	12:47	17:42	46:46
29. Hideyo Enomoto	JPN	18:31	25:37	21:04	18:16	17:11	13:45	46:41
30. Alfred Klinck	FRG	18:03	22:47	22:58	23:29	00:00	00:00	46:27
31. Raymond Harlan	USA	24:44	00:15	21:29	04:00	00:00	15:13	46:13
32. Germano Masciullo	I	20:49	19:02	00:00	11:27	13:06	24:55	45:44
33. Carlo Cotugno	I	22:30	22:22	21:46	23:04	20:01	19:21	45:34
34. Helmut Jakob	FRG	08:58	19:55	15:28	25:20	15:10	15:24	45:15
35. Vilim Kmokh	YU	20:58	00:42	22:43	00:26	14:02	18:37	43:41
36. Ronald Higgs	CDN	00:00	09:10	12:08	00:00	19:03	24:26	43:29
37. Dezso Orsovai	HUN	19:00	17:59	00:00	21:01	17:34	00:00	40:01
38. Harro Erofejeff	FIN	18:17	12:09	15:14	21:00	05:36	16:37	39:17
39. Wilhelm Beekmeyer	NL	18:30	16:36	16:10	11:35	06:51	17:30	36:00

### TEAM RESULTS

1	Romania	197:50	8	Germany	146:49
2	Great Britain	195:32	9	Finland	146:29
3	USA	177:17	10	Canada	142:39
4	Poland	173:43	11	Italy	138:44
5	Japan	163:43	12	Netherlands	138:10
6	Yugoslavia	149:38	13	Switzerland (2)	121:34
7	Hungary	148:12			

### COMMENTS ON THE '82 WCh

Although there was no one reporting for INAV, I have been fortunate to receive word from several who attended. Warren Williams has an unusual tale:

I never thought I would be 400 feet underground watching and taking part in the 1982 World Indoor Championship in a Romanian salt mine, but that's the way it was. The mine was unique; it reminded me of a cathedral with its stately carved walls and dark interior. All that was needed was organ music and we're in the sanctuary of a great church.

First, the temperature stays at a constant 53 degrees all year around in the mine, thus causing the model rubber to lose about 20% of its efficiency. All of our team members had to go up in rubber

size and readjust their now heavier airplanes. The extra weight included that picked up when moisture penetrated the balsa wood. Under those conditions our models were stalling and slowly climbing in the heavy atmosphere. Slight drafts at the floor level and a jet stream of air going in opposite directions along the 150' catwalk area. This caused the models to drift out of the center and to the sides of the walls. The salt walls stuck to our models like flypaper to flies. This did great damage to our models because balloons were used to pull them away. The lighting was poor; it was too dark to read a paper. This made ballooning almost impossible—the fliers couldn't see to catch the models or steer them out of danger.

All the team members' models survived the long trip except for Erv Rodemsky's. His box broke open

when it jammed at the top of the conveyor belt at the Bucharest Airport. All of his models were very seriously damaged and it took him two days to salvage three models out of six.

The first day was a practice session and everything went well, but time ran out with more testing needed.

On the second day the competition started with the first round starting at 8:30 am. Erv was the first to fly. His model climbed like an elevator at about a 70 degree angle. As it reached the catwalk, it went into a cruise and finally landed with high time of the day--34:10. On all the rest of his flights, the models flew excellently, but drifted into the walls or were lost above the catwalk.

Our team was anxious to start now that Erv had led the way with an excellent first flight. Soon, Ray Harlan's model was off, but it stalled during the power burst and failed to gain altitude. All of his flights from that time on were hampered by this "over-elevated" problem, and so his best time was 24:44. Meanwhile, Cezar Banks managed flights of 29:54 and 32:59 for his best score, putting him in sixth place on individual times.

In the second day of competition, Jim Richmond came up with a terrific flight of 36:37 to lead the pack. On the following day, Aurel Morar of Romania broke Jim's mark with a 36:56.

The strong British team fought to the end with the Romanian team, but came up 2:28 short of winning the team trophy, and Dave Pymm came within 11 seconds of winning individual honors.

The most dramatic part of the whole meet was Jim Richmond's last attempt of the contest. After repairing damage from prior flights, he had 1 1/2 minutes to wind and fly. Team Manager Bud Romak was counting off seconds as Jim wound the rubber. Unfortunately, the rubber broke four times before he was able to hook up. As he removed the model from the stand, time ran out and the meet was over.

When we gathered around the scoreboard, there was no doubt who had taken all the marbles. The Romanian team was 1st with 197:50, followed by the British with 195:32 and then U.S.A. with 177:17. The individual high time belonged to Romanian Aurel Morar (70:00), followed by Dave Pymm with 69:49 and Jim Richmond with 68:11. A great time was had by all, and they all were winners.

That night, a banquet was held with heads of state and FAI officials of Romania in attendance. Included was Romania's oldest Pioneer Aviator, who made his first flight in 1912. The banquet gave us the opportunity to meet and exchange good wishes with all the contestants.

Congratulations to Romania for a very well-organized and planned Indoor World Championship!

Bud Romak filed a report as Team Manager, and the following comments were taken from that report:

The World Championships was a success. The salt mine has got to be the most challenging site in the whole world! I am sure the U. S. team would have had a real shot for first place if we could have had a prior time to test fly there. It takes a lot of experience to reach the top of the mine. The team had one and a half days of testing before the start of the W. C. On the first day, the U.S. was in second place--thanks to a fine start by Jim Richmond and Cezar Banks. Ray Harlan had wing and CG problems and never did solve them. We knew the Romanian team would be tough and England had gained some valuable experience by flying in the mine last year. As you can see by the results, David Pymm almost won individual honors.

In retrospect, I would say it would be great to try it again and again. You can't imagine the neatness of the mine. Words cannot--cannot--ever come close to what it is really like. It's a world of its own.

Finally, Andras Ree of Hungary sent this short note:

I think you have seen our results on the WCh in Slanic. It is a bad dream today, too, with 13 of our models being broken or left hanging on the

wall. Orsovai (who set the Cat II World Record last year) had no start landed! His seven models were not enough for the six launches. One of our problems was the microfilm. Our dopes have become sticky in the last few years. Now I work on new mixtures, based on materials other than dopes. I shall build new test surfaces when this problem is solved.

#### \*\*\*NATIONAL INDOOR MODEL AIRPLANE SOCIETY\*\*\*

##### This Issue

As you can tell by the masthead, which has been made up for some time, this issue was to have been mailed in November. And, the road to Hell is paved with good intentions! Meanwhile, I have presented what I have of the '82 Indoor WCh, along with whatever else will fit. If there isn't another before 1983: Merry Christmas and Happy New Year!

##### Gops!

Issue #7 mentioned that Jim Jones had purchased razor blades, but stated that they were single-edge blades. Not so! Jim's hoard of blades consists of high-quality steel *double edge* blades--the kind that "snap" when you break them. These blades are ideal for all the cutting and stripping that we do. The price is 50 blades for \$9, postpaid; Jim's address: 36631 Ledgestone Dr., Mt. Clemens MI 48043.

##### Hey, Look At This!!

Dave Erbach requested that I mention this, hoping that some of you might be interested. Dave is the Event Director for an International Ornithopter Postal Contest which requires that flights be made between Dec. 1, 1982 and Dec. 1, 1983. Flights can be made at any indoor contest sanctioned by F.A.I. or any affiliated national organization (such as A.M.A.) Those interested should contact Dave for more information and a set of rules, his address is 1738 St. Mary's Road, #702, Winnipeg, Man. R2N 1G8, Canada. Entry is free, but there are cash prizes.

##### Good News/Bad News

The good news is that Indoor Week is set up for 1983; what we don't know is what type of event will be held the first of the week before the annual NIMAS bash--whatever John Martin decides to call it this time! Indoor Week will begin June 12, 1983 and last until June 19. Now for the bad news: the 1983 event may well be the last Indoor Week at West Baden, since Northwood Institute recently decided to close the campus and sell the facilities. So, at this time, we don't know if our playhouse will ever be available again.

##### More Bad News

I recently received a letter from Ferdinando Migani in Italy. His news is that Pirelli rubber strip will no longer produced. So, unless you are a bit sneaky, your present hoard is all you are likely to have! So, now we will again be searching for good rubber to fly our models. I have noticed that the term "good rubber" seems to mean different things to different people, and very few people ever test rubber to determine its how "good" it is.

Obviously, we need a non-destructive test for rubber quality. Over the years we have developed "rule of thumb" turns tables and similar guides to rubber usage. We all have been searching for knowledge of how to apply our rubber more effectively. What is really needed is a simple way to test rubber to its limits without breaking it.

I have good reason to say "test to the limit": I once did a lot of rubber testing, but I stopped when I realized that I had no really effective way to measure what I was looking for. I realized this when I tested a piece of rubber which was as good as any I had previously tried, using conventional tests. When I pushed this particular sample beyond normal limits, I found that it had more than 25% higher energy storage capability than any I had seen; it was accidental that I found out how good that rubber really was. So, if there is anyone out there who is interested in designing a rubber test, now is the time! Just remember--each sample must be tested with no preconceived notion of what it "ought" to be capable of, and you must discover, non-destructively, what the energy storage limit of that sample really is.

## CONTEST CALENDAR

### CONNECTICUT - Glastonbury

Indoor sessions will be held at the Glastonbury CT High School Gym, Dec. 19, 1982 and Jan. 19, Feb. 6, Mar. 6 and Apr. 17, 1983. The Feb. 6 session is a beginner special Delta Dart event, while the Apr. 17 session will be an AMA sanctioned contest. Contact George Armstead, 89 Harvest Lane, Glastonbury CT 06037 for more info.

### FLORIDA - Miami

MIAMA's winter season includes a series of contests at Miami Dade South High School on Jan. 16, Feb. 27, Mar. 27 and Apr. 24, 1983, from 9 am to 5 pm. Contact John Martin, 3227 Darwin St., Miami FL 33133 for details. Call 858-6363 on Friday before meet for confirmation.

### INDIANA - West Baden

Indoor Week June 12-19, 1982. For details keep tuned in!

### MINNESOTA - Minneapolis.

A new series of indoor contests will be held at Burnside High School Gym, Burnside MN, on Dec. 19, 1982 and Jan. 16, Feb. 13, Mar. 20, and Apr. 17, 1983, from Noon to 5 pm. A variety of regular and special events will be held. For more info contact The Minneapolis MAC, 17110 24th Ave. N., Plymouth MN 55447.

### MISSOURI - Kansas City Area

Roger Schroeder has set up more activity; there will be Fun Flies at the Westport-Roanoke Community Center, 3601 Roanoke Rd., K.C., MO on Dec. 11, 1982 and Jan. 29, 1983. For more info contact Roger at 4111 W. 98th St., Shawnee Mission KS 66207.

### New York City

Ed Whitten will be CD'ing a Pennyplane and Manhattan contest at the Low Library Rotunda on campus at Columbia University on Dec. 12, 1982. For more info contact Ed at P O Box 176, Wall St. Station, New York NY 10005.

### OREGON - Albany Area

The Willamette Model Club is sponsoring indoor on Jan. 9, Jan 30 and Feb. 20, 1983, from 9:30 am to 3:30 pm at the South Albany High School Gym, 3705 S. Columbus St., Albany OR. Contact Bob Stalick at 5066 NW Picadilly Circle, Albany OR 97321.

### TEXAS - Bedford

Indoor Contest at Bedford Boy's Ranch, Bedford, Texas on Dec. 11, 1982, 5 pm to 10:30 pm with HLG, Pennyplane/Easy B and Peanut Scale. For info call Jess Shepherd, 2713 Summit View, Bedford TX 76021, ph. 817-282-3770.

## PENNYPLANE MOTOR CHART

The chart below, worked up by Dennis Jaecks, is a valuable guide to selection of Pirelli motors for Pennyplane models. Within each horizontal line of data, three figures are presented. The top, hand-written figure, represents the weight of motor in pennyweights (decimal fraction of a penny's weight), the second figure represents cross-section area, and the third figure is turns that particular motor can safely handle. The left-hand ordinate of the chart is strip width, and the top ordinate is loop length. Note that various batches will have different thickness, so the chart is a guide rather than an absolute.

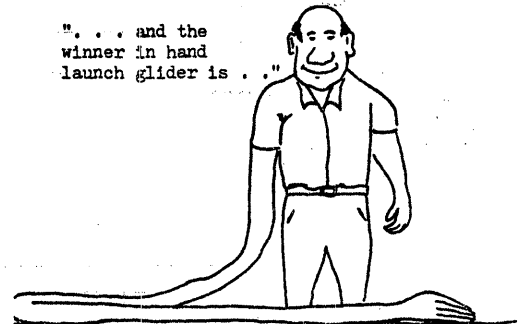
## PIRELLI PARAMETER TABLE

The chart shown below summarizes turns vs. torque for various sizes of Pirelli rubber; it can be used as a guide on the flying field to help judge how hard to push a motor during winding. Note that temperature, rubber age and condition will have some bearing on the maximum values, but this chart gives you a starting point. Keep detailed records of each motor's performance, so you will be able to learn from experience just how far an individual motor can be pushed.

SIZE	WEIGHT 2 STRANDS, 1/16" WIDE	PER INCH	TURNS	TORQUE INCH OUNCES	WT.
0.020	0.00092	210.0	0.150		
0.030	0.00135	171.5	0.276	1.00 OZ	
0.040	0.00194	148.5	0.424		
0.050	0.00230	132.8	0.593	2.50 OZ	
0.060	0.00276	121.2	0.779		
0.070	0.00322	112.2	0.982		
0.080	0.00368	105.0	1.200	1.50 OZ	
0.090	0.00414	99.0	1.432		
0.100	0.00460	93.9	1.677		
0.110	0.00506	89.5	1.935		
0.120	0.00552	85.7	2.205		
0.130	0.00598	82.4	2.436	1.00 OZ	
0.140	0.00644	79.4	2.778		
0.150	0.00690	76.7	3.081		
0.160	0.00736	74.2	3.394		
0.170	0.00782	72.0	3.717		
0.180	0.00828	70.0	4.050		
0.190	0.00874	68.1	4.392		
0.200	0.00920	66.4	4.743	2.00 OZ	
0.210	0.00966	64.8	5.104		
0.220	0.01012	63.3	5.472		
0.230	0.01058	61.9	5.850		
0.240	0.01104	60.6	6.235		
0.250	0.01150	59.4	6.629		
0.260	0.01196	58.2	7.031		
0.270	0.01242	57.2	7.440		
0.280	0.01238	56.1	7.857		
0.290	0.01334	55.1	8.282		
0.300	0.01380	54.2	8.714	4.00 OZ	

STOLEN FROM BILL MATHEWS' "FFFLIAR:

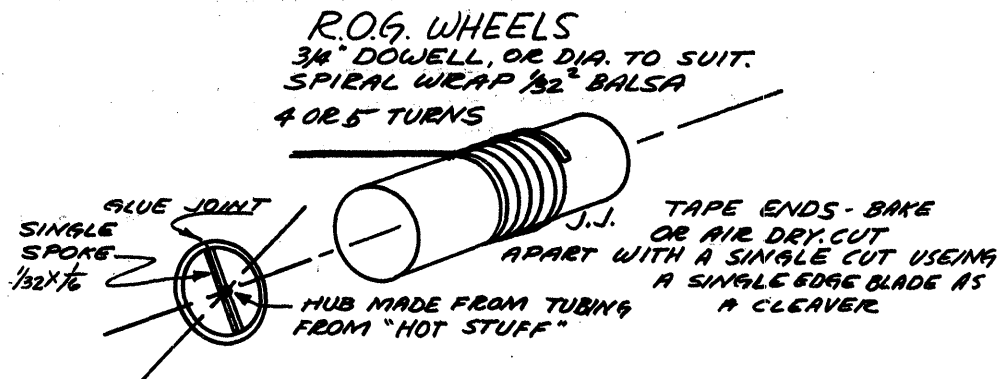
"... and the winner in hand launch glider is ..."



## HINTS AND KINKS

### Baby R.O.G. Wheels

Jim Jones suggests the construction shown below for lightweight A ROG wheels.

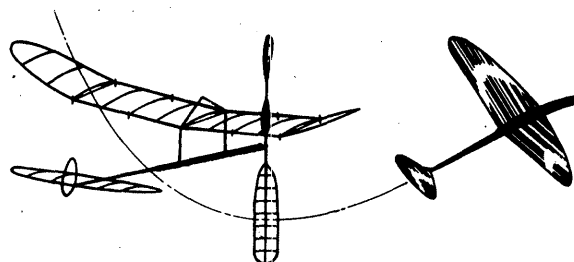


LENGTH →

THICKNESS  
↑

	14.00	14.25	14.50	14.75	15.00	15.25	15.50	15.75	16.00	16.25	16.50	16.75	17.00	17.25	17.50	17.75
.099	0.3638 1317.4 570 0.0644 1310.8	0.3649 1340.9 580 0.0655 1334.2	0.3660 1364.4 590 0.0667 1357.6	0.3672 1387.9 600 0.0678 1381.0	0.3683 1411.5 610 0.0690 1404.4	0.3694 1435.0 620 0.0701 1427.8	0.3706 1458.5 630 0.0713 1451.2	0.3717 1482.0 640 0.0724 1474.6	0.3729 1505.6 650 0.0736 1498.0	0.3740 1529.1 660 0.0747 1521.4	0.3751 1552.6 670 0.0759 1544.8	0.3763 1576.1 680 0.0770 1568.2	0.3774 1599.7 690 0.0782 1591.6	0.3786 1623.2 700 0.0793 1615.0	0.3797 1646.7 710 0.0805 1638.5	0.3808 1670.2 720 0.0816 1661.9
.100	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.101	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.102	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.103	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.104	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.105	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.106	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.107	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.108	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.109	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.110	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.111	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.112	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.113	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8
.114	0.3650 1317.8	0.3662 1340.8	0.3674 1363.8	0.3686 1386.8	0.3697 1409.8	0.3709 1432.8	0.3720 1455.8	0.3732 1478.8	0.3743 1501.8	0.3755 1524.8	0.3767 1547.8	0.3778 1570.8	0.3790 1593.8	0.3801 1616.8	0.3813 1639.8	0.3825 1662.8

# INDOOR



#9

## NEWS and VIEWS

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

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

### When Do I Renew?

Once upon a time, INAV was published regularly enough that it was easy to tell if you had missed an issue. In the past few years, this has not been the case. In order to bring coherence to my book-keeping, I used sequential dates on the issues, so you might receive the "Aug. '79" issue sometime in 1981. This confused everyone, understandably.

Thanks to the nagging of a lot of people, and to the genius of Ed Whitten, the problem was solved. Now, each issue has a consecutive number, and the current date appears on each issue of INAV. So, if you want to know when to renew, check the mailing label on your issue each month. For example, this is Issue #9 (see masthead above), and if your label has a "9" in the upper right-hand corner, you are due this month! It is helpful to me if you can check your label each month, and renew when appropriate. NIMAS membership is \$5 for 12 issues (U. S., Canada and Mexico). Subscribers from other countries must add \$1 postage surcharge for Seamaill delivery, or \$2 for Air Mail delivery.

### This Issue

I have resolved to make no more excuses--this issue is about three months later than I had hoped, and is being rushed into print to distribute the entry forms for ENART before it is too late to distribute them. I do feel that I have the obstructions almost cleared away so that more timely news-letter circulation is possible. I am working toward that end, and I have great amounts of excellent material just waiting for me to send it out.

### Is Anyone Out There?

At one time, there never was a problem with having news from the various areas of activity, plus news about contest schedules and FAI Team Selection Trials. During this entire Team Selection Program, I have received results only from one Local Trials. Also, AMA HQ sent me a summary of the current points standings of the various program entrants. I realize that the unreasonably erratic publication of INAV has been a turn-off for those who might have sent this material; in times past, the accumulation of such timely material has spurred me to get out an issue, and this prod has not been available. I just don't know if it *could* have worked this time, but it did in times past.

### International Ornithopter Postal Contest

Dave Erbach is sponsoring an international ornithopter postal meet to "promote the development of flapping wing model aircraft and to encourage the exchange of ideas about such models at the international level."

A full set of rules can be obtained from Dave, who lives at 1738 St. Mary's Road, #702, Winnipeg, Manitoba R2N 1G8, Canada, but here is a summary: Flights must be made and launched within 2 meters of the floor. Model size must not exceed 1000 square centimeters of supporting surface, and be powered by strands of extensible rubber only. Flights must be made between Dec. 1, 1982 and Dec. 1, 1983 at an event sanctioned by the Federation Aeronautique Internationale, or by any of its associated affiliates.

### Update on West Baden

The following information is the latest available on Indoor Week. First, the guest speaker for

the banquet after the United States Indoor Championships will be Bob Champine, who is well known to many INAV members. Bob was an engineering test pilot for NACA and NASA for many years, and has been a member of NIMAS almost since its inception. Second, Contest Board Coordinator Don Lindley will hold an open forum on indoor rules at 8 pm on Monday, June 13, 1983. Don places no restrictions on what kind of rules discussion the group can cover, but he expects that complaints will be accompanied by constructive suggestions for correction of the item under discussion.

John Martin has announced the 1983 GNATS, an event for Pistachio Scale (8" span or 8" overall length) models. This event will be part of the Fourth World Peanut Grand Prix, which will run for 24 hours beginning 7 pm, June 17, 1983. More info on ENART appears on page 4; copied from John Martin's exciting newsletter "The Hangar Pilot".

The schedule for flying at the United States Indoor Championships (sponsored jointly by NFFS and NIMAS) is as follows:

Sun. June 13 until noon - practice flying.  
12 noon to 6 pm - Easy B & Paper Stick  
Mon. June 14 - 8 am to 12 am--HLG  
12 am to 8 pm--Indoor Stick & F1D\*  
8 pm to ?? Indoor rules discussion  
Tues. June 15 - 7 am to 10:30 am--Manhattan & Bostonian Cabin  
10:30 to 3 pm--Pennyplane & Novice PP  
3 pm to 7 pm--F1D and Indoor Cabin  
7:30 pm to ?? Banquet  
Wed. June 15 - 8 am to 1 pm--All scale events  
1 pm--ENART begins

\*"At large" FAI Regionals; 6 2-hour rounds; 4 on 6/14, 2 on 6/15.

### 40 Minute Club Update

The listing below represents the latest version of the 40 Minute Club. These flights all represent the single best effort of the individual, with all flights taking place as part of an officially sanctioned contest.

Name	Country	Time	Class*			Year	Site
			1	2	3		
Richmond, Jim	USA	52:14	X			1979	Akron
Kowalski, Dick	USA	50:41	X			1976	Akron
Barr, Laurie	England	47:28		X		1982	Cardington
Richmond, Jim	USA	47:23		X		1980	Akron
Harlan, Ray	USA	47:13		X		1980	Akron
Rodensky, Erv	USA	45:50	X			1974	Santa Ana
Rieke, K.H.	W. Germany	45:40	X			1962	Cardington
Redlin, Carl	USA	45:17	X			1962	Cardington
Andrews, Pete	USA	44:59		X		1979	Akron
Randolph, Bob	USA	44:50	X			1972	Santa Ana
Mather, Clarence	USA	44:44	X			1974	Santa Ana
Hacklinger, Max W.	Germany	44:20	X			1961	Cardington
Kopecky, Ernie	USA	43:42	X			1963	Santa Ana
Banks, Cezar	USA	43:35		X		1981	Santa Ana
Cummings, Frank	USA	43:28	X			1963	Santa Ana
Atwood, Bill	USA	43:17	X			1963	Santa Ana
Plotzke, Ron	USA	42:53	X			1969	Lakehurst
Domina, Dan	USA	42:25		X		1979	Akron
Calliau, Larry	USA	42:02		X		1982	Santa Ana
Romak, Bud	USA	42:01	X			1965	Moffett



Romak, Bud	USA	41:59	X	1981	Akron
Richmond, Jim	USA	41:45	X	1969	Lakehurst
Gibbs, Bob	USA	41:35	X	1981	Santa Ana
Finch, Tom	USA	41:27	X	1963	Santa Ana
Champine, Bob	USA	41:23	X	1963	Santa Ana
Rodemsky, Erv	USA	41:23	X	1979	Akron
Stoll, Ed	USA	41:21	X	1963	Santa Ana
Mather, Clarence	USA	40:54	X	1974	Santa Ana
Draper, Ron	England	40:44	X	1962	Cardington
Pymm, Dave	England	40:40	X	1980	Cardington
Bilgri, Joe	USA	40:37	X	1965	Santa Ana
Nonaka, S.	Japan	40:36	X	1978	Cardington
Doig, Richard	USA	40:13	X	1981	Akron
Triolo, John	USA	40:06	X	1974	Lakehurst

\*Class 1 - FAI, FAI 90cm or AMA-D  
 2 - FAI 65cm - 1 gram  
 3 - FAI 65cm - no weight requirement

#### FAI INDOOR REPORT

##### Team Selection Results Summary

The data presented below represents the standing of the Team Selection entrants as of the end of last year, and was furnished by AMA Hq.

NAME	BEST LOCAL	BEST REGIONAL	1982 TOTAL
Pete Andrews	8.95	96.44	105.39
Cezar Banks	10.00	95.19	105.19
Dan Belieff	10.00	76.27	86.27
Bill Bigge	6.58		6.58
Larry Cailliau	8.52	100.00	108.52
Sal Cannizzo	10.00		10.00
Jack Carter		50.34	50.34
Rick Doig	10.00	91.91	101.91
Dan Domina	10.00	100.00	110.00
Mark Drela	10.00	93.75	103.75
Ron Ganser	9.19	81.57	90.76
Bob Gibbs	9.99	100.00	109.99
Lew Gitlow	8.16	64.54	72.70
Dave Hagen	10.00	95.47	105.47
Ray Harlan	10.00	87.89	97.89
Earl Hoffman	9.17	19.99	29.16
Bill Hulbert	10.00	96.31	106.31
Larry Loucka	8.92	40.88	49.80
Clarence Mather	10.00	83.35	93.35
Larry Mzik	7.40	56.41	63.81
Ron Obarski	10.00	98.42	108.42
Manny Radoff		85.19	85.19
Bob Randolph	10.00	100.00	110.00
Jim Richmond	10.00	100.00	110.00
D. Rigotti	8.53	51.56	60.09
Al Rohrbaugh	7.08	80.48	87.50
Bud Romak	10.00	99.74	109.74
C. V. Russo	5.70	79.38	85.08
Bill Shailor	9.06		9.06
D. Stevens	7.12	75.54	82.66
Ed Stoll	9.63	89.92	99.55
A. Tagliafico	8.52	86.05	94.57
J. Thurmond	8.70	82.98	91.68
Paul Tryon	9.78	90.18	99.96
Bill Tyler	8.96		8.96
Tom Vallee	9.94		9.94
Walt Van Gorder	10.00	90.76	100.76
Warren Williams	6.07		6.07

#### 1983 INDOOR NATS

##### A Big Week Planned

The following information came in just as this issue was being put to bed, and it looks as if those who can't make it to West Baden might have an opportunity for a Big Week also!

In addition to three days of official competition, (July 23-27) there will be five more days of unofficial indoor events. The huge Base Hangar at Westover Air Force Base will be available all of Nats week for all kinds of Indoor flying.

While the daily and hourly schedules have not been determined, the plan is to provide opportunities for anyone with any kind of indoor model to fly as much as possible, from morning till night. Even

indoor RC is expected--rubber and perhaps CO2 powered. In addition there will be lots of time for Peanuts, Hand Launched Gliders and Microfilm models.

Except for some impromptu (made up on the spot) contests that may develop, the activity for the last five days will be informal, with no fees involved. It will be mostly fly for fun. This will be the greatest opportunity yet for Indoor fliers to simply fly anything and everything.

The site lends itself well to lots of flying. It's big--200 ft. x 280 ft. floor area--and has an arched ceiling which provides a useful flying area of about 60 feet high in the center and about 40 feet on the sides. See page 122 of the June '83 issue of Model Aviation for a cross-section drawing.

Outdoor modelers please note: The Base Hangar is very close to the CL and RC areas at the Nats. For the first time in many years seeing Indoor will be very easy--just a short walk--and it will be happening all week long. There may never be a better chance to see and enjoy this form of modeling.

#### CONTEST CALENDAR

##### NEW JERSEY, Lakehurst

Dan Domina reports the following sessions are set up for Lakehurst #1: June 12, July 2-3 (FAI Regionals), July 17, Aug 14, and Oct. 2, 1983. Contact Dan at 6 Meadow Lane, East Windsor NJ 08520 for details and confirmation.

#### STATE OF THE ART

David Aronstein won a recent contest at Columbia University using the model shown on the plan page. This Bostonian has conventional construction except that the fuselage does not come together at the rear, but is open to allow for rubber access. This allows a five gram model to be ballasted to the required seven grams to counterbalance the long motor. The wing is a typical sparless indoor wing, covered on the bottom to form a "sort of" Ritz airfoil. Wheels are meat tray foam with hubs made from Hot Stuff tubing. Stab incidence is adjustable, and the motor was a 30" loop of 3/32" pirelli. The flight pattern is right-right, against torque, which helps get a lot of altitude from the power burst.

#### NFFS FREE FLIGHT HALL OF FAME

The following listed persons have been named to the Free Flight Hall of Fame:

##### REGINALD DENNY (DECEASED)

A modeler whose designs have been widely accepted both in the 1930's and 1980's. Who can forget his Dennymite engine?

##### JOHN GARD

A scientific designer of Wakefield and Nordic models. He has carried the theory of Aeronautics into practical application through his designs.

##### DON MCGOVERN

Was editor of Flying Models magazine for many years. A designer of truly unique models and designer / draftsman of more model plans than almost anyone else.

##### JOHN POND

Is the grandfather of the "Old Timers" activity throughout the world. He has been a pusher of Free Flight since the 1930's.

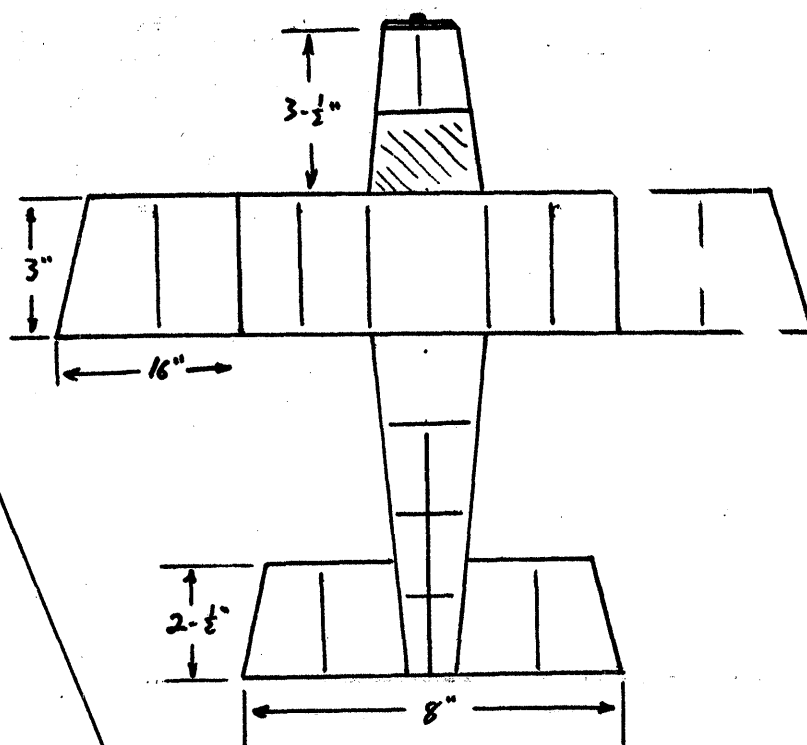
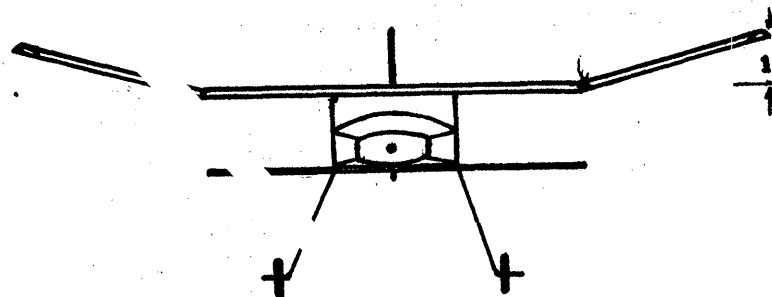
##### GEORGE REICH

Is a dedicated modeler whose desire to achieve championship status was realized fully in 1961, when he won the Wakefield Cup for the U.S.A.. He has developed many rubber powered designs that have been widely mimicked by other modelers.

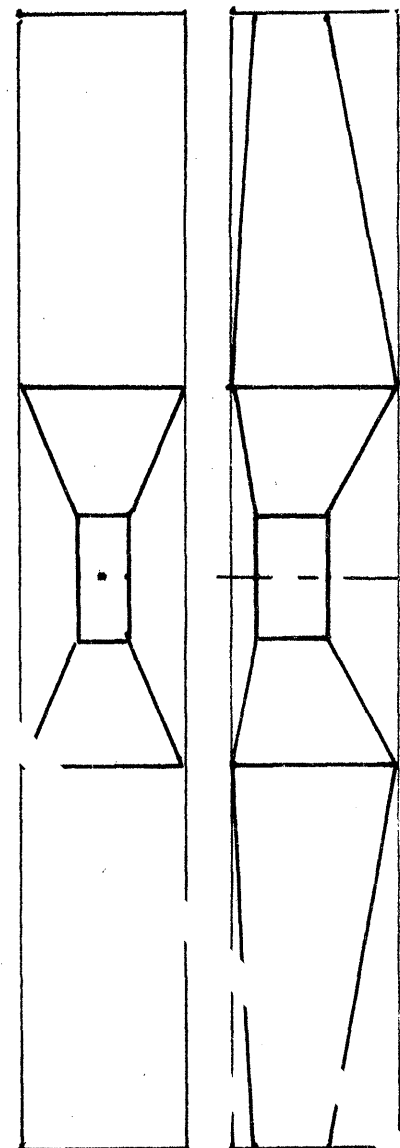
##### LAWRENCE SMITHLINE

Is a name remembered by the oldster of today. Larry's articles on model construction appeared in the old Flying Aces, Model Airplane News, and Air Trails of yesteryear. Many of today's modelers cut their modeling teeth on Larry's designs.

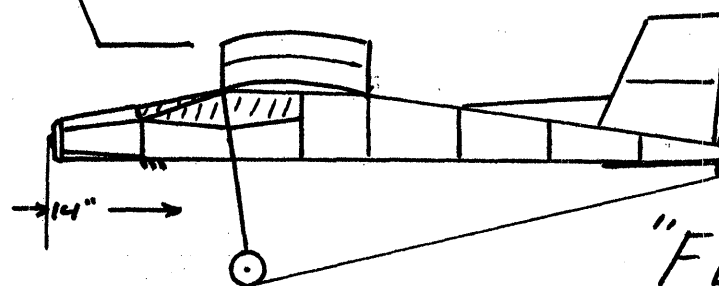
AIRFOIL - FULL SIZE



LANDING  
GEAR  
WIRE  
PATTERN



PROP BLANK  
FULL SIZE  
FROM 6" x 78" x 78"



"FLATS"

BOSTONIAN CABIN

BEST TIME: 3:00

WEIGHT: 5.7g.

DAVID ARONSTEIN

50 PASTURE LANE

POUGHKEEPSIE, N.Y. 12603

1/4 SIZE

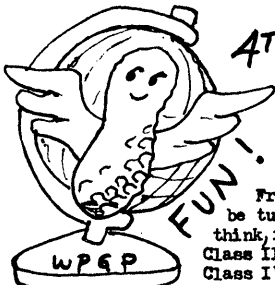
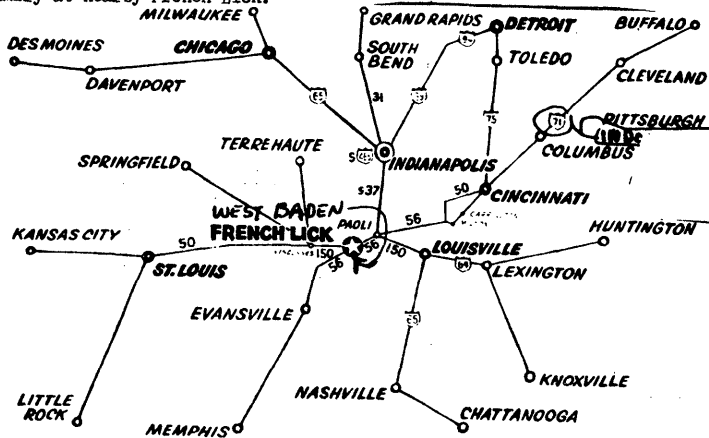
NORTHWOOD INSTITUTE, WEST BADEN INDIANA 812-936-9971

By now the entire indoor fraternity has been well informed of this annual gathering of the National Indoor Model Airplane Society sponsored by Miami Indoor Aircraft Model Association. I'll spare you all the verbiage about the first seven meets except to say I'm glad I was there. The fun, the fellowship, the flying, and the memories are the finest.

THE NIMAS RECORD TRIALS: Every type of indoor model is flown and recognized. This is 18 classes (12 AMA and 6 provisional or unofficial). This is an AMA category III site and a FAI category III site. MIAMA will have the necessary forms for AMA records. Flyers planning to go for FAI records should come prepared with the proper forms. Consult your AMA rule book. Beautiful pewter mugs (Trophies) will be awarded from 1st to 10th overall based on Index of Performance. This index is how well the best flight your model makes compares with the national record. In addition to Index of Performance mugs there will also be trophies for Easy B, Manhattan, Scale, and Peanut Scale. There are no limits on the number of classes you enter, and no limits on the number of flights you make. AMA rules apply to all classes except those here. Peanut is flown to the MIAMA rules and can be built to 13" span, or a 9" overall length.

MANHATTAN 46M  
\* BOSTONIAN, SPEED + PEANUT SPEED, KIT/PLAN SCALE

NORTHWOOD INSTITUTE: The Atrium is a domed room 98' high and over 200' in diameter. The rooms surround the Atrium, and meals are served in the adjoining dining room. These are dormitory rooms in an old college and not plush or air-conditioned. There is plenty of activity for the entire family at nearby French Lick.



## 4TH 24 HOUR WORLD PEANUT GRAN PRIX

At the end of indoor week is the peanut circus... an all night event from 7 PM Fri. June 17, to 7 PM Sat. Night. Planes must be turned in Thursday by 10 AM. We have new, and we think fairer classes this year. Class I, Monoplanes, Class II, Biplanes, Class III Ultralight aircraft, Class IV Unorthodox aircraft i.e. Triplanes, Quads, seaplanes, flying to etc, autogiros, helicopter and Class V Multiengined aircraft. We also have a separate class for Fikes & Lacey's. Our fee is \$5.00 per class, and proxy entries are limited to two entries. To do justice to your airplane we have discovered that two planes is about all your proxy flier can handle. Particularly since it might arrive damaged, untrimmed, and breaks the first three motors.

We urge that you get your models insured, because sorry to say some have not gotten home. (I lost 4 models once in a Model Builder proxy, but got \$80 out of the deal).

R.O.G. gets you 10 bonus seconds in flight so tell your proxy. Build to 13" span or 9" overall length. Re-entries are permitted, as are as many entries in each class as you want (Only your best effort counts). If you are present you may enter all 6 classes for \$20.00.

### INDOOR WEEK - PART III

NAME \_\_\_\_\_ COUNTRY \_\_\_\_\_ AMA NO. & CLASS \_\_\_\_\_  
ADDRESS \_\_\_\_\_

I WILL ENTER:

I WILL NOT BE THERE, SO I NEED A PROXY ENTRY FORM

IF YOU ARE A PROXY ENTRY; SEND THIS TO MIKE ARAK 10900 SW 61 CT.  
Miami Fla. 33156 USA

IF YOU ARE COMING SEND THIS TO DR JOHN MARTIN, 2180 Tigertail Ave  
Miami, Fla. 33133

Mike Arak will send additional information as to packing, and instructing your proxy pilot. ENTRY CLOSING JUNE 1

Fees listed above, \$5.00 per class, \$1.00 for each additional plane per class, Proxy entries should enclose return postage, and insure entry.

We assure you that your plane will be flown by a competent pilot, and, if you follow Mike's instructions you will probably get your little gem back all in one piece, and maybe a winner! Fame and fortune may be yours! We, of MIAMA, would like to thank all those enthusiasts out there that MAKE THIS A SUCCESS!

KIT/PLAN SCALE - See Martin Varney at event table Tue. June 14 10:30 A.M. Workshop 4:15 PM in 46319 (219) 423-6856

1. Scale, rubber powered models built from kits and/or published plans.
2. The prop and/or rubber may be changed to allow a better prop-power combination.
3. The nose block and thrust button may be altered to facilitate winding of the rubber motor, but the nose block must retain the shape, size, etc. of the original.
4. The tissue and color may be changed, but all pertinent markings must be on the airplane, for the era of the aircraft being modeled. No condenser paper or film coverings will be allowed.
5. Static judging documentation will be based on published plans only. Structure, craftsmanship, and fidelity of construction to the plan are the basis for the model's static score.
6. Photographs and 3-views are not needed or required.

The final score will be the total of the static and flight scores, and are as follows:  
A. Static score: 60 points max for fidelity of construction to the plan, 40 points max for craftsmanship.

B. Flight points: the time of the flight in seconds, the max time cannot exceed the total of the static score for that model, total flight score will be the best 2 out of 5 officials, an official will be any flight of 15 seconds or longer in the air, model launching will be R.O.G. indoors, hand launch outdoors (or at the discretion of the Contest Director).

### UNLIMITED RUBBER SPEED - C. SOTCH

1. Models must be rubber powered and propeller driven.
2. Models must start from an unassisted ROG launch from a 3 point sitting position.
3. Model to be timed for two complete laps around two pylons set 20 feet apart.
4. Flights will be disqualified if the model touches the pylon or ground after crossing the starting line.
5. The timer will stand in line with the two pylons. Timing starts when the model crosses the line after completing two laps.
6. Time pieces must be able to time to 1/100 of a second.
7. Shortest time for two complete laps determines the winner.
8. There will be no limit to the number of models or launches.

### PEANUT SPEED

The Unlimited Rubber Speed rules apply except for the following changes:

1. The models are limited to Peanut Scale models.
2. The models' scores will be the time in seconds for the model to fly laps.
3. The lowest time will determine the winner.

BY WED. JUNE 15 WE START THE 3 DAYS OF THE

## ENART

### 8TH NIMAS ANNUAL RECORD TRIALS

Well, it's back to West Baden indoor folks, but this may be our last time, we are sorry to say. I suppose that, by now, everyone knows that Northwood Institute is in its last year as a college. The future is cloudy!

If you have never attended, this may be your last opportunity to experience the unique atmosphere that is INDOOR WEEK. We are sure that nothing more need be said about this event, as the format is well known. There is plenty to do for the entire family in this area, besides watching toy airplanes, and the rates are very good. The food is fine, the rooms are only college dorms without air conditioning and other comforts, so bring what you may need.

Patch up your old models, and build a new one or two, and be prepared to do a lot of flying, and socializing.

The US Indoor Champs is a four & indoor meet with a quality field of competitors, the ENART is a record trials with trophies based on how well your best time compares with the National Record (Index of performance), and the Forth World Peanut Gran Prix is the world's only 24 hour model meet.

## ENTER BY JUNE 1

NAME \_\_\_\_\_ AMA Number \_\_\_\_\_ Age Class \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

I (We) will stay \_\_\_\_\_ nights (At \$10.00 per person per night)

I am entering the following events: (ALL indoor classes will be flown)

Bud Tenny is ENART CD. The MIAMA indoor Club is Sponsor.

Entry Fees: Open class \$10.00 plus \$3.00 for each additional event.

Junior/Senior \$5.00 plus \$2.00 for each additional event.

SEND fees, and lodging to: Dr. John Martin 2180 Tigertail Ave  
Miami Florida, 33133 USA

ENTRIES MUST BE IN BY JUNE 1, 1983, or a late fee of \$5.00 will be added. Meals are available on site. Banquet is \$10.00

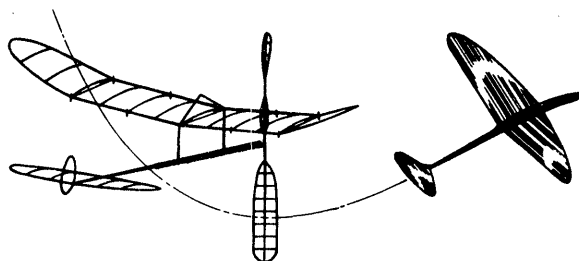
If you just enter glider, or only scale, the entry fee is \$5.00

## INDOOR WEEK PART II

# INDOOR

## NEWS and VIEWS

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



#10

### \*\*\*\*NATIONAL INDOOR MODEL AIRPLANE SOCIETY\*\*\*\*

#### This Issue

This issue contains all the flight results from Indoor Week at West Baden, except for the Kit-Plan Scale and Lo-Cal events. If Jim Miller and Martin Varney will send those, I'll be glad to run them.

The cover page on domestic issues is an announcement of a special scale book by Bill Hannan. There is a special pre-production price offer included, and Bill has extended this deadline by 10 days for NIMAS members. It looks like it will be a good reference volume!

#### New Materials and Products

Ray Harlan has a large quantity of very light plastic, half as thick as the lightest polycarbonate film (MicroLite). The weight saving is about 25% over MicroLite. It is polyester (Mylar), and can be trimmed easily with a hot soldering iron. Also, many microfilm covering techniques can be used with it. Ray sells a 10' long x 12.5" strip for \$8; his address is 15 Happy Hollow, Wayland MA 01778.

I have a brochure about boron filament which lists these attributes: strength to weight ratio-6.5 times as great as aluminum; stiffness to weight ratio 6 times that of tool steel. Also, this comparison was made: ".004" boron is comparable to .020" music wire." Note: Boron is toxic and the pieces are sharp, so should exercise special care in handling it. Model Research Laboratories (Curt Stevens), 24692 Nympha, Mission Viejo CA 92691, ph. 714-586-5779. 1/4 oz. (1000') of filament is sold on a 5.5" diameter spool for \$25 postpaid.

Bob Randolph, 25145 Lawton Ave., Loma Linda CA 92354, is selling a digital watch he says is perfect for modelers. It is a combination chronograph, calculator and alarm. The total range of features is impressive, so it should be a bargain for the \$15 postpaid that Bob is asking.

#### RESULTS FROM INDOOR WEEK

##### U. S. INDOOR CHAMPIONSHIPS

##### Junior Indoor HLG

Name	Times	Total
1. Paul Loucka	43.0	45.0
2. Aaron Markos	42.3	43.0
3. Dave Brown	27.0	25.0
4. Sean Capogreco	24.2	27.0

##### Senior Indoor HLG

1. Bryan Fulmer	57.2	57.6	114.8
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##### Open Indoor HLG

1. Bernie Boehm	67.6	68.4	136.0
2. Bob Larsh	57.0	59.0	116.0
3. Richard Pivitt	50.6	43.0	94.6
4. R. Powell	42.0	42.0	84.0
5. Ed Banks	40.0	43.0	83.0
6. Wally Simmers	41.4	41.0	82.4
7. J. Loribecki	39.2	39.0	78.2
8. Moe Whittemore	34.2	33.6	67.8
9. R. Lane	33.4	32.2	66.0

##### Open FAI Stick

1. Larry Cailliau	35:32	37:51	73:23
2. Cezar Banks	34:40	34:46	69:26
3. Jim Richmond	35:10	33:27	68:37
4. Stan Chilton	32:41	32:52	65:33
5. Ron Higgs	32:51	31:06	63:57
6. Richard Doig	31:08	32:19	63:27
7. Walt Van Gorder	31:28	31:13	62:41
8. Ron Ganer	32:10	30:27	62:37
9. Bill Hulbert	31:28	31:02	62:30
10. Paul Tryon	29:24	32:29	61:53
11. Mike Thomas	28:40	28:52	57:32
12. Ed Stoll	26:05	30:02	56:07
13. Larry Loucka	25:57	24:34	50:31
14. Dan Belieff	24:13	24:09	48:22

15. Tom Norell*	20:47	20:46	41:33
16. Jack McGillivray	14:47	26:18	41:05
17. Jeff Annis	16:51	21:36	38:27
18. Dick Ganslen	19:59	13:55	33:54
19. Roy Kerr	22:37	7:12	29:49

##### \*Senior Class

##### Jr./Sr. Indoor Stick

1. Tom Norell	21:13
2. Mike Clem	21:13
3. Paul Loucka	20:19

##### Open Indoor Stick

1. Rick Doig	32:41
2. Stan Chilton	34:49
3. Dick Obarski	32:41
4. Dan Belieff	28:30
5. Bill Hulbert	25:47
6. Gilbert Graunke	25:43
7. Dave Erbach	25:13
8. Jeff Annis	23:52
9. Larry Loucka	22:29
10. Ed Stoll	22:06
11. Dick Ganslen	20:55
12. Jim Richmond	20:27

##### Jr./Sr. Paper Stick

1. Paul Loucka	19:04
2. Mike Van Gorder	17:42
3. Robert Skrijanc	12:38
4. Aaron Markos	12:00
5. Tom Norell	11:12
6. Dave Brown	6:11

##### Open Paper Stick

1. Jim Richmond	26:57
2. Stan Chilton	24:26
3. Dick Obarski	24:40
4. Dan Belieff	22:23
5. Richard Doig	22:03
6. Ron Ganer	21:01
7. Larry Loucka	19:40
8. Jeff Annis	18:09
9. Gordon Wisniewski	15:37
10. Dave Erbach	13:53
11. Carl Fries	13:36
12. Tony Sutter	12:11
13. Jerry Skrijanc	10:08
14. Dick Ganslen	9:08
15. Ed Stoll	4:34
16. R. Powell	2:41

##### Open ROG Cabin

1. Rick Doig	25:12
2. Ron Ganer	24:21
3. Dan Belieff	23:38
4. Tony Sutter	16:46

##### Junior Novice Pennyplane

1. Paul Loucka	10:11
2. Brian Varney	7:52
3. Dave Brown	6:22
4. Aaron Markos	4:30

##### Senior Novice Pennyplane

1. Mike Van Gorder	11:17
2. Bryan Fulmer	6:40

##### Open Novice Pennyplane

1. Chuck Markos	12:05
2. Jim Clem	11:51
3. Cezar Banks	11:50
4. Bernie Boehm	11:24
5. Jim Jones	11:21
6. Doug Barber	11:13
7. Walt Van Gorder	11:10
8. Lester Garber	10:47
9. Tony Sutter	10:39
10. Larry Loucka	10:33
11. Terry Mrakava	9:59

12. Del Ogren	9:48
13. Carl Fries	9:00
14. Joe Hervat	8:50
15. Tony Italiano	8:45
16. Ed Banks	8:15
16. John Voorhees	8:15
18. Jim Thornberry	8:02
19. Gordon Wisniewski	7:29
20. Moe Whittemore	7:19
21. Otto Curth	7:00
22. Bill Bigge	5:06
23. Bill Franklin	3:09

#### Junior Pennyplane

1. Jeni Jaecks	12:36
2. Paul Loucka	10:26
3. Dave Brown	8:35
4. Robert Skrijanc	6:54

#### Senior Pennyplane

1. Mike Van Gorder	11:12
2. Tom Norell	10:39

#### Open Pennyplane

1. Dennis Jaecks	16:00
2. Gordon Wisniewski	13:16
3. Walt Van Gorder	12:24
4. Bob Larsh	11:26
5. Jerry Skrijanc	11:05
6. John O'Leary	10:45
7. Bob Oppegard	10:41
8. John Voorhees	10:29
9. Dick Pivitt	10:13
10. Wally Simmers	9:55
11. Tony Sutter	9:01
12. Tony Italiano	8:53
13. Doug Barber	8:49
14. Otto Curth	8:05
15. Walt Everson	7:52
16. Don Steeb	7:50
17. Bob Butsch	7:03
18. Roger Lane	6:59
19. Don Block	6:56
20. Moe Whittemore	6:13
21. Bill Franklin	0:11

#### Jr./Sr. Easy B

1. Mike Van Gorder	16:23
2. Aaron Markos	12:45
3. Tom Norell	12:43
4. Bryan Fulmer	12:25
5. Mike Clem	11:08
6. Dave Brown	9:20
7. Robert Skrijanc	4:33

#### Open Easy B

1. Chuck Markos	18:46
2. Walt Van Gorder	18:20
3. Cezar Banks	18:08
4. Jerry Skrijanc	17:25
5. Roy Kerr	16:50
6. Gordon Wisniewski	15:46
7. Dick Obarski	15:39
8. Jim Richmond	15:32
9. Dave Erbach	15:31
10. Jack McGillivray	15:01
11. Doug Barber	13:58
12. Ken Groves	12:59
13. R. Powell	12:41
14. Tony Sutter	12:37
15. Jim Clem	12:36
16. Bob Clemens	12:09
17. Don Steeb	11:58
18. Rick Doig	11:52
19. Jim Pulley	11:32
20. Carl Fries	11:07
21. Tony Italiano	11:00
22. Richard Pivitt	10:57
23. Bob Oppegard	10:45
24. Dick Ganslen	10:34
25. Otto Curth	10:31
26. Terry Mrakava	10:24
27. Wally Simmers	10:20
28. Joe Hervat	9:25
29. Walt Everson	8:45
30. John Voorhees	8:42
31. Jeff Annis	7:16
32. Millard Wells	6:13
33. Stan Chilton	6:02
34. W. Franklin	5:40
35. Jim Thornberry	5:22
36. Moe Whittemore	5:08
37. Lester Garber	4:00
38. John O'Leary	1:43

#### Jr./Sr. AMA Scale

Name	Static	Flying	Score
1. Dave Brown	89	54.5	143.5

#### Open AMA Scale

1. Ed Stoll	95	81.5	176.5
2. Bob Siedentoph	84	88.5	172.5
3. Tony Sutter	89	82	171
4. Jack McGillivray	88	76.5	164.5
5. Butch Hadland	90	67	15
6. Mike Arak	83	56	139
7. Don Steeb	80	54	134
8. John Martin	54	78.5	132.5
9. Jim Miller	81	48.5	129.5
10. Ken Graves	76	51.5	127.5
11. Phil Cox	86	25	111
12. Millard Wells	49	51.5	100.5

#### Jr./Sr. Peanut Scale

Name	Static	Flying	Score
1. Bryan Fulmer	56	76	132
2. Aaron Markos	60	58	118
3. Dave Brown	56	61	117

#### Open Peanut Scale

1. Jack McGillivray	77	134.4	211.4
2. Lester Garber	53	130	183
3. Ken Groves	82	100	182
4. Lester Garber	64	116	180
5. Keith Fulmer	58	120	178
6. Chuck Markos	93	66	159
7. Bob Clemens	83	66	149
8. Jim Miller	68	72	140
9. Phil Cox	69	56	125
10. Don Steeb	55	68	123
10. Walt Everson	68	55	123
12. Phil Cox	95	20.5	115.5
13. Roger Lane	53	47	100
14. Don Steeb	62	29	91
15. Peter Baker	40	46	86
16. John Martin	20	59.4	79.4
17. Millard Wells	50	28	78
18. Bon Block	42	34.5	86.5
19. Dale Goff	32	43	75
20. L. Armstrong	42	29.5	71.5
21. L. Armstrong	42	29	71
22. Mike Arak	42	19.2	61.2

#### Open Manhattan

Name	Time
1. Walt Van Gorder	9:50
2. Chuck Markos	8:56
3. Hardy Brodersen	7:21
4. Ron Ganser	7:20
5. Larry Loucka	7:13
6. Ken Groves	6:07
7. Bob Larsh	5:55
8. Moe Whittemore	5:48
9. Don Steeb	4:24

#### Open Bostonian

Name	Charisma	Flight	Score
1. Jack McGillivray	1.2	2:36	566.4
2. Dave Erbach	1.1	7:25	489.5
3. Ken Groves	1.2	6:03	477.6
4. Bob Clemens	1.2	6:20	456.0
5. Terry Mrakava	1.2	6:03	435.6
6. Millard Wells	1.2	5:26	391.2
7. Rex Powell	1.2	5:02	362.4
8. Don Steeb	1.1	5:27	359.7
9. Tony Sutter	1.1	5:21	353.1
10. John Loribecki	1.1	4:13	353.1
11. Martin Varney	1.0	4:37	277.0
12. Bob Butsch	1.2	2:28	177.6
13. Roger Lane	1.1	2:36	171.6
14. Del Ogren	1.2	1:32	110.4

#### Unlimited Rubber Speed

Name	Time
1. Mike Arak	8.21
2. Frank Kieser	10.78
3. Chuck Markos	10.93

#### Peanut Speed

1. Martin Varney	9.87
2. Butch Hadland	10.98

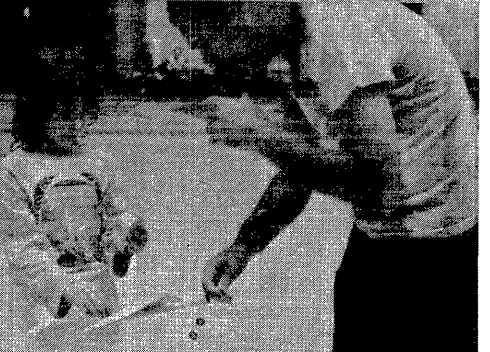
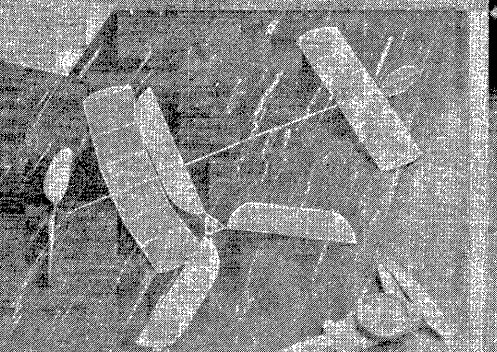
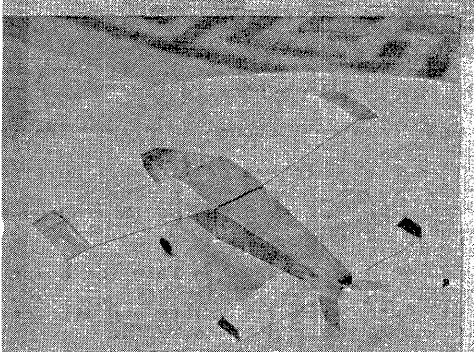
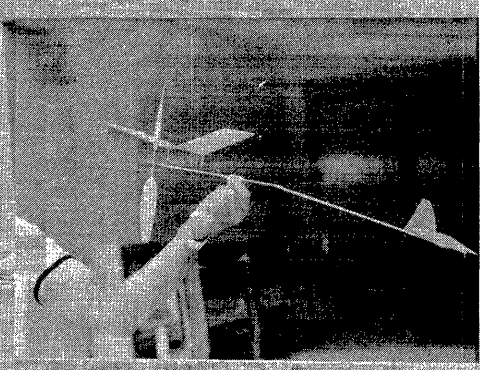
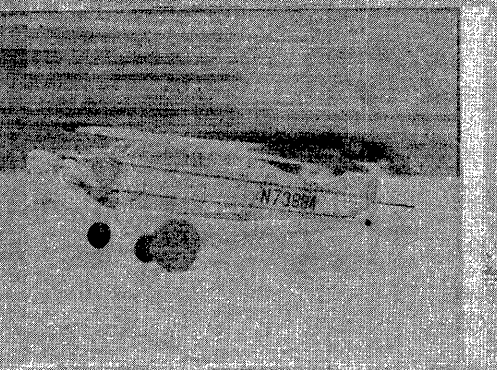
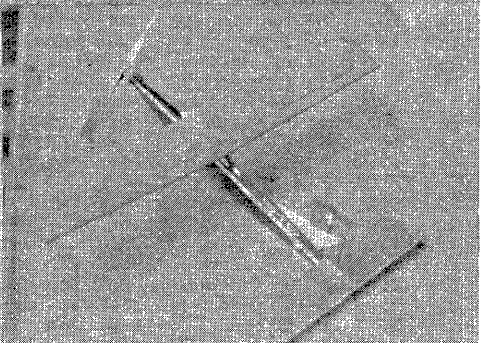
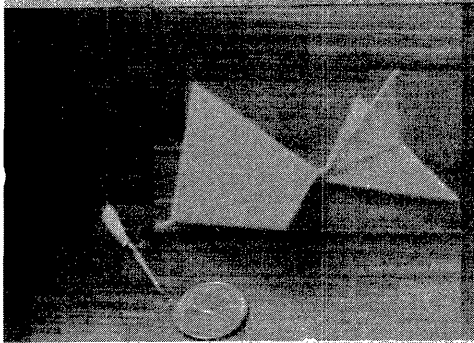
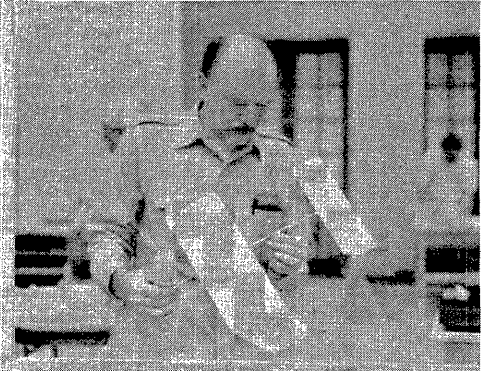
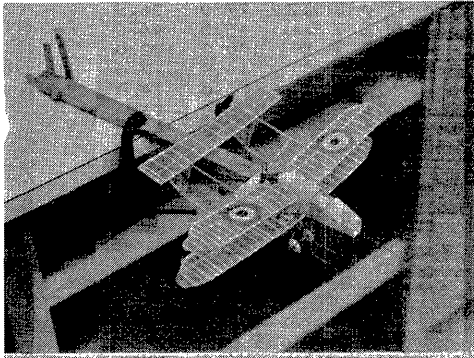
#### RESULTS FROM INDOOR WEEK

#### Eighth NIMAS Annual Record Trials

#### NIMAS Index

Name	Class	Time	Score
1. Larry Loucka	Open Autogyro	9:03	1.248
2. Mike Van Gorder	Sr. Novice PP	11:41	1.118
3. Aaron Markos	Jr. Novice PP	12:24	1.107
4. Mike Van Gorder	Sr. Easy B	16:27	1.067
5. Stan Chilton	Open Easy B	22:01	1.060
6. Paul Loucka	Jr. Novice PP	11:31	1.025
7. Dennis Jaecks	Open Pennyplane	15:17	1.017
8. Jeni Jaecks	Jr. Pennyplane	12:05	.994
9. Walt Van Gorder	Open Easy B	19:26	.938





10. Chuck Markos	Open Novice PP	11:55	.926
11. Rick Doig	Open Cabin	23:17	.920
12. Walt Van Gorder	Open Novice PP	11:44	.910
13. Jim Clem	Open Novice PP	11:40	.906
14. Ron Ganster	Open Cabin	22:38	.894
15. Dick Obarski	Open Easy B	17:27	.840
16. Rick Doig	Open Stick	37:33	.839
17. Dick Obarski	Open Paper	22:56	.835
18. Walt Van Gorder	Open Pennyplane	12:15	.815
19. Stan Chilton	Open Paper	21:44	.790
20. Dick Obarski	Open Stick	34:24	.769
21. Doug Barber	Open Easy B	15:01	.725
22. Dick Ganslen	Open FAI Stick	24:53	.630
23. Walt Van Gorder	Open Paper	16:00	.583

#### AMA Scale (16 entries; 12 flew)

Name	Model	Static	Flying	Score
1. Ken Groves	Fike	78	90	168
2. Jack McGillivray	SE-5	78	80.5	158.5
3. John Martin	Martin MO-1	59	89.5	148.5
4. Phil Cox	Buttercup	81	65	146.0
5. Bob Siedentoph	Kalinin K-4	70	73.5	143.5
6. Chuck Markos	J-4	70	72.5	142.5
7. Tony Sutter	14-bis	73	69.5	142.5
8. Ken Groves	Sopwith Tripe	69	63.5	132.5
9. Don Steeb	Vagabond	65	60.5	125.5
10. Lloyd Wood	Waco SRE	49	49	124.0
11. Lloyd Wood	Sop. Tabloid	86	27.5	113.5
12. Mike Arak	Vagabond	77	35.5	112.5

#### Peanut Scale (17 entries; all flew)

Name	Model/Static	Flying
1. Ken Groves	Fike/251.2	125 + 130
2. Lester Garber	Fike/221.0	125 + 128
3. Jack McGillivray	Lacey/210.0	143 + 139
4. Bob Clemens	Cloudbuster/394.2	58 + 57
5. Chuck Markos	Tiger Moth/369.7	60 + 59
6. Bob Clemens	Currie Wot/312.7	63 + 68
7. Don Steeb	Lacey/196.0	91 + 93
8. Don Steeb	Skyrider/194.0	105 + 103
9. Aaron Markos	Lacey/211.2	54 + 63
10. John Martin	14-bis/245.0	33 + 39
11. Mike Arak	Vagabond/?	18 + 18
12. Millard Wells	Wee Bee I/96.0	128 + 121
13. Walt Everson	Bucker/199.5	34 + 32
14. Millard Wells	Wee Bee II/108.0	68 + 81
15. Walt Everson	Waco/159.2	50 + 52
16. Brian Varney	Cougar/129.5	58 + 56
17. Ed Tolkiekis	Pietenpol/134.7	33 + 35

#### CD2 Scale (7 entries; 5 flew)

Name	Model	Static	Flying	Score
1. Phil Cox	J-3 Cub	88	90	178
2. Butch Hadland	Lacey	87	90	177
3. Bob Siedentoph	Stinson	86	90	176
4. Bob Clemens	Farman	84	90	174
5. Tony Sutter	1911 Cessna	79	31.5	110.5

#### Manhattan Cabin

Name	Time
1. Larry Loucka	10:04
2. Chuck Markos	8:57
3. Walt Van Gorder	8:37
4. Tony Sutter	6:45
5. Ken Groves	5:44

#### Bostonian Cabin

Name	Charisma	Time	Score
1. Jack McGillivray	1.15	2:40	3.06
2. Bob Clemens	1.19	2:14	2.613
3. Ken Groves	1.16	2:10	2.513
4. Robert Baldwin	1.11	2:07	2.349
5. Phil Cox	1.09	2:01	2.198
6. Don Steeb	1.16	1:49	2.107
7. Del Ogren	1.07	0:32	.57

#### Jr. Unlimited Circle Speed

Name	Time (Sec.)
1. Brian Varney	5.25
2. Susan Arak	14.54

#### Open Unlimited Circle Speed

1. Mike Arak	7.36
2. Chuck Markos	9.01

#### Peanut Speed

1. Butch Hadland	8.67
------------------	------

#### FOURTH WORLD PEANUT GRAND PRIX

#### Class I Monoplanes - 27 entries, 23 flew

Name	Model/Static	Flying
1. Jim Miller	Itoh/232	88.0
2. Bob Clemens	Mosquito/319.5	53.0
3. Jim Miller	Itoh #2/171.5	110.0
4. Dave Kiefer	Vagabond/269.5	48.5
5. Lubomir Koutny	Kingfisher/253.4	46.8
6. Bill Hunter	Zero/333.0	13.0

7. Millard Wells	Beardmore/108.0	144.0
8. Paul McIlrath	Caudron/140.0	71.0
9. Ross Jahnke	Cougar/132.0	78.0
10. John Martin	Hydravion/279.7	27.0
11. Walt Everson	Found/216.8	46.0
12. Millard Wells	WeeBee/108.0	130.0
13. Mike Arak	Bieriot/285.0	14.9
14. Brian Varney	Cougar/129.25	70.0
15. Walt Everson	Taylorcraft/192.0	38.0
16. Bill Criss	Comper Swift/168.0	39.8
17. Bob Clemens	Found/168.0	70.0
18. Millard Wells	F. Mosquito/120.0	55.0
19. Pete Baker	Found/81.0	62.8
20. Ed Toleikis	Pietenpol/134.75	37.5
21. Pete Baker	BD-4/88.0	51.6
22. Dale Goff	Cub/130.0	26.0

#### Class II Biplane - 18 entries, 16 flew

1. Chuck Markos	Tiger Moth/369.75	70.5
2. Jack McGillivray	SE-5/335.75	104.0
3. Bob Clemens	Currie Wot/312.75	69.0
4. Tony Sutter	14-bis/240.0	47.0
5. Dave Kiefer	Pitts/330.0	35.2
6. John Martin	14-bis/245.0	37.7
7. Mike Arak	Nieuport/400.5	5.0
8. Ross Jahnke	Halberstadt/217.0	47.5
9. Ken Groves	Tabloid/311.94	34.4
10. Paul McIlrath	1930 Laird/191.2	58.8
11. Walt Everson	Waco E/159.2	72.0
12. John Martin	Nakajima/178.8	35.5
13. Bill Criss	Stearman PT/238.0	7.3
14. Chriss Scott	Martinsyde/216.2	27.0
15. Randy Sicksbert	Jenny/210.2	23.0
16. Walt Everson	Jungman/199.5	41.8
17. Millard Wells	Kawasaki/144.0	36.0

#### Class III Ultralite - 4 entries, all flew

1. Bob Clemens	Cloudbuster/394.2	55.0
2. Don Steeb	Skyrider/194.0	96.0
3. John Martin	Boxmoth/224.0	34.0
4. Aaronstein	J262/114.0	31.2

#### Class IV Unorthodox - 8 entries, 7 flew

1. Lloyd Wood	Float Tabloid/395.7	42.4
2. Ken Groves	Sopwith Tripe/255.5	57.4
3. Dave Kiefer	Sopwith Tripe/332.5	33.4
4. Lubomir Koutny	Kingfisher/253.4	46.0
5. Millard Wells	Curtis Tripe/214.5	45.0
6. Tony Sutter	Annular Ring/209.0	50.0
7. John Martin	Hydravion/279.7	23.6

#### Class V Multi-engine - 3 entries, 3 flew

1. J. McGillivray	Yugoslav 45-T/272	83.0
2. Lloyd Wood	Boeing B-9/256.0	20.0
3. John Martin	Bloch MB/200.0	27.4

#### Class VI Lacey/Fike - 12 entries, 9 flew

1. Ken Groves	Fike/251.0	131.1
2. Jim Miller	Lacey/234.0	125.0
3. Chuck Markos	Lacey/276.0	86.4
4. Butch Hadland	Lacey/304.0	69.0
5. Jack McGillivray	Lacey/210.0	169.0
6. Lester Garber	Fike/221.0	117.0
7. Dave Kiefer	Lacey/227.5	54.5
8. Don Steeb	Lacey/196.0	92.0

#### THE PHOTO PAGE

##### Top Row

1. A D Scout (Blackburn) by Millard Wells. A really nice model which probably flies better than the real one!
2. Don Lindley launches his Indoor Payload model--a new class promoted by Del Ogren and Don.
3. Cezar Banks got a new record (13:05) in Novice Pennyplane.

##### Second Row

1. Bob Andrews and Butch Hadland did all the scale judging.
2. Tony Sutter's Annular Ring Peanut.
3. Butch Hadland shows off his Fokker Peanut Speed model.

##### Third Row

1. What will it be when it grows up? This miniature by Dale Goff was inspired by the Pistachio Scale models.
2. Tony Sutter's CD2 model made many beautiful flights.
3. Lo-Cal--semi-scale models with a profile fuselage.

##### Fourth Row

1. Brian Varney's Cougar flew well enough to place 14th in a field of mostly adults.
2. Butch Hadland's Lacey Pistachio was really well built and flew as well as many regular Peanut Scale models.
3. Doug Barber's European style Easy B topped 15 minutes in spite of its 1.75 gram weight.

##### Fifth Row

1. Frank Scott finished this Bostonian too late for competition, but it is attractive and flies well.
2. Fred Weitzel's G-III Autogyro was a lively and attractive performer as built and flown by Millard Wells.
3. Mike Arak and Susan wind Mike's Circle Speed model which won the Open class event.



# SCRAPBOOK of SCALE

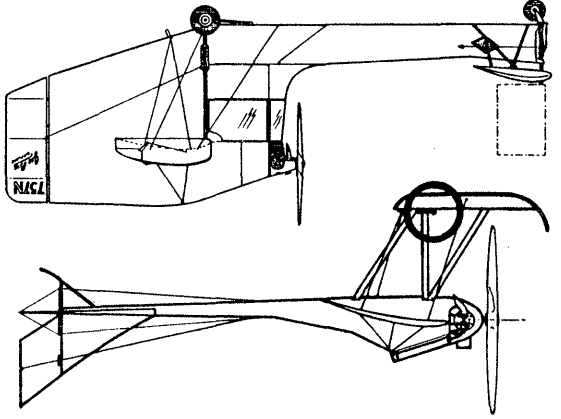
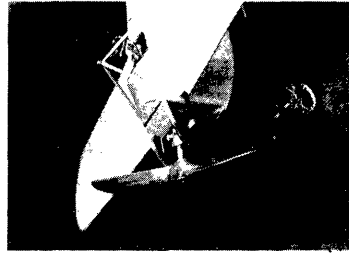
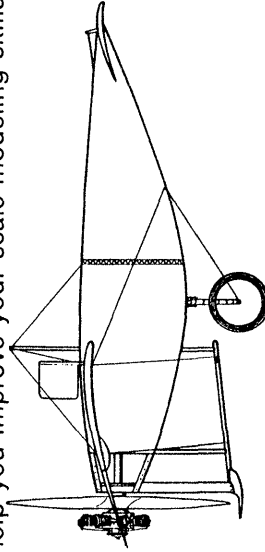
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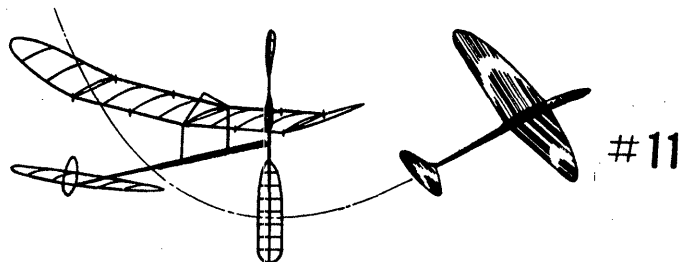
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# INDOOR



## NEWS and VIEWS

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

### \*\*\*\*NATIONAL INDOOR MODEL AIRPLANE SOCIETY\*\*\*\*

#### This Issue

There are a few comments about Indoor Week which wouldn't fit last time. I will also be trying to print the good material which has stacked up lately, in this issue and in issues to come. There are new design trends and new materials, and I would like to get application data and techniques on them. I hope that anyone who is working with the new materials will be willing to share their ideas.

#### What's Missing?

So far, there hasn't been *one single word* from anyone about the NATS, except some side comments relayed during phone calls. If anyone cares, I'll be happy to run NATS results, but I have to have the data in order to publish it! There *was* an Indoor NATS this year, wasn't there?

#### NOTES FROM INDOOR WEEK

All I have from the Indoor Champs are a few second-hand comments. It was noted that Larry Cailliau did some very good steering, along with having innovative steering equipment which mini-mized the chance of catching the prop. I didn't get a clear idea of this, Larry, so how about a report? Also, Dave Erbach flew a startlingly light ornithopter to a time which I heard was over eight minutes; unfortunately, the data left with CD Tony Italiano before I arrived.

ENART flying was the usual mixed bag of flying in a number of events, but the Circle Speed event was quite interesting to me. Although Martin Varney's Folkerts Racer didn't repeat its win of the same event at the Indoor Champs, Brian's elegantly simple model posted a higher time than anyone else. I can see that this event could be a real challenge, if someone wanted to build a special model to fit the rules. In particular, if the event rules were somewhat more limiting in the amount of power allowed, I can see a real battle of aerodynamic design shaping up. That sort of challenge is very interesting to me—how about you? What started me thinking about power reduction was the collision between Martin's Folkerts and Eddie Capogreco's nose. It only left a small cut, but this was too close to the eyes for anyone's comfort! A lower potential speed and/or lower wing loading would have reduced the impact and increased the dodging time. Butch Hadland's Peanut Speed model was to his usual fine standards, and was very well controlled as it zipped around the balloon pylons in quite good time without zooming drastically.

The single outstanding thing which I remember about the Grand Prix was how well the Pistachio models flew, and Butch's Lacey was head and shoulders above even many of the regular Peanut models in flying ability.

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#### INTERNATIONAL CLASS EASY B?

The rules listed below will be considered at the Fall meeting of CIAM. Unfortunately, the deadline is past for input on these rules, but at least you have some idea of what is being proposed.

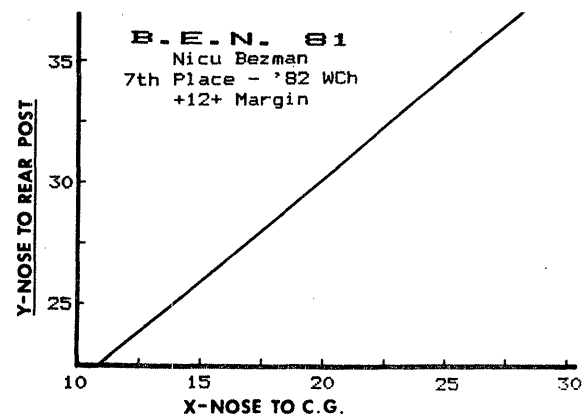
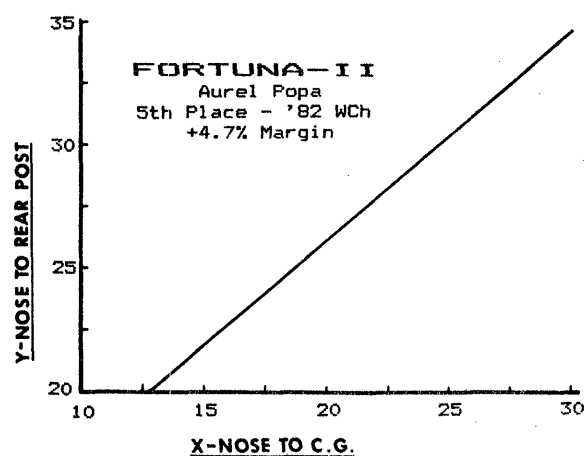
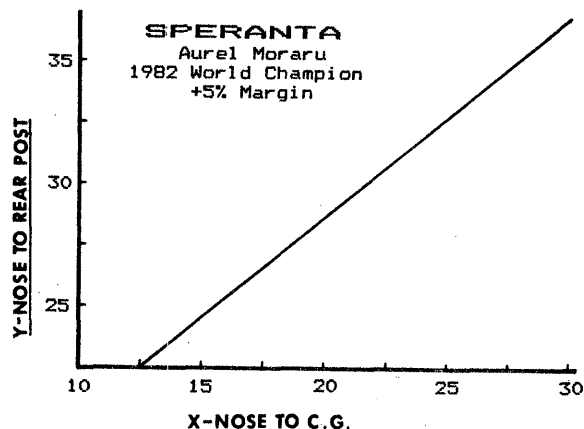
2.4.2 Before "Characteristics of Indoor Models", add: "a".

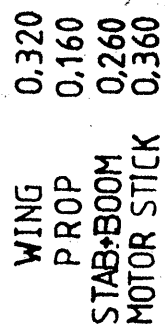
Add in the second paragraph:

b. Characteristics of E.Z.B. Models: The wingspan is maximum 45 cm, and the wing chord maximum 7.5 cm. The length of the motor stick is maximum 23 cm. The weight of the model without rubber motor shall be no less than 1.2 grams. Flying surfaces shall be rectangular and no wire or wood bracing may be used. The covering of the surfaces will be anything but microfilm. A tubular fuselage is not allowed.

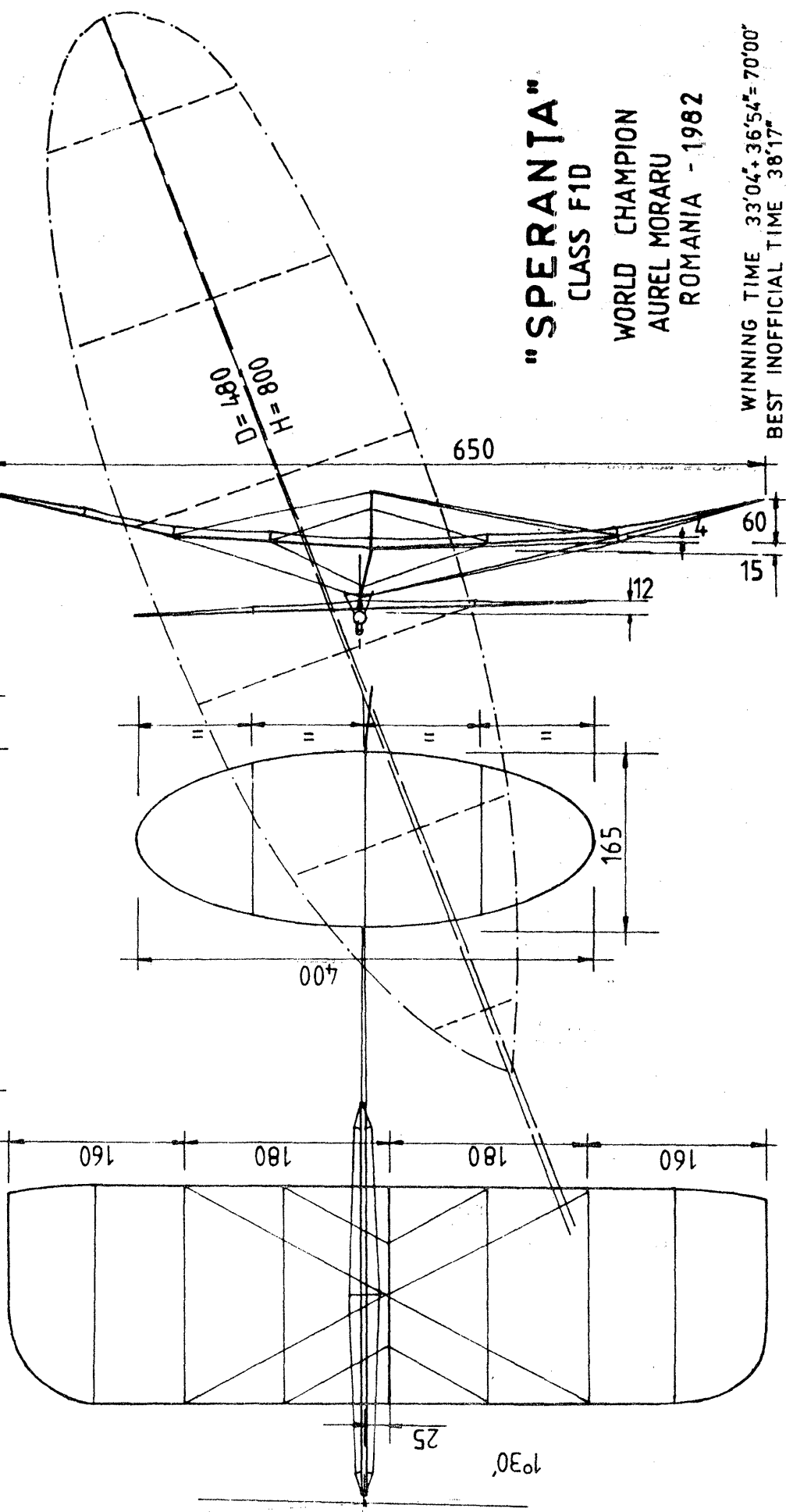
#### STATE OF THE ART

This issue highlights the models of the Romanian Team; they won the 1982 Indoor World Championship. I have had these three views a while, and decided on the multiple presentation. The CMDS charts appear below; I hope to resume presenting these with each three view.





RUBER = 15g/m 2160 tr.



**"SPERANTA"**  
**CLASS F1D**

**WORLD CHAMPION**

**AUREL MORARU**

ROMANIA - 1982

WINNING TIME 33'04" + 36'54" = 70'00"  
BEST INOFFICIAL TIME 38'17"

WING	Q32 - Q34
STAB+BOOM	Q22 - Q24
PROP	Q14 - Q16
MOTOR STICK	Q34 - Q36

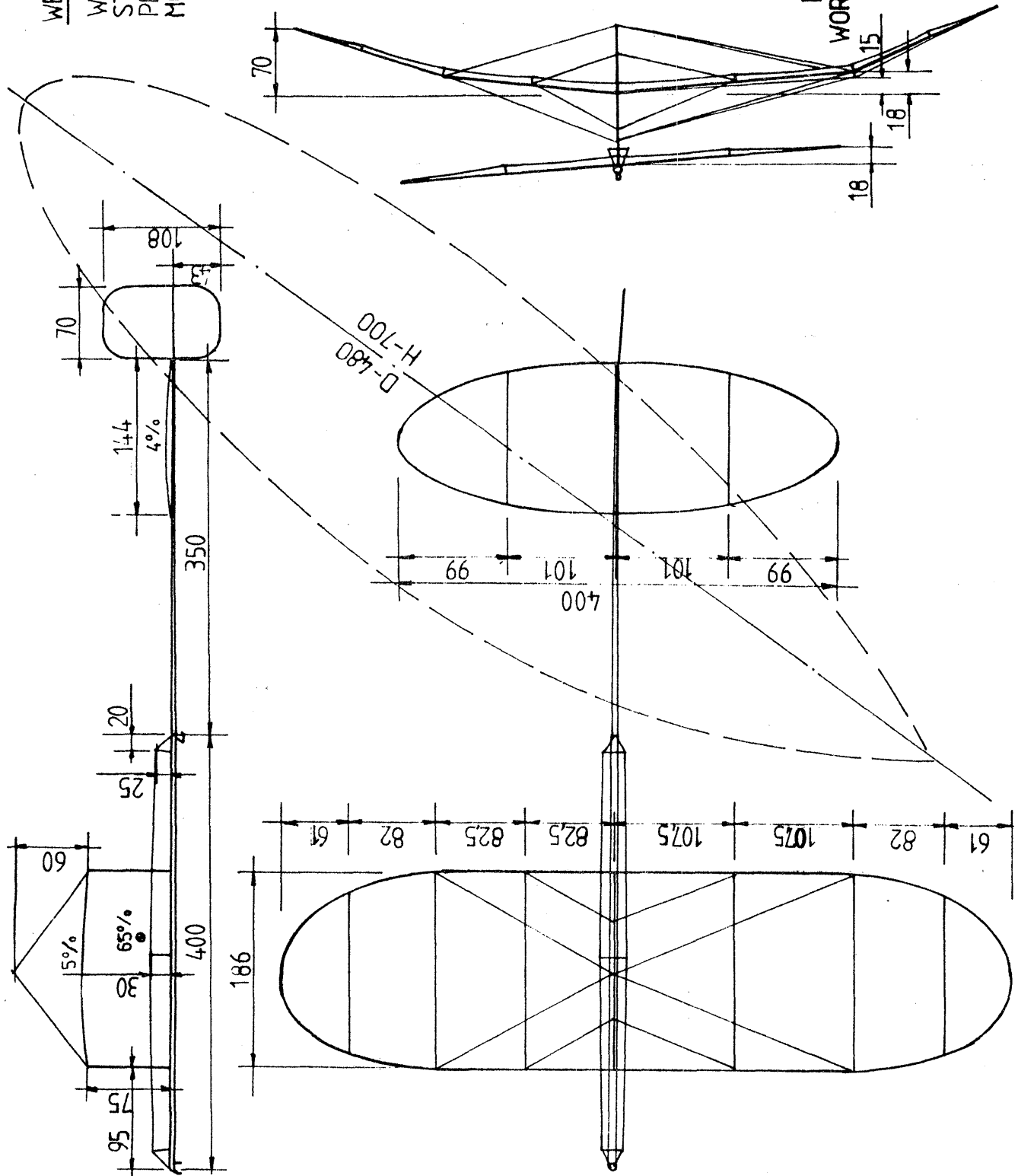
RUBER 1.3-1.4 g/m

## FORTUNA - II.

FID. - AUREL POPA  
WORLD CHAMPIONSHIPS

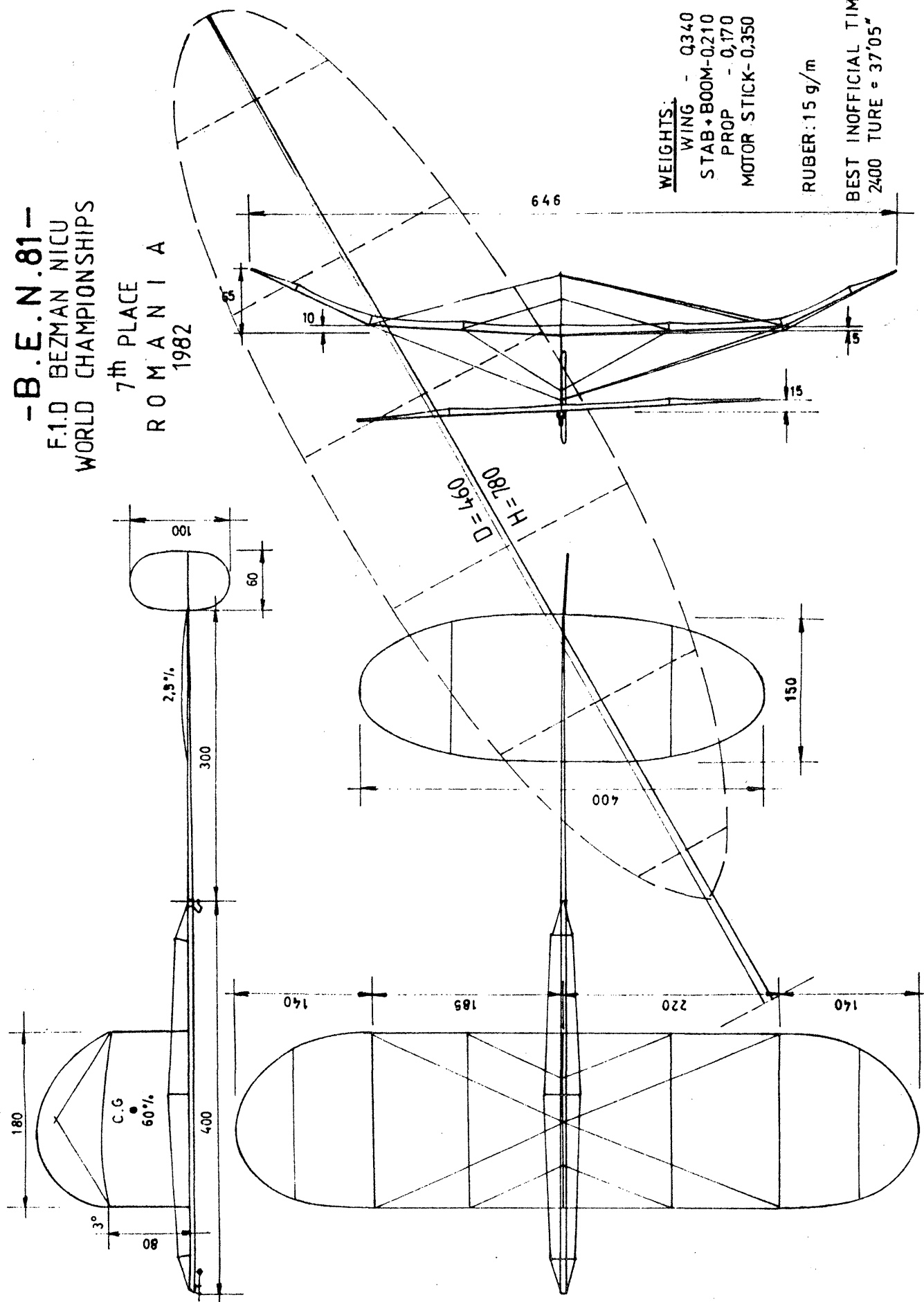
5<sup>th</sup> PLACE

ROMANIA  
1982



**-B.E.N.81-**  
**F.I.D BEZMAN NICU**  
**WORLD CHAMPIONSHIPS**

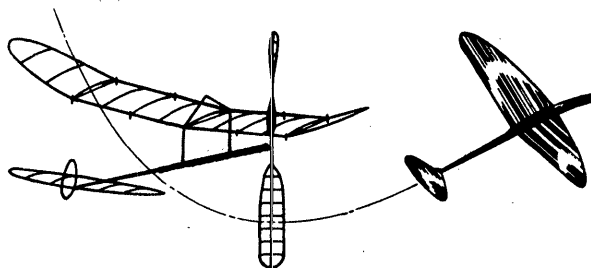
**7th PLACE**  
**ROMANIA**  
**1982**



# INDOOR

## NEWS and VIEWS

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



# 12

### \*\*\*\*NATIONAL INDOOR MODEL AIRPLANE SOCIETY\*\*\*\*

#### This Issue

This is one of several issues dealing with only one or two topics. This format won't be used every time, but it gives me a chance to use some longer items held back for lack of room to publish them. This month's major topic is rubber testing, which has not been exhausted by Dennis' excellent summary. Results from the Team Selection Finals appear below also; thanks to Joan Rodemsky for the excellent camera-ready copy!

#### Hats Off To.....

Tony Italiano, President of the National Free Flight Society. In case you haven't noticed, Tony has done more than his share of promoting indoor flying by ramrodding the U. S. Indoor Championships. I know that other NFFS officers and members such as Hardy Brodersen have had an active part in this promotion also, but Tony has been willing to shoulder much of the paperwork involved. Note that Tony already has a full-time job with outdoor FF, so this effort in behalf of indoor is extra! Part of this willingly assumed burden appears in this issue - a survey to aid planning for the 1984 USIC. Read the text involved, then flip to page 5 (domestic issues only) and fill out the survey sheet and return it to Tony. Note that Tony has mailed some of these already and had an original deadline of October 15, 1983. He has extended the deadline to allow me to circulate the survey further, but please mail it immediately!

#### A Slight Oops!

Issue #11 showed three-views of the 1982 Romanian WCH models, the 1982 winners. Unfortunately, the printer did a slight size reduction on those plans, to give room to clamp the master during the printing process. This hasn't happened before, so I was unprepared. To recoup, measure the span of the prop outline as shown and compare it to the stated dimension. This will allow you to get the outline back to "real" size if you need it. Please remember to leave adequate margins when you send me your three-view; we both will be ahead!

#### RUBBER TESTING

Dennis Jaecks says: Most of my test method was obtained from Fred Pearce's excellent article in March/April '79 Model Aviation. The key is his use of two stretches, where he uses a Force #1 based on weight and length of the sample, and a Force #2 based on data from the first stretch. I would be confident flying on rubber testing good by this method; there aren't a lot of maybes and ifs to his test. I didn't go into a lot of detail on hold time, rest time and temperature, but you must be consistent. A high quality force gage is necessary also - fish scales are obviously out!

#### CONTEST CALENDAR

##### FLORIDA - Miami Area

Doc Martin's somewhat outrageous promotions are paying off! Can you imagine flying in a fertilizer warehouse? It seems that there were two such structures built at Lakeland, Florida; they have been unused due to slump in fertilizer demand. John has been working this one for some time, and now has contests scheduled there. The first is Nov. 26-27, 1983, 2 pm to 7 pm (Nov. 26) and 8 am to 2 pm (Nov. 27). The MIAMA season opens on Oct. 23, 1983 at Miami Dade South High School, 9 am to 5 pm. Their December meet is the Millard Wells Meet at Coral Shore School (Mile marker 90 in the Keys), beginning at 9 am; Pistachio and ROW events. Contact John Martin, 2180 Tigertail, Miami FL 33133 for more details, and call 305-858-6363 for site confirmation on a meet weekend.

##### OKLAHOMA - Oklahoma City Area

Two contests are on tap at the Oklahoma City 23rd Street Armory: Dec. 11, 1983 and March 11, 1983. HLG, Easy B, Pennyplane, etc, plus possibly Manhattan Cabin and Ornithopter. Contact Bill Baker, 1902 Peter Pan St., Norman OK 73069 for more details.

##### TEXAS - Ft. Worth/Dallas Area

Monthly sessions will continue at the Bedford Boy's Ranch in Bedford, Texas, and informal sessions happen on Thursday afternoons if you can get off work. Contact Jess Shepherd, 2713 Summit View, Bedford TX 76021 for details.

#### THE FORTY MINUTE CLUB

The latest update of 40 minute fliers appears below, thanks to the continued efforts of Bob Gibbs. If you can document your own position on this list, send the info to Bob at 161 Larkwood Circle, San Ramon CA 94583. These are the single best official flight of each individual, made as part of an officially sanctioned event. That includes flights anywhere in the world, provided the sanctioning entity is the national aero club of that country.

Name	Country	Time	Class*			Year	Site
			1	2	3		
Richmond, Jim	USA	52:14	X			1979	Akron
Kowalski, Dick	USA	50:41	X			1976	Akron
Barr, Laurie	England	47:28		X		1982	Cardington
Richmond, Jim	USA	47:23		X		1980	Akron
Harlan, Ray	USA	47:13		X		1980	Akron
Doig, Rick	USA	46:24	X			1983	Akron
Rodemsky, Erv	USA	45:50	X			1974	Santa Ana
Rieke, K.H.	W. Germany	45:40	X			1962	Cardington
Redlin, Carl	USA	45:17	X			1962	Cardington
Andrews, Pete	USA	44:59		X		1979	Akron
Randolph, Bob	USA	44:50	X			1972	Santa Ana
Mather, Clarence	USA	44:44	X			1974	Santa Ana
Hacklinger, Max	W. Germany	44:20	X			1961	Cardington
Kopecky, Ernie	USA	43:42	X			1963	Santa Ana
Banks, Cezar	USA	43:35		X		1981	Santa Ana
Cummings, Frank	USA	43:28	X			1963	Santa Ana
Atwood, Bill	USA	43:17	X			1963	Santa Ana
Plotzke, Ron	USA	42:53	X			1969	Lakehurst
Domina, Dan	USA	42:25		X		1979	Akron
Cannizzo, Sal	USA	42:20		X		1983	Lakehurst
Randolph, Bob	USA	42:16		X		1983	Santa Ana
Calliau, Larry	USA	42:02		X		1982	Santa Ana
Romak, Bud	USA	42:01	X			1965	Moffett
Romak, Bud	USA	41:59		X		1981	Akron
Richmond, Jim	USA	41:45			X	1969	Lakehurst
Gibbs, Bob	USA	41:35		X		1981	Santa Ana
Obarski, Dick	USA	41:30		X		1981	Akron
Finch, Tom	USA	41:27	X			1963	Santa Ana
Champine, Bob	USA	41:23	X			1963	Santa Ana
Rodemsky, Erv	USA	41:23		X		1979	Akron
Stoll, Ed	USA	41:21	X			1963	Santa Ana
Mather, Clarence	USA	40:54		X		1974	Santa Ana
Draper, Ron	England	40:44	X			1962	Cardington
Pymm, Dave	England	40:40		X		1980	Cardington
Bilgri, Joe	USA	40:37	X			1965	Santa Ana
Nonaka, S.	Japan	40:36		X		1978	Cardington
Doig, Rick	USA	40:13		X		1981	Akron
Triolo, John	USA	40:06	X			1974	Lakehurst

\*Class 1 - FAI, FAI 90cm or AMA-D  
2 - FAI 65cm - 1 gram  
3 - FAI 65cm - no weight requirement

SEPT. 30, 1983

# FELLOW INDOOR FLYER:

PROGRESS IS THE WORLD'S BIGGEST PROBLEM - AND WE INDOOR FLYERS ARE FACED WITH IT TOO!

The NWI at West Baden, Indiana has closed it's doors and have been trying to sell the property. A small group of flyers are loosely formed to try to keep our finger in the proceedings in order to maintain a show of interest and possibly protect our use of the building for indoor activity. However, we must in parallel consider other possibilities as well, in case our efforts are for naught.

I need your thoughts direly - - -

Consider the following for the 3rd USIC in 1984:

1. Lakehurst - a possibility, but not 100% viable as dealing with the MILITARY can be volatile considering all the "progress" going on around the world. Very difficult to obtain a firm commitment now for June/July 1984.

2. Santa Ana Marine Base Hangar. - Same as above but with additional problems in obtaining for more than 1 day.

3. KIBBIE FIELD HOUSE - University of Idaho, Moscow, Idaho

This fabulous structure appears to be the most viable alternate I can see at the present. The building is 144' high and floor area of 200 x 400 ft. We could fly 2 events simultaneously! (Like HLG and FID - HA!).

I need your very honest input, so please think, assess and reply accordingly.

Dormitory rooms would "probably" be available.

- A. If we were to hold the 3rd USIC at Kibbie during July 1984 which week would you prefer:

July 1\_\_\_\_ July 8\_\_\_\_ July 15\_\_\_\_ July 22\_\_\_\_

(NATS would probably be first week of August and at Reno)

- B. Would you really make vacation plans and attend the USIC in 1984.

YES\_\_\_\_ NO\_\_\_\_

- C. Exactly which events would you enter:

HLG\_\_\_\_ AMA SC\_\_\_\_ PAPER STK\_\_\_\_  
PP\_\_\_\_ SPEED\_\_\_\_ EZB\_\_\_\_  
NPP\_\_\_\_ FID\_\_\_\_ MAN/BOSTON\_\_\_\_  
PEANUT\_\_\_\_ AMA STK\_\_\_\_ CABIN\_\_\_\_

- D. Would you attend the banquet if one were held?

YES\_\_\_\_ NO\_\_\_\_

- E. AGAIN - Would you attend the 3rd USIC at the University of Idaho and can I put your name down as positively being there (if that is the final selection)?

YES\_\_\_\_ NO\_\_\_\_

- F. If West Baden becomes viable again, would you prefer that site over Kibbie?

YES\_\_\_\_ NO\_\_\_\_

- G. If West Baden is the site, do you prefer week of:  
JUNE 10\_\_\_\_ JULY 1\_\_\_\_ JULY 22\_\_\_\_

JUNE 17\_\_\_\_ JULY 8\_\_\_\_

JUNE 24\_\_\_\_ JULY 15\_\_\_\_

- H. If we were assessed a rental charge requiring approximately \$15.00 - \$25.00 an entrant extra fee, would you still attend? (No matter where the contest was held?)

YES\_\_\_\_ NO\_\_\_\_

- I. Do you have any other 100'+ site in mind other than the above and if so, please enumerate the statistics and state what you have done on any contacts with the place.

- J. If you have some constructive comments to make, please do so.

Please - don't wait to send your reply in - I need it now!

Don't lay these sheets down and say I'll do it later, your wife will wait as you've got more important things to attend to - really only 2 minutes will do. But NFFS hasn't got much money so please use your own envelope and stamp for the cause. My time is free too and I've got the bulk of the work! Together we'll work it out.

*Tony*  
Tony Italiano

## NATIONAL FREE FLIGHT SOCIETY

DEDICATED TO THE INTERESTS OF FREE FLIGHT MODELING



Sept. 16, 1983

Subject: PRESS NOTICE

The National Free Flight Society is accepting nominations for the following:

10 Models of the Year - (1984)

Send to:  
James G. Wilson  
1030 Avenue D  
Redondo Beach, CA 90277

Free Flight Hall of Fame (1984).

Send to:  
Anthony J. Italiano  
1655 Revere Dr.  
Brookfield, WI 53005

Also, a call for papers for the 1984 Symposium. Please make your intentions known along with an overall outline to:

Stan Stoy  
12314 Inletridge Dr.  
Maryland, MO 63043

314-434-9153 (home)  
314-233-8361 (office)

Have your information in by January 1, 1984.  
Thank you for your assistance.

## INDOOR TEAM SELECTION

West Baden, Indiana

September 3-5, 1983

Name	1	2	3	4	5	6	7	8	9	Best Two	Finals Points	Prior Points	Total Points
1. Bob Randolph	34:48	36:48	35:30	8:30	34:25	37:30	-	-	-	74:18	1000	109.73	1109.73
2. Cezar Banks	7:50	37:08	36:06	13:43	34:46	6:14	36:57	-	36:39	74:05	997.08	110.00	1107.08
3. Jim Richmond	14:05	10:21	35:52	7:27	33:48	35:40	30:07	35:50	37:41	73:33	989.91	110.00	1099.91
4. L. Cailliau	33:29	36:41	25:17	-	7:54	33:51	33:33	10:51	5:53	70:32	949.30	110.00	1059.30
5. S. Cannizzo	7:34	5:51	30:05	7:30	36:34	32:18	14:17	5:15	9:49	68:52	926.87	110.00	1036.87
6. Ray Harlan	31:17	32:55	29:20	8:44	35:16	9:03	31:08	12:18	32:08	68:11	917.68	109.66	1027.34
7. Richard Doig	16:57	33:41	7:18	34:51	22:25	8:15	6:41	25:47	22:45	68:32	922.39	104.28	1026.67
8. R. L. Gibbs	33:09	30:55	34:08	28:00	15:44	26:07	30:25	30:43	8:54	67:17	905.56	109.99	1015.55
9. S. Chilton	-	-	-	23:30	6:07	7:25	29:43	34:26	32:38	67:04	902.65	110.00	1012.65
10. Bud Romak	29:11	25:01	24:29	19:47	28:45	32:26	33:48	32:16	28:04	66:14	891.43	109.74	1001.17
11. Paul Tryon	31:52	13:14	33:14	9:23	26:40	22:43	23:09	12:50	27:28	65:06	876.18	99.96	976.14
12. W. Van Gorder	26:52	34:20	18:18	-	28:35	4:34	30:36	23:33	23:55	64:56	873.93	100.76	974.69
13. L. Gitlow	9:12	19:41	8:42	13:21	33:18	1:39	6:57	23:55	31:02	64:20	865.86	108.15	974.01
14. E. Hoffman	6:24	18:24	8:08	21:50	20:44	30:25	5:02	32:17	14:39	62:42	843.88	103.74	947.62
15. M. Andrews	24:52	31:40	5:56	30:41	7:53	28:32	22:45	26:12	7:43	62:21	839.17	105.39	944.56
16. R. Obarski	9:10	29:40	27:26	18:34	31:20	30:10	22:23	29:38	18:47	61:30	827.73	108.42	936.15
17. W. Hulbert	31:34	18:49	7:38	24:33	22:17	22:43	11:04	26:55	24:25	58:29	787.12	110.00	897.12
18. D. Belieff	21:00	31:31	7:09	24:55	21:28	10:19	4:18	26:00	25:28	57:31	774.11	99.70	873.81
19. R. Ganser	12:56	24:35	20:06	8:27	9:07	28:59	25:02	7:03	27:07	56:06	754.82	105.26	860.08
20. A. Rohrbaugh	22:40	8:39	4:42	26:36	15:23	29:05	9:59	26:54	-	55:59	753.48	87.50	840.98
21. Jim Clem	22:38	22:19	22:35	18:35	11:00	15:48	15:58	-	15:36	45:13	608.57	89.52	698.09

Erv Rodemsky, Contest Director

STEP #1, STRETCH THE TEST LOOP OF RUBBER

TO A LENGTH  $L_1$  WHERE THE FORCE, VALUE IS ~~NOT~~ DETERMINED

BY,  $F_1 = \frac{45 \times \text{WEIGHT OF LOOP IN GRAMS}}{\text{LENGTH OF ORIGINAL LOOP IN INCHES.}}$

RECORD  $L_1$  @  $F_1 =$  \_\_\_\_\_

STEP #2. STRETCH AGAIN TO  $F_2$  WHERE

$F_2 = \frac{430 \times \text{WEIGHT OF LOOP IN GRAMS}}{L_1 \text{ (FROM } F_1) \text{ INCHES}}$

STEP #3 RECORD LENGTH @  $F_2$  AND GO TO STEP 4

STEP #4 BACK OFF 3" AND RECORD FORCE

CONTINUE BACK OFF STRETCH AT 3 INCH INTERVALS AND RECORD FORCE VALUES.

THEN CALCULATE ENERGY STORED.

$$\sum_{\text{SUM VALUES}} = \left( \frac{F_{\text{MAX}} - F_1}{2} \right) + \left( \frac{F_1 - F_2}{2} \right) + \left( \frac{F_2 - F_3}{2} \right) \dots + \left( \frac{F_{\text{LAST}} - F_{\text{LAST}}}{2} \right)$$

AND THEN

ENERGY STRETCH =  $\frac{3 \text{ FOOT}}{12} \times \frac{16 \text{ OUNCES}}{\text{WEIGHT IN OUNCES LBS.}} \times \left( \sum_{\text{SUM VALUES}} \right)$

IN  $\frac{\text{FT} \times \text{LBS}}{\text{LB}}$

FRED USES ELONGATION =  $\frac{L_2}{L_1}$  TO RATE

RUBBER

WHERE 7.3 IS GETTING TOO OLD OR OVER VULCANIZED

AND 8.2 IS TOO SOFT OR UNDER VULCANIZED

1978 PIRELLI TEST #2 7-8-80

.0383027-000802 = .037502 X 16 1/4"

1.063125 GRAMS WHERE .0008 = WEIGHT OF KNOT

$F_1 = \frac{45 \times 1.063125}{16.25} = 3.183 \text{ LBS}; L_1 = 12.4"$

$F_2 = \frac{430 \times 1.063125}{12.4} = 3.68 \text{ LBS}$

$EL = \frac{L_2}{L_1} = \frac{132.5}{16.25} = 8.15$

INCHES	LBS	TURNS	TORQUE
132.5	3.68	2170	.60
129.5	2.80	2070	.325
126.5	2.23	1970	.220
123.5	1.87	1870	.175
120.5	1.62	1770	.150
117.5	1.44	1670	.135
114.5	1.33	1570	.120
111.5	1.24	1470	.112
108.5	1.18	1370	.110
105.5	1.10	1270	.107
102.5	1.07	1170	.097
99.5	1.02	1070	.092
96.5	1.00	970	.090
93.5	.95	870	.088
90.5	.91	770	.082
87.5	.89	670	.080
84.5	.87	570	.075
81.5	.83	470	.072
78.5	.80	370	.065
75.5	.78	270	.060
72.5	.75	170	.055
69.5	.71	70	.055
66.5	.69	00	.025
63.5	.65		.000
60.5	.62		
57.5	.60		
54.5	.56		
51.5	.53		
48.5	.50		
45.5	.47		
42.5	.43		
39.5	.40		
36.5	.38		
33.5	.35		
30.5	.30		
27.5	.25		
24.5	.20		
21.5	.13		
18.5	.05		
15.5	.00		

ENERGY =  $\frac{3}{12} \times 16 \times \left( \frac{1+1}{2} \right) + \left( \frac{1+1}{2} \right) \times \left( \frac{1+1}{2} \right)$

$C_s = \frac{3}{12} \times 16 \times 34.34 = 3662$

FT LBS  
LB

WIND =  $\frac{100}{12} \times 1 \times 2 \times \pi \times \left( \frac{1+1}{2} \right) \times \left( \frac{1+1}{2} \right)$

WIND =  $\frac{100}{12} \times 2 \times \pi \times 2.635$

$W_E = \frac{3679}{12} \times \frac{\text{FT LBS}}{\text{LB}}$

STRETCH =  $\frac{L_2 \times \frac{1}{2} L_2 F_2}{W_T \text{ grams}}$

=  $\frac{132.5 \times .68}{1.063125} = 84.75$

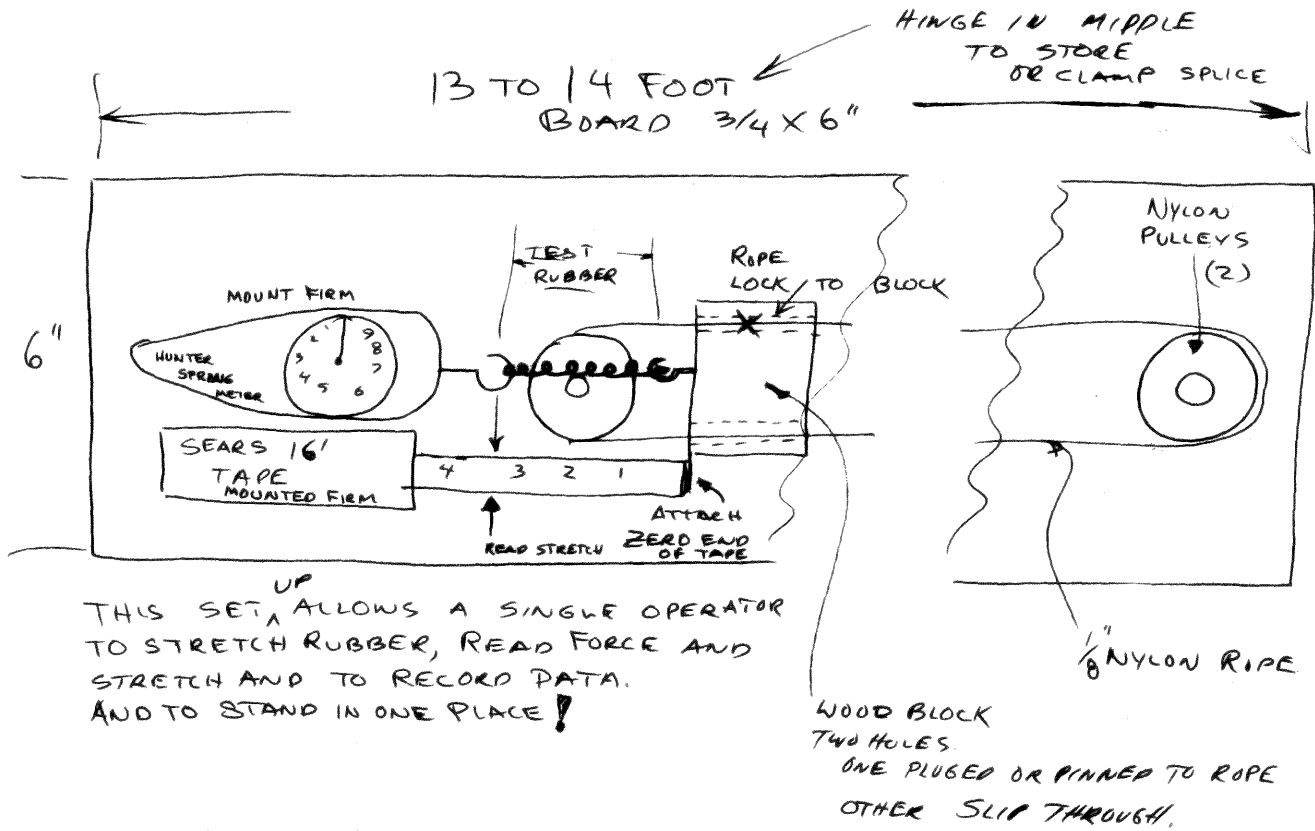
RICHMOND

=  $\frac{\text{TURNS } 50\% \times \text{TORQUE } 50\%}{W_T \text{ grams}}$

=  $\frac{1085 \times .093}{1.063125} = 94.91$



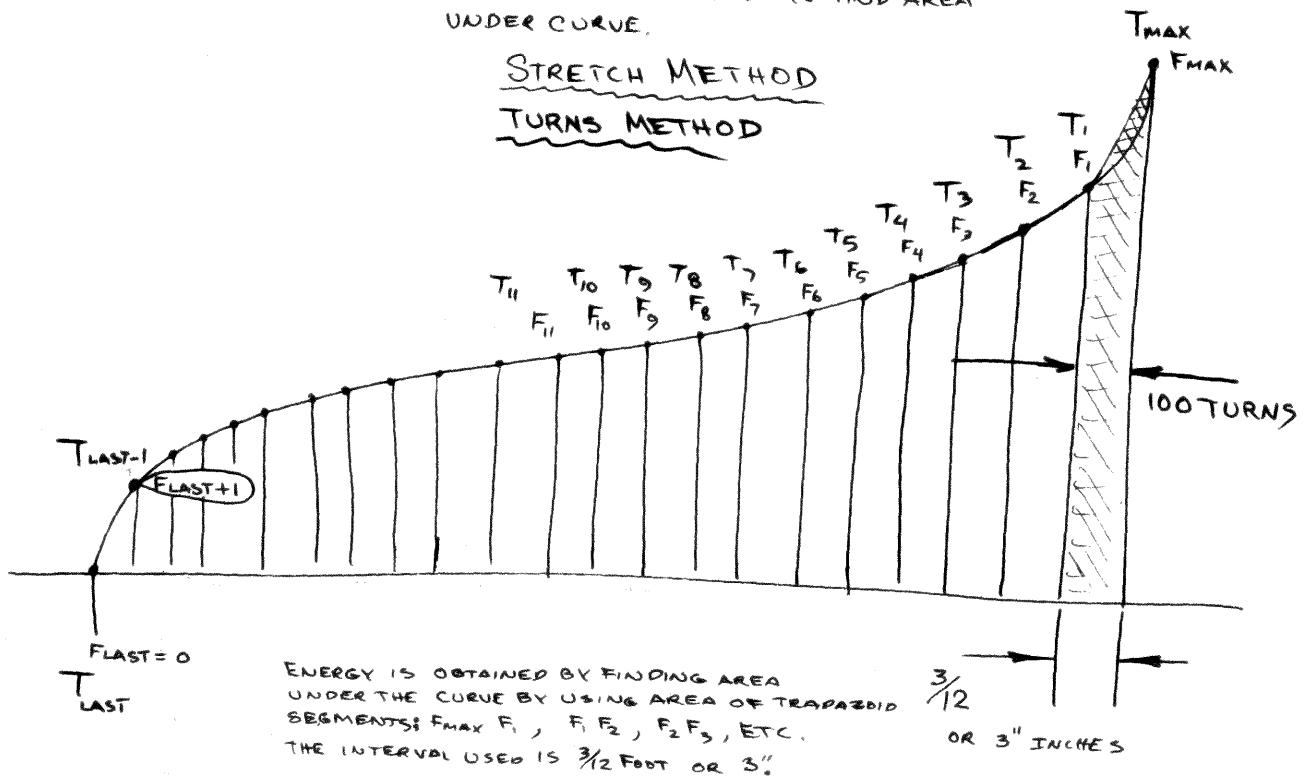
# TEST SET UP



TYPICAL CURVE AND ENERGY CALCULATION METHOD IS FIND AREA UNDER CURVE.

## STRETCH METHOD

## URNS METHOD



WHERE

$$ENERGY = \frac{100 \text{ TURNS}}{12 \text{ INCHES}} \times 2\pi \times \frac{1 \text{ FOOT}}{\text{WT OUNCES}} \times \left( \frac{T_{MAX} - T_{MAX-1}}{2} + \frac{(T_1 - T_2)}{2} + \dots + \frac{(T_{LAST-1} - T_{LAST})}{2} \right)$$

T = INCH / OUNCES

NOTE (INCH / OUNCES) OR OUNCE 1/16 BECOMES LBS / LB

WT OUNCES

INCH OUNCE X 1/16

3RD USIC SURVEY - SEPTEMBER 1983

FILL THIS SHEET IN AND MAIL TO

A. J. ITALIANO  
1655 REVERE DRIVE  
BROOKFIELD, WI 53005

A. JULY 1\_\_\_\_ JULY 8\_\_\_\_ JULY 15\_\_\_\_ JULY 22\_\_\_\_

B. YES\_\_\_\_ NO\_\_\_\_

C. HLG____	AMA SC____	PAPER STK____
PP____	SPEED____	EZB____
NPP____	FID____	MAN/BOSTON____
PEANUT____	AMA STK____	CABIN____

D. YES\_\_\_\_ NO\_\_\_\_

E. YES\_\_\_\_ NO\_\_\_\_

F. YES\_\_\_\_ NO\_\_\_\_

G. JUNE 10____	JULY 1____	JULY 22____
JUNE 17____	JULY 8____	
JUNE 24____	JULY 15____	

H. YES\_\_\_\_ NO\_\_\_\_

I.

J.

NAME :

Mail by October 15 1983