



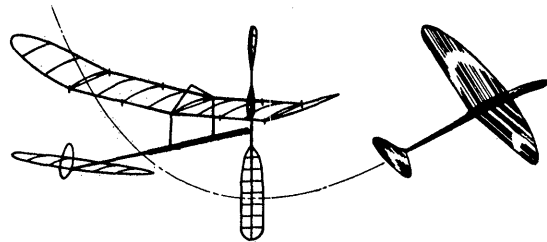


# INDOOR

## NEWS and VIEWS

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

#1



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

### A Reminder

Turn right now to the outside page of this issue and note the mailing label. In the upper right-hand corner of the label there appears (with very few exceptions) a number. Note up above, in the mast-head--the number 1 appears. All this number jazz is the result of a suggestion by Ed Whitten which allows my normal bookkeeping actions to proceed properly, even if I continue to have difficulty in resuming my original once-a-month publishing schedule. This issue is #1 in the new series of issues which begin with this issue, and the number on your address label is the number of the issue which marks the end of your subscription. If for some reason you feel that you have more issues coming, check with me and I will send you a copy of the record card and we will work out what happened. Meanwhile, you can rejoice that the publication date which appears above is essentially, if not completely, up to date. It may have taken teaching an old dog new tricks, but we made it!

### This Issue

As this is being written, I'm not sure that more than the results will fit. If they did, I also have some commentary about the two other major events which we (NIMAS) shared our week with; the Nats and the Peanut Scale Grand Prix. If you have just joined us, results from the Grand Prix and results and commentary from the Peanut Scale Speed event (part of SMART) appeared in the next most previous issue (should it be called -1?); that issue was dated Dec. '79.

### FAI Finals

About the time you get this, the FAI Finals (to pick the U.S. Indoor Team for the 1982 Indoor World Championships) will be ready to begin at Santa Ana hangar in California. I hope that some kind soul will furnish some information and at least a short report on what happened and who won, with what.

### THE PICTURE STORY

Photos from all three events have been intermingled; all photos by Bud Tenny.

#### Page 2

Row 1 Left - Martin Varney's semi-scale Bostonion. Wing had been shifted back for better balance; not enough (see clay on skid). Model heavy, but flew well.

Row 1 Right - Mike Clem winds his "new rule" Easy B; second place in the Nats.

Row 2 Left - Experimental Easy B prop, flown by Brian or Bradley Fulmer. Hub structure is round carbon fiber strand; material was available as sample only. The short piece only holds the pitch angle. Same size material is stiff enough for wing posts.

Row 2 Right - No, not turbulator strips--de-turbulators! This model by Moe Whittemore was too light for the ceiling. The modification greatly increased the altitude, but too little to make the model competitive.

Row 3 Left - Folkerts Racer by Martin Varney won the Peanut Speed event handily, yet flew well in duration also. This one didn't climb 'way past the top of the pylons!

Row 3 Right - Doc Martin loads his Alco Sport; it won 4th at the Nats.

Row 4 Left - Don Lindley holds while Dave winds; they are an active father-son team from the Chicago Aeronauts.

Row 4 Right - Dennis Jaecks built two almost identical Pennyplane models; a careful study will show the left one has constant camber airfoil, while one on right tapers in thickness from 7% to 3%; reduces level flight torque and improves flight time.

#### Page 3

Row 1 Left - This neat model came from Ranier Lotz of West Germany. This one was properly packed and came with good flight instructions.

Row 1 Right - An all-balsa, built-up, covered Easy B prop. The covering is ultra-thin balsa, with grain running across the blade. It was worth the trouble--Earl Hoffman won the Nats with it!

Row 2 Left - Two-piece slotted stab for Pennyplane; built by Moe Whittemore. Wing has a reflex airfoil, with single-surface covering on the bottom of the ribs. Model seemed to fly well, Moe needed more time to trim for high ceiling.

Row 2 Right - Another unusual prop--Pennyplane prop made from styrofoam covering from 2-liter soft drink bottle. Bernie Boehm got the idea and tried shortly after the container style was discontinued! Oh, well, maybe next time!

Row 3 Left - Bill Hulbert with his FAI models.

Row 3 Right - Jim Clem's Novice Pennyplane and built-up prop. Prop outline and pitch layout per Cezar Banks' Novice PP.

Row 4 Left - This super-light Peanut wasn't packed well, got here mangled. Martin Varney did super repair job; proxy-flew the model to second place.

Row 4 Right - Walt Van Gorder with one of very few 20+ paper-covered Easy B models. Walt is a fierce competitor; has done well in short time flying indoor.

### 1981 INDOOR NATS RESULTS

AMA STICK - Jr.  
Jenifer Jaecks 8:23.6  
Chad Curth 5:39.0  
Paul Loucka 0:48.2

AMA STICK - Sr.  
Dave Lindley 17:48.6  
Mike Clem 17:18.2  
Bradley Fulmer 8:33.8

AMA STICK - Op.  
Cezar Banks 30:31.8  
Jim Richmond 30:29.4  
Bill Hulbert 30:13.2  
Paul Tryon 27:19.6  
Richard Doig 25:41.0  
Dennis Jaecks 25:34.8  
Dan Belieff 25:31.6  
Dick Hardcastle 23:03.4  
Ed Stoll 22:56.0  
Ron Ganser 21:44.0  
Earl Hoffman 21:25.4  
Jeff Annis 20:13.0  
James Davidson 19:51.0  
Jerry Skrzjanc 19:32.0  
Roman Szymula 19:18.6  
Dick Obarski 16:26.0  
Otto Curth 13:02.8  
Jim Clem 11:51.4

AMA PAPER STICK - JR.  
Jenifer Jaecks 9:40.0  
Bryan Fulmer 8:27.0  
Paul Loucka 8:26.0  
Chad Curth 6:49.0

AMA PAPER STICK - Sr.  
Mike Van Gorder 15:39.4  
Dave Lindley 13:26.0  
Bradley Fulmer 8:01.6

AMA PAPER STICK - Op.  
Jim Richmond 27:25.4  
Jerry Skrzjanc 24:38.0  
Richard Doig 23:50.4  
Dick Obarski 23:14.0  
Ed Stoll 22:42.0  
Ron Ganser 21:54.4  
Dan Belieff 21:53.0  
Charlie Sotich 20:18.0  
Gordon Wisniewski 19:29.0  
Tony Sutter 19:28.4  
Stan Chilton 19:08.2  
Rex Powell 15:51.2  
Tom Killough 15:06.0  
Douglas Barber 13:04.4  
Larry Loucka 7:42.2  
Lew Gitlow 4:45.0

AMA LADIN - Jr.  
Paul Loucka 11:24.3  
Bryan Fulmer 4:33.2

AMA CABIN - Op.  
Richard Doig 18:57.0  
Tony Sutter 14:40.8  
Larry Loucka 13:05.0  
Dan Belieff 9:22.6  
Ron Ganser 4:27.2

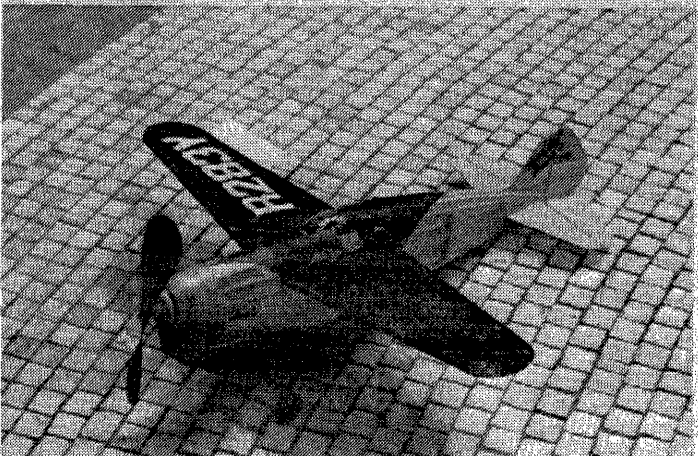
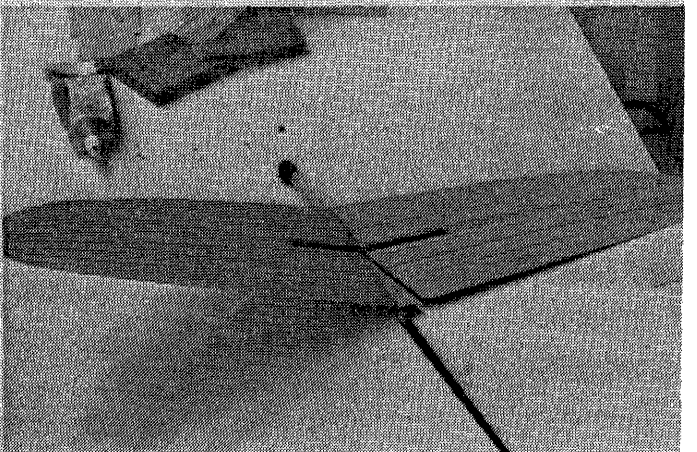
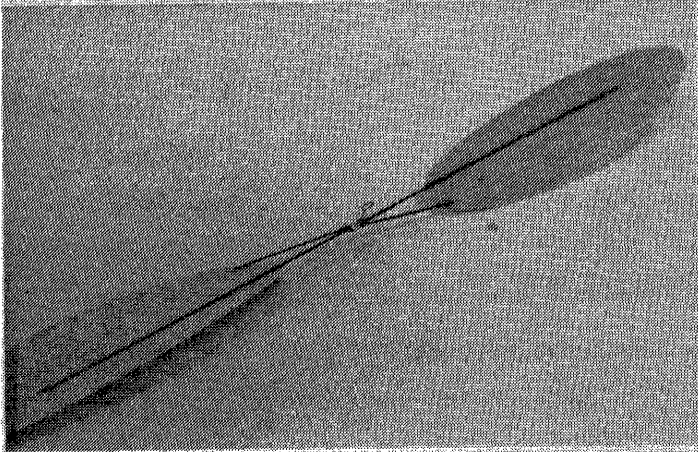
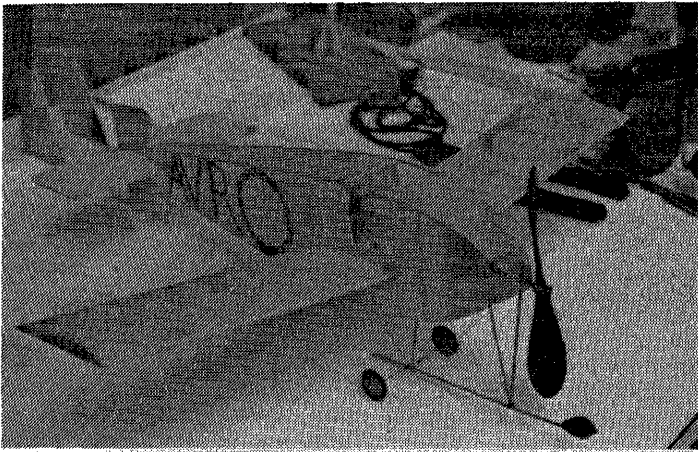
FAI STICK - Jr.  
Jenifer Jaecks 21:53  
Paul Loucka 13:21  
Chad Curth 15:08

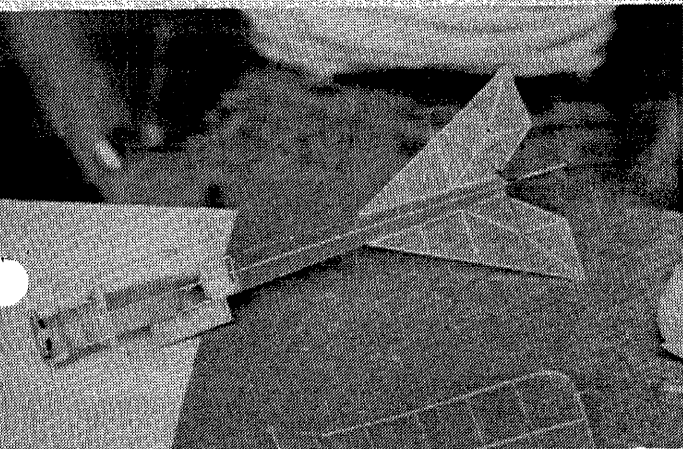
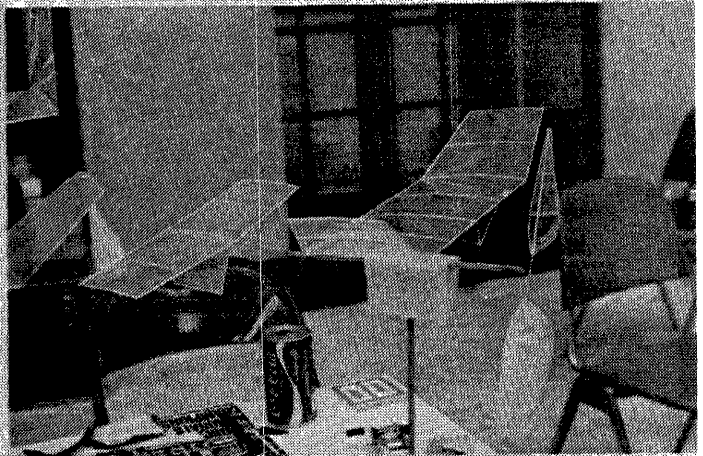
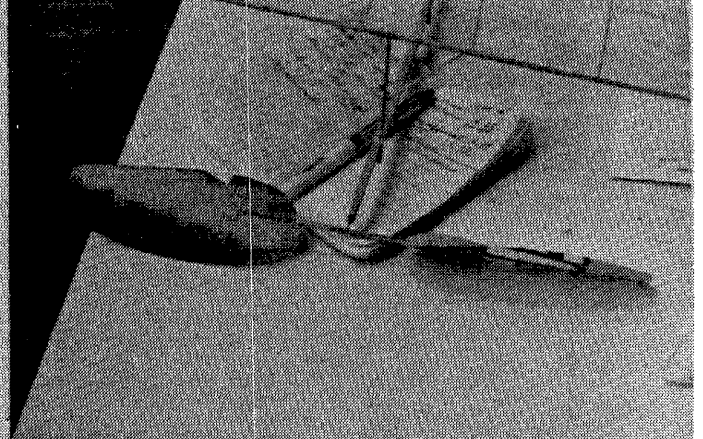
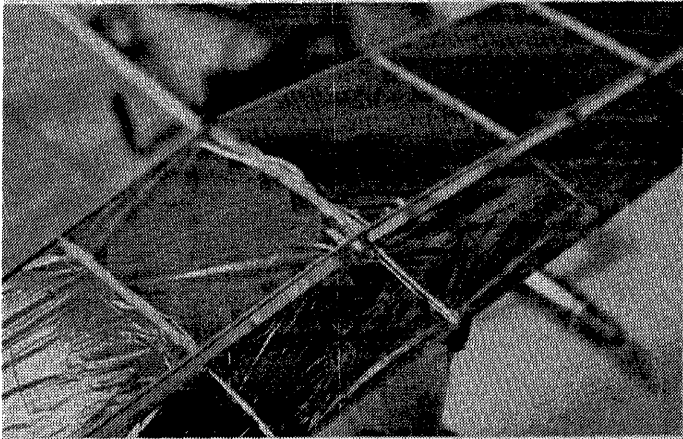
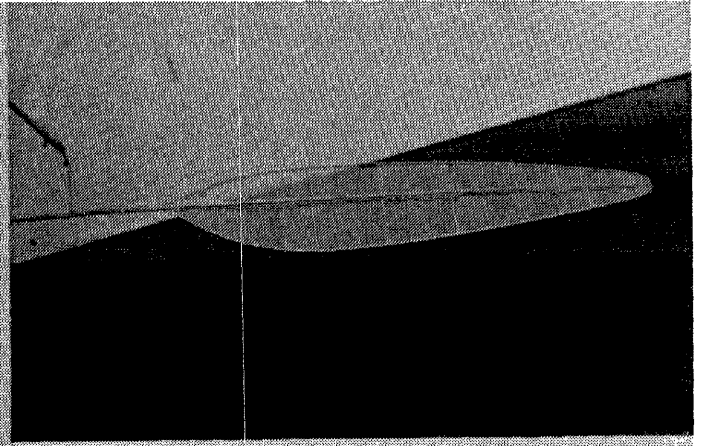
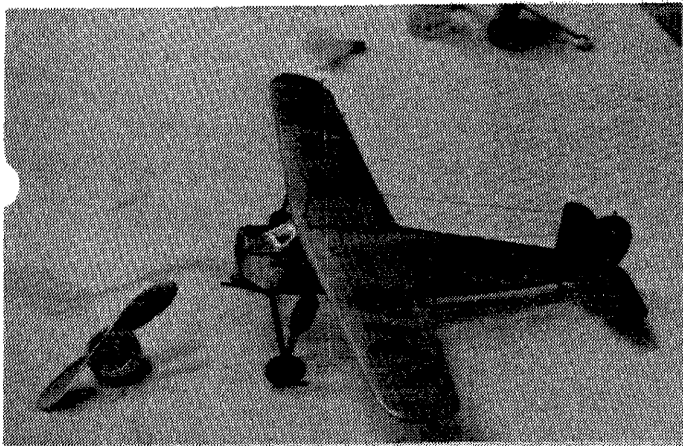
FAI STICK - Sr.  
Dave Lindley 34:37

FAI STICK - Op.  
Jim Richmond 68:35  
Earl Hoffman 65:40  
Stan Chilton 65:14  
Paul Tryon 63:17  
Bill Hulbert 62:53  
Dick Obarski 59:11  
Ed Stoll 58:37  
Richard Doig 57:04  
Dick Hardcastle 55:50  
Roman Szymula 45:06  
Jack Carter 42:25  
Walt Van Gorder 42:02  
Jeff Annis 40:43  
Ron Ganser 39:52  
Dan Belieff 38:01  
Jim Clem 28:49  
Otto Curth 15:21  
Dennis Jaecks 15:15  
Larry Loucka 11:32

AMA PENNYPLANE - Jr.  
Jenifer Jaecks 11:25.4  
Paul Loucka 9:57.2  
Thomas Norell 8:54.2  
Chad Curth 7:42.7  
Brian Varney 6:48.4  
Kris Warmann 6:43.4  
Bryan Fulmer 3:18.0

AMA PENNYPLANE - Sr.  
Mike Clem 10:38.3  
Dave Lindley 10:28.0  
Mike Van Gorder 9:14.0  
Glenn Campbell 6:12.0  
Bradley Fulmer 5:33.0





|                             |         |                               |              |
|-----------------------------|---------|-------------------------------|--------------|
| <u>AMA PENNYPLANE - Op.</u> |         | Dan Belieff II                | 106.7        |
| Dennis Jaecks               | 13:56.2 | Bob Larsh                     | 106.4        |
| Cezar Banks                 | 13:31.2 | Mike Arak                     | 105.4        |
| Dick Hardcastle (time)      |         | Wally Simmers                 | 102.6        |
| Robert Warmann              | 11:24.8 | Bill Schlarb                  | 95.5         |
| Larry Loucka                | 10:58.0 | Robert Warmann                | 91.2         |
| Roman Szymula               | 10:29.1 | Maurice Whittmore             | 83.3         |
| <u>James Davidson</u>       | 10:23.0 | Rex Powell                    | 74.4         |
| Jim Jones                   | 10:05.1 | Tom Killough                  | 73.2         |
| Walt Van Gorder             | 10:04.5 | Dan Belieff                   | 65.7         |
| Maurice Whittmore           | 9:59.0  |                               |              |
| Bernie Boehm                | 9:56.2  | <u>AMA SCALE - Jr.</u>        | <u>Score</u> |
| Gordon Wisniewski           | 9:49.1  | Graham Killough               | 116          |
| Earl Hoffman                | 9:31.2  | Brian Varney                  | 104          |
| Ron Ganser                  | 9:25.0  | Liz Sanford                   | 104          |
| Lew Gitlow                  | 9:19.7  | Bryan Fulmer                  | 103.5        |
| Tony Sutter                 | 9:08.3  | Melanie Sanford               | 102          |
| Tony Italiano               | 9:07.0  | Kris Warmann                  | 68.5         |
| Robert Moulton              | 8:55.0  |                               |              |
| Robert Oppegard             | 8:27.1  | <u>AMA SCALE - Sr.</u>        |              |
| Douglas Barber              | 8:13.7  | Bradley Fulmer                | 115.5        |
| Carl Fries                  | 8:05.0  | Stef Sanford                  | 107.5        |
| Jess Bacon                  | 7:52.7  | Glenn Campbell                | 99.5         |
| Joseph Macay                | 7:10.0  | Michael Gilbert               | 94.5         |
| Walt Everson                | 6:55.3  |                               |              |
| Otto Curth                  | 6:23.6  | <u>AMA SCALE - Op.</u>        |              |
| Del Ogren                   | 5:52.1  | Ed Stoll                      | (S)          |
| Arthur Adamisin             | 4:50.2  | Tom Killough                  |              |
| Charlie Sotich              | 4:02.0  | Joseph Macay                  |              |
| Pat Ciambrello              | 3:10.0  | John Martin                   |              |
|                             |         | Phil Cox                      |              |
| <u>AMA EASY B - Jr.</u>     |         | Bob Clemens                   |              |
| Robert Skrzjanc             | 14:25.0 | Arthur Adamisin               | 128          |
| Graham Killough             | 8:56.0  | Bob Willey                    | 127          |
| Bryan Fulmer                | 7:18.3  | Lloyd Wood                    | 125.5        |
| Thomas Norell               | 6:23.0  | Walt Everson                  | 118.5        |
|                             |         | Martin Varney                 | 112.5        |
| <u>AMA EASY B - Sr.</u>     |         | Curt Sanford                  | 109.5        |
| Mike Van Gorder             | 15:24.8 | Mike Arak                     | 99.5         |
| Mike Clem                   | 12:40.8 | Rex Powell                    | 89.5         |
| Bradley Fulmer              | 7:25.0  | Pat Ciambrello                | 83.5         |
|                             |         | Perry Peterson                | 79           |
| <u>AMA EASY B - Op.</u>     |         | Jim Miller                    | 78           |
| Earl Hoffman                | 21:56.8 | Jim Davidson                  | 78           |
| Walt Van Gorder             | 20:34.0 | Robert Warmann                | 45           |
| Dick Hardcastle             | 19:43.8 |                               |              |
| Jerry Skrzjanc              | 18:56.0 | <u>AMA PEANUT SCALE JR.</u>   |              |
| Lew Gitlow                  | 17:48.2 | Bryan Fulmer                  | 122          |
| Bob Mullins                 | 17:11.3 | Graham Killough               | 118          |
| Stan Chilton                | 15:57.8 | Melanie Sanford               | 114          |
| Cezar Banks                 | 15:55.6 | Thomas Norell                 | 112          |
| Roy Kerr                    | 15:40.0 | Arthur Adamisin               | 103          |
| Douglas Barber              | 13:55.6 | Brian Varnen                  | 91           |
| James Davidson              | 13:20.6 | Kris Warmann                  | 29           |
| Carl Fries                  | 13:09.0 |                               |              |
| Tony Sutter                 | 12:35.2 | <u>AMA PEANUT SCALE - Sr.</u> |              |
| Roman Szymula               | 11:26.7 | Bradley Fulmer                | 133          |
| Rex Powell                  | 10:22.0 | Michael Gilbert               | 113          |
| Jess Bacon                  | 7:59.5  | Stef Sanford                  | 110          |
| Pat Ciambrello              | 7:21.0  | Glenn Campbell                | 93           |
| Walt Everson                | 5:22.6  |                               |              |
| Bill Bigge                  | 4:33.5  | <u>AMA PEANUT SCALE - Op.</u> |              |
|                             |         | Jim Miller                    | 214          |
| <u>INDOOR HLG - Jr.</u>     |         | Arthur Adamisin               | 160          |
| Kris Warmann                | 97.0    | Bob Clemens                   | 146.4        |
| Thomas Norell               | 96.3    | Tony Sutter                   | 139          |
| Bryan Fulmer                | 92.7    | Joseph Macay                  | 134          |
| Paul Loucka                 | 79.6    | Jim Davidson                  | 133          |
| Graham Killough             | 59.4    | Earl Hoffman                  | 132          |
| Taylor Strack               | 21.3    | Pat Ciambrello                | 126.6        |
|                             |         | Bob Willey                    | 123          |
| <u>INDOOR HLG - Sr.</u>     |         | Curt Sanford                  | 121          |
| Mike Clem                   | 96.6    | Mike Arak                     | 116          |
| Bradley Fulmer              | 93.0    | Perry Peterson                | 116          |
| Glenn Campbell              | 54.5    | John Martin                   | 114.6        |
|                             |         | Martin Varney                 | 95           |
| <u>INDOOR HLG - Op.</u>     |         | Walt Everson                  | 75.8         |
| Bernie Boehm                | 141.8   | Tom Killough                  | 73           |
| Stan Stoy                   | 134.5   | Bill Bigge                    | 29           |

FOOTNOTES

There's not too much room left, as anticipated; the four-page format dictated by mailing weight restrictions (overseas) has proven to be somewhat limiting! So, here is a brief summary of the week:

Nats attendance was much higher, and by more of the top fliers, than in several years. If you want a good comparison, dig out a past issue of INAV and compare the number of entrants to this year's listing. It also seemed that there were a few more Juniors and Seniors than before. The reason is apparent; those who attended here were those whose parents cared enough to help, or to see that they got help, with indoor modeling. In other words, AMA has less of a "Junior" problem than a problem of insufficient involvement by adults in working with Junior fliers!

NIMAS Non-INDEX Competition

| <u>Name</u>                              | <u>Age</u>         | <u>Model</u>      | <u>Scale/Flight</u> |
|--|--------------------|-------------------|---------------------|
| <u>AMA Rubber Scale</u>                  |                    |                   |                     |
| Butch Hadland                            | Op.                | Lacey M-10        | 85/69.4             |
| Stef Sanford                             | Sr.                | Lacey M-10        | 54/91.5             |
| John Martin                              | Op.                | Alco Sport        | 72/73.0             |
| Melanie Sanford                          | Jr.                | Lacey M-10        | 49/91.6             |
| Liz Sanford                              | Jr.                | Lacey M-10        | 49/90.6             |
| Bob Clemens                              | Op.                | Granwell CLA-3    | 84/43.6             |
| Jim Miller                               | Op.                | Currie Wot        | 66/58.8             |
| Paul McIlrath                            | Op.                | Glenny-Henderson  | 10/114.2            |
| Curt Sanford                             | Op.                | Lacey M-10        | 64/54.2             |
| John Martin                              | Op.                | Niewport 17C      | 61/109.3            |
| <u>Peanut Scale</u>                      |                    |                   |                     |
| Tony Sutter                              | Op.                | Heinkel 100 V-8   | 280/57.0            |
| Jim Miller                               | Op.                | Vagabond          | 182/109.0           |
| Mike Arak                                | Op.                | Lacey M-10        | 300/56.2            |
| Bob Willey                               | Op.                | Fike              | 236/57.0            |
| Liz Sanford                              | Jr.                | Lacey M-10        | 140.2/98            |
| John Martin                              | Op.                | Niewport 17C      | 253.5/48.3          |
| Earl Hoffman                             | Op.                | Piper Vagabond    | 123/103             |
| John Martin                              | Op.                | Niewport Triplane | 250.5/31.5          |
| Bob Clemens                              | Op.                | Pacific Standard  | 192/51.5            |
| Melanie Sanford                          | Op.                | Lacey M-10        | 131.5/92.5          |
| Plenny Bates                             | Op.                | Old Ironsides     | 144/29.8            |
| <u>CO<sub>2</sub> Scale</u>              |                    |                   |                     |
| Butch Hadland                            | Op.                | Lacey M-10        | 141/226             |
| Bob Clemens                              | Op.                | Farman Jabiru     | 70.2/154.2          |
| Phil Cox                                 | Op.                | Wittman Buttercup | 66.1/152.1          |
| <u>Manhattan Cabin</u>                   |                    | <u>Age</u>        | <u>Time</u>         |
| Walt Van Gorder                          | Op.                |                   | 9:09.0              |
| Larry Loucka                             | Op.                |                   | 9:05.0              |
| Ron Ganser                               | Op.                |                   | 8:21.0              |
| Tony Sutter                              | Op.                |                   | 6:05.2              |
| Dan Kilgore                              | Op.                |                   | 5:09.0              |
| Bob Clemens                              | Op.                |                   | 4:31.7              |
| <u>Bostonion Cabin</u>                   | <u>Age</u>         | <u>Charisma</u>   | <u>Score*</u>       |
| Bob Clemens                              | Op.                | 1.2               | 346.8               |
| Martin Varney                            | Op.                | 1.1               | 321.31              |
| Paul McIlrath                            | Op.                | 1.05              | 233.83              |
| Walt Everson                             | Op.                | 1.05              | 191.63              |
| Del Ogren                                | Op.                | 1.0               | 188.5               |
| Carl Hedley                              | Op.                | 1.1               | 173.36              |
| *Score = (three flight total) x Charisma |                    |                   |                     |
| <u>"Old" Easy B (Separate Trophy)</u>    |                    |                   | <u>Time</u>         |
| Stan Chilton                             | Op.                |                   | 20:50.7             |
| Walt Van Gorder                          | Op.                |                   | 19:43.4             |
| Dick Obarski                             | Op.                |                   | 18:13.0             |
| Gerald Skrzjanc                          | Op.                |                   | 17:09.0             |
| Mike Van Gorder                          | Sr.                |                   | 14:54.0             |
| Doug Barber                              | Op.                |                   | 13:03.8             |
| <u>Other NIMAS Index Flights</u>         |                    |                   |                     |
| <u>Name</u>                              | <u>Model Class</u> | <u>Age</u>        | <u>Time</u>         |
| Lew Gitlow                               | Ornithopter        | Op.               | 3:06.2              |
| Ron Ganser                               | Cabin              | Op.               | 24:04.0             |
| Rick Doig                                | Cabin              | Op.               | 21:20.7             |
| Stan Chilton                             | Paper Stick        | Op.               | 23:14.7             |
| Jack Carter                              | Indoor Stick       | Op.               | 21:33.0             |
| Stan Chilton                             | FAI Stick          | Op.               | 35:16.3             |
| Jack Carter                              | FAI Stick          | Op.               | 27:10.3             |
| Gerald Skrzjanc                          | FAI Stick          | Op.               | 26:05.8             |
| Roman Szymula                            | FAI Stick          | Op.               | 25:58.8             |
| Jess Shepherd                            | FAI Stick          | Op.               | 24:42.5             |
| Robert Skrzjanc                          | FAI Stick          | Jr.               | 15:28.8             |
| Walt Van Gorder                          | New Easy B         | Op.               | 21:36.8             |
| Dick Hardcastle                          | New Easy B         | Op.               | 21:28.0             |

One non-flying event of momentous import happened. Dick and Nicki Hardcastle, from the St. Louis, Missouri area, showed a really super indoor film which was very well received. It was a superbly photographed and staged documentary of the 1981 World Championships, flown at West Baden last year. This film will soon be available through AMA Headquarters, and should be viewed by all clubs!

ONE LAST WORD

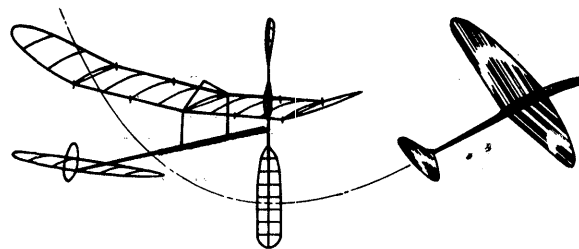
If you followed the exhortation to examine your mailing label and didn't find a number instead of a date, it's because I ran out of time to finish updating the records; electing to get this issue out before it died on the vine!

# INDOOR

## NEWS and VIEWS

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

#2



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

#### This Issue

As a reminder, this is the second issue (see upper right corner of the masthead) under the new arrangement where issues are numbered sequentially and the current date is put on the masthead. So, to tell when your own subscription expires, look at the upper right-hand corner of your address label. When the issue you receive has the same number as that on your label, you have the last issue due under your subscription. In response to many requests, the current membership rates (including INAV) appear below:

Members on North American continent: \$4.50/12 issues.

Other subscriptions: \$4.50 + postage surcharge. Postage surcharge for seairmail: \$1.50 (total cost \$6.00). Postage surcharge for airmail: \$2.50 (total cost \$7.00)

#### Missing Issue #1?

If you did not get an issue with #1 on it, but were supposed to, drop me a line. I found out the hard way that some of the labels had defective stickum. I noted that many were not sticking well, so I taped them down. Apparently I missed some, since a few issues came back with no labels, but with a sticky, dirty place showing where the label used to be! Of course, this gave me no clues about whose issue it was, so I'll have to rely on you!

#### AMA Election Under Way

By the time you receive this, most AMA members will have received their ballot for the 1981 Officer Elections. This year, the odd-numbered Districts are electing Vice Presidents, and the office of AMA Secretary-Treasurer is on the ballot for all members to vote on. The incumbent S/T is Jim McNeill, who has done an excellent job. I don't know exactly why his name was left off the ballot, since he was nominated. I personally believe that he deserves to be presented on the ballot. Since he is not, you must write in his name if you feel as I do and wish to vote for him.

#### \*\*\*An Important Book!\*\*\*

Some of you may have been fortunate enough to have seen and perhaps buy a copy of "BUILDING AND FLYING INDOOR MODEL AIRPLANES", by Ron Williams. This book tells all you wish you knew about indoor modeling, but don't know who to ask. The book covers not only start-up information for all kinds of indoor models, but also tells many of the finer points as well.

The book contains an unbelievable variety of information, and is profusely illustrated with both photos and hand-drawn illustrations. One of the big difficulties of getting new people into our ranks is how to let people know what we are about and how to build these unusual models we are obsessed with. This book, made available to young people, certainly can help to spread this information. To that end, I have donated a copy to the Richardson Public Library. I hope that this will seem like a good idea to many of you, and that you will follow suit in your own neighborhood. If you can't afford this, show your copy to the head librarian and see if you can't get the library to order their own copy. If you don't have a copy yet, you are missing out on one of the most important events of the past several years! You can get your copy from Simon & Schuster; in paperback for \$12.95. Hop to it!

#### Another NIMAS Member Dies

We were recently notified that Maj. Gen Franklin Davis, retired career officer and long-time NIMAS member, died on May 4, 1981. Those who knew him will miss his activity and enthusiasm.

#### FAI TEAM SELECTION FINALS

Elsewhere in this issue are shown the results for the Team Selection Finals, held at Santa Ana on Labor Day Weekend. Besides the results as shown, it is worthy of note that 1st runner-up Dan Domina passed up the offer (traditionally made,

not required) to be Team Manager. Bud Romak, the next runner-up, accepted the nomination and was elected Team Manager. Bud has a number of years of experience as team member, along with a significant amount of experience managing his own business; he will be an excellent manager. Congratulations and best wishes to Bud and team members Cezar Banks, Ray Harlan and Jim Richmond! It is currently expected that Erv Rodemsky will also fly at the 1982 Indoor WCh to defend his title. The current expectation is that the 1982 WCh will be in the Romanian Salt Mines.

#### New Team Selection Committee Members

In fairly recent past history, there were two vacancies on the Team Selection Committee; Ted Gonzoph died last year and C. V. Russo resigned this year. Manny Radoff was elected by fliers from District II to replace Russ, and Stan Chilton was appointed to replace Ted.

At the time of this writing, an election is under way to replace Jim Richmond as Chairman of the Committee, who resigned after doing an excellent job. Thanks to Jim, and congratulations to Stan and Manny!

#### NATIONAL FREE FLIGHT SOCIETY

The time has come for making nominations for the two special awards made annually by NFFS, with nominations being accepted until Jan. 1, 1982 for the following categories:

Top Ten Models Of The Year. Send nominations to Gil Graunke, 15260 Heather Hill Dr., Brookfield WI 53005.

1982 Free Flight Hall of Fame. Send nominations to A. J. Italiano, 1655 Revere Dr., Brookfield WI 53005.

#### CONTEST BOARD ACTION

Although official announcement has not been made, the recent Free Flight Contest Board voting has approved a return to rules for Easy B similar to those in effect when the microfilm-covered model was created. The major difference is that Easy B remains an official event rather than a provisional event as it was originally. Thus ends an unfortunate series of happenings which did nothing to promote model aviation in general and Indoor in particular. Hopefully, both the fliers and the Contest Board have gained insight and experience.

#### NATIONAL RECORD ACTIVITY

Three fliers are due congratulations for their flight activity in recent months. First in order of occurrence: Mr. Hideyo Enomoto of Japan set a new FAI Cat. I World Record in March, 1981; the time was 25:24. The previous mark was held by Tom Vallee.

On the local scene, Warren Williams claimed Lew Gitlow's AMA Cat III Helicopter record with a flight of 10:07 at Santa Ana during July. Then, in August, Tom Vallee set a new Cat I Paper Stick record of 16:04 and a Cat I H.L. Stick record of 22:26. Trying again in September, Tom then logged 23:32 for a new Stick record and 23:14 for a new AMA FAI Cat I record of 23:14. Each of these fliers deserve our applause; not many of us are pushing for new records at this time!

#### CONTEST CALENDAR

##### CALIFORNIA - San Diego

The San Diego Orbiters continue their monthly informal contests after club meetings at the Colina Del Sol Gymnasium. The next scheduled event is set for Oct. 23, 1981. Contact Howard Haupt for more info; ph. 282-4886.

##### KANSAS - Overland Park

Roger Schroeder has organized a series of indoor flying sessions at the Westport Roanoke Community Center, 3601 Roanoke Rd., Overland Park. The sessions are set for Nov. 28 and Dec. 12, 1981, and Jan. 14, Mar. 14 and Apr. 14, 1982. The first three sessions are Fun Fly sessions from 3 pm to 5 pm and the other two are contests to be held from 3 pm to 7 pm. For more details contact Roger at 4111 W. 98 St., Overland Park KS 66207, ph. 648-4265.

**NOT ANOTHER PROPOSAL!**

**MISSOURI - St. Louis**

Jim Bennett, 324 Helfenstein Ave., St. Louis MO 63119, sent this schedule for indoor contests in the area: Oct. 24, 1981, St. Louis Armory, Easy B, HLG and Indoor Scale; Cat. II; 49'. Other meets: Nov. 15, Dec. 13, 1981 and Jan. 17, Feb. 14, Mar. 14 and Apr. 14, 1982. All those meets presumably scheduled for the Armory; all are AMA Class A meets except for the Apr. 4 meet, which is Class AA. Contact Jim for more details.

**OKLAHOMA - Oklahoma City**

The Sooner Free Flight Society will hold an AMA Class AA indoor contest at the National Guard Armory, 200 NE 23rd St., Oklahoma City, Dec. 13, 1981, from 8 am to 5 pm. Events: HLG (8 am to 10 am), "old" Easy B, Pennyplane, Paper Stick, Peanut Scale (AMA Rule #58), AMA Scale, Bostonion and Novice R.O.G. Contact Bill Baker, 1902 Peter Pan, Norman OK 73069, ph. 405-329-1018 for more details.

**GLUE THE KNOT!**

The material to follow is Stan Chilton's description of how to make motors by glueing the rubber instead of tying it. The major benefit to be gained is that the rubber has far less tendency to break at the knot when under high stress (during winding, primarily). Stan usually is surrounded by broken motors at the end of a contest day, and he maintains that most of his broken motor problem has been failure at the knot. Stan comments:

After trying quite a few knots (and breaking them either while tying them or testing them), I ended up with the following which works better than anything else I tried.

Lay out a piece of rubber about 1" longer than required for the size loop you want to end up with. Double (fold in two) the strands keeping them flat to each other and mark the exact length of motor you desire using a pen called a "Sharpie". It is a felt tip pen with a fairly sharp conical point and has permanent ink, probably some sort of cellulose base. Mark the rubber loop with the mark starting at the point of exact length you want, with the rest of the mark being on the outside of this exact length.

Begin by slipping on "O" rings if you use them, then take a scissor-type locking clamp and clamp the two loose ends together about 3/16" from the end. Hold the clamp handle in a vise and stretch the rubber loop over to an anchor so the rubber is stretched to about five times its normal length, with the mark visible. I use obsolete water-soluble rubber lubricant and put a very small amount around the marked area of the motor, using a small screwdriver. This sounds crazy, but it keeps the rubber from abrading itself at the knot. I then take some carpet thread (not nylon--maybe cotton with some dacron) and wrap this around the motor about three times, beginning at the loop end of the mark, and then tying a couple of overhand knots as tightly as possible. From the knot side you can see just two wraps of thread. The carpet thread should not be so small as to cut the rubber and not so big it is heavy or unwieldy.

I actually wrap this thread around the motor about three times, beginning at the loop end of the mark, then tying a couple of overhand knots in it. I tie as tightly as I can--from the knot side you can see just two wraps of thread.

Release the tied motor from the latched clamp and wash the motor and the knot clean. Dry it well with a clean cloth--when dry, especially at the knot, it must be glued. Put a drop of Hot Stuff on a piece of glass and use the 1/32 teflon tubing which comes with the glue to dip a tiny drop into the crotch of the loose ends of the tied loop. If you are very steady, put a very tiny drop on the knot in the thread. Be sure not to get any Hot Stuff on the motor itself! Blot off any excess glue and trim the ends of the rubber.

I am using a rubber lubricant consisting of boiled green soap and glycerin, and pure stinking lanolin--boiled to a cold cream paste (when cool) and adding about 1% vegetable base carrier silicone. This lube works as well as any I've ever used, and continues to work well when the motor is dry.

I keep all my rubber, both motors and skeins, well dusted with Johnsons Baby Talc. I also wash motors after each flying session and use more talc. The only trouble is that you have to wash each motor before using it, so locate your flying box near either a water fountain or a rest room, or take a supply of water to wash motors with.

As a result of using this method of tying motors, I break less than 1/3 as many motors as before, yet each motor is wound to at least 90% of full turns before backing off to the desired launch torque.

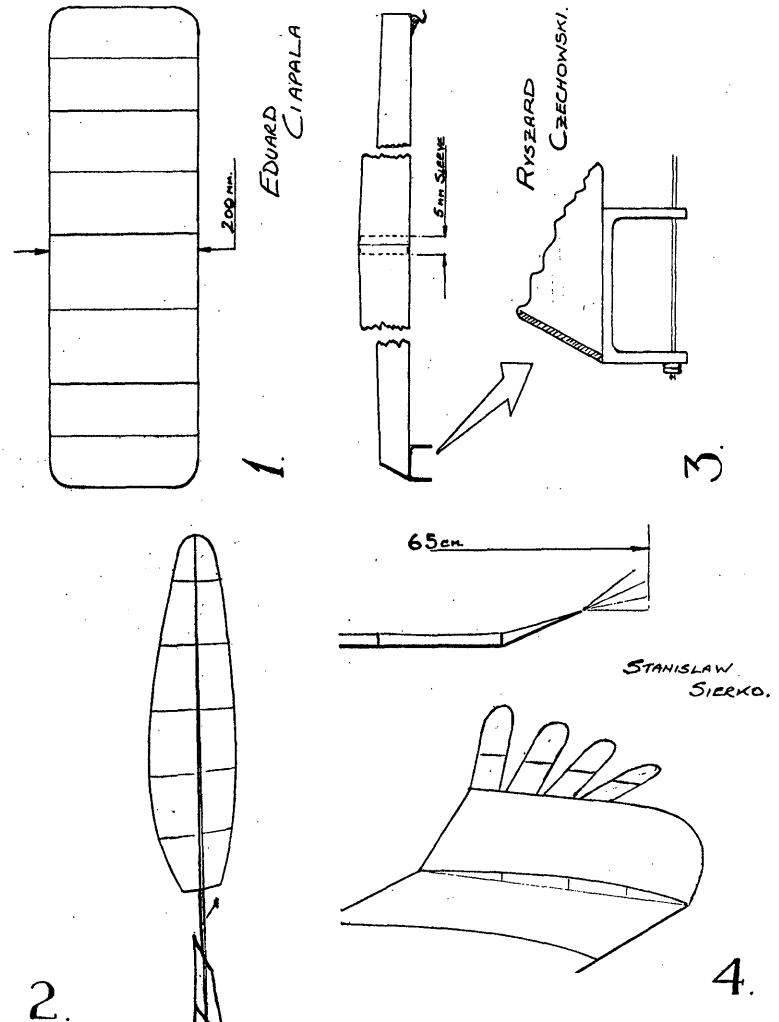
During the recent Team Selection Finals, a great number of models were lost by even the most experienced fliers, in one of the best Cat. III sites in the world. Erv Rodemsky contends that this is due to the continuing evolution of the F1D model, which leads to the models spending great amounts of time near the ceiling. Although I'm not sure I agree with all of his proposal (printed on page 4), I agree that there is a problem and that he has made many good points. Read it, make up your own mind, and comment either to Erv, or to INAV. If you wish, your comments, pro or con, can be aired in INAV. Erv's address is 26 Warmspring, Irvine CA 92714.

**OLD, BUT INTERESTING--**

Sometimes I get an item which gets lost in the shuffle or is crowded out of the issue it should have been to be timely. The material below was furnished by Ed Whitten, from a letter he received in 1979. Ideas seldom go out of style, so here are some different ideas!

**NOTES from the 6th International F1D contest at Wroclaw, Poland, Sept. 20-23, 1979:**

- 1 - Eduard Ciapala (Polish national champion) - unusually large chord wing (large for Continental designs) approaching 200 sq. inches area. Not used in contest.
- 2 - Sylvester Kujawa - Propeller with abruptly square cut hub - purely experimental - no conclusions formed.
- 3 - Ryszard Czechowski (1974 World Champion) - Tapered/spliced stick. Tapering is not new, but splicing appears original approach. Theoretically resists bending loads better than parallel stick. Important feature is that it is economic on wood. With care one can make two sticks from one sheet. Also nose bearing - immaculately machined from solid - stronger than 'bent-up' variety - however, more difficult to adjust thrust line.
- 4 - Stanislaw Sierko - A quite startling wing design giving appearance of wing tip feathers. Intention is to smooth out airflow/tip vortices a la Hoerner tips. Thought to be of questionable advantage at F1D airspeeds. Penalties: increased weight and loss of area.





**F1D INDOOR TEAM SELECTION CONTEST**

September 5-7, 1981

Santa Ana, California

| Place       | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | Total Score | Points | Prev. Points | Total Points |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|--------|--------------|--------------|
| 1. Banks    |       | 41:11 | 43:35 | 6:35  |       |       | 41:32 | 2:06  |       | 85:07       | 1000   | 110.00       | 1110.0       |
| 2. Harlan   | 23:11 | 6:29  | 40:49 | 36:42 | 40:41 | 39:24 |       | 39:29 | 11:19 | 81:30       | 975.5  | 110.00       | 1067.5       |
| 3. Richmond | 6:34  | 38:16 | 38:21 | 38:03 | 12:55 |       | 41:54 | 38:46 | 31:16 | 80:40       | 947.7  | 110.00       | 1057.7       |
| 4. Domina   | 36:29 | 39:22 | 37:05 | 37:28 | 37:01 | 7:59  | 38:38 | 38:28 | 40:40 | 80:02       | 940.3  | 110.00       | 1050.3       |
| 5. Romak    | 25:49 | 38:36 | 34:21 | 24:21 | 41:30 | 28:26 | 35:06 | 36:04 | 11:19 | 80:06       | 941.1  | 105.40       | 1046.5       |
| 6. Mather   | 33:52 | 39:35 | 38:59 | 35:11 | 28:42 | 36:09 | 38:47 | 35:45 | 38:17 | 78:34       | 923.0  | 107.26       | 1030.3       |
| 7. Cannizzo | 33:16 | 5:07  | 34:09 | 8:01  | 38:10 | 38:54 | 9:18  | 26:50 | 36:24 | 77:04       | 905.4  | 104.58       | 1010.0       |
| 8. Randolph | 3:19  | 33:37 | 23:27 | 28:37 |       | 33:13 | 35:18 | 28:55 | 38:04 | 73:22       | 862.0  | 92.81        | 954.8        |
| 9. Calliau  | 30:32 |       | 34:41 | 31:39 | 37:03 |       | 17:54 |       |       | 71:44       | 842.8  | 109.29       | 952.1        |
| 10. Hagen   | 27:26 | 37:30 | 34:18 | 24:53 | 9:01  | 22:06 | 29:06 | 17:47 |       | 71:48       | 843.5  | 105.16       | 948.7        |
| 11. Hulbert | 29:30 | 34:18 | 30:51 | 24:51 | 34:28 | 35:15 | 33:36 | 00:03 |       | 69:43       | 819.1  | 105.22       | 924.3        |
| 12. Doig    | 6:13  | 32:17 | 21:58 | 34:25 | 34:37 | 11:24 | 31:29 | 35:04 | 33:33 | 69:41       | 818.7  | 97.83        | 916.5        |
| 13. Gitlow  | 14:00 | 7:22  | 29:18 | 17:27 |       | 35:35 | 1:12  | 30:11 | 33:56 | 69:31       | 816.7  | 82.64        | 899.3        |
| 14. Gibbs   | 27:49 | 20:02 | 1:30  | 14:27 | 32:32 | 7:10  | 34:25 | 32:07 |       | 66:57       | 786.6  | 110.00       | 896.6        |
| 15. Stoll   | 20:26 | 31:33 | 33:55 | 26:31 | 32:23 | 32:15 | 24:03 | 8:41  | 30:04 | 66:18       | 778.9  | 95.61        | 874.5        |
| 16. Hoffman | 12:30 |       |       |       | 32:42 |       | 31:53 |       |       | 64:35       | 758.8  | 104.68       | 863.8        |
| 17. Radoff  | 26:57 | 33:34 | 22:43 | 25:50 | 32:14 | 2:10  | 25:38 | 28:47 | 5:13  | 65:48       | 773.1  | 84.98        | 858.1        |
| 18. Faykun  | 15:06 | 32:15 | 16:50 | 26:50 | 29:49 | 25:53 | 28:34 | 2:35  |       | 62:04       | 729.2  | 101.37       | 830.2        |
| 19. Ganslen | 20:41 | 24:17 |       |       |       | 19:32 | 12:12 | 20:20 | 21:03 | 45:20       | 532.6  | 108.34       | 640.6        |

*Erv Rodemsky*  
 Erv Rodemsky  
 Contest Director

**1982 INDOOR TEAM-SELECTION STATUS**

| Contestant  | Akron Regional<br>9/2/80<br>time/points | Santa Ana Regional<br>11/15-16/80<br>time/points | West Baden Regional<br>6/21-22/81<br>time/points | Santa Ana Regional<br>6/21/81<br>time/points | Lakehurst Regional<br>7/4-5/81<br>time/points | Denton, Tex Regional<br>7/26/81<br>time/points | Akron Regional<br>8/1-2/81<br>time/points | Points from best Local | Program Points to date |
|-------------|---|--|--|--|---|--|---|------------------------|------------------------|
|             | Banks                                   |  | 67:05/100.0                                      |  |   |  |   |                        | 10.00                  |
| Belleff     |   |  |  |  | 39:15/55.37                                   |  |   | 10.00                  | 65.37                  |
| Brodersen   |   |  |  |  |   |  |   | 5.99                   | 5.99                   |
| Calliau     |   | 57:13/85.29                                      | 68:28/100.0                                      |  |   |  |   | 9.29                   | 109.29                 |
| Cannizzo    |   |  |  |  | 67:18/94.94                                   |  |   | 9.64                   | 104.58                 |
| Carter      | 42:59/46.67                             |  | 42:25/61.95                                      |  |   |  |   | 8.09                   | 70.04                  |
| Chilton     |   |  | 65:14/95.28                                      |  |   |  |   | 10.00                  | 105.28                 |
| Clem, J.    |   |  |  |  |   |  |   | 10.00                  | 10.00                  |
| Clem, M.    |   |  |  |  |   |  |   | 10.00                  | 10.00                  |
| Crane       |   |  |  |  |   |  |   | 8.13                   | 8.13                   |
| Doig        | 69:23/75.33                             |  | 57:07/83.35                                      |  |   |  | 72:53/87.83                               | 10.00                  | 97.83                  |
| Domina      |   |  |  |  | 70:53/100.0                                   |  |   | 10.00                  | 110.00                 |
| Faykun      |   | 63:12/94.21                                      |  |  |   |  |   | 7.16                   | 101.37                 |
| Ganser      | 63:47/69.25                             |  | 39:52/58.23                                      |  |   |  | 67:47/81.68                               | 8.26                   | 89.94                  |
| Ganslen     |   |  |  |  |   |  |   | 8.48                   | 8.48                   |
| Gibbs       |   | 50:19/75.01                                      |  | 81:10/100.0                                  |   |  |   | 10.00                  | 110.00                 |
| Gitlow      |   | 49:58/74.49                                      |  |  |   |  |   | 8.15                   | 82.64                  |
| Hagen       |   | 63:50/95.16                                      |  |  |   |  |   | 10.00                  | 105.16                 |
| Hardcastle  |   |  | 55:50/81.55                                      |  |   |  |   |                        | 81.55                  |
| Harlan      | 86:44/94.17                             |  |  |  |   |  | 82:59/100.0                               | 10.00                  | 110.00                 |
| Haupt       |   |  |  |  |   |  |   | 3.22                   | 3.22                   |
| Hoffman     |   |  | 65:39/95.89                                      |  |   |  |   | 8.79                   | 104.68                 |
| Hulbert     | 75:13/81.67                             |  | 62:53/91.85                                      |  |   |  | 79:17/95.54                               | 9.68                   | 105.22                 |
| Kulzer      |   |  |  |  |   |  |   | 10.00                  | 10.00                  |
| Loucka      | 64:43/70.27                             |  |  |  |   |  | 72:46/87.69                               | 1.80                   | 89.49                  |
| Mather      |   | 61:38/91.88                                      |  | 78:57/97.26                                  |   |  |   | 10.00                  | 107.26                 |
| Obarski     | 74:43/81.13                             |  | 59:11/86.44                                      |  |   |  | 77:38/93.55                               | 10.00                  | 103.55                 |
| Platt       |   |  |  |  |   |  |   | 9.41                   | 9.41                   |
| Radoff      |   |  |  |  | 53:33/75.53                                   |  |   | 9.43                   | 84.98                  |
| Randolph    |   | 56:20/83.98                                      |  | 55:18/68.13                                  |   |  |   | 8.83                   | 92.81                  |
| Richmond    | 92:06/100.0                             |  |  |  |   |  |   | 10.00                  | 110.00                 |
| Romak       |   | 64:00/95.40                                      |  |  |   |  |   | 10.00                  | 105.40                 |
| Russo       |   |  |  |  | 53:30/75.48                                   |  |   |                        | 75.48                  |
| Shailor     |   |  |  |  |   |  |   | 5.62                   | 5.62                   |
| Shepherd    |   |  |  |  |   |  |   | 9.85                   | 9.85                   |
| Stoll       |   |  | 58:37/85.61                                      |  |   |  |   | 10.00                  | 95.61                  |
| Szymula     |   |  | 55:06/80.48                                      |  |   |  |   |                        | 80.48                  |
| Tenny       |   |  |  |  |   |  |   | 3.08                   | 3.08                   |
| Tryon       |   |  | 63:17/92.43                                      |  |   |  |   | 8.52                   | 100.95                 |
| Van Gorder  | 59:35/64.69                             |  |  |  |   |  | 73:14/88.25                               | 8.02                   | 96.27                  |
| Williams, W |   | 49:55/72.92                                      |  |  |   |  |   |                        | 72.92                  |
| Skrjanc     |   |  |  |  |   |  |   | 2.74                   | 2.74                   |

### Proposed F1D Rule Change

Back in the '60s, when indoor was first accepted as a world championship event, the ultra simple rules (90 CM wingspan) produced big, beautiful models, but the event was so intimidating that one world championship was cancelled due to a lack of interest. Against strong U.S. opposition, the CIAM reduced the wingspan to 65 CM to make carrying the boxes on public transportation more practical. After two world championships with the smaller, extremely light models, the one gram rule was adopted to increase model durability. Both size reduction and the weight rule increased popularity of the event resulting in more countries than ever sending teams. Now, after ten years of stagnant rules, the models with wide chords, long motor sticks and big props require boxes that are as large as the 90 CM models. They spend more time rafting and banging and are constantly being destroyed in shipping and handling. During the recent U.S. team selection contest, virtually every "world class" flyer blew one or more models, six by Cesar Banks, six by Bud Romak, three by Ray Harlan and three by Larry Calliau. This is a situation like Wakefield before the rubber weight limitation. There has to be something wrong when the world's best flyers smash a model every other flight. How can you reasonably expect anyone new to waste such time and money. Undoubtedly some "die hards" will give it up if there is a rule change as happened in Wakefield, but when the new people come around, it will be bigger than ever-- as Wakefield with its 50! entrants at this year's Free Flight Championship. It's insane to spend the time needed to build and test six or eight ships and then sweat out the airline baggage smashers in order to participate in serious competition.

### Santa Ana Stick

1. Wingspan - 60 CM (23.622")
2. Length - excluding prop - 60 CM
3. Weight - excluding rubber - one gram
4. Horizontal area of lifting surfaces - 1200 CM<sup>2</sup> (186 sq. in.). Biplanes must include area of both wings.
5. Motor weight -  $\frac{1}{2}$  gram
6. No gears for motors or mechanical gadgets to change prop pitch or flying surfaces. All configuration changes must be aerolastic.

This produces a model that will fit in a two foot box, carried in the cabin of an airplane, and have an average wing chord of 5.276", assuming a 3% stabilizer. Since these models will be stronger, they will better be able to take a fully wound motor, thereby making rubber other than Pirelli a viable option. FAI Supply, for instance, is not as subject to breakage and has more energy storage, but most of that is at the high end and cannot be used by the present models. In testing on half motors, I find it great fun to see just how the model flies with a wire light motor.

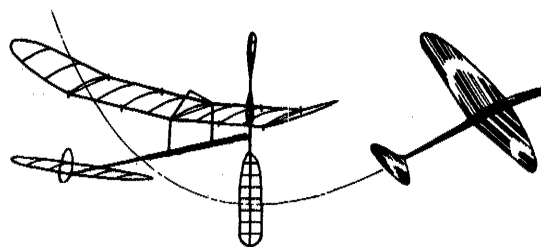
Some of you may feel that reducing the size is all right, but limiting rubber is a bad idea. Unless we limit the rubber, motor sticks will get even longer than at present; and since the models will be stronger, they will be wound tighter with huge motors and spend even more time at the ceiling, drifting to the sides, getting hung and being destroyed. Limiting rubber to  $\frac{1}{2}$  gram will go a long way toward preserving your best models. I've heard that this will put a premium on rubber quality, but this has always been the case. If you have poor rubber, adding more it will not solve the problem, only make the model heavier. The motors could be processed, sealed and kept by the timer after you process. You would need to process several bands to cover breakage when you are ready to fly. I feel that these planes will be capable of 30 minute flights. In testing on  $\frac{1}{2}$  motors (approximately 2/3 gram rubber) with 2/3 gram of ballast and overweight models, I've been able to do over 21 minutes many times. So, I'm sure that these models will score respectable times even by today's standards. Other benefits of this proposal are: wood quality is less important, bracing is simpler, the weight of plug-in tail booms can be tolerated for packing ease, and film frames can be smaller, making lifting and storage less of a problem.

I realize that this constitutes a complication of processing, but most other FAI classes are much more restrictive than this. At our team selection, less than two minutes per plane were required for weighing and measuring and no delays were encountered. Processing of the wing and tail areas could be done by a certificate of compliance and in case of doubt, a complete check made. The contestant would be required to submit full-size cardboard templates of the projected lifting surfaces. These could be used to cut out tissue patterns and weighed, or one of those perimeter tracing gadgets which measure area directly could be used. Let's not specify a chord length, as this really causes everyone to make square wings!

These rules have been called a "one design" contest, but there would still be a great deal of latitude for variations in planform, airfoil selection, prop design, area distribution, center of gravity location, rubber handling ability, etc. Let's face it, the present models are very difficult to build down to weight with adequate strength for air loads, handling, tight motors, steering, and shipping.

I intend to build a model to these specifications for demonstration purposes (Boy Scout groups, etc.), as it will certainly be more practical to fly in a small room. So how about all of you who have expressed interest building for a contest at Santa Ana on December 20 or January 17? Please let me know if you have any strong opinions about modifications to the above proposal.

With apologies to those who disagree, I've given this a lot of consideration and sincerely think that these rule changes would benefit the sport, increase competition and insure the future of F1D indoor flying throughout the world.

**INDOOR****NEWS and VIEWS**

#3

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

\*\*\*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 Woltthoorn | 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 CALENDARFLORIDA - 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 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 FAIers...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.

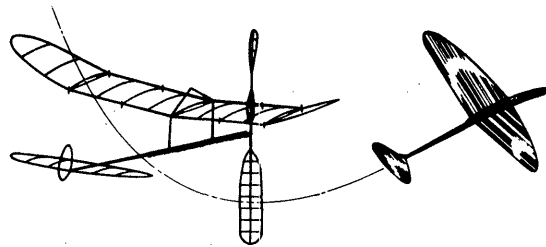
#### TORQUE ROD DESIGN

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 REPORTTeam 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 CALENDARFLORIDA - 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 Roakoke 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.

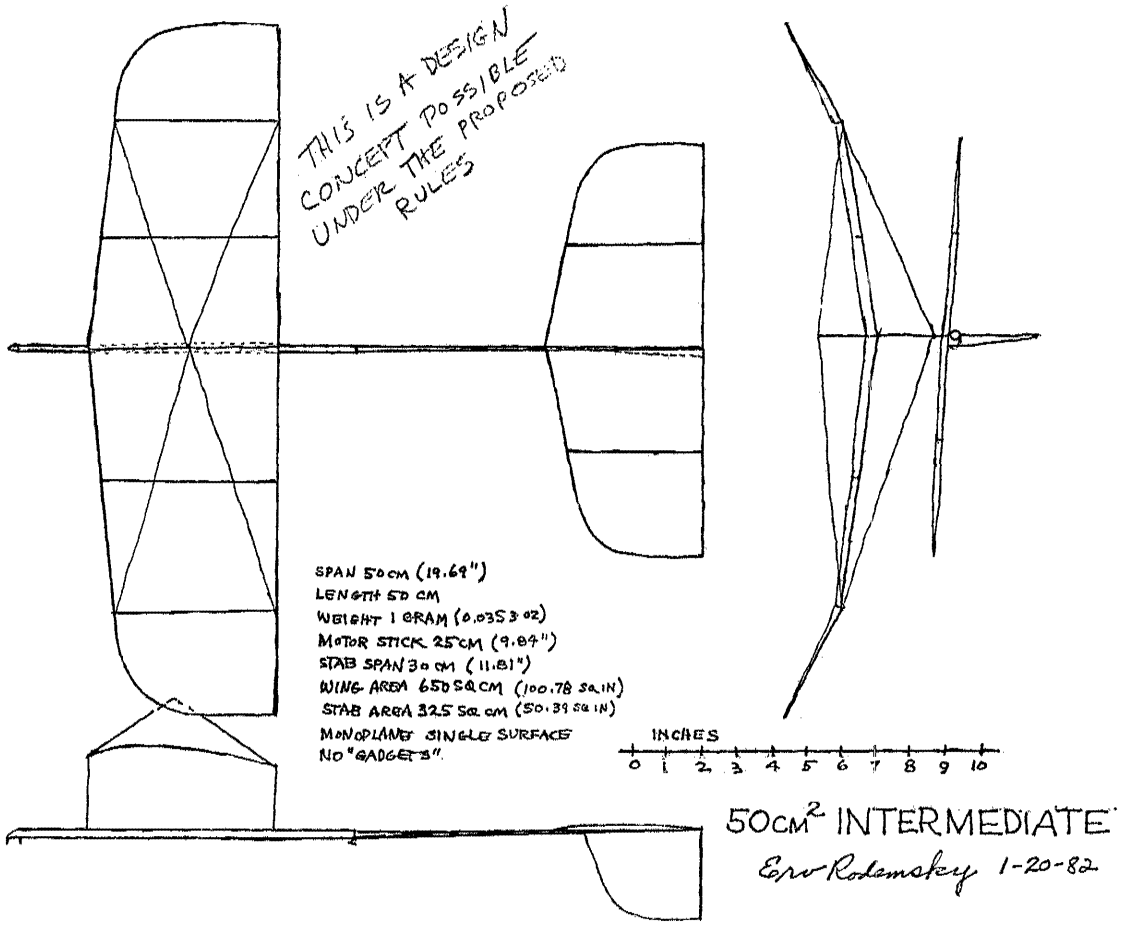
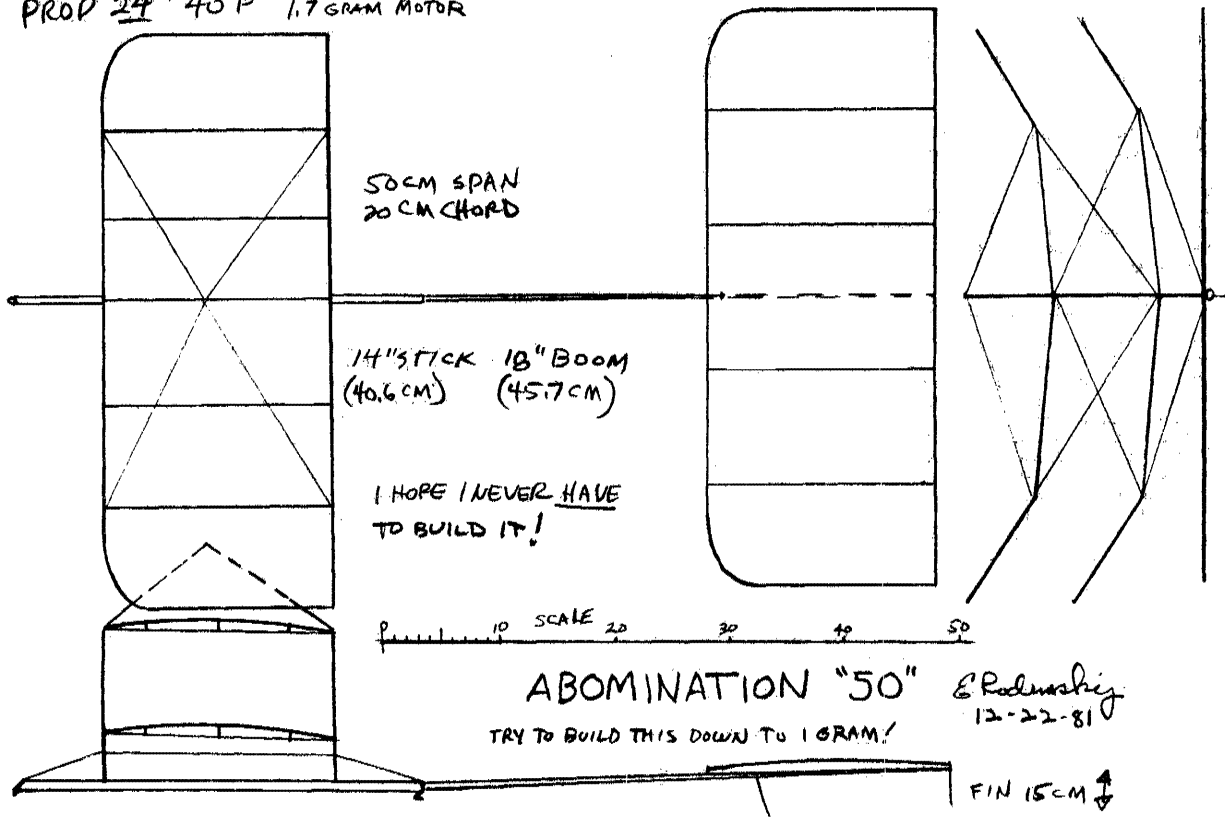
With sincere apologies to those who are in support of the original 60 cm. class, especially those who have built and flown the models and are even more enthusiastic about 60 cm., a great number of people feel that a new permanent class should be different enough that the change is meaningful. Also the 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 patented 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. 20510

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.

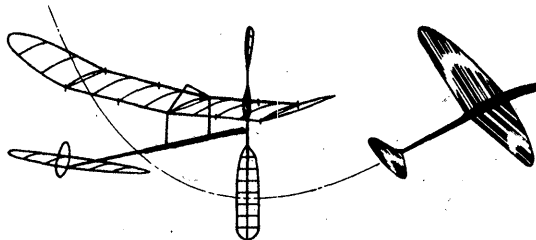
#### WRAPUP ON F1D

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



\*\*\*\*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 Mats 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 Class Demo** |              | NFFS Banquet 7 pm, Guest Speaker 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 Hagien, 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

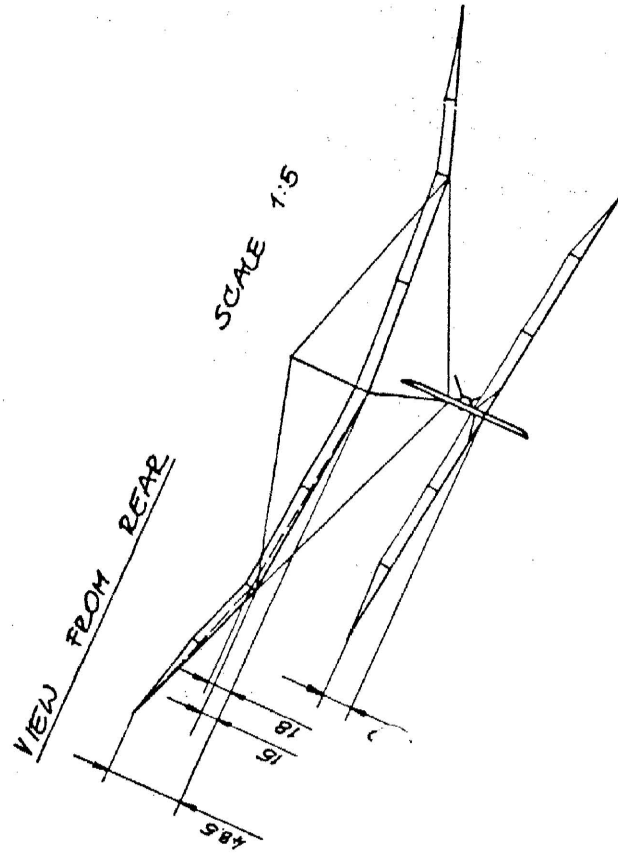
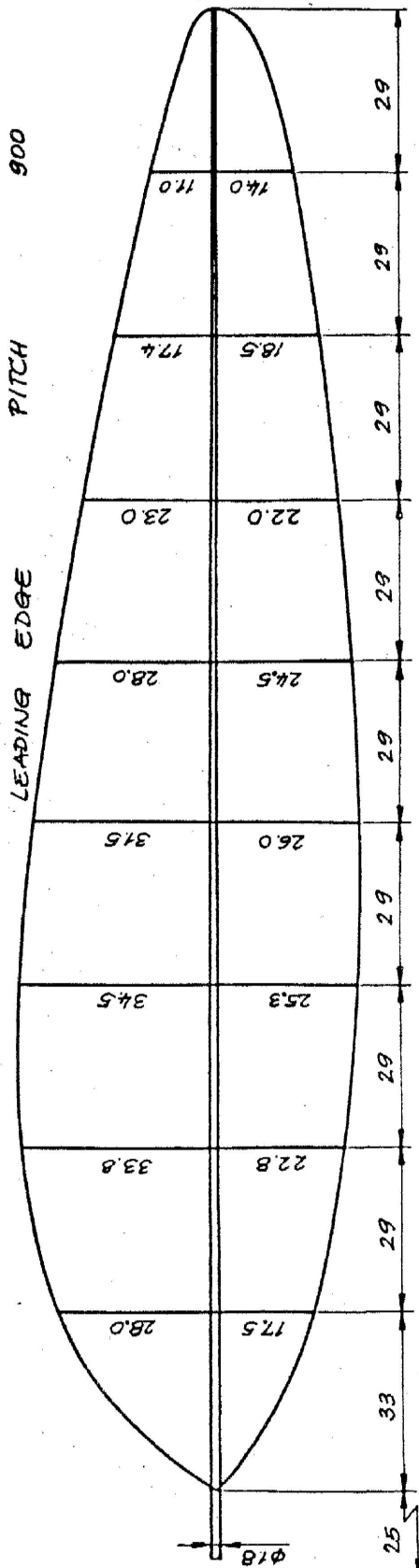
Two sessions are left in the MIAMA spring indoor season: the May 9 contest at the Opa Locka Blimp Hangar and the May 16 Fly-in at Miami Dade South. Both sessions run 9 am to 5 pm; contact Dr. John Martin, 3227 Darwin St. Miami FL 33133 for more details. Call 858-6363 on Friday before meet for confirmation.

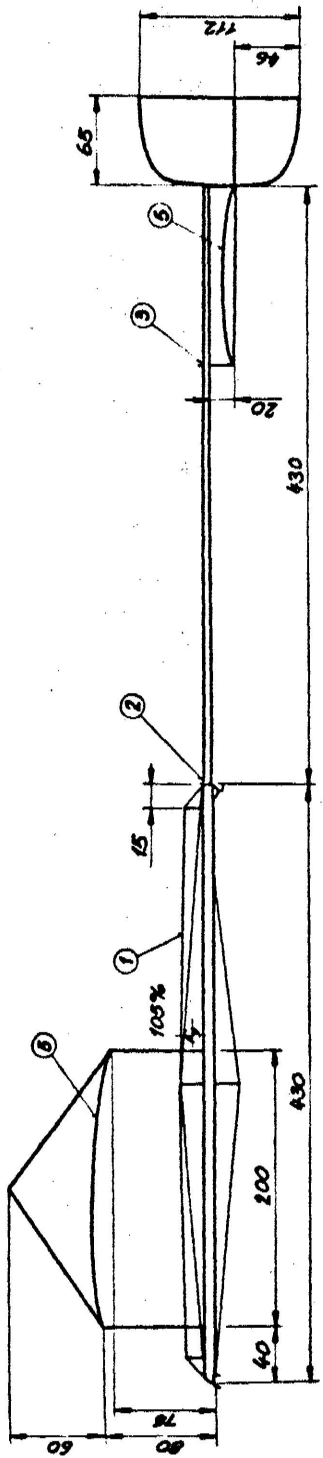
WEIGHTS  
(GRAMS)

|              |             |
|--------------|-------------|
| WING         | 0.30        |
| STAB + BOOM  | 0.23        |
| PROP         | 0.18        |
| MOTOR STICK  | 0.31        |
| <u>TOTAL</u> | <u>1.02</u> |

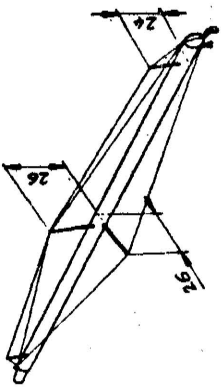
PROP DIAMETER 580  
PITCH 900

SCALE 1:1

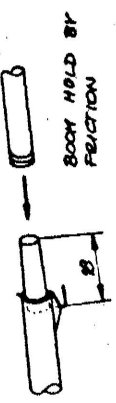




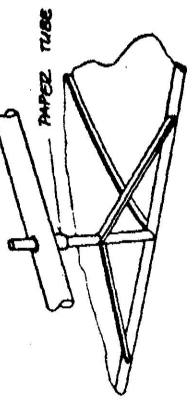
DETAIL 1: BRACING OF THE MOTOR STICK



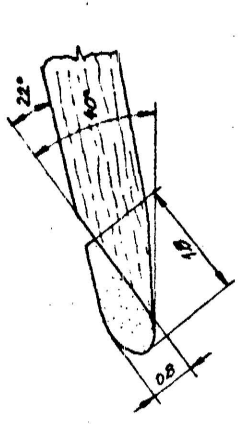
DETAIL 2: CONNECTION MOTOR STICK - TAIL BODY



DETAIL 3: TAIL PLANE TRIM DETAIL

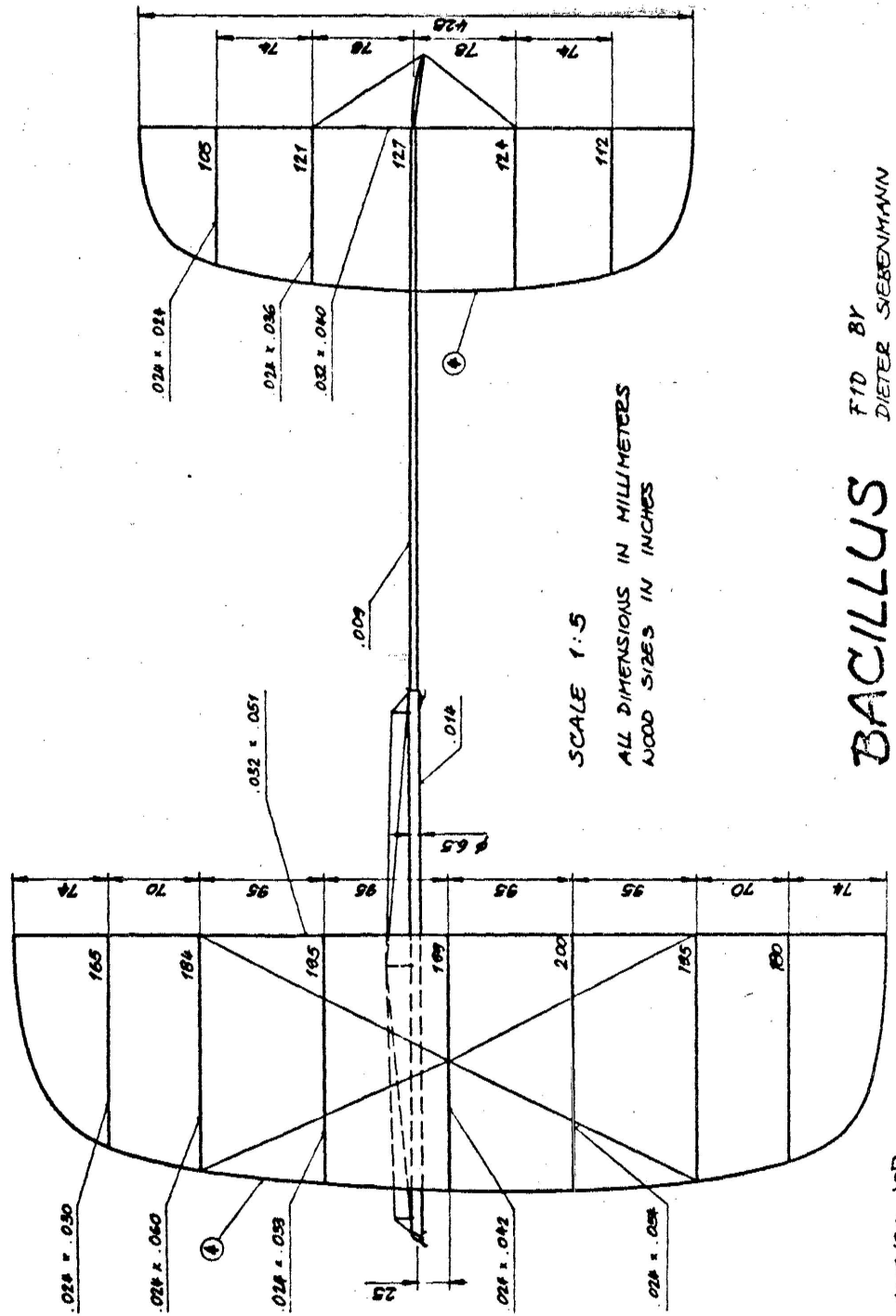


DETAIL 4: LEADING EDGE LUNG SPARS



DETAIL 5: AEROFOILS

|             |  |   |     |     |     |     |     |    |    |     |     |
|-------------|--|---|-----|-----|-----|-----|-----|----|----|-----|-----|
| WING:       |  | X | 0   | 5   | 10  | 15  | 20  | 30 | 40 | 50  | % C |
| Y           |  | 0 | 16  | 27  | 35  | 40  | 45  | 48 | 5  |     | % C |
| TAIL PLANE: |  | X | 0   | 10  | 20  | 30  | 40  | 50 |    | % C |     |
| Y           |  | 0 | 3.8 | 5.5 | 6.3 | 6.7 | 6.9 |    |    | % C |     |



F1D BY  
DIETER SIEBENMANN

# BACILLUS

AUG '80

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

\*\*\*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?

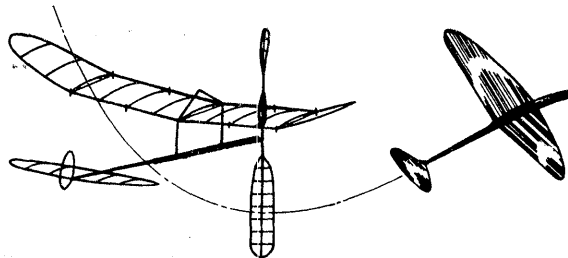
#### "Old" ICB Business

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)



# 6

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</b> 9 Entrants      | <b>Senior HLG</b> 4 Entrants  |
| 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</b> (21)    | <b>Junior HLG</b> 2 Entrants  |
| 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</b> (27)         | <b>Jr./Sr Paper Stick</b> (4) |
| Gerald Skrjanc 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</b> (4) | <b>Open Peanut Scale</b> (22) |
| 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</b> (9)            | <b>Manhattan Cabin</b> (11)   |
| 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</b> (3)    | <b>Open Pennyplane</b> (17)   |
| Dave Lindley 11:30              | Walt Van Gorder 11:34         |
| Kris Warmann 10:42              | Jerry Skrjanc 11:30           |
| Mike Clem 3:34                  | Bob Warmann 10:45             |
|                                 | Dick Hardcastle 10:42         |
|                                 | Gordon Wisniewski 10:23       |
| <b>Junior Pennyplane</b> (3)    | <b>AMA Scale</b> (12)         |
| Paul Loucka 11:05               | Jack McGilvray 177.0 pts.     |
| Robert Skrjanc 7:46             | Ed Stoll 171.5                |
| Dave G. Brown 3:37              | Ken Groves 166.0              |
|                                 | Jim Miller 155.5              |
| <b>Jr./Sr. AMA Scale</b> (2)    | Kris Warmann 87.5 pts.        |
|                                 | John Martin 149.5             |
|                                 | Dave G. Brown 65.5            |

|                                 |          |                               |       |
|---------------------------------|----------|-------------------------------|-------|
|                                 |          | <u>Open Indoor Stick</u> (14) |       |
| <u>Jr./Sr. Indoor Stick</u> (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 |
| <u>F1D Stick</u> (18)           |          | <u>R.O.G. Cabin</u> (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    |                               |       |
| <u>Peanut Speed</u> (6)         |          | <u>Open Novice P/P</u> (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 |
| <u>Junior Novice P/P</u> (3)    |          | Gordon Wisniewski             | 9:44  |
| Paul Loucka                     | 11:12    |                               |       |
| Brian Varney                    | 6:38     | <u>Senior Novice P/P</u> (2)  |       |
| Dave G. Brown                   | 3:27     | Mike Clem                     | 9:28  |
|                                 |          | Kris Warmann                  | 6:05  |

### 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 Skrjanc 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 satisfied 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; Newport 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; Newport 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 Escalente; 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 Skrjanc; 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 Laceys 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

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!

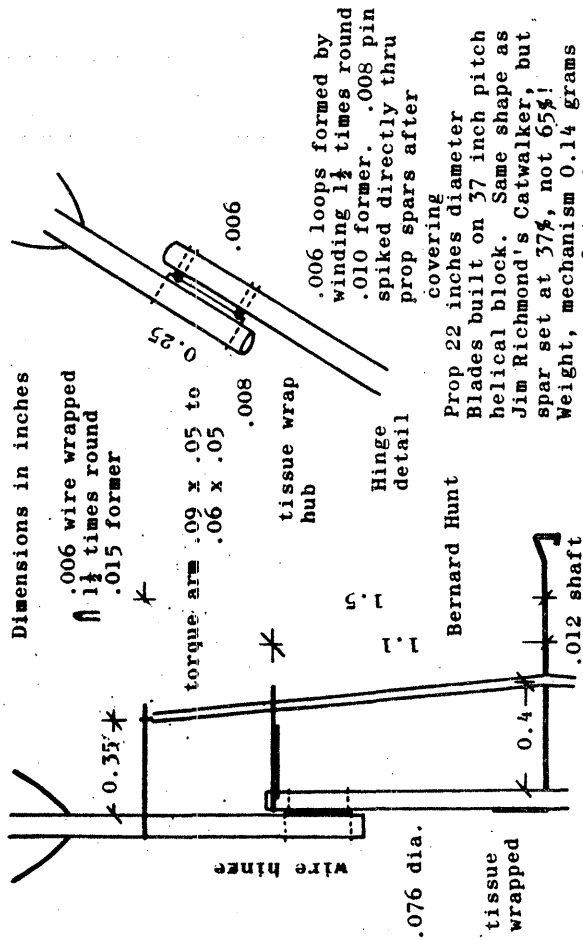


(Continued from p. 4)

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.

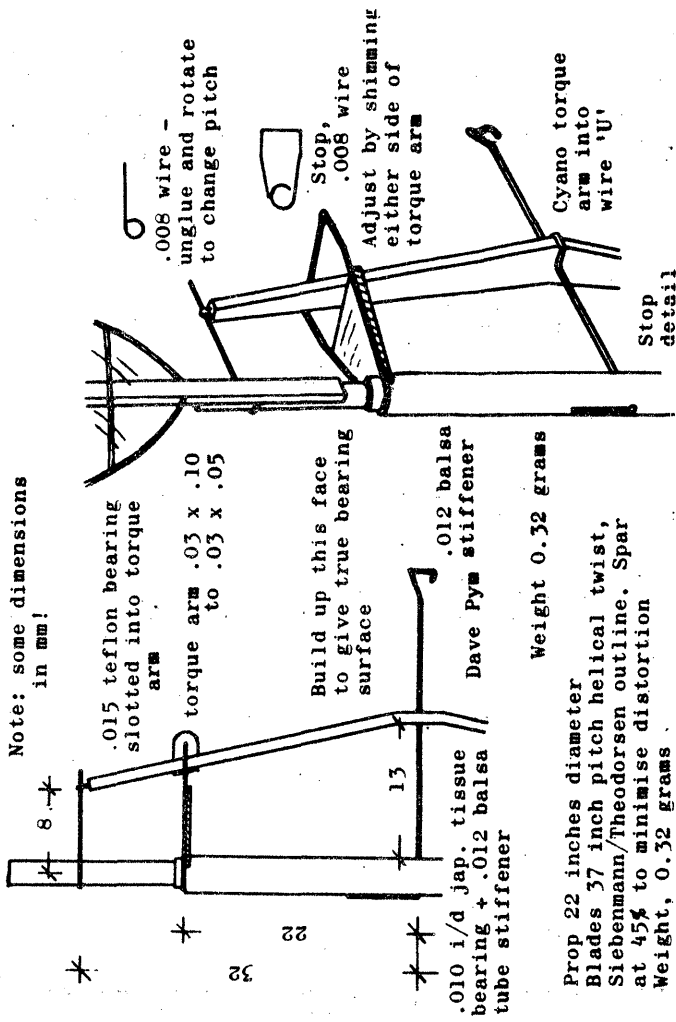
**THE MECHANISM:** the following explanation of the mechanism may be helpful. The torque of the motor opposed by the drag of the propeller blades causes the piano wire between the torque arm and the propeller hub to twist. This twist multiplied by the mechanical advantage of the torque arm/propeller 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.



**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).

Note: some dimensions in mm!



Prop 22 inches diameter

Blades 37 inch pitch helical twist, Siebenmann/Theodorsen outline. Spar 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 unglueing and re-setting the prop levers until the torque value at the top stop setting corresponds to the cruise torque for the chosen maximum 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; Pilarus 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 3 trol. 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 (DF) 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 (DF) 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

| Flier         | Time  | 1000/Time | Scale Pts. | Total  |
|---------------|-------|-----------|------------|--------|
| 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 |
|--------------|------|

VIIINART INDOOR RECORD TRIALS (Index)

| Name            | Event       | Time  | Index |
|-----------------|-------------|-------|-------|
| 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

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 GANSLIN , 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 GANSLIN , 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

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 12.09  
 4 D ERBACH , MANITOBA , MB 12.05

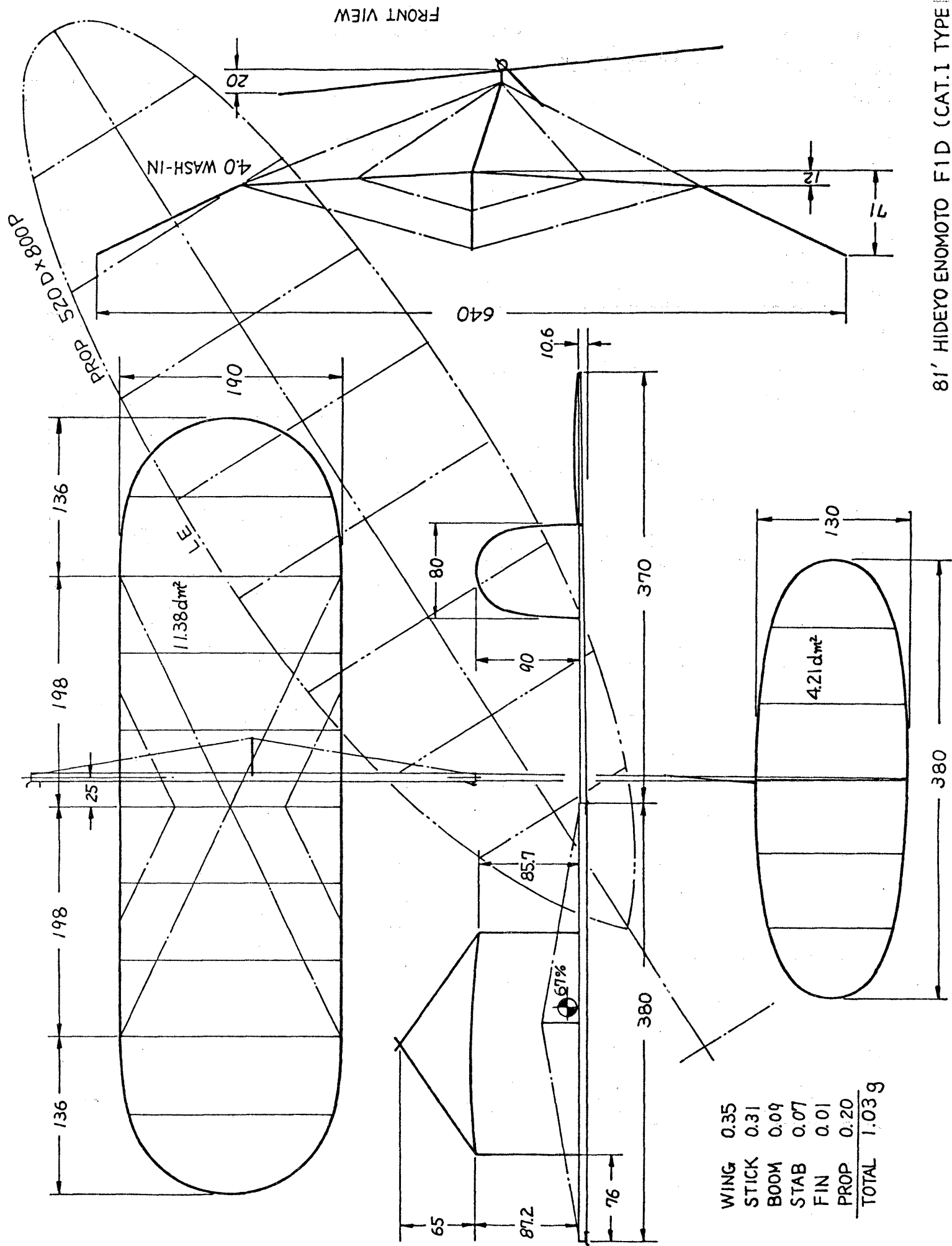
INDOOR HLG

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



|              |               |
|--------------|---------------|
| WING         | 0.35          |
| STICK        | 0.31          |
| BOOM         | 0.09          |
| STAB         | 0.07          |
| FIN          | 0.01          |
| PROP         | 0.20          |
| <b>TOTAL</b> | <b>1.03 g</b> |

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 |

JUNIOR

|                      |                 |         |
|----------------------|-----------------|---------|
| 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 |

JUNIOR

|                      |                    |      |
|----------------------|--------------------|------|
| 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 |
|------------------|------------------|-------|

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.

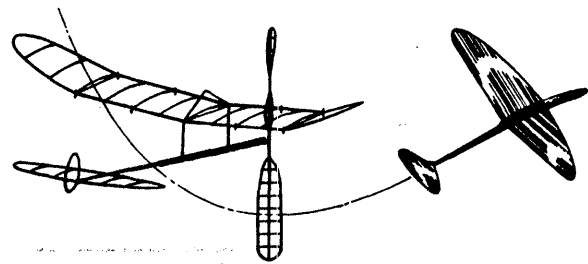
We have very few gymnasiums or hangars available for Cat. III or IV, so I decided to challenge the Cat. I record. We found a good gymnasium which has an almost flat ceiling of 7.95m height at Yoyagi, Tokyo. Last year I happened to fly my model for 23:48 at another gymnasium and Mr. Nonaka arranged the 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).

- 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.
- Model Weight 1.16g  
Rubber 42 cm loop, 1.5g  
Number of turns 1400  
Record 23:00
- Model and rubber Same as second flight.  
Number of turns 1500  
Record 23:59  
I steered the model one time.
- 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.
- 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



## 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 Ree           | 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. Sylwaster 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 Sierko    | P       | 25:07 | 22:36 | 28:10 | 21:38 | 20:52 | 26:24 | 54:42 |
| 19. Pentti Nora         | 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 Erofejef      | 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 Britian | 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 conveyer 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!

##### Oops!

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 be 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

*ON P. 4*  
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.

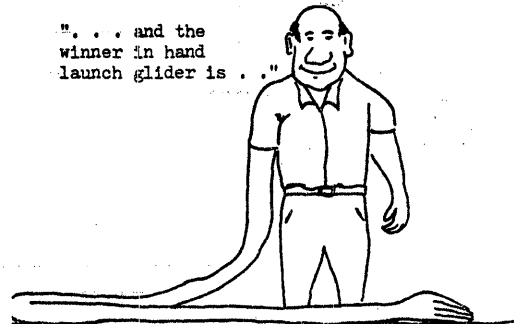
PIRELLI PARAMETER TABLE

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<br>2 STRANDS, 1/16" PER INCH | TURNS<br>PER INCH | TORQUE<br>INCH OUNCES | WT.       |
|-------|-------------------------------------|-------------------|-----------------------|-----------|
| 0.020 | 0.00092                             | 210.0             | 0.150                 |           |
| 0.030 | 0.00135                             | 171.5             | 0.276                 | ↑ .10 OZ  |
| 0.040 | 0.00194                             | 148.5             | 0.424                 |           |
| 0.050 | 0.00230                             | 132.8             | 0.593                 | ↑ .25 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                 | ↑ .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                 | ↑ .100 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 ..."

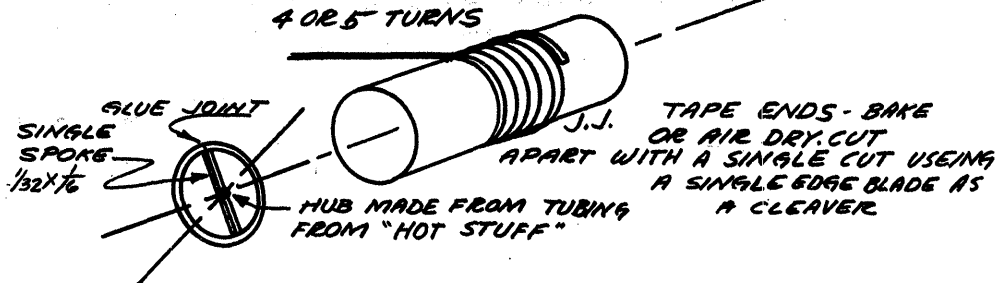


HINTS AND KINKS

Baby R.O.G. Wheels

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

**R.O.G. WHEELS**  
3/8" DOWEL, OR DIA. TO SUIT.  
SPIRAL WRAP 1/32" BALSA  
4 OR 5 TURNS



TAPE ENDS - BAKE OR AIR DRY. CUT APART WITH A SINGLE CUT USING A SINGLE EDGE BLADE AS A CLEAVER

LENGTH → 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

THICKNESS

.099 ↓

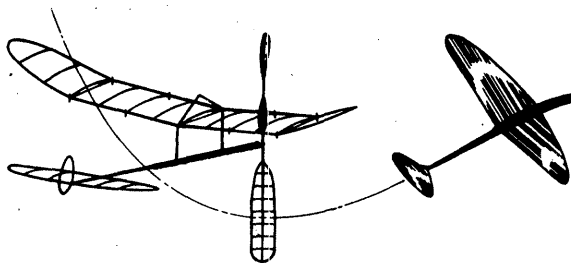
|      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .100 | .570   | .580   | .590   | .600   | .611   | .621   | .631   | .641   | .652   | .661   | .672   | .682   | .692   | .702   | .713   | .722   |
|      | 0.0644 | 0.0655 | 0.0667 | 0.0678 | 0.0690 | 0.0701 | 0.0713 | 0.0724 | 0.0736 | 0.0747 | 0.0759 | 0.0770 | 0.0782 | 0.0793 | 0.0805 | 0.0816 |
|      | 1310.8 | 1334.2 | 1357.6 | 1381.0 | 1404.4 | 1427.8 | 1451.2 | 1474.6 | 1498.0 | 1521.4 | 1544.8 | 1568.2 | 1591.6 | 1615.0 | 1638.5 | 1661.9 |
| .101 | .575   | .586   | .597   | .608   | .617   | .628   | .637   | .648   | .658   | .669   | .679   | .689   | .699   | .709   | .720   | .730   |
|      | 0.0650 | 0.0662 | 0.0674 | 0.0685 | 0.0697 | 0.0709 | 0.0720 | 0.0732 | 0.0743 | 0.0755 | 0.0767 | 0.0778 | 0.0790 | 0.0801 | 0.0813 | 0.0825 |
|      | 1304.3 | 1327.5 | 1350.8 | 1374.1 | 1397.4 | 1420.7 | 1444.0 | 1467.3 | 1490.6 | 1513.9 | 1537.2 | 1560.5 | 1583.7 | 1607.0 | 1630.3 | 1653.6 |
| .102 | .582   | .592   | .602   | .613   | .623   | .634   | .644   | .654   | .665   | .675   | .685   | .696   | .706   | .716   | .727   | .737   |
|      | 0.0657 | 0.0669 | 0.0680 | 0.0692 | 0.0704 | 0.0716 | 0.0727 | 0.0739 | 0.0751 | 0.0762 | 0.0774 | 0.0786 | 0.0798 | 0.0809 | 0.0821 | 0.0833 |
|      | 1297.8 | 1321.0 | 1344.2 | 1367.4 | 1390.6 | 1413.7 | 1436.9 | 1460.1 | 1483.3 | 1506.4 | 1529.6 | 1552.8 | 1576.0 | 1599.1 | 1622.3 | 1645.5 |
| .103 | .587   | .598   | .608   | .619   | .629   | .640   | .650   | .660   | .671   | .682   | .692   | .703   | .713   | .723   | .734   | .745   |
|      | 0.0663 | 0.0675 | 0.0687 | 0.0699 | 0.0711 | 0.0723 | 0.0734 | 0.0746 | 0.0758 | 0.0770 | 0.0782 | 0.0794 | 0.0805 | 0.0817 | 0.0829 | 0.0841 |
|      | 1291.5 | 1314.6 | 1337.7 | 1360.7 | 1383.8 | 1406.8 | 1429.9 | 1453.0 | 1476.0 | 1499.1 | 1522.2 | 1545.2 | 1568.3 | 1591.4 | 1614.4 | 1637.5 |
| .104 | .593   | .604   | .614   | .625   | .636   | .646   | .657   | .667   | .677   | .688   | .699   | .709   | .720   | .730   | .741   | .752   |
|      | 0.0670 | 0.0682 | 0.0694 | 0.0706 | 0.0718 | 0.0730 | 0.0742 | 0.0753 | 0.0765 | 0.0777 | 0.0789 | 0.0801 | 0.0813 | 0.0825 | 0.0837 | 0.0849 |
|      | 1285.3 | 1308.3 | 1331.2 | 1354.2 | 1377.1 | 1400.1 | 1423.0 | 1446.0 | 1468.9 | 1491.9 | 1514.8 | 1537.8 | 1560.7 | 1583.7 | 1606.6 | 1629.6 |
| .105 | .598   | .609   | .620   | .630   | .641   | .652   | .663   | .674   | .684   | .695   | .706   | .716   | .727   | .737   | .748   | .759   |
|      | 0.0676 | 0.0688 | 0.0700 | 0.0712 | 0.0724 | 0.0737 | 0.0749 | 0.0761 | 0.0773 | 0.0785 | 0.0797 | 0.0809 | 0.0821 | 0.0833 | 0.0845 | 0.0857 |
|      | 1279.2 | 1302.0 | 1324.5 | 1347.7 | 1370.5 | 1393.4 | 1416.2 | 1439.1 | 1461.9 | 1484.8 | 1507.6 | 1530.4 | 1553.2 | 1576.0 | 1598.8 | 1621.6 |
| .106 | .605   | .615   | .626   | .636   | .647   | .659   | .669   | .680   | .691   | .701   | .713   | .723   | .734   | .745   | .755   | .766   |
|      | 0.0683 | 0.0695 | 0.0707 | 0.0719 | 0.0731 | 0.0744 | 0.0756 | 0.0768 | 0.0780 | 0.0792 | 0.0805 | 0.0817 | 0.0829 | 0.0841 | 0.0853 | 0.0865 |
|      | 1273.1 | 1295.9 | 1318.6 | 1341.3 | 1364.1 | 1386.8 | 1409.5 | 1432.2 | 1455.0 | 1477.7 | 1500.4 | 1523.2 | 1545.9 | 1568.7 | 1591.4 | 1614.1 |
| .107 | .610   | .621   | .632   | .643   | .653   | .665   | .675   | .686   | .698   | .708   | .719   | .730   | .741   | .752   | .762   | .774   |
|      | 0.0689 | 0.0701 | 0.0714 | 0.0726 | 0.0738 | 0.0751 | 0.0763 | 0.0775 | 0.0788 | 0.0800 | 0.0812 | 0.0824 | 0.0837 | 0.0849 | 0.0861 | 0.0874 |
|      | 1267.2 | 1289.8 | 1312.4 | 1335.0 | 1357.7 | 1380.3 | 1402.9 | 1425.6 | 1448.2 | 1470.8 | 1493.4 | 1516.1 | 1538.7 | 1561.3 | 1584.0 | 1606.6 |
| .108 | .616   | .627   | .637   | .648   | .660   | .671   | .682   | .692   | .704   | .714   | .726   | .737   | .748   | .759   | .769   | .781   |
|      | 0.0696 | 0.0708 | 0.0720 | 0.0733 | 0.0745 | 0.0758 | 0.0770 | 0.0782 | 0.0795 | 0.0807 | 0.0820 | 0.0832 | 0.0845 | 0.0857 | 0.0869 | 0.0882 |
|      | 1261.3 | 1283.8 | 1306.3 | 1328.9 | 1351.4 | 1373.9 | 1396.4 | 1418.9 | 1441.5 | 1464.0 | 1486.5 | 1509.0 | 1531.6 | 1554.1 | 1576.6 | 1599.1 |
| .109 | .621   | .632   | .644   | .655   | .666   | .677   | .688   | .699   | .710   | .722   | .732   | .744   | .754   | .766   | .776   | .788   |
|      | 0.0702 | 0.0714 | 0.0727 | 0.0740 | 0.0752 | 0.0765 | 0.0777 | 0.0790 | 0.0802 | 0.0815 | 0.0827 | 0.0840 | 0.0852 | 0.0865 | 0.0877 | 0.0890 |
|      | 1255.5 | 1277.9 | 1300.3 | 1322.7 | 1345.2 | 1367.6 | 1390.0 | 1412.4 | 1434.8 | 1457.3 | 1479.7 | 1502.1 | 1524.5 | 1546.9 | 1569.4 | 1591.8 |
| .110 | .627   | .638   | .650   | .660   | .672   | .683   | .694   | .706   | .717   | .728   | .739   | .751   | .761   | .773   | .784   | .795   |
|      | 0.0708 | 0.0721 | 0.0734 | 0.0746 | 0.0759 | 0.0772 | 0.0784 | 0.0797 | 0.0810 | 0.0822 | 0.0835 | 0.0848 | 0.0860 | 0.0873 | 0.0885 | 0.0898 |
|      | 1249.8 | 1272.1 | 1294.4 | 1316.7 | 1339.0 | 1361.3 | 1383.7 | 1406.0 | 1428.3 | 1450.6 | 1472.9 | 1495.2 | 1517.5 | 1539.8 | 1562.2 | 1584.5 |
| .111 | .633   | .644   | .655   | .667   | .678   | .690   | .700   | .712   | .723   | .735   | .745   | .757   | .768   | .780   | .792   | .804   |
|      | 0.0715 | 0.0728 | 0.0740 | 0.0753 | 0.0766 | 0.0779 | 0.0791 | 0.0804 | 0.0817 | 0.0830 | 0.0842 | 0.0855 | 0.0868 | 0.0881 | 0.0894 | 0.0906 |
|      | 1244.1 | 1266.3 | 1288.6 | 1310.8 | 1333.0 | 1355.2 | 1377.4 | 1399.6 | 1421.9 | 1444.1 | 1466.3 | 1488.5 | 1510.7 | 1532.9 | 1555.2 | 1577.4 |
| .112 | .638   | .650   | .661   | .673   | .684   | .696   | .707   | .718   | .730   | .741   | .753   | .764   | .776   | .787   | .799   | .809   |
|      | 0.0721 | 0.0734 | 0.0747 | 0.0760 | 0.0773 | 0.0786 | 0.0799 | 0.0811 | 0.0824 | 0.0837 | 0.0850 | 0.0863 | 0.0876 | 0.0889 | 0.0902 | 0.0914 |
|      | 1238.6 | 1260.7 | 1282.8 | 1304.9 | 1327.0 | 1349.1 | 1371.2 | 1393.3 | 1415.4 | 1437.5 | 1459.6 | 1481.7 | 1503.8 | 1525.9 | 1548.0 | 1570.1 |
| .113 | .644   | .656   | .667   | .679   | .691   | .702   | .714   | .725   | .737   | .748   | .759   | .771   | .783   | .794   | .806   | .817   |
|      | 0.0728 | 0.0741 | 0.0754 | 0.0767 | 0.0780 | 0.0793 | 0.0806 | 0.0819 | 0.0832 | 0.0845 | 0.0858 | 0.0871 | 0.0884 | 0.0897 | 0.0910 | 0.0923 |
|      | 1233.1 | 1255.1 | 1277.1 | 1299.1 | 1321.1 | 1343.2 | 1365.2 | 1387.2 | 1409.2 | 1431.2 | 1453.2 | 1475.2 | 1497.2 | 1519.2 | 1541.2 | 1563.2 |
| .114 | .650   | .661   | .673   | .684   | .697   | .708   | .720   | .731   | .743   | .754   | .766   | .777   | .789   | .801   | .813   | .824   |
|      | 0.0734 | 0.0747 | 0.0760 | 0.0773 | 0.0787 | 0.0800 | 0.0813 | 0.0826 | 0.0839 | 0.0852 | 0.0865 | 0.0878 | 0.0891 | 0.0905 | 0.0918 | 0.0931 |
|      | 1227.6 | 1249.6 | 1271.5 | 1293.4 | 1315.3 | 1337.3 | 1359.2 | 1381.1 | 1403.0 | 1424.9 | 1446.9 | 1468.8 | 1490.7 | 1512.6 | 1534.6 | 1556.5 |

# INDOOR

## NEWS and VIEWS

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

#9



\*\*\*\*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      |
| 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      |
| 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  | BEST     | 1982<br>TOTAL |
|-----------------|-------|----------|---------------|
|                 | LOCAL | REGIONAL |               |
| 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.

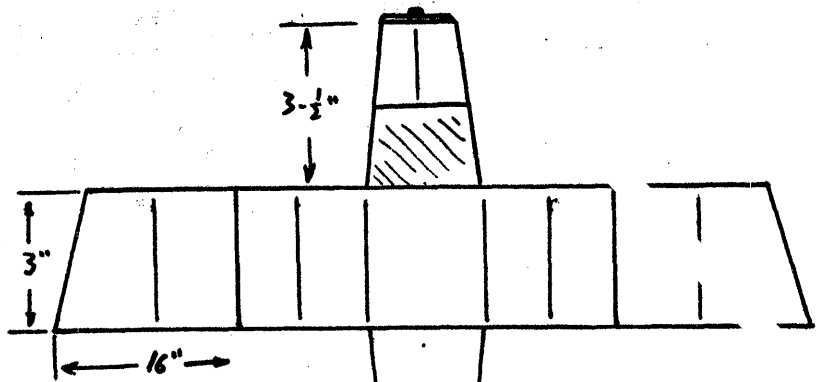
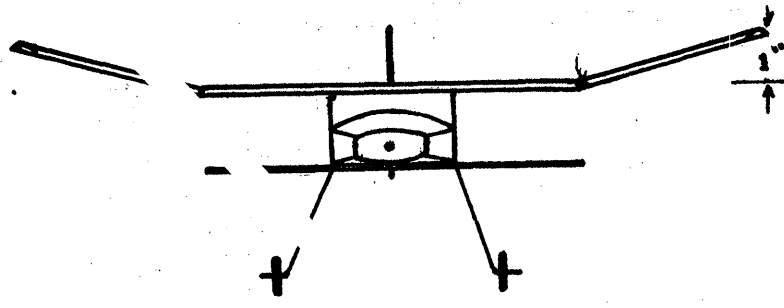
#### GEORGE REICH

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.

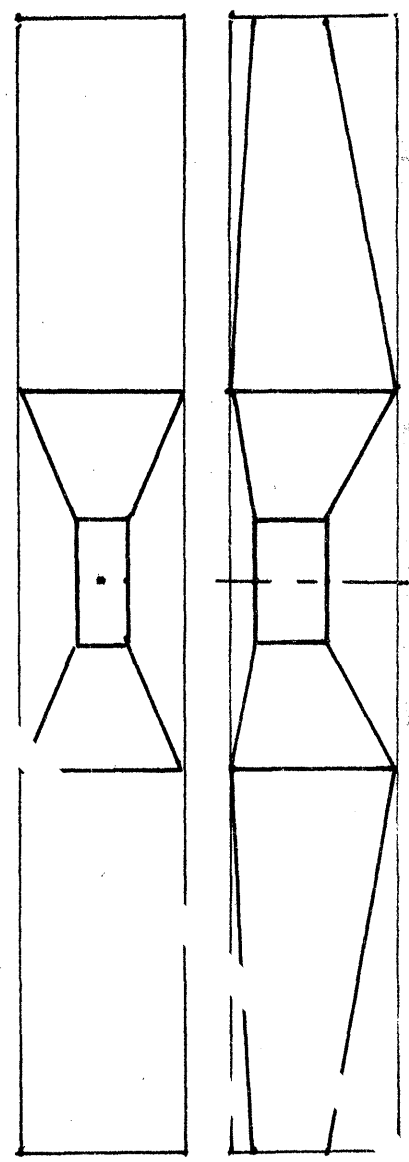
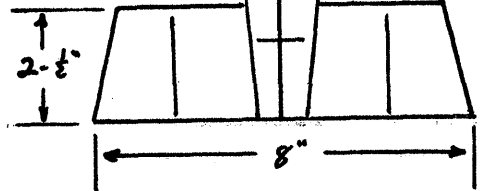
#### LAWRENCE SMITHLINE

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.

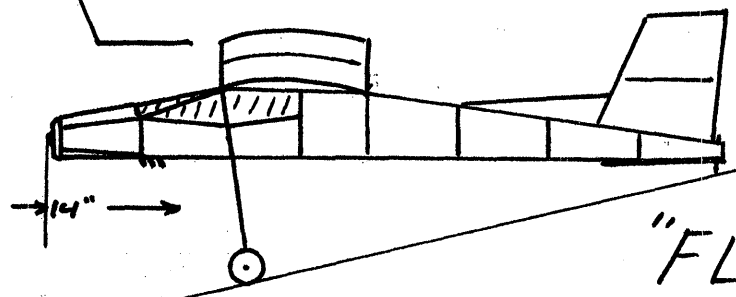
AIRFOIL - FULL SIZE



LANDING GEAR WIRE PATTERN



PROP BLANK FULL SIZE FROM 6" x 7/8" x 7/8"



"FLATS"

BOSTONIAN CABIN

1/4 SIZE

BEST TIME: 3:00

WEIGHT: 5.7g.

DAVID ARONSTEIN  
50 PASTURE LANE  
POUGHKEEPSIE, N.Y. 12603

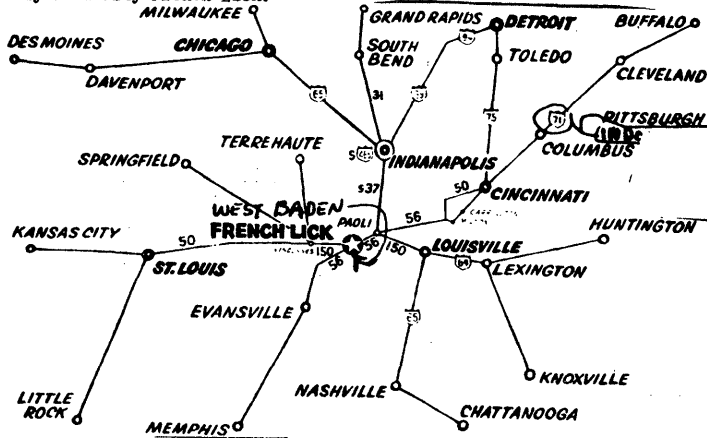
NORTHWOOD INSTITUTE, WEST BADEN INDIANA 812-936-9971

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.

MAHATTAN 46M FLYING ACES PROFILE  
\* BOSTONIAN, SPEED + PEANUT SPEED, KIT/PLAN SOLE 106M

**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.



**KIT/PLAN SCALE - See Martin Varney at event table Tue. June 14**

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.
4. The tissue and color must retain the shape, size, etc. of the original. (i.e. door lines, hinge lines, cowli bumps, etc.). The color and trim should be appropriate 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. Photographs and 3-views are not needed or required.
6. 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).

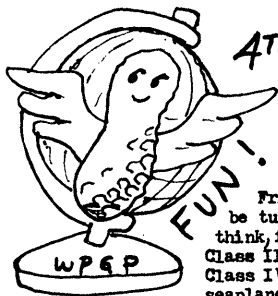
DONT BE CONFUSED BY ALL THIS STUFF - JUST BRING YOUR PLANES TO WINNIN + HAVE FUN

**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.
  3. The lowest time will determine the winner.



**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, untripped, 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). **GREAT AWARDS!!**

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 CLOSERS JUNE 1 FEES: SEND TO MARTIN**

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!**

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

**EMART EIGHTH 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 EMART 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 EMART 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.

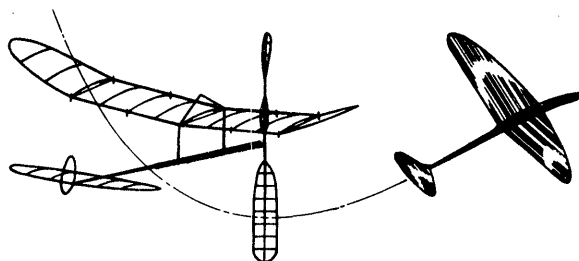
SEND fees, and lodging to: Dr. John Martin 2180 Tigertail Ave Miami Florida, 33133 USA

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

\*\*\*\*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 |
|-----------------|------|------|-------|

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 Ganser      | 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 Ganser        | 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 Ganser  | 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 Sjrjanc | 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 Skrjanc     | 11:05 |
| 6. John O'Leary      | 10:45 |
| 7. Bob Oppgard       | 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 Skrjanc  | 4:33  |

Open Easy B

|                      |       |
|----------------------|-------|
| 1. Chuck Markos      | 18:46 |
| 2. Walt Van Gorder   | 18:20 |
| 3. Cezar Banks       | 18:08 |
| 4. Jerry Skrjanc     | 17:25 |
| 5. Roy Kerr          | 16:50 |
| 6. Gordon Wisniewski | 15:46 |
| 7. Dick Obariski     | 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 Oppgard      | 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 |

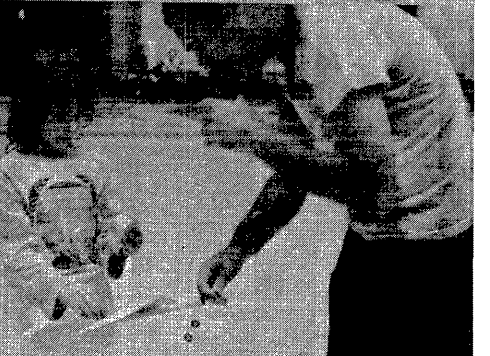
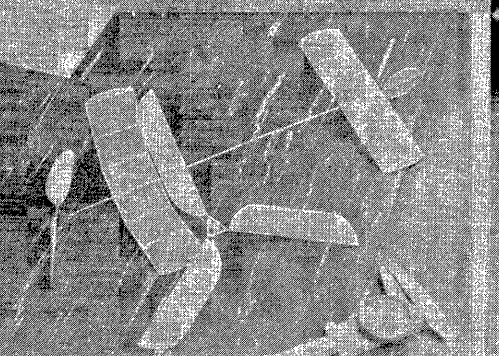
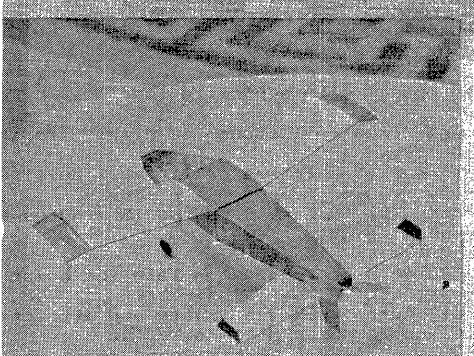
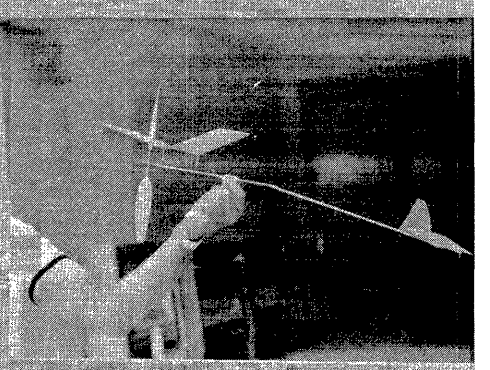
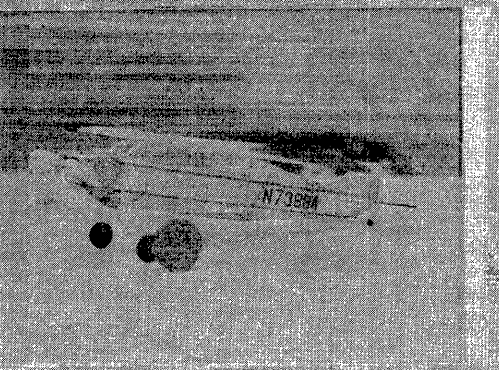
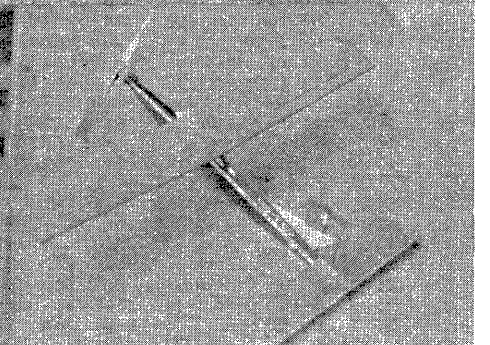
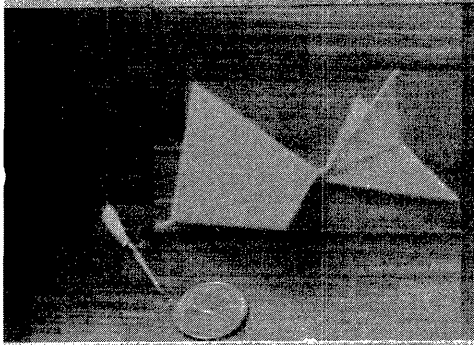
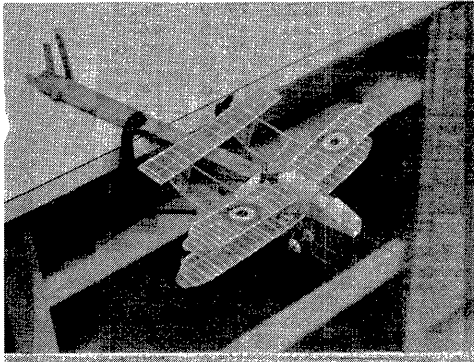
RESULTS FROM INDOOR WEEK

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 Ganser      | 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 Graves       | 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 92.0  |
| 2. Bob Clemens    | Mosquito/319.5   | 53.0 47.5  |
| 3. Jim Miller     | Itoh #2/171.5    | 110.0 92.0 |
| 4. Dave Kiefer    | Vagabond/269.5   | 48.5 49.0  |
| 5. Lubomir Koutny | Kingfisher/253.4 | 46.8 45.0  |
| 6. Bill Hunter    | Zero/333.0       | 13.0 13.1  |

|                   |                    |             |
|-------------------|--------------------|-------------|
| 7. Millard Wells  | Beardmore/108.0    | 144.0 146.0 |
| 8. Paul McIlrath  | Caudron/140.0      | 71.0 71.0   |
| 9. Ross Jahnke    | Cougar/132.0       | 78.0 71.0   |
| 10. John Martin   | Hydravion/279.7    | 27.0 26.5   |
| 11. Walt Everson  | Found/216.8        | 46.0 46.0   |
| 12. Millard Wells | WeeBee/108.0       | 130.0 122.0 |
| 13. Mike Arak     | Bieriot/285.0      | 14.9 7.0    |
| 14. Brian Varney  | Cougar/129.25      | 70.0 74.0   |
| 15. Walt Everson  | Taylorcraft/192.0  | 38.0 26.0   |
| 16. Bill Criss    | Comper Swift/168.0 | 39.8 45.0   |
| 17. Bob Clemens   | Found/168.0        | 70.0        |
| 18. Millard Wells | F. Mosquito/120.0  | 55.0 56.0   |
| 19. Pete Baker    | Found/81.0         | 62.8 61.0   |
| 20. Ed Toleikis   | Pietenpol/134.75   | 37.5 24.7   |
| 21. Pete Baker    | BD-4/88.0          | 51.6 52.4   |
| 22. Dale Goff     | Cub/130.0          | 26.0        |

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

|                     |                   |             |
|---------------------|-------------------|-------------|
| 1. Chuck Markos     | Tiger Moth/369.75 | 70.5 80.4   |
| 2. Jack McGillivray | SE-5/335.75       | 104.0 103.0 |
| 3. Bob Clemens      | Currie Wot/312.75 | 69.0 66.0   |
| 4. Tony Sutter      | 14-bis/240.0      | 47.0 52.0   |
| 5. Dave Kiefer      | Pitts/330.0       | 35.2 35.9   |
| 6. John Martin      | 14-bis/245.0      | 37.7 39.2   |
| 7. Mike Arak        | Nieuport/400.5    | 5.0 6.0     |
| 8. Ross Jahnke      | Hälberstadt/217.0 | 47.5 49.0   |
| 9. Ken Groves       | Tabloid/311.94    | 34.4 31.0   |
| 10. Paul McIlrath   | 1930 Laird/191.2  | 58.8 63.1   |
| 11. Walt Everson    | Waco E/159.2      | 72.0 63.0   |
| 12. John Martin     | Nakajima/178.8    | 35.5 40.4   |
| 13. Bill Criss      | Stearman PT/238.0 | 7.3 4.2     |
| 14. Chriss Scott    | Martinsyde/216.2  | 27.0 27.0   |
| 15. Randy Sicksbert | Jenny/210.2       | 23.0 26.0   |
| 16. Walt Everson    | Jungman/199.5     | 41.8        |
| 17. Millard Wells   | Kawasaki/144.0    | 36.0 36.0   |

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

|                |                   |            |
|----------------|-------------------|------------|
| 1. Bob Clemens | Cloudbuster/394.2 | 55.0 59.0  |
| 2. Don Steeb   | Skyrider/194.0    | 96.0 100.0 |
| 3. John Martin | Boxmoth/224.0     | 34.0 27.2  |
| 4. Aaronstein  | J262/114.0        | 31.2 28.5  |

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

|                   |                     |           |
|-------------------|---------------------|-----------|
| 1. Lloyd Wood     | Float Tabloid/395.7 | 42.4 45.8 |
| 2. Ken Groves     | Sopwith Tripe/255.5 | 57.4 57.2 |
| 3. Dave Kiefer    | Sopwith Tripe/332.5 | 33.4 31.4 |
| 4. Lubomir Koutny | Kingfisher/253.4    | 46.0 46.0 |
| 5. Millard Wells  | Curtis Tripe/214.5  | 45.0 46.0 |
| 6. Tony Sutter    | Annular Ring/209.0  | 50.0 52.0 |
| 7. John Martin    | Hydravion/279.7     | 23.6 25.2 |

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

|                   |                   |           |
|-------------------|-------------------|-----------|
| 1. J. McGillivray | Yugoslav 45-T/272 | 83.0 69.5 |
| 2. Lloyd Wood     | Boeing B-9/256.0  | 20.0 18.4 |
| 3. John Martin    | Bloch MB/200.0    | 27.4 28.5 |

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

|                     |             |             |
|---------------------|-------------|-------------|
| 1. Ken Groves       | Fike/251.0  | 131.1 132.4 |
| 2. Jim Miller       | Lacey/234.0 | 125.0 129.0 |
| 3. Chuck Markos     | Lacey/276.0 | 86.4 84.3   |
| 4. Butch Hadland    | Lacey/304.0 | 69.0 77.0   |
| 5. Jack McGillivray | Lacey/210.0 | 169.0 149.2 |
| 6. Lester Garber    | Fike/221.0  | 117.0 126.0 |
| 7. Dave Kiefer      | Lacey/227.5 | 54.5 55.0   |
| 8. Don Steeb        | Lacey/196.0 | 92.0 86.4   |

**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

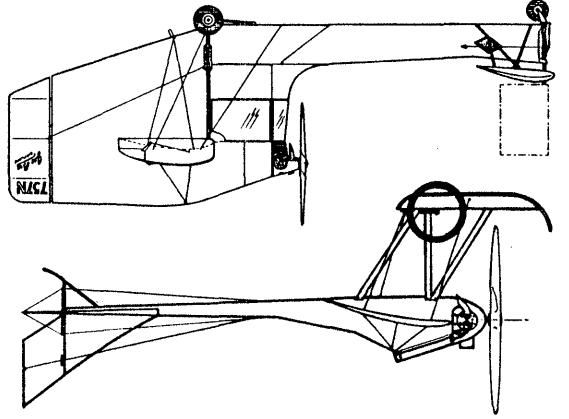
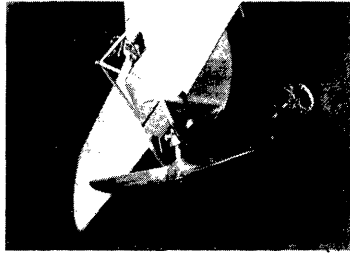
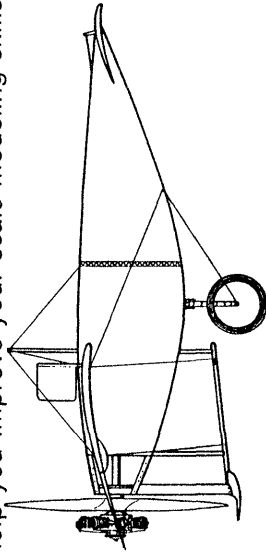
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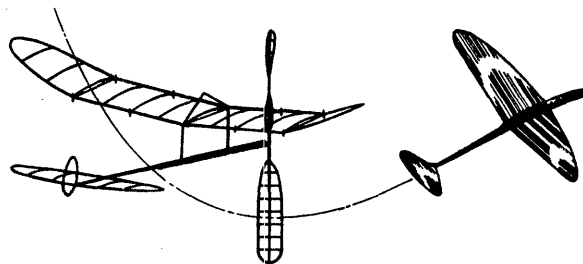
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# INDOOR

## NEWS and VIEWS

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



#11

\*\*\*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.

WANT A VIDEOTAPE?

ANYONE INTERESTED IN OBTAINING A GOOD QUALITY VIDED TAPE OF THE 1980 WORLD CHAMPIONSHIPS, BETA OR VHS, PRICE \$25; PLEASE WRITE OR CALL 314-227-9916.

\*\*NEED 20 ORDERS MINIMUM\*\*

Dick Hardcastle  
7319 Wise Avenue  
St. Louis MO 63117

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.

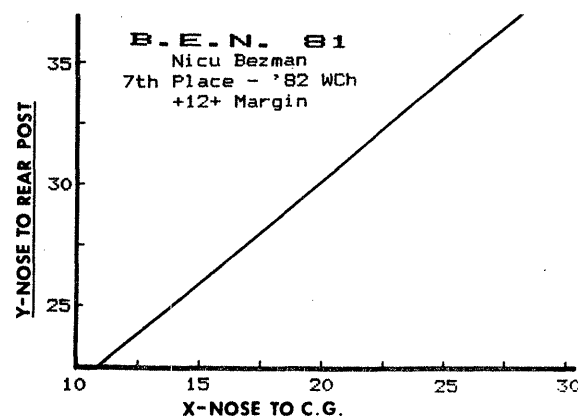
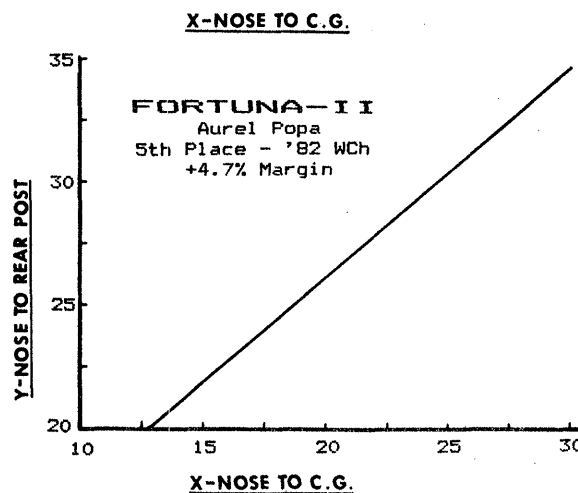
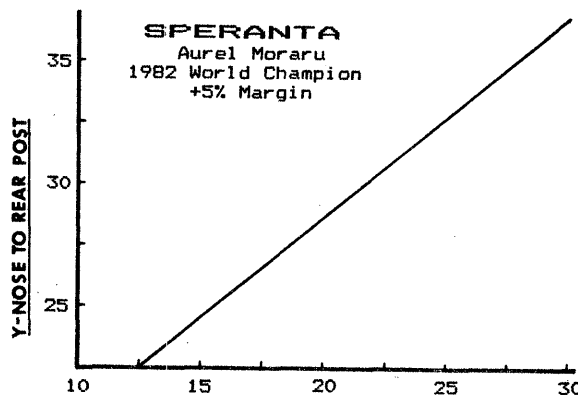
2.4.2 Before "Characteristics of Indoor Models", add: "a".

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.

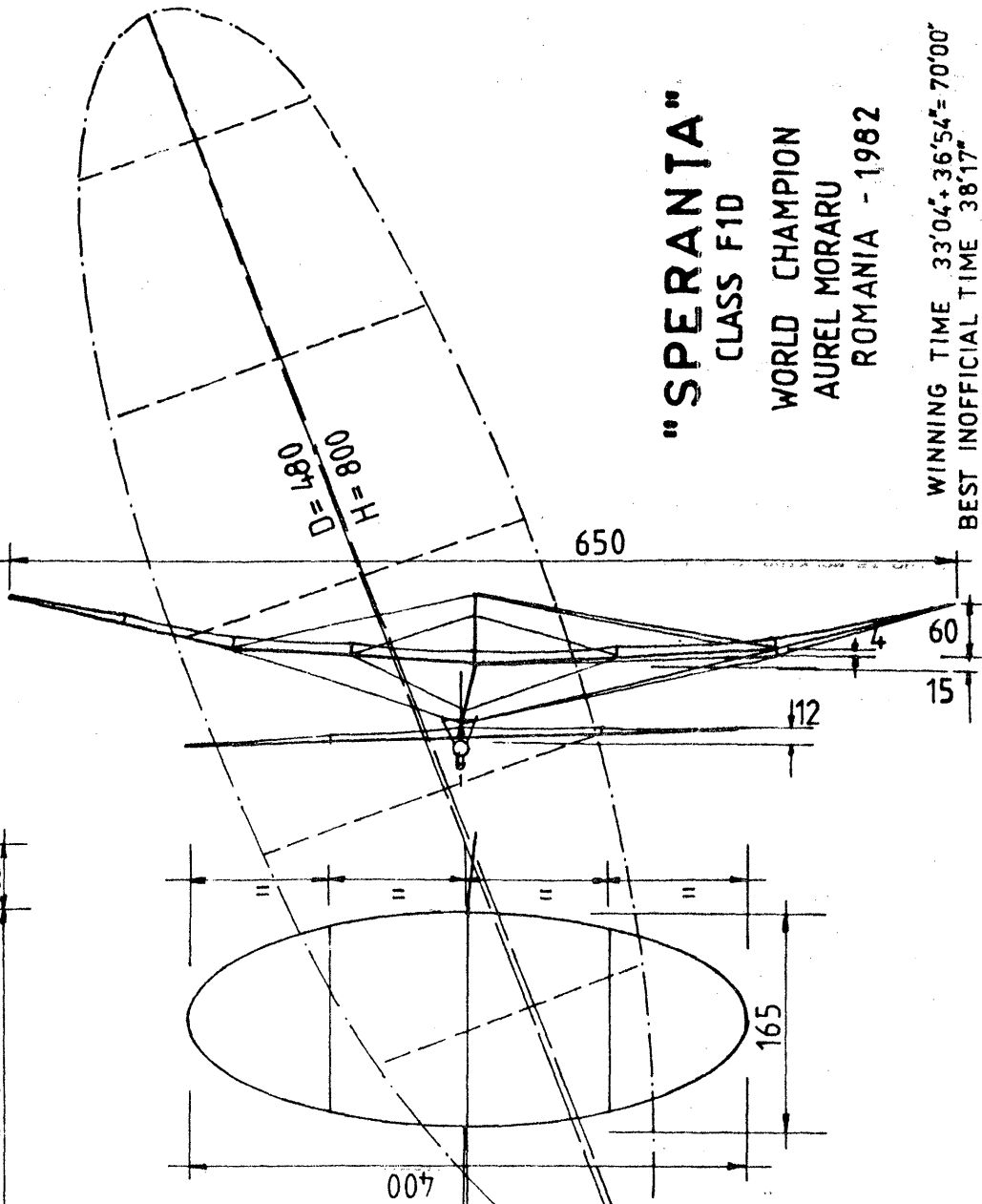
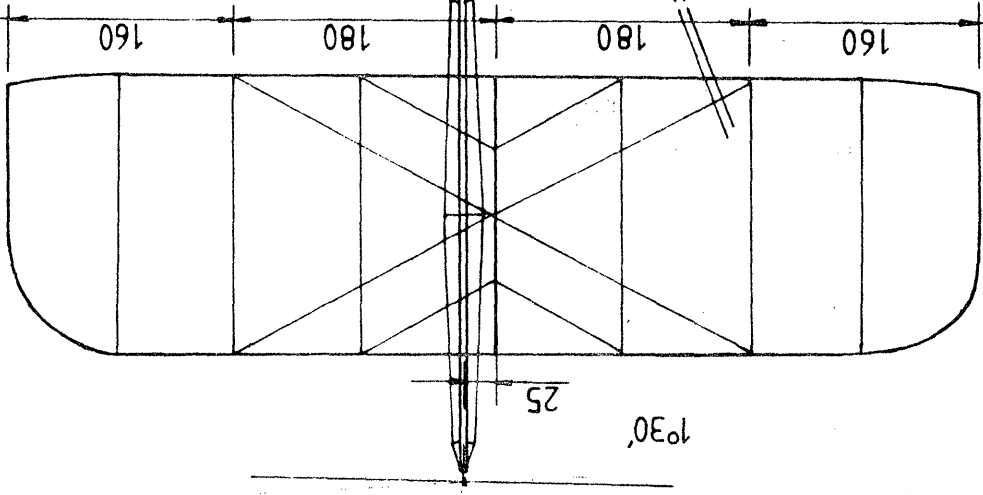
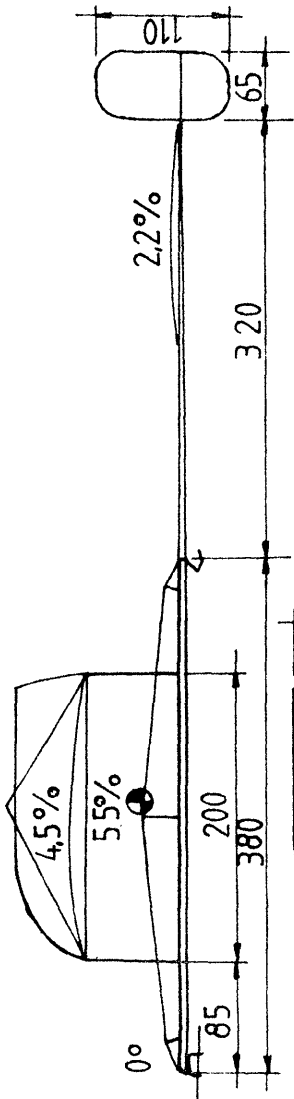
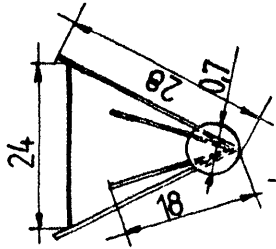
STATE OF THE ART

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.



WING 0,320  
 PROP 0,160  
 STAB+BOOM 0,260  
 MOTOR STICK 0,360

RUBER = 15g/m 2160 tr.



"SPERANTA"  
 CLASS F1D

WORLD CHAMPION

AUREL MORARU

ROMANIA - 1982

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

WEIGHTS:

WING Q32 - Q34  
 STAB+BOOM Q22 - Q24  
 PROP 0,14 - 0,16  
 MOTOR STICK Q34 - Q36

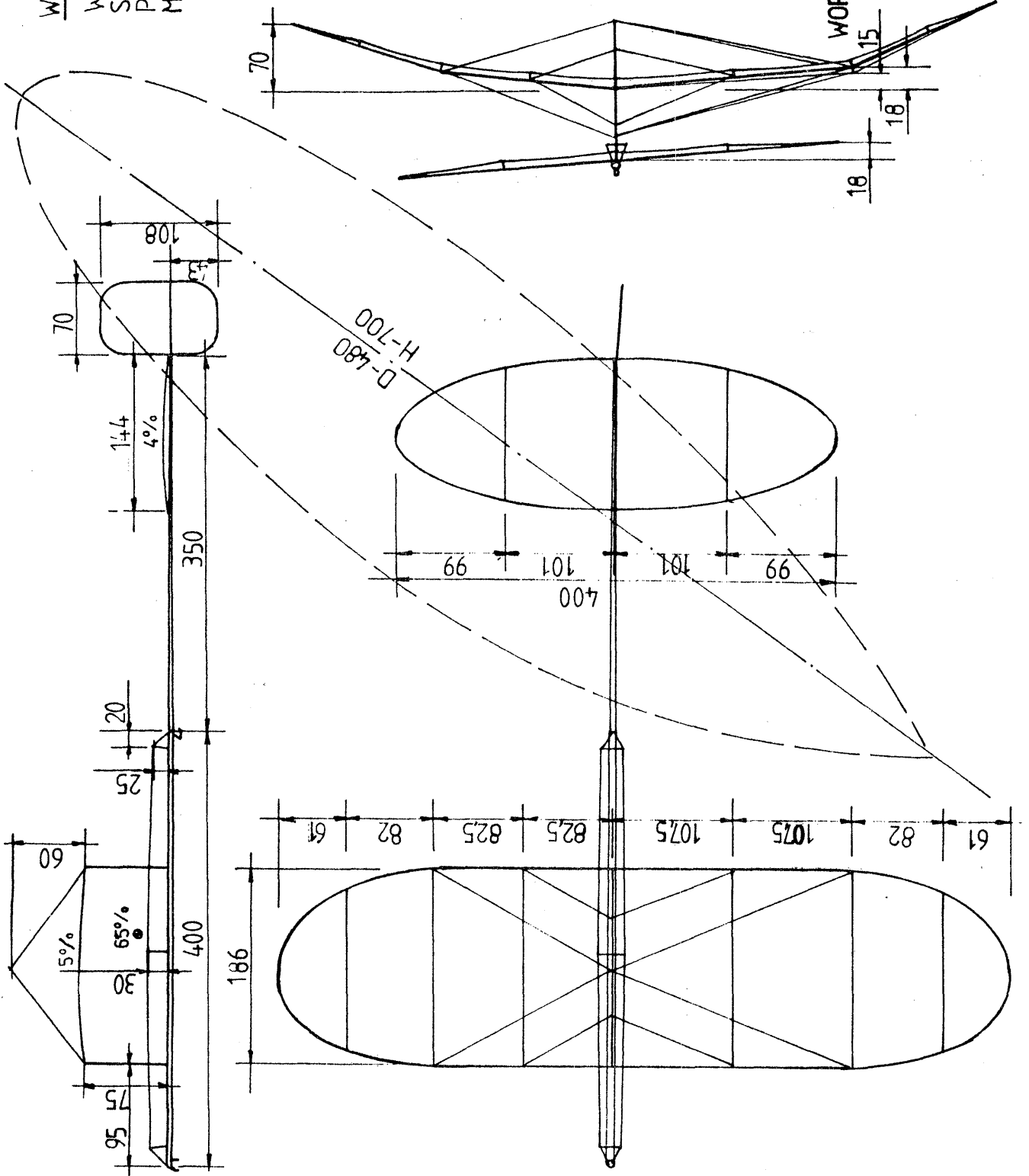
RUBER 1,3-1,4 g/m

**FORTUNA - II.**

FID. - AUREL POPA  
 WORLD CHAMPIONSHIPS

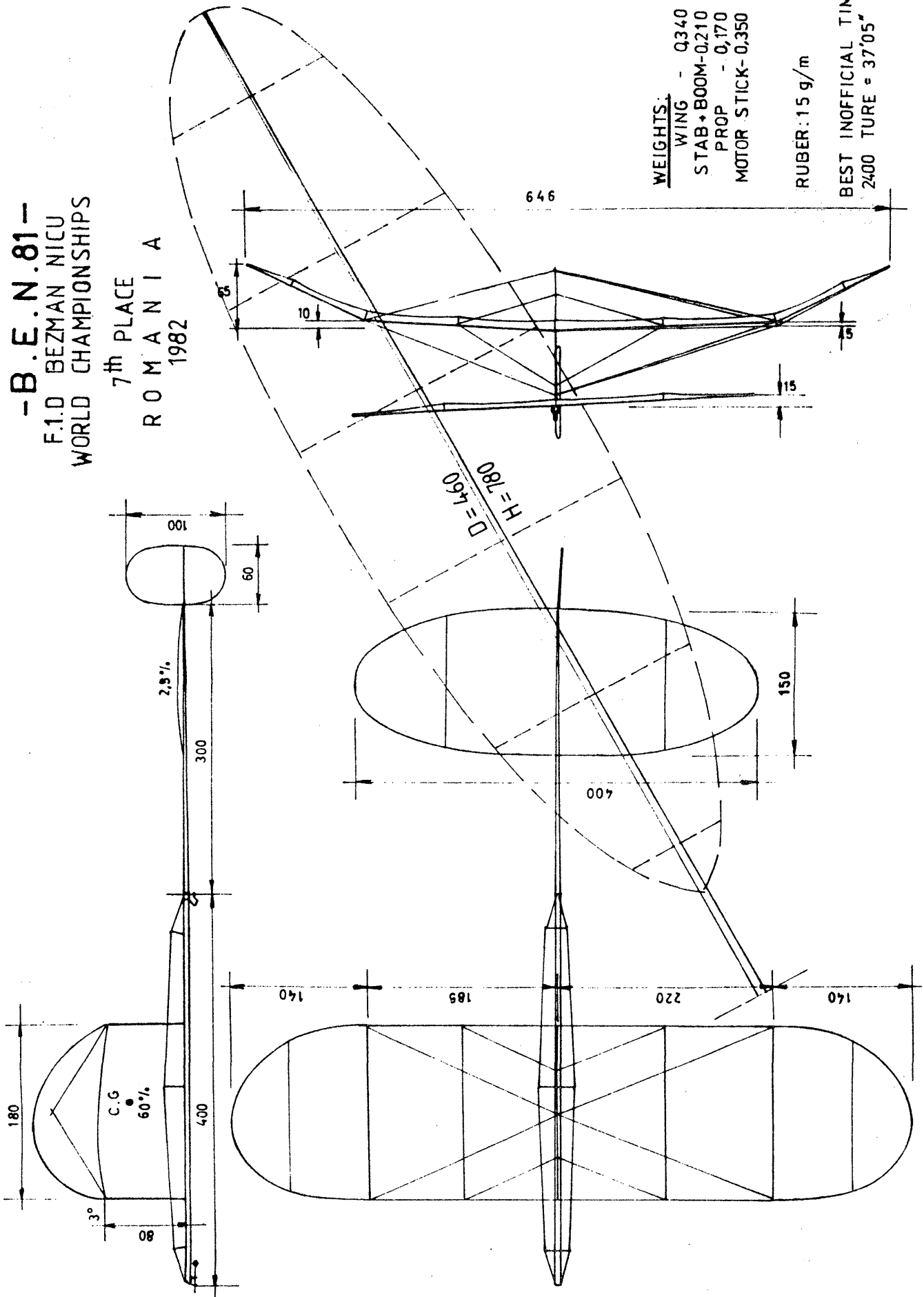
5<sup>th</sup> PLACE

ROMANIA  
 1982



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

7th PLACE  
**R O M A N I A**  
 1982



**WEIGHTS:**  
 WING - Q340  
 STAB + BOOM - 0.210  
 PROP - 0.170  
 MOTOR STICK - 0.350

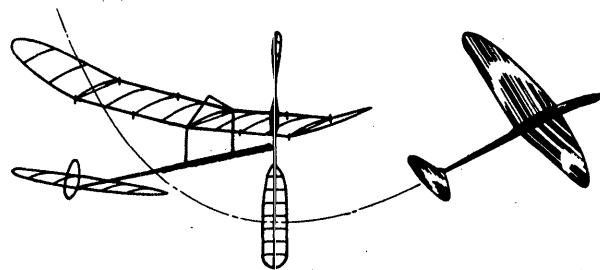
RUBER: 15 g/m

BEST INOFFICIAL TIME  
 2400 TURE = 37'05"

# 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* |   |        | Site       |
|------------------|------------|-------|--------|---|--------|------------|
|                  |            |       | 1      | 2 | 3 Year |            |
| 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



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.



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

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

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

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

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

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

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

$$E_1 = \frac{L_2}{L_0} = \frac{132.5}{16.25} = 8.15$$

| TURNS | TORQUE | INCHES | LBS  |
|-------|--------|--------|------|
| 2170  | .60    | 132.5  | 3.68 |
| 2070  | .325   | 129.5  | 2.80 |
| 1970  | .220   | 126.5  | 2.23 |
| 1870  | .175   | 123.5  | 1.87 |
| 1770  | .150   | 120.5  | 1.62 |
| 1670  | .135   | 117.5  | 1.44 |
| 1570  | .120   | 114.5  | 1.37 |
| 1470  | .112   | 111.5  | 1.24 |
| 1370  | .110   | 108.5  | 1.18 |
| 1270  | .107   | 105.5  | 1.10 |
| 1170  | .097   | 102.5  | 1.07 |
| 1070  | .092   | 99.5   | 1.02 |
| 970   | .090   | 96.5   | 1.00 |
| 870   | .088   | 93.5   | .95  |
| 770   | .082   | 90.5   | .91  |
| 670   | .080   | 87.5   | .89  |
| 570   | .075   | 84.5   | .87  |
| 470   | .072   | 81.5   | .83  |
| 370   | .065   | 78.5   | .80  |
| 270   | .060   | 75.5   | .78  |
| 170   | .055   | 72.5   | .75  |
| 00    | .050   | 69.5   | .71  |
| 00    | .047   | 66.5   | .69  |
| 00    | .043   | 63.5   | .65  |
| 00    | .040   | 60.5   | .62  |
| 00    | .038   | 57.5   | .60  |
| 00    | .035   | 54.5   | .56  |
| 00    | .030   | 51.5   | .53  |
| 00    | .025   | 48.5   | .50  |
| 00    | .020   | 45.5   | .47  |
| 00    | .015   | 42.5   | .43  |
| 00    | .013   | 39.5   | .40  |
| 00    | .010   | 36.5   | .38  |
| 00    | .008   | 33.5   | .35  |
| 00    | .005   | 30.5   | .30  |
| 00    | .005   | 27.5   | .25  |
| 00    | .005   | 24.5   | .20  |
| 00    | .005   | 21.5   | .13  |
| 00    | .005   | 18.5   | .05  |
| 00    | .000   | 15.5   | .00  |

$$\text{ENERGY STRETCH} = \frac{3}{12} \times 16 \times \left( \frac{F_1 + F_2}{2} \right) + \left( \frac{F_1 + F_2}{2} \right)$$

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

FT LBS  
LB

$$\text{WIND ENERGY} = \frac{100}{12} \times \frac{1}{2} \times 2 \pi \times \left( \frac{F_1 + F_2}{2} \right)$$

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

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

$$\text{STRETCH} = \frac{L_2 \times \frac{1}{2} L_2 F_2}{\text{WT GRAMS}}$$

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

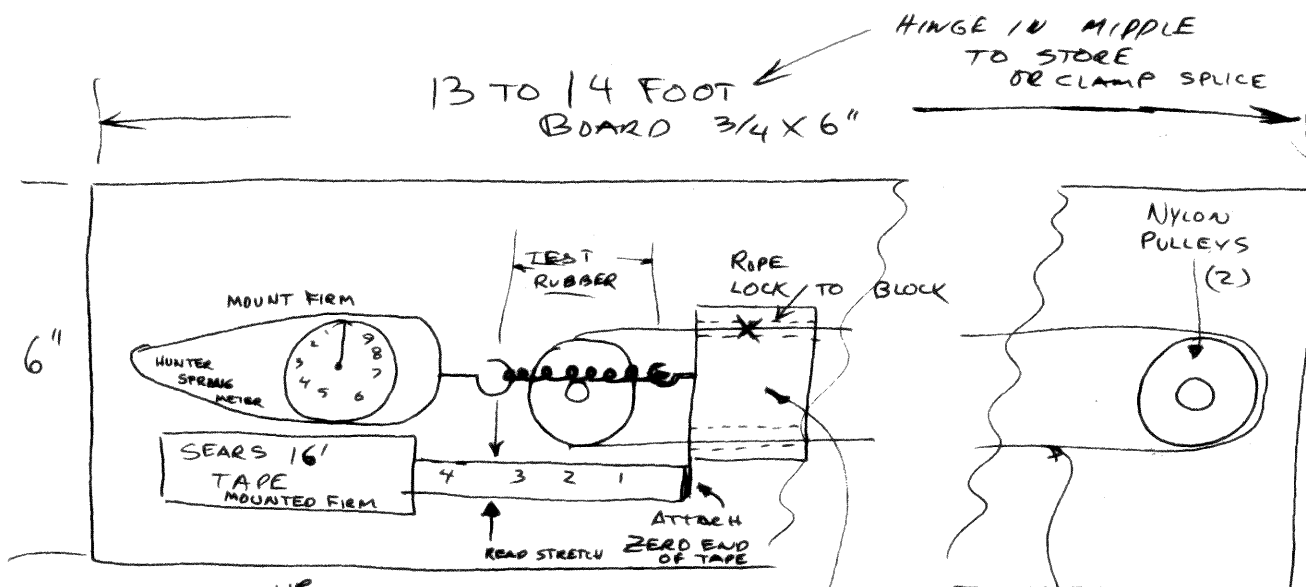
RICHMOND

$$= \frac{\text{TURNS } 50\%_{\text{MAX}} \times \text{TORQUE } 50\%}{\text{WT GRAMS}}$$

WT GRAMS

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

# TEST SET UP

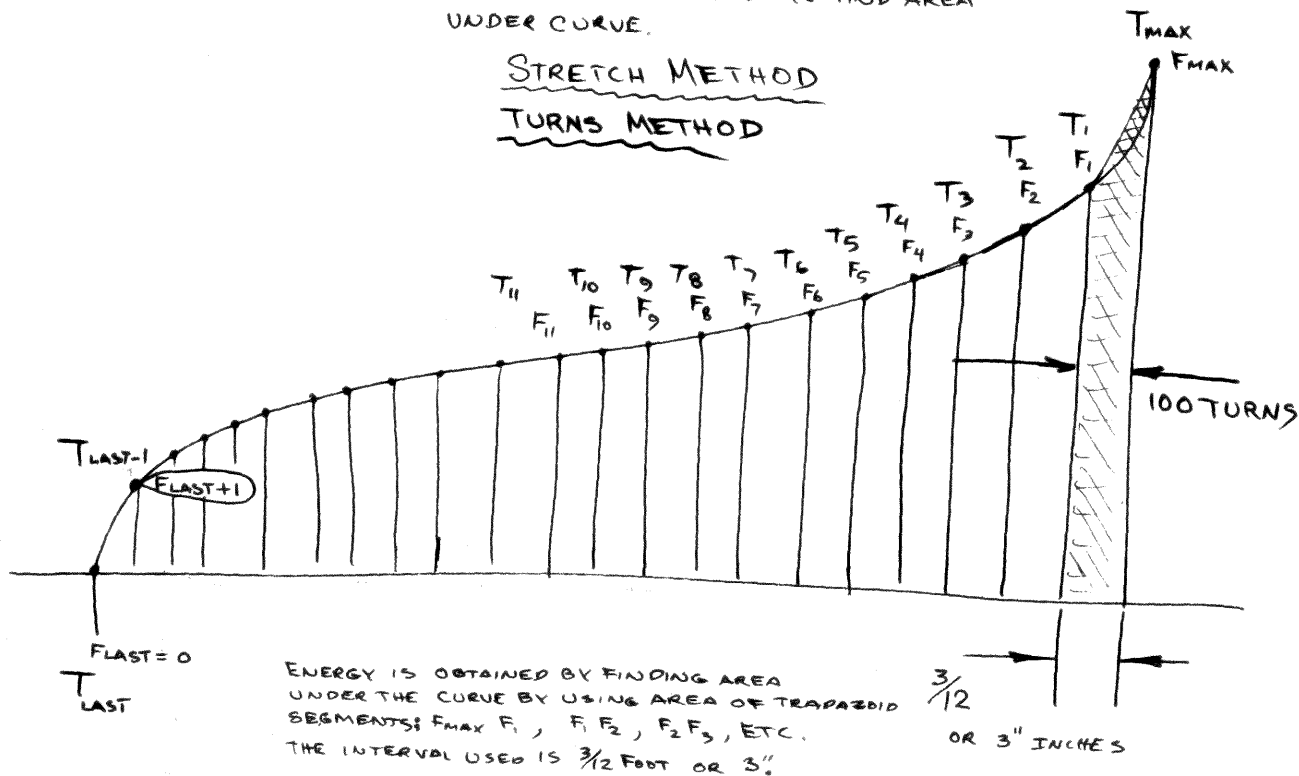


THIS SET<sup>UP</sup> ALLOWS A SINGLE OPERATOR TO STRETCH RUBBER, READ FORCE AND STRETCH AND TO RECORD DATA. AND TO STAND IN ONE PLACE!

WOOD BLOCK TWO HOLES. ONE PLUGGED OR PINNED TO ROPE OTHER SLIP THROUGH.

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

## STRETCH METHOD TURNS METHOD



WHERE

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

$T = \frac{\text{INCH}}{\text{OUNCES}}$  NOTE  $\left( \frac{\text{INCH}}{\text{OUNCES}} \right)$  OR  $\frac{\text{OUNCE}}{\text{INCH}} \times \frac{1}{16}$  BECOMES  $\frac{\text{LBS}}{\text{LB}}$

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.

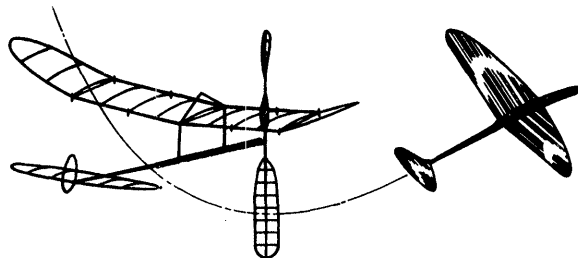
J.

NAME :

Mail by October 15 1983

**INDOOR****NEWS and VIEWS**

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



# 13

THIS ISSUE

Indoor News and Views is off the ground again. Melody and Richard Doig have volunteered to publish this newsletter until such time that Bud Tenny can resume this function. In the interim the Doigs will edit, type, collate, and mail the newsletter so please send ALL contest announcements, contest results, photographs, model plans, modeling suggestions and questions, etc. to:

Indoor News and Views  
c/o The Doigs  
6 Canary Hill Dr.  
Pontiac, MI 48055

For those of you who don't know us an introduction is in order. Richard has been building indoor models since 1971 including microfilm (FID, AMA Stick), ROG Cabin, Paper Stick, E Z B, Pennyplane, and HLG. He participates in the FAI Indoor Team selection program finishing 7th this past year. He is the District 7 representative on the Indoor Contest Board, the FAI Team selection committee, and an active Contest Director. Melody on the other hand has never built an indoor model but is an ardent supporter of Indoor Modeling and very knowledgeable of the rules and other aspects. She has attended most of the contests Richard has flown in over the years, helped out at FAI Team finals, the 1980 World Championships and recently has run several contests including the Michigan Indoor Championships.

We do not have Bud Tenny's long history in Indoor Modeling but we have good intentions and will try to do a good job. We want to see Indoor Modeling have a long and prosperous future and regular issues of INAV is essential to link the various clubs and geographically diverse groups of Indoor Modelers together.

Regular issues of INAV may not be on a monthly basis, every six to eight weeks seems more realistic. However this depends somewhat on the Indoor Modeling community, the more input we get, the more information per issue and the more issues that will be published.

A NOTE TO NIMAS MEMBERS

I'm deeply indebted to Rick and Melody Doig for their offer to publish some issues of INDOOR NEWS AND VIEWS. I am also indebted to others who have made similar offers. The major problem with turning over the newsletter to anyone for a temporary period is that much of the existing material is scattered in numerous locations in the chaos which passes for my office. Rick and Melody have a significant amount of material on hand, so they don't require my in-depth searches to support newsletter issues which should have been sent before they got started! A local person, able to visit my stacks as often as necessary could have pulled together material without my direct intervention, but I haven't had time for greater involvement since shortly after the November '83 issue.

CONTEST CALENDER

- June 9&10 CANTIAGE PARK, LONG ISLAND, CAT. II Microflim stick, E Z B, Pennyplane, HLG Bostonian, Peanut Scale. Sponsor-LIAMAC John Carbone CD, 394 Oakwood, Huntington, Long Island, NY 11746, (516)271-5548
- June 17 YANKEE INDOOR CHAMPIONSHIPS, WESTOVER AFB CAT. III Scale, Peanut Scale, NoCal, WWI and WW II Mass Launch, AMA Stick, E Z B, Pennyplane, Manhattan, Bostonian Sponsor-MIT Tech Model Aircrafters & Glastonbury Aeromodellers, Ray Harlan CD 15 Happy Hollow, Wayland, MA 01778 (617)358-4013
- June 18-20 UNITED STATES INDOOR CHAMPIONSHIPS DETROIT, MICHIGAN CAT. III Sponsor-NFFS and NIMAS Details in this issue
- June 21 PEANUT GRAND PRIX, DETROIT, MICHIGAN CAT. III Sponsor-MIAMA Details in this issue
- mid July FAI LOCAL & RECORD TRIALS, GOODYEAR AEROSPACE AIRDOCK, AKRON, OH, CAT. IV, FID Due to Airdock security clearances you must contact the CD in advance. Bill Hulbert 174 Castle Blvd, Akron, OH 44313 (216)864-8030
- AUGUST 5-7 AMA NATIONALS, RENO COLISEUM, RENO, NV CAT. II, AMA scale, Peanut Scale, Pennyplane, EZB, Manhattan, HLG (all wood & high tech), AMA Stick, Paper Stick, FID, & ROG Cabin. Entry form in Model Aviation July 1984 issue
- SEPT. 29&30 11th ANNUAL MIDWESTERN STATES INDOOR CHAMPIONSHIPS, CHANUTE AFB, RANTOUL, IL CAT. II ?, Sponsor- Chicago Aeronuts These are tentative plans per Don Lindley details will be in an upcoming issue.
- OCTOBER 28 MICHIGAN INDOOR CHAMPIONSHIPS, STATE FAIR COLISEUM, DETROIT, MI, CAT. III, FID, Paper Stick, EZB, Pennyplane, Manhattan, HLG, AMA Scale, Peanut Scale, Blatter 40. Sponsor- Detroit Balsa Bugs & Exchange Clubs Council, Richard Doig CD 6 Canary Hill Dr, Pontiac, MI 48055 (313)373-5374

LAKEHURST FLYING CANCELLED

The seven tentative flying dates for 1984 in Lakehurst Hanger #1 sponsored by the East Coast Indoor Modelers have been cancelled due to repairs to the hanger doors. Club President Dan Domina warns indoor modelers trying to gain access to the hanger these actions could jeopardize future indoor flying as well as being arrested by the military police. When construction is finished new flying sessions will be scheduled and will be announced here in INAV or by contacting Dan Domina 6 Meadow Lane E. Windsor, NJ 08520

## INDOOR CONTEST BOARD

The interpretations concerning Easy B bracing and steering are effective immediately and are to be enforced by Contest Directors. The following text will be included in contestant packets at the AMA Nationals and to all contestants at the United States Indoor Championships.

### INDOOR CONTEST BOARD ACTION

#### Two Rules Interpretations

The Indoor Contest Board has been called on for two interpretations this year. The first request was generated as a response to experimental carbon fiber bracing on an Easy B. The second request questioned the manner of steering used on two Novice Pennyplane flights which exceeded the existing records.

#### EASY B BRACING

A requested interpretation of Easy B bracing methods developed this Indoor Contest Board ruling:

The use of any material other than wood for bracing on Easy B will not be acceptable. The intent of the Easy B rules is that all structures shall be constructed entirely from wood, using adhesives solely to assemble the structure.

#### STEERING INTERPRETATION

Two recent record applications were denied by Indoor Contest Board action after a request for review of the steering methods used in setting the records. The record applications were denied on the basis of the following interpretation, which is a composite of CB member comments:

Steering is intended to alter the direction of flight and the general location of a model which is approaching the structure of the building. The intent of the rule is to avoid influencing either the altitude of the model or its rate of climb or descent during the period of steering.

### 1984-85 AMA RULEBOOK OMISSIONS

Unfortunately they/we have done it again, these sections were omitted from the last rulebook as well as the current one.

1. AMA section 19. FF Indoor Rubber  
Add to paragraph 15.1 on page 15  
... can be inscribed, "below the primary structure of the building."
2. To AMA rulebook FAI Indoor Models (F1D) on page 94 add section 3.4.5 from the FAI Sporting Code. Insert between Definition of an Official Flight and Collision Rule.  
"Number of Models: There is no limit to the number of models that a competitor may use at an indoor contest."

### FAI LOCAL CONTEST AT AKRON

May 19 and 20 was the first FAI Local Contest and Record Trials of the 1984/1985 program in the Akron Airdock. Even though eight fliers attended only five official flights were recorded as much of Saturday was devoted to testing of new models before the rain started at 6:30 pm interrupting flying. Once it rains outside it drips inside for up to 24 hours after the rain stops. With additional rain on Sunday flying was risky between the drips. In spite of these conditions two new CAT. IV records were set on Saturday; Walt Van Gorder 9:08 Manhattan Cabin  
Al Rohrbaugh 7:51 Ornithopter

Sorry there are no pictures of Akron flying as cameras are not allowed on the grounds because of a high security project in the Airdock.

## 1984/1985 FAI TEAM PROGRAM CHANGES

Earlier this Spring a questionnaire was mailed to FAI Team Selection Program participants concerning possible changes to the program. Several items received enough interest to warrant a ballot to the FAI Team Selection Committee and as a result of that voting the following changes are effective immediately.

The United States Indoor Championships sponsored by NFFS and NIMAS and the AMA Nationals are now at-large regional contests. This is in addition to the one regional contest per year in each of the seven regions of the country. The regional contest entry fee of \$10.00 is in addition to the regular contest entry fee. Certificates of performance will be awarded to participants at the Finals in 1985. Any Junior or Senior wishing to participate (and has a current FAI stamp) will have free entry into local and regional contests but not the Finals which has a \$15.00 entry fee.

### INDOOR MODELING SAFETY

The "Safety Comes First" column in the July 1984 Model Aviation has some excellent safety hints and first aid treatments regarding cyanoacrylate glue (Hot Stuff) and we suggest you read the column.

Extreme care should also be used when using Boron filament which is the newest trend in indoor models. Remember Boron is toxic and because it is so small it easily penetrates the skin. Several modelers have gotten Boron into their hands while building and one got some Boron into his foot while barefoot in the living room. Take care to keep Boron contained in your model workshop so other members of your family especially children and pets cannot be injured.

Also if you use Boron on your models don't get mad and crumble them into a ball to throw them into the trash or you will have to pick the Boron out of your hands first as one modeler had to.

### NATIONAL FREE FLIGHT SOCIETY 1984 MODELS OF THE YEAR

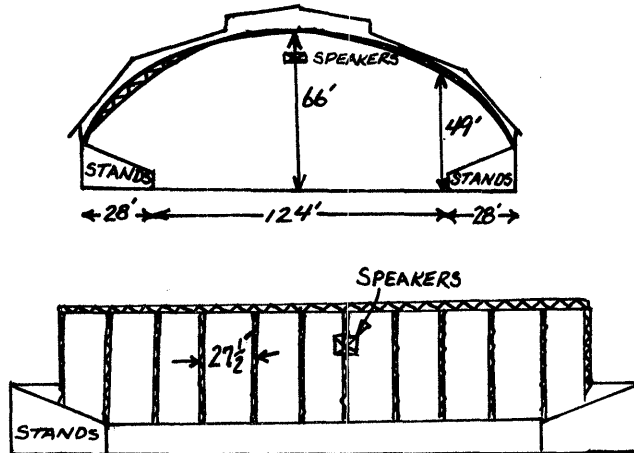
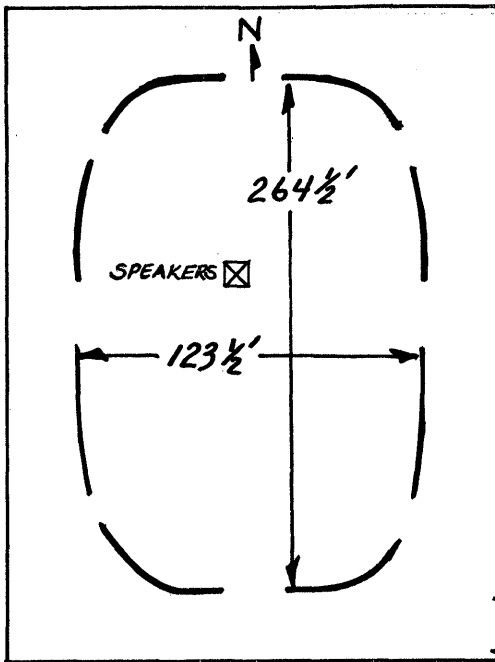
F1A (Nordic): Walt Ghio, Bandit  
F1B (Wakefield): Anselmo Zeri, Rara Avis  
F1C (Power): Silvano Lustrati, I-520-A  
AMA Power: Small- Ron St.Jean, Structureless  
foam composite (SFC) concept  
Large- Sal Taibi, Starduster 900  
Hand Launched Glider: Martyn Cowley, Goldrush  
Indoor: Bernard Hunt, Tandem Two EZB  
Unlimited Rubber: Mik Mikkelson, Unlimiter  
Scale: Bill Noonan, Armstrong-Whitworth Ape  
Special: George Kenakis & Lothar Döring  
recording thermal-detectors

### FREE FLIGHT HALL OF FAME

Ed Lidgard : creator-flier championship quality models  
Paul Plecan: prolific designer of flying models with attention to scale details  
Ken Willard: model designs of significance and author of creative articles

**INDOOR WEEK SITE**

**STATE FAIR COLISEUM, DETROIT, MI.**



**SPEAKERS HANG DOWN 10 FEET**  
**ENTRANCE LIGHTS ARE IN GIRDER STRUCTURE**

INDOOR WEEK PART II

The Rest of the Story as Stolen from The Hanger Pilot

Here's the scoop on the rest of Indoor Week. Thursday, June 21 is MIAMA Scale Day (8:30 am- 7:30 pm). Scale activities will start on Wednesday, June 20 at 1:30 pm as shown on the revised NFFS schedule, and continue through Thursday at 7:30 pm. We will have the 5th World Peanut Grand Prix, but it will NOT be proxy, nor 24 hours (only 17 hours to get in your flights). Flown to the same rules as in the past... the MIAMA/Hadland rules which are similar to the Miller/AMA rules but give extra static points for weighty details. We will also have the Second GNATS for Pistachio (and smaller) models. Pistachio 8" max. span or 6" max. overall length. These will be flown to the new AMA "Miller" rules with 2 exceptions...double covering NOT NECESSARY and NO ROG. We will have CO2 Scale with AMA indoor scale rules, and Calumet Modelers will have their Kit/Plan event.  
**TURN IN ALL THIS STUFF TUESDAY BY 9:00 am.**

**SORRY; GANG, BUT NINART, 9th record trials will NOT be held this year for obvious reasons...The chance of setting a CAT. III record in a 66' high building is nil. We had intended to present the awards to last year's winners at the meet, but they will just have to be mailed out.. a little more patience, please.**

Here's what we need from you. Keep your eyes open for an EXCELLENT CAT I site (26'3") or CAT.II (49'2 1/2").. you know the type.. no drift, no ceiling crud, preferably absolutely smooth, etc. etc. Also we need a place where all can stay, eat, and socialize like a college or a giant motel, or youth camp, or something like.. sort of like West Baden, y'know? Then we can have our NARTS again with a good chance to tear up the record books like we used to do in CAT.III Look around, pilots, and let us know, or there will be no NART next year, either. It's not too early to make plans.

Oh, yes one more feature of Scale Day are 2 FLYING ACES style mass launch peanut events. One for GOLDEN AGE MONOPLANES, and one for WORLD WAR ONE BIPLANES, at 1:00 pm and 7:00 pm.

**MIAMA SCALE DAY ENTRY**

Name \_\_\_\_\_ Class JR SR OP

Address \_\_\_\_\_

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

Circle Events:

- |   |   |
|---|---|
| FEEES: Open/Senior \$10.00<br>for entry to Scale Day<br>(Includes 1 event)<br>\$3.00 each additional event<br>and \$1.00 for each additional<br>entry per event (or re-entry) | 1. Monoplane<br>2. Biplane<br>3. Unorthodox-Heli,<br>auto, seaplane, boat<br>4. Ultralite<br>5. Lacey/Fike<br>6. CO2 Scale<br>7. Kit/Plan<br>8. 2nd GNATS (Pistachio) |
| Juniors \$5.00 entry plus<br>\$2.00 each extra  | Under 2 grams<br>2 - 3 grams<br>Over 3 grams<br>9. Flying Aces Mass<br>Launch   |

Send Fees payable to:

John B. Martin  
2180 Tigertail Av.  
Coconut Grove, FL 33133

**SEND IN BY JUNE 4. TURN IN ALL ENTRIES TUES. 9:00am**



THIRD

UNITED STATES INDOOR CHAMPIONSHIPS

JUNE 18, 19, 20, 1984 AT MICHIGAN STATE FAIR COLISEUM

DETROIT, MICHIGAN



Sponsored By:



National Free Flight Society

National Indoor Model Airplane Society

\* SUNDAY, JUNE 17

TEST FLYING

NOON - 6:00 PM \* SANCTIONED AAAA BY AMA CATEGORY III (CEILING IS 66')

| A.M.  | MONDAY JUNE 18         | TUESDAY JUNE 19         | WEDNESDAY JUN 20         |
|-------|------------------------|-------------------------|--------------------------|
| 8:30  | ↑                      | ↑                       | ↑                        |
| 9:30  | HLG                    | PENNYPLANE<br>NOVICE PP | EZB                      |
| 10:30 | ↓                      | MANHATTAN<br>BOSTONIAN  | PAPER STICK              |
| 11:30 | ↑                      |                         |                          |
| 12:30 | ① F1D                  |                         |                          |
| 1:30  | ↓                      | ↑                       | ↓                        |
| :30   | ②                      | ④ F1D                   |                          |
| 3:30  | AMA<br>STICK           | ↑                       |                          |
| 4:30  | ③                      | ⑤ ROG<br>CABIN          | SCALE                    |
| 5:30  | ↓                      | ↓                       | PEANUT SCALE<br>KIT/PLAN |
| 6:30  | ↑ ORNITHOPTER<br>SPEED | ⑥                       |                          |
| 7:30  | ↓                      | ↓                       |                          |
| PM    |                        | BANQUET AT 8:00 PM      |                          |

DOORS OPEN AT 8:00 AM

DOORS CLOSE AT 8:00 PM

THE USA VOICE IN FREE FLIGHT MATTERS IS NFFS & NIMAS!

SLIGHTLY REVISED SCHEDULE MAY 21, 1984

Contest Directors - H. Brodersen, A. Italiano  
D. Lindley, C. Sotich  
G. Wisniewski

All Senior and Open Flyers will be required to time flights and assist as called upon (be happy and volunteer!)

NO DISPUTES ALLOWED - CD's HAVE THE LAST WORD FOR FAIRNESS.

Entries must be postmarked by June 4, 1984 - late fee \$5.00 payable on site.

NOTE: FOR DETAILS OF THE MIAMA PEANUT GRAND PRIX AND RECORD TRIALS, SEND A LARGE SASE TO Dr. J. Martin, 2180 Tigertail Ave., Miami, FL 33133 - (June 20, 21, 22, 1984)

BRING YOUR OWN CHAIRS AND TABLES-----AND BALLOONS (HELIUM WILL BE PROVIDED)  
BANQUET - TUESDAY, JUNE 19, 1984 8:00 PM - \$11.00/PERSON

Detroit area contact: Richard Doig (313)373-5374

AWARDS to 3RD PLACE

|                 | JR                   | SR | OP |
|-----------------|----------------------|----|----|
| HLG             | X                    | X  | X  |
| PAPER STICK     | JR. & SR. (COMBINED) |    | X  |
| ROG CABIN       |                      |    | X  |
| F1D             |                      |    | X  |
| EASY B          | JR. & SR. (COMBINED) |    | X  |
| PENNY PLANE     | X                    | X  | X  |
| NOVICE PP       | X                    | X  | X  |
| MANHAT.         |                      |    | X  |
| BOSTONIAN       |                      |    | X  |
| INDOOR STICK    | JR. & SR. (COMBINED) |    | X  |
| PEANUT SCALE    | JR. & SR. (COMBINED) |    | X  |
| AMA SCALE       |                      |    | X  |
| PEANUT SPEED    |                      |    | X  |
| UNLIMITED SPEED |                      |    | X  |
| ORNITHOPTER     |                      |    | X  |

CASH PRIZES ONLY

Peanut Scale Rules per 51.A - 1982/83 AMA rule book  
NOTE: All AMA rules apply except as described (over)

NOTE: All models for scale judging are to be submitted by 9:00 a.m. June 19 or earlier (along with documentation and name of contestant).



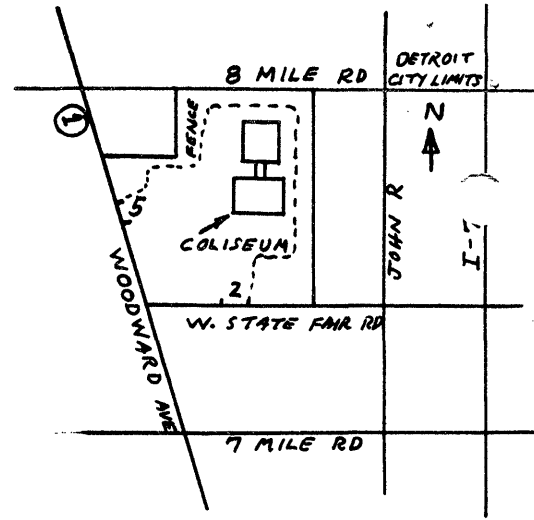
**KIT - PLAN SCALE RULES**

1. Scale, rubber powered models built from kits and/or published plans.
2. The prop and/or rubber mat be changed to allow a better prop-power combination.
3. The nose block and thrust button may be altered to facilitate winding of 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 plans, (ie., door lines, hinge lines, cowl bumps, etc.). The color and trim should be appropriate for the era of the aircraft being modeled. No condenser paper or film coverings will be allowed. All flying surfaces must be double covered.
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 score. Photographs and 3 views are not needed or required.
6. 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 ROG (or at the discretion of the CD).

AWARDS TO 3rd IN OPEN, BEST JUNIOR AND BEST SENIOR.

Register at the Calumet Aircraft Modelers table on the day of the event. For further details, contact- Martin Varney

7992 White Oak Ln., Hammond, IN 46324



**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 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 crosses the line after completing two laps.
6. Shortest time for two complete laps determines the winner.
7. 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 2 laps.
3. The lowest time will determine the winner.

|          |                                 | Includes<br>One Event | Each<br>Addl. Ev. |
|----------|---------------------------------|-----------------------|-------------------|
| OP       | NFFS<br>AND NIMAS<br>MEMBER     | \$18.00               | \$3.00            |
|          | NON NFFS<br>AND NIMAS<br>MEMBER | \$30.00               | \$5.00            |
| JR<br>SR |                                 | \$ 7.00               | \$2.00            |

All entries must be AMA Member or of their countries governing body

Send your entry payable to:

A. J. Italiano  
1655 Revere Dr.  
Brookfield, WI 53005  
(414) 782-6256 (After 7 PM CDST)

(Send large SASE for extra entry blanks)

June 4, 1984 is deadline!

**MANHATTAN CABIN RULES**

1. Airframe weight, less rubber...Minimum four (4) grams.
2. Overall length.....20" max from prop bearing aft.
3. Fuselage...(a) Must support and enclose a single rubber motor. No motor sticks. (b) Must include or exceed a "box" 2½ x 4 x 2 inches. No diamond shapes. (c) Must have a windshield of 2 sq inches min area, and a window on each side of one square inch min area covered with cellophane or similar transparent material.
4. Prop... Solid wood, direct drive, fixed pitch.
5. Wing... Unbraced monoplane with 4" max chord and 20" max projected span.
6. Stab... Projected span 12" max. Chord 3½" max.
7. Landing gear... Rigid and fixed with at least two wheels of 1" minimum diameter.
8. Flying...All flights ROG, unlimited attempts to record 5 flights. Flights of less than 20 seconds are attempts. Best single flight wins.
9. Covering...Except for windshield and windows, paper or wood. No films.

**BOSTONIAN RULES:**

1. Maximum projected wingspan(s) 16"
2. " wing chord(s) 3"
3. " propeller diameter 6"
4. " overall length w/o prop is 14"
5. Minimum weight w/o motor(s) 7 grams (biplanes - 14 g)
6. Fuselage contains a "box" 1-1/2 x 2-1/2 x 3" or larger
7. Longerons must support the motor(s) & form "box"
8. Fixed landing gear, two or more rotating 3/4" dia. min. wheels
9. Must have a windshield and a window on each side with min. of 1 sq. in.
10. ROG
11. Charisma factor: Judge rates model on appeal to him, construction neatness, scale like details, uniqueness, etc. A 1.0 to 1.2 rating is used.
12. Seven official flights over 20 seconds, total in full seconds of the best two flights multiplied by the charisma factor determines winner basis

**NO FAULT INSURANCE:** Check your model before you come to contest---disqualified if your out of dimension model is due to lack of self discipline.

# THIRD UNITED STATES INDOOR CHAMPIONSHIPS

June 18, 19, 20, 1984

MICHIGAN STATE FAIR COLISEUM



**NFFS**

Please Print

Name \_\_\_\_\_ AMA NO. \_\_\_\_\_  
                     Last                      First                      Initial

Street \_\_\_\_\_

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

I hereby certify that I understand all of the rules under which I will compete and will diligently follow the official AMA safety code as well as any that may be established on site as well as apply the use of good accepted common sense in all my flying and affairs at the contest site.

Signature \_\_\_\_\_

Circle Events Entered

|                  |                                  | Includes<br>One Event | Each<br>Additional Event |
|------------------|----------------------------------|-----------------------|--------------------------|
| Open             | NFFS or<br>NIMAS<br>Member       | \$18.00               | \$3.00                   |
|                  | Non NFFS<br>and NIMAS<br>Members | \$30.00               | \$5.00                   |
| Junior<br>Senior |                                  | \$ 7.00               | \$2.00                   |
|                  |                                  |                       |                          |

1. Hand Launched Glider
2. Paper Stick
3. ROG Cabin
4. FID
5. Easy B
6. Pennyplane
7. Novice Pennyplane
8. Manhattan
9. Bostonian
10. Indoor Stick
11. Peanut Scale
12. AMA Scale
13. Peanut Speed
14. Unlimited Speed
15. Ornithopter

Junior [ ] Senior [ ] Open [ ]

NOTE: You can join NFFS or NIMAS and AMA on premises.

Banquet - \$11.00 per person

In case of emergency please contact:

NAME \_\_\_\_\_ PHONE \_\_\_\_\_

STREET \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

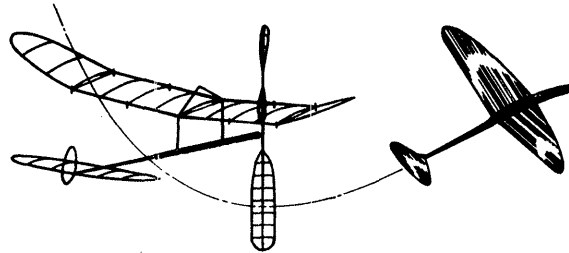
Send fees payable to:  
 J. Italiano  
 55 Revere Dr.  
 Brookfield, WI 53005

Contest Sponsors:  
 National Fee Flight Society  
 National Indoor Model Airplane Society

Must be postmarked by June 4, 1984  
 Late entry fee of \$5.00 payable on site

**INDOOR****NEWS and VIEWS**

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



#14

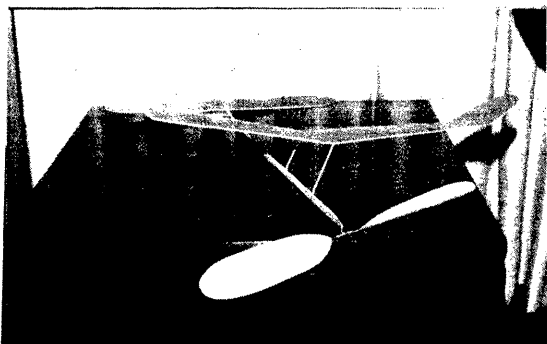
THIS ISSUE

This issue of INAV took longer to get out than I had hoped it would. The week before the United States Indoor Championships, Carl Wheeley of Model Aviation asked us if we would write an article on the U.S.I.C. for the magazine. Writing that article, gathering and captioning the accompanying photographs took more effort and time than we originally thought. That's done and it will appear in the October issue. Complete results of the U.S.I.C. will be in the next issue of INAV.

Now for this issue. Many thanks to Ed Whitten for the contest results and photo from Cantiague Park and also the Yankee Indoor Champs results. Also thanks to Stan Chilton for sending plans of his FAI Indoor model "Dragonfly". This is the model he flew at last year's FAI Finals and is among the trend to longer (36.6 inches) models.

MISSING SUBSCRIBERS

Two copies of issue #13 were returned as undeliverable by the Post Office, which considering the gap between #12 and #13 is remarkable. Do you know where these people are? Walter Lounsbury of Wichita, Kansas has moved, where? And Sgt. Charles Cohlt, APO, New York has probably been stationed somewhere else if he is still in the Service. If you know their whereabouts please let us know.



Is this your Easy B? This model - the rudder hangs below the stab - was left hanging in the girders on Wednesday morning of the U.S.I.C. The model is in good condition and we would like to return it to its builder. Please call Richard Doig at (313)373-5374 to claim.

WORLD INDOOR CHAMPIONSHIPS

The 1984 World Indoor Championships will be held during October in Nagoya, Japan. The word via Ed Whitten is the People's Republic of China will be sending a team.

CONTEST CALENDER

- AUGUST 11 FAI LOCAL, LONGWOOD RECREATION CENTER, OLNEY, MD, CAT I, F1D, Flying from 6 pm - 1 am. CD - Dan Belieff (301) 933-5445
- AUGUST 12 RECORD TRIALS, NORTHWOOD HIGH SCHOOL, WHEATON, MD, CAT I, This site is only 2½ miles from Olney and both are north of Washington DC, CD - Tom Vallee (301)498-0790
- SEPT 1-3 FAI REGIONAL, SANTA ANA HANGER #1, TUSTIN CA, CAT IV, Sponsor-MCAS, CD - Curt Stevens 24692 Nympha, Mission Viejo, CA 92691 (714) 586-5779
- SEPT 1-3 FAI REGIONAL, GOODYEAR AEROSPACE AIRDOCK, AKRON, OH, CAT IV, Contact CD in advance Bill Hulbert 174 Castle Blvd, Akron, OH 44313 (216)864-8030
- SEPT 29&30 11th ANNUAL MIDWESTERN STATES INDOOR CHAMPIONSHIPS, CHANUTE AFB, RANTOUL, IL CAT II, Sponsor-Chicago Areonuts These plans are still tentative and details will be in an upcoming issue
- OCTOBER 28 MICHIGAN INDOOR CHAMPIONSHIPS, STATE FAIR COLISEUM, DETROIT, MI, CAT III, F1D, Paper Stick, EZB, Novice Pennyplane, Manhattan Cabin, Bostonian, HLC, AMA Scale Peanut Scale, Blatter 40. Sponsor-Detroit Balsa Bugs & Exchange Clubs Council CD - Richard Doig 6Canary Hill, Pontiac, MI 48055 (313)373-5374

The listing in the Competition Calender of Model Aviation for the Midwestern States Indoor Championships in the Jones Armory is a mistake. The correct site is Chanute AFB, Jones Armory will only be used as a backup site should Chanute fall through.

LOW LIBRARY FLYING

Flying sessions in the Low Library Rotunda of Columbia University will resume in September, contact Ron Williams at (212) 722-5262 for specific dates.

RON WILLIAMS' BOOK

Yes, indoor modelers, the book Building and Flying Indoor Model Airplanes by Ron Williams is being published again. This edition is softcover, costs \$14.95 and has an updated Appendix. It should be available by September 1 in most hobby shops and bookstores, if you don't see this book ask for it. Or you can order it directly from the publisher:

Peregrine Smith Books, Inc.  
P.O. Box 667  
Layton, UT 84041 USA

- Add \$1.50 shipping for the first book ordered and 75¢ for each additional book.
- Overseas orders add \$2.00 shipping for first book ordered and \$1.00 for each additional book, U.S. funds only please.

## COMPETITION RULES AND PROCEDURES

On May 5 & 6, 1984 there was a joint meeting of the Executive Council and all Contest Board Chairmen. The following results of that meeting were excerpted from the August 1984 issue of Model Aviation.

The main problem addressed was getting the AMA Rulebook into member's possession before the first of the year in which the rulebook takes effect. The solution which was unanimously accepted by the Executive Council and Contest Boards goes into effect immediately. The September 1, 1984 deadline for presenting Proposals remains. The major difference is that a separate Cross-proposals cycle and the Interim vote on them have been eliminated. Revisions and refinements can be made to a Proposal but are subject to approval of the Proposal's author. These need no special form and can be submitted through January 1, 1985 to the appropriate Contest Board Chairman. Comments can be made on any Proposal through the Final vote on May 1, 1985. If you feel a proposal needs major changes then that is a new proposal requiring the proper form with its deadline of September 1, 1984.

Other changes made at this meeting include "changing from simple majority to 2/3 majority of responding members for passage on the Initial vote where one (or more) Contest Board (s) are involved." Also "the rule book will be split up into a General section, which includes rules acted on only by the Executive Council or the combined Contest Boards and individual sections containing all the rules acted on by each of the individual boards. These individual sections will contain all the rules associated with the actual field operation of a contest except for those concerned with site, facilities, officials, protests, and other administrative and organizational rules." This will be done for the next (1986-1987) rulebook.

Also some interest has been shown for a rule book for Contest Directors that is a large-print 8 1/2 x 11 loose-leaf format. If you are interested let your Contest Board representative know.

Elsewhere in this issue are photocopies of all the Indoor Proposals received to date. Read them over and if you feel minor changes are needed submit a revision or if major changes are needed then submit a new proposal. Or if something has not been addressed that you think should, then you submit the proposal. The last page of this issue - U.S. copies only - is a blank Rules Proposal form. USE IT! All forms must be postmarked no later than September 1, 1984! Don't delay as time is running short.

## INDOOR TROPHIES

Unique indoor trophies are hard to come by, but in recent issues of Model Aviation are some good examples. The August Letters to the Editor has a photo from Bob Clemens of a three dimensional Indoor Scale trophy. Bud Tenny's Indoor column in the July issue has a photo etched trophy plate courtesy of Don Chancey. After seeing these examples we had to pass along this idea.

This is the Detroit Balsa Bug's FAI Indoor trophy, given every other year to the highest placed Michigan resident in the FAI Indoor Team Selection program. The trophy was rebuilt in 1981 by Richard Doig, current holder of the trophy, so the wire art style indoor model even has all the appropriate twists. The model has a 6 1/2" wingspan and an overall length of 9". It was made using .045 and .050 music wire soldered together and then spray painted with gold Rust-Oleum.

## ONE MORE TIME IN WEST BADEN

Arrangements were made on very short notice, for the weekend of June 30 and July 1 to have a Record Trials in the West Baden Atrium. Eight modelers attended and a majority of them had come to set records.

West Baden without the meals and accommodations at the site is not the same atmosphere. Also the usual site preparations were not the same. The plastic shrouds around the bandstand at the roof remained intact and we were able to have all the windows overlooking the Atrium shut, but we were unable to cover the fireplace or close all the outer doors. Also there were tours which came in every 45 minutes and walked across the floor making for some interesting moments as they almost collided with a descending model.

Dick Ganslen was testing new microfilm models and Carl Fries brought along his Easy B. Ornithopter fliers Walt Erbach and Roy White came to try for records. Walt Van Gorder brought his Manhattan Cabin to try and increase his CAT III record of 9:00 set June 10 in Cincinnati. Richard Doig had rebuilt his AMA Stick monster from the U.S.I.C. hoping to do better time. He also brought his R.O.G. Cabin along but could do no better than 24:47, just short of the record. Jim Richmond brought his new FAI design to test in a 98' ceiling and try to beat Cezar Bark's record of 39:04 but could do no better than 38:30.

Al Rohrbaugh was the only flier who was able to set a new record - 8:17 with his unique Ornithopter. Al hopes to have an article showing his new design published in one of the modeling magazines soon.

The lack of record setting was due to the unusually cool weather, it only got to 75°F and the turbulence caused by the open doors and tourists trooping through.

## FUTURE FLYING IN WEST BADEN ?

As to the future possibility of flying in the Atrium it looks very bleak. Northwoods Institute closed its college campus there last September and has leased the property with an option to purchase to Eugene MacDonald, a local hotel owner. He intends to restore the building and grounds to a luxury hotel resort, its original use. It is his intention that when restoration is complete he cannot give a group exclusive use of the Strium unless they rent out all the hotel rooms - all 432 rooms.

It is the concensus of the modelers who attended this last Record Trials that as long as MacDonald has control of the building no flying will happen. It is also the group's opinion that the restoration plans will never get beyond the planning stage as there was no evidence in June of work starting or about to start. Rumors in West Baden say there is some sort of deadline in September. If this is true the situation may change later this year. We will keep you posted as events there unfold.



CANTIAGUE PARK (50'), HICKSVILLE, LI, NY \* CD JOHN CARBONE \* Sponsored by L.I.A.M.A.C. with awards by GRUMMAN AEROSPACE CORP. \* June 9, 10, 1984

PENNYPLANE

- 1) Steve West 8:45
- 2) Joe Nuszer 8:19
- 3) Bob Bender 8:18
- 4) Frank Haynes 8:06
- 5) Randy Boston 7:59
- Manny Radoff 7:59
- 7) Richard Whitten 7:26
- 8) Ted D'Alessandra 7:14
- 9) Mark Trubowitsch 7:04
- 10) John Triolo 6:49
- 11) Ed Beshar 6:22
- 12) Heidi Spigelmyer 4:25

EASY "B"

- 1) Joe Nuszer 9:21
- 2) Frank Haynes 8:34
- 3) Ted D'Alessandra 7:48
- 4) Bob Bender 7:06
- 5) Steve West 5:56
- 6) Ed Beshar 5:44
- 7) Heidi Spigelmyer 4:22
- Mark Trubowitsch x
- Randy Boston x

MICROFILM (ONLY) STICK

- 1) Manny Radoff 19:07
- 2) Richard Whitten 16:28
- 3) Joe Nuszer 13:18

H. L. GLIDER (ALL Balsa)

- 1) Joe Nuszer 38.3 + 38.0 = 76.3
- 2) Mark Trubowitsch 36.7 + 33.1 = 69.8
- 3) Bob Bender 32.0 + 31.0 = 63.0
- 4) Bill Passarelli 30.2 + 32.0 = 62.2
- 5) Scott Pulver (JR) 28.0 + 20.2 = 48.2

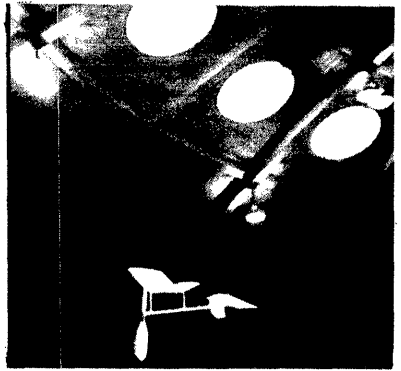
BOSTONIAN (7 gr. - Best Single Flight times 20% Charisma - HL)

- 1) Mark Trubowitsch 158 x 1.15 = 181.7
- 2) Bill Passarelli 135 x 1.20 = 159.6
- 3) Bob Bender 132 x 1.15 = 151.8
- 4) Randy Boston 136 x 1.10 = 149.6
- 5) Frank Haynes 134 x 1.10 = 147.4
- 6) Joe Nuszer 85 x 1.10 = 97.5

PEANUT SCALE (1983 AMA Rules - HL - all rec'd 1.0 Factor)

- 1) Bill Passarelli 135 + 79 pts = 215
- 2) Joe Nuszer 138 + 73 " = 211
- 3) Randy Boston 140 + 69 " = 209
- 4) Frank Haynes 114 + 71 " = 185
- 5) Bob Bender x 84 " x

Scott Pulver received a prize for best time in HLG for a Junior, and Heidi Spigelmyer received a trophy for being the "outstanding beginner". Winners received trophies through third place in all events.



Ed Beshar's PennyPlane descends in Cantiague Park skating arena... Blue sky-lights are the trade-mark of this site. Ed Beshar is a legend... and one of my heroes from way back. In Carl Claudy's book (1931) he has 3 plans, an OHLG, a 9 Min. Indoor Tractor and a Twin Pusher.

Ed started building in 1927 at age 11, and admits to not winning a contest until 1929 at the old age of 13.

Conditions during this contest were somewhat unusual. This site is an ice skating arena and the ice had recently been removed. On Saturday hot temperatures outside and cool temperatures inside caused it to rain inside the building prior to flying leaving large puddles on the floor making R.O.G. impossible. Sunday had fog rising from the floor!

# 1984 YANKEE INDOOR CHAMPIONSHIPS

June 17 Westover AFB, Chicopee, Mass.  
(site of the 1983 Nationals)

FAC SCALE (12 Entries)

- 1) George Meyers
- 2) Jerry Wagner
- 3) Henry Frautschy
- 4) Art Maiden
- 5) Waldo Cargill

PEANUT SCALE (12 Entries)

- 1) Jerry Wagner
- 2) Henry Frautschy
- 3) Jim Fiorello
- 4) George Meyers
- 5) Bob Clemens

WWI MASS LAUNCH (6 Ent.)

- 1) George Meyers
- 2) Ed Heyn
- 3) Pat Ciambrello
- 4) Ted Langley
- 5) Art Farranda

WWII MASS LAUNCH

- 1) Jerry Wagner
- 2) Waldo Cargill
- 3) George Meyers
- 4) Art Maiden
- 5) Ed Heyn

NO-CAL (2 Entries)

- 1) Jerry Wagner
- 2) Bob Clemens

AMA STICK (6 Entries)

- 1) Jerry Wagner 17:23
- 2) Pete Andrews 17:05
- 3) Jon Harlan (JR) 16:59
- 4) Jim Fiorello 11:41
- 5) Pat Ciambrello 6:54

EASY "B" (9 Entries)

- 1) Ray Harlan 15:51
- 2) Pete Andrews 13:09
- 3) Jerry Wagner 11:55
- 4) Jon Harlan (JR) 9:31
- 5) Walt Henry 9:19

MANHATTAN (3 Entries)

- 1) Pete Andrews 7:27
- 2) John Triolo 6:58
- 3) Frank Haynes 5:48

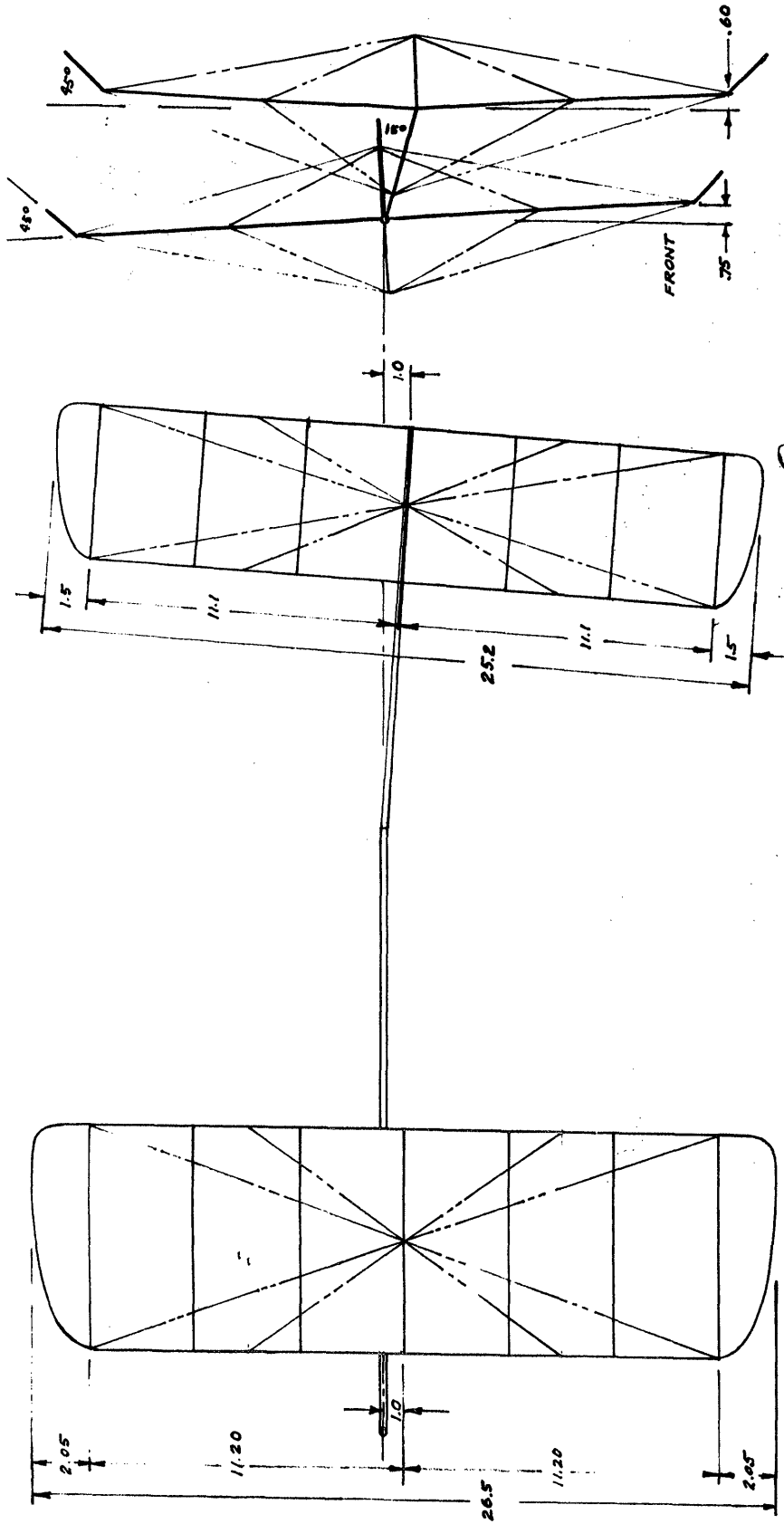
BOSTONIAN (6 Entries) - 7 Gr., 2 Best Flights X 20% Charisma, ROG, Singled Covered Surfaces OK

- 1) Chet Bukowski 326.9 Pts.
- 2) Bob Clemens 231.9 "
- 3) Ted Langley 208.2 "
- 4) John Triolo 202.8 "
- 5) Frank Haynes 105.1 "

PENNY PLANE (13 Entries)

- 1) Pete Andrews 11:45
- 2) Steve West 10:43
- 3) Manny Radoff 9:29
- 4) Frank Haynes 9:20
- 5) Jon Harlan (JR) 8:17

In addition, Jon Harlan set a new Junior AMA National Helicopter Record of 6:18.



**"DRAGONFLY" FID**  
 BY STAN CHILTON - 1983

POWER: 072 x.040 x 251 PIRELLI  
 2.27 GR. 2700 MAX TURNS

PROP: 19.5/31

WTS:

|       |       |      |
|-------|-------|------|
| WING  | .011  | .02. |
| BODY  | .026  |      |
| PROP  | .0067 |      |
| TOTAL | .0437 | .02. |

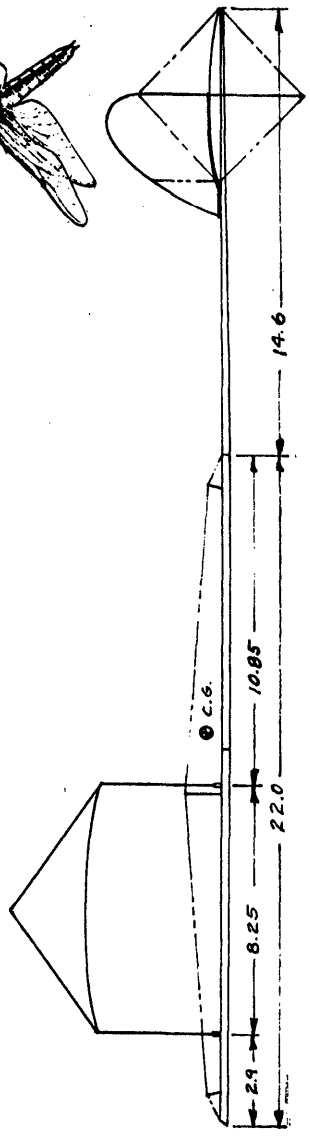
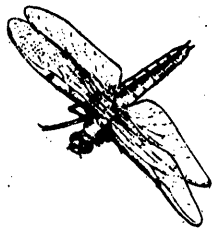


EXHIBIT A

PROPOSAL NO. IND-86-1  
(to be inserted by HQ)

POSTMARK DATE: 5/11/84  
(to be inserted by HQ) Rec'd 6/27/84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT  INDOOR  SCALE  Helicopter  Soaring  Racing  Aerobatics  CONTROL LINE  GENERAL

Type of Proposal: (Circle one)  Cross-Proposal?  (Identification No. of relevant Basic Proposal: \_\_\_\_\_)

1. Brief summary of the proposed change: TO REMOVE THE INDOOR CATEGORY BECAUSE THE RUBBER BANDS WILL BE A BUILT UP STRUCTURE WHICH SUBSTITUTES THE RUBBER BANDS FOR A MODIFIED STICK MODEL.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quote present rule book wording)" to: "(exact wording desired)". 19.3 Classes- Change Paper covered to Intermediate made to radio; A CABIN MODEL HAS A BUILT UP ENCLOSED FRAMEWORK WHICH SUBSTITUTES A RUBBER MOTOR NO RIGID INTERNAL STRUCTURES OR WOOD STICKS

3. Logic behind proposal change, including alleged shortcomings of present rules: THIS PROPOSER WOULD REMOVE THE RUBBER BANDS FROM THE INDOOR CATEGORY BECAUSE THEY ARE USED IN THE RUBBER BANDS WHICH SUBSTITUTES THE RUBBER BANDS FOR A MODIFIED STICK MODEL.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).  
(1) Proposer: Anthony J. Williams AMA Member No. 6232 Date of Signature 4/24/84  
Street Address: 198 TWINS FORD RD State: PA Zip: 18954  
City: RICHMOND State: PA Zip: 18954  
(2) Endorsement: Pat Beach AMA Member No. 2287 Date of Signature 4-28-84  
City: Richmond State: PA Zip: 18954  
(3) Endorsement: Robert G. ... AMA Member No. ... Date of Signature ...

EXHIBIT A

PROPOSAL NO. IND-86-2  
(to be inserted by HQ)

POSTMARK DATE: Ap 12, '84  
(to be inserted by HQ) Rec'd 6/27/84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT  INDOOR  SCALE  Helicopter  Soaring  Racing  Aerobatics  CONTROL LINE  GENERAL

Type of Proposal: (Circle one)  Cross-Proposal?  (Identification No. of relevant Basic Proposal: \_\_\_\_\_)

1. Brief summary of the proposed change: To allow the use of any covering material other than microfilm. The commonly used condenser paper is no longer being produced. The time to change is now before condenser paper becomes like gold to the contest flyer. The intent of the paper covered rule was to eliminate microfilm and at that time paper was the only alternative.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quote present rule book wording)" to: "(exact wording desired)". 19.3 Classes- Change Paper covered to Intermediate

3. Logic behind proposal change, including alleged shortcomings of present rules: Modern day capacitors are produced from metalized plastic films rather than thin paper and aluminum foil due to the size and cost savings. Condenser paper is going the way of the buggy whip. Plastic films are easier to work with and cost a lot less than any of the light paper materials. Plastic cost under .25¢ sq.ft.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).  
(1) Proposer: Curt Stevens AMA Member No. 4719 Date of Signature 4/5/84  
Street Address: 2492 Nympha State: Cal Zip: 92691  
City: Mission Viejo State: Cal Zip: 92691  
(2) Endorsement: Walter J. Williams AMA Member No. 3530 Date of Signature 4-7-84  
City: ... State: ... Zip: ...  
(3) Endorsement: Clarence J. Mather AMA Member No. 8133 Date of Signature 4-7-84  
City: ... State: ... Zip: ...

1 A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.  
2 A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been "tentatively accepted" by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

EASY D  
EXHIBIT A

PROPOSAL NO. IND-86-3  
(to be inserted by HQ)

POSTMARK DATE: Ap 12, '84  
(to be inserted by HQ)

Rec'd 6/27/84

APR 17 1984

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter GENERAL

Type of Proposal: (Circle one) Soaring RACING Aerobatics Cross-Proposal? (Identification No. of relevant Basic Proposal: )

- Brief summary of the proposed change: To allow the use of any covering material other than microfilm. The commonly used condenser paper is no longer being produced. The time to change is now before condenser paper becomes like gold to the contest flyer. The intent of the paper covered rule was to eliminate microfilm and at that time paper was the only alternative.
- Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quotes present rule book wording)" to: "(exact wording desired)"):  
19.8.2a Change "The easy B model shall be a paper covered monoplane" to read "The easy B model can be covered with any commercially available solid material such as paper or plastic film. Microfilm is not allowed."

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

- Logic behind proposal change, including alleged shortcomings of present rules: Modern day capacitors are produced from metalized plastic films rather than thin paper and aluminum foil because of the cost and size savings. condenser paper is going the way of the buggy whip. Plastic films are easier to work with and cost less than any of the light paper materials. Cost under 0.25¢ sq. ft.

Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Curt Stevens AMA No. 219 Member Cat. 4/5/84

Street Address: 24692 Nympha State: Cal Zip: 92691  
City: Mission Viejo

(2) Endorsement: Maryj Williams Member Card No. 7-7-84 Date of Signature: 4-17-84

(3) Endorsement: Clarence J. Mathis Member Card No. 8-23 Cat. 4-1-84 Date of Signature: 4-1-84

A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.

A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been "tentatively accepted" by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

Penny plane  
EXHIBIT A

PROPOSAL NO. IND-86-4  
(to be inserted by HQ)

POSTMARK DATE: Ap 12, '84  
(to be inserted by HQ)

Rec'd 6/27/84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter GENERAL

Type of Proposal: (Circle one) Soaring RACING Aerobatics Cross-Proposal? (Identification No. of relevant Basic Proposal: )

- Brief summary of the proposed change: This class should be dropped because it serves no purpose and just adds to the rule book confusion. Novice pennyplane is a good beginners event and should be retained. the old paper stick class with plastic film covering will make an excellent intermediate class without all the crazy pipes and fat props.
- Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quotes present rule book wording)" to: "(exact wording desired)"):  
20.3 Eliminate the pennyplane class completely.  
20.3 and 20.4 could be combined into a new 20.3 containing all the rules for the novice pennyplane event.

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

- Logic behind proposal change, including alleged shortcomings of present rules: The Pennyplane class was a good idea that went wild and now serves no purpose at all.

Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Curt Stevens AMA No. 219 Member C. Cat. 4/5/84

Street Address: 24692 Nympha State: Cal Zip: 92691  
City: Mission Viejo

(2) Endorsement: Maryj Williams Member Card No. 7-7-84 Date of Signature: 4-17-84

(3) Endorsement: Clarence J. Mathis Member Card No. 8-23 Cat. 4-1-84 Date of Signature: 4-1-84

A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.

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# EXHIBIT A

PROPOSAL NO. \_\_\_\_\_  
 (to be inserted by HQ)

POSTMARK DATE: \_\_\_\_\_  
 (to be inserted by HQ)

## RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

|                                   |             |        |                             |   |              |  |
|-----------------------------------|-------------|--------|-----------------------------|---|--------------|--|
| Rule Category:<br>(Circle one)    | FREE FLIGHT | INDOOR | SCALE                       | RADIO CONTROL:  | CONTROL LINE | GENERAL  |
| Type of Proposal:<br>(Circle one) |             |        | Basic Proposal <sup>1</sup> | <input type="radio"/> Helicopter<br><input type="radio"/> Soaring<br><input type="radio"/> Racing<br><input type="radio"/> Aerobatics |              | Cross-Proposal <sup>2</sup><br>(Identification No. of relevant<br>Basic Proposal: _____) |

1. Brief summary of the proposed change: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quote present rule book wording)" to: "(exact wording desired)".

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Note:** The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: \_\_\_\_\_ AMA No. \_\_\_\_\_ Member Cat. \_\_\_\_\_ Date of Signature \_\_\_\_\_

Street Address \_\_\_\_\_

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

(2) Endorsement: \_\_\_\_\_ AMA No. \_\_\_\_\_ Member Cat. \_\_\_\_\_ Date of Signature \_\_\_\_\_

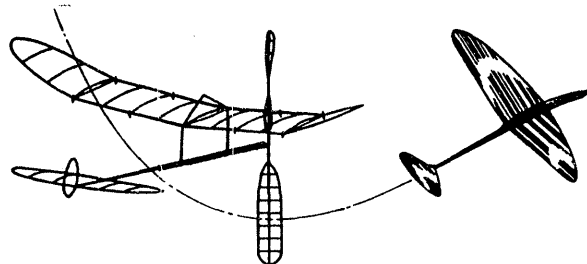
(3) Endorsement: \_\_\_\_\_ AMA No. \_\_\_\_\_ Member Cat. \_\_\_\_\_ Date of Signature \_\_\_\_\_

<sup>1</sup> A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.

<sup>2</sup> A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been "tentatively accepted" by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

A PHOTOCOPY OF THE RULES PROPOSAL IS ACCEPTABLE IF YOU DO NOT WISH TO CUT UP THE MAGAZINE.

# INDOOR



#15

## NEWS and VIEWS Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080 This Issue: Melody & Richard Doig - 6 Canary Hill Dr., Pontiac, MI 48055

### THIS ISSUE

We would like to thank everyone for their constructive criticism and compliments on issues #13 and #14. We also invite you to submit technical information to share with the world or technical questions you would like answered.

The 2½ months since issue #14 have been very busy with 2 contests out of town - Akron and Chanute AFB - and running 2 contests here - Michigan Outdoor Champs Free Flight events and Michigan Indoor Champs. So to answer Herb Robbins INAV won't hurt the flying but contests will postpone INAV.

### CONTEST CALENDER

#### CALIFORNIA - TUSTIN

FAI Team Selection Local in Hanger #1 on Tustin M.C.A.F. the first weekend of each month. Nov. 3&4, Dec. 1 & 2, etc. To gain admittance to base contact Curt Stevens (714) 586-5779 or 24692 Nympha, Mission Viejo, CA 92691

#### CALIFORNIA - SAN DIEGO

Indoor flying and contest the 4th Friday of each month, starting time 7:30 pm at the Colina Del Sol Community Center, 5319 Orange Av. Contact San Diego Orbiters program chairman Chuck Dugan (619)448-1373

#### FLORIDA - MIAMI

MIAMI indoor meets #1 Oct. 14, #3 Dec. 9, #5 Feb10 and World Proxy Inter-Gnats April 13 & 14. Miami Dade South College 11011 S.W. 104th Street CAT II 27 feet Events: Scale, Peanut, Pistachio, Kit/Plan, "A" R.O.G., FAC mass launch, Easy B, Pennyplane, Novice Pennyplane, Manhattan/Bostonian. Contact Mike Arak (305) 666-6620 or "Doc" Martin (305)858-6363 or 2180 Tigertail Av. Miami, FL 33133

#### FLORIDA - TAMPA

MIAMI indoor meets #2 Nov.10 & 11, #4 Jan.12 & 13, #6 March 9 & 10, #7 May 11 & 12 at MacDill A.F.B. CAT III 61 feet To gain admittance onto base you must contact Dick Obarski (813) 693-1996 or 2349 Barcelona Av. Fort Myers, FL 33905 Events: EZB, Peanut Scale, Manhattan/Bostonian, "A" R.O.G., HLG, Pennyplane, Novice Pennyplane, Kit/Plan

#### MASSACHUSETTS - BOSTON AREA

Flying sessions start Saturday, Nov. 10, 6-10 pm and then the first Saturday of each following month. M.I.T. Dupont gym, Cambridge, MA CAT II Events flown based on participants' interest. Contact Ray Harlan (617) 358-4013 or 15 Happy Hollow, Wayland MA 01778

#### MISSOURI - KANSAS CITY

Fun flying and contests at Westport Community Center, 3601 Roanoke Rd., Kansas City (downtown) Saturday Nov.17, 2 pm organizational meeting, 3-5 pm fun fly, Saturday Dec.15, 3-5 pm fun fly, Saturday Jan.19, 3-5 pm contest for Peanut and profile scale, Saturday Feb.16, 3-5 pm contest for AMA and Peanut scale, Saturday March ?, 3-5 pm contest for Easy B, Pennyplane, OT R.O.G. Contact Roger Schroeder (913) 648-4265 or 4111 W. 98th Street, Overland Park, KS 66207

#### NEBRASKA - LINCOLN

Nebraska Free Flighters Fall Indoor Contest Sunday, Nov.18 at Beatrice City Hall, 30 miles south of Lincoln. Events: Easy B, HLG, Peanut, one design Easy B, Bostonian. Contact L. Blinde (402) 467-4765 or 3833 N. 56th Street, Lincoln, NE 68504

#### NEW JERSEY - GLASSBORO

Contests at Glassboro Community College (October 27 cancelled) CAT I 23½ feet - sponsored by Philadelphia Sky Pirates. Contact Frank Donnelly (215) 637-1167 or 3613 N. Hereford Lane, Philadelphia, PA 19114

#### NEW JERSEY - LAKEHURST

FAI Team selection contests and flying sessions in Hanger #1 at New Jersey Naval Air Station, CAT IV. Dates will be set after remodelling project finishes. Contact C.V.Russo (201) 382-0871 or 143 Willoway, Clark, NJ 07066

#### NEW YORK - WESTCHESTER COUNTY

Possible flying sessions and contests in Horace Greeley High School in Chappaqua-35 miles north of New York City. Contact Bob Langelius (914)949-6083.

#### OKLAHOMA - OKLAHOMA CITY

Fun flying and contests at National Guard Armory, 23rd Street, Oklahoma City. Sunday Nov.11 fun fly, Sunday Feb.17 fun fly or contest, Sunday March 17 contest. Contact Bill Baker (405) 329-1018 or 1902 Peter Pan, Norman, OK 73069

#### TEXAS - DALLAS AREA

Monthly flying sessions and contest at Bedford Boys Ranch in Bedford. Contact Jess Shepherd (817) 282-3770 or 2713 Summit View, Bedford, TX 76021

When writing for more information on a flying session or contest we suggest you include a self addressed, stamped business size envelope. This will help speed the information back to you and save the contact person some money and effort.

The above listings for contests and/or flying sessions are all the ones we know about. Most cover multiple sessions throughout the upcoming winter. Hopefully more groups around the country have plans for flying activities this winter, if so please send us your flyer, or write us, or give us a call. (313) 373-5374 Plans need not be complete but you must include the telephone number (address optional) of someone to contact for more information.

#### COLUMBIA UNIVERSITY

NO flying sessions have been scheduled in the Low Library Rotunda. New efforts are being made and it looks promising. The problems occurred because Ron Williams is no longer a professor at Columbia and last year's sponsor - the Office of Student Affairs - was the victim of budget cuts. Please do not rock the boat by contacting Columbia University directly, as this could jeopardize the negotiations. If you want to help or want information contact Ron Williams directly, at (212) 722-5262. Or contact Ed Whitten at home (212) 724-0282 or office (800) 521-3384.

FROM AROUND THE WORLD

HUANG Yongliang of the Peoples Republic of China writes (to Ed Whitten) that their Indoor Team was picked last November at the National contest in Shanghai. The ceiling height is about 46 feet. All members are from Shanghai which is the center of indoor activity in China.

|                  |               |       |
|------------------|---------------|-------|
| 1. LOW Sau-Lum   | 23:48 + 23:06 | 46:54 |
| 2. CHEN Kwok-Hun | 20:30 + 20:22 | 40:52 |
| 3. ZHU Sai-Ping  | 13:49 + 14:27 | 28:16 |

Note: Ed Whitten did the translation and says these spellings may not be exactly correct as the Chinese have recently simplified many of their characters and consequently an entirely new system of Romanization is now used.

Jorgen Korsgaard, a Dane living in West Germany, writes that he will be making the trip to Nagoya, Japan as the first team from Denmark. He attended the FID International in Wroclaw, Poland on June 28 to July 1, 1984 for practice. Jorgen placed 18th of 41 contestants with flights of 28:00 + 27:10 for a 55:10 total. Aurel Popa of Rumania placed first with 34:36 + 32:32 for a 67:08 total. I believe this site is just below CAT III maximum of 15 meters or 98 feet 5 inches.

1986 FAI INDOOR TEAM SELECTION

U.S. INDOOR CHAMPIONSHIPS REGIONAL - DETROIT, MICHIGAN

JUNE 18 & 19, 1984

|                    | best 2 flights |       | total | points |
|--------------------|----------------|-------|-------|--------|
| 1. Larry Cailliau  | 30:14          | 29:55 | 60:09 | 100.00 |
| 2. Bill Hulbert    | 25:39          | 25:42 | 51:21 | 85.34  |
| 3. Paul Tryon      | 23:42          | 23:45 | 47:27 | 78.89  |
| 4. Jim Richmond    | 21:31          | 25:00 | 46:31 | 77.34  |
| 5. Walt Van Gorder | 23:48          | 19:05 | 42:53 | 71.29  |
| 6. Larry Loucka    | 20:31          | 20:30 | 41:01 | 68.20  |
| 7. Richard Doig    | 21:25          | 19:10 | 40:35 | 67.46  |
| 8. Dick Obarski    | 18:43          | 20:50 | 39:33 | 65.75  |
| 9. Dan Belieff     | 13:36          | 12:04 | 25:40 | 42.68  |
| 10. Larry Mzik     | 13:24          | 12:01 | 24:25 | 42.26  |
| 11. Ron Ganser     | 3:48           | -     | 3:48  | 6.32   |

GOODYEAR AIRDOCK REGIONAL - AKRON, OHIO SEPT.1-3,1984

|                    | best 2 flights |       | total | points |
|--------------------|----------------|-------|-------|--------|
| 1. Jim Richmond    | 39:11          | 38:56 | 78:07 | 100.00 |
| 2. Ron Ganser      | 35:58          | 37:26 | 73:24 | 93.96  |
| 3. Richard Doig    | 35:41          | 35:59 | 71:40 | 91.74  |
| 4. Bill Hulbert    | 35:14          | 34:12 | 69:26 | 88.88  |
| 5. Paul Tryon      | 33:47          | 31:00 | 64:47 | 82.93  |
| 6. Dick Obarski    | 31:57          | 29:58 | 61:55 | 79.26  |
| 7. Larry Loucka    | 29:14          | 32:35 | 61:49 | 79.13  |
| 8. Walt Van Gorder | 30:39          | 30:53 | 61:32 | 78.77  |
| 9. Jon Harlan      | 30:32          | 30:06 | 60:38 | 77.62  |
| 10. Bob Gibbs      | 11:14          | 35:25 | 46:39 | 59.72  |
| 11. Ray Harlan     | 38:08          | 8:02  | 46:10 | 59.10  |
| 12. Larry Mzik     | 24:23          | 18:04 | 42:27 | 54.34  |

INDOOR '84 NAGOYA

| Individual Competition |     |         | Nations Competition |  |  |
|------------------------|-----|---------|---------------------|--|--|
| 1. J.Richmond          | USA | 1.17:27 | 1. U.S.A.           |  |  |
| 2. C.Banks             | USA | 1.14:43 | 2. Poland           |  |  |
| 3. R.Randolph          | USA | 1.12:04 | 3. Switzerland      |  |  |

The next issue of Indoor News and Views (#16) will contain complete coverage of the recent World Championships held in Nagoya, Japan. Issue #16 will arrive about one week after you receive this issue.

1984 UNITED STATES INDOOR CHAMPIONSHIPS POST SCRIPT

The third U.S.I.C. is history--held on June 18 to 20, 1984 at the Detroit State Fair Coliseum. The Coliseum was a pleasure to fly in, ie, clean, well kept and generally no drift. It was also well lighted and maintained an acceptable temperature thru-out the day. Ceiling height was 66 feet with truss work above that. The central loudspeakers were shrouded in plastic sheeting and did not present a problem. The cooperation of all flyers was excellent and a general air of comradery existed.

There were two problems- (1) Rental charge for the Coliseum at approx. \$500 per day- (2) Insufficient attendance.

The 57 entrants did not provide enough income to pay for the total expenses. The basic entry fee was set at \$18 based upon a break even point of 85 entrants and at least 3 events per flyer. To increase the fee to a higher value would be detrimental to attendance. We will be incurring a loss and holding a U.S.I.C. in Detroit again would be detrimental to the good health of N.F.F.S.

Total event entries equaled 177 or a 3.1 average events per entry. We had 3 junior and 1 senior entries.

The EZB event is still the largest attraction with 23 active flyers. The 13 entries in FID is still an excellent number. The Canadian attendance was down but those that did attend were of very high calibre. Mike Colling of Great Britain attended. He was visiting the U.S. as a guest of Doug Barber.

Attendance broke down as follows:

|                |                |                |
|----------------|----------------|----------------|
| Michigan----18 | Maryland----1  | Pennsylvania-1 |
| Wisconsin---5  | California---1 | Florida-----5  |
| Indiana-----3  | Nebraska----2  | Missouri-----2 |
| Illinois-----4 | Ohio-----10    | New Jersey---1 |
| Canada-----2   | England-----1  |                |

Thanks of a high order are extended to Rich & Melody Doig for the detailed arrangements of the facility, shrouding of the speakers, helium and the handling of all of the minor but important details. Many thanks to the unsung "heroes" of scale competition, ie., Messers Walter Hartung and Jim Jones, the scale judges. N.F.F.S. thanks the following individuals for their extra generous donations towards dumping the U.S.I.C. deficit:

G. Wisniewski, W. Ganslen, H. Brodersen, W. Erbach, R. White, J. Voorhees, R. Doig, L. Leifer, J.& W. Beton, J. Hervat, L. Garber, N. Taggart, Doc Martin, A. Italiano

The Banquet was held on Tuesday night (6-19-84) at the Gazebo Inn--food and facilities were excellent. The guest speaker was Robert Dial, ex Flying Tiger pilot and General Motors Corporate Pilot. Bob held the assembled on the edge of their seats with his experiences and inside thinking of a fighter pilot under combat stress.

The next great challenge we have is to find a suitable site for the 1985 U.S.I.C. We are still looking for a ceiling height of close to 100 feet, central U.S. location preferred, free access or a fee of less than \$300 per day and close to housing. Please send any information you have on such a site to: A. Italiano, 1655 Revere Dr., Brookfield, WI 53005.

The attendance at the M.I.A.M.A. Grand Prix was much reduced. Doc Martin ran his program concurrent with the U.S.I.C. scale events. The dollar excuse is not valid as the M.I.A.M.A. fee was approx. half of the U.S.I.C. and you could also fly outside of normal working daytime hours.

Remember - "united we stand, divided we fall" - so indoor flyers it is incumbent upon each individual to effect a united stand and get all of the indoor flyers to actively participate.

A. J. Italiano  
President N.F.F.S.

1984 UNITED STATES INDOOR CHAMPIONSHIPS

JUNE 18-20, 1984

SPONSORED BY N.F.F.S. & N.I.M.A.S.

HAND LAUNCHED GLIDER - JR

|             |      |
|-------------|------|
| 1. P.Loucka | 78.6 |
| 2. M.Pivitt | 48.2 |
| 3. J.Pivitt | 27.8 |

HAND LAUNCHED GLIDER - SR

|             |      |
|-------------|------|
| 1. B.Fulmer | 96.4 |
|-------------|------|

HAND LAUNCHED GLIDER - OP

|              |        |
|--------------|--------|
| 1. B.Boehm   | 114.8* |
| 2. P.Shailor | 113.6  |
| 3. W.Simmers | 80.4   |
| 4. R.Pivitt  | 79.0   |
| 5. D.Belieff | 75.8   |
| 6. P.Crowley | 70.8   |
| 7. R.Doig    | 68.0   |
| 8. G.Honda   | 65.4   |

A.M.A INDOOR STICK - JR/SR

|               |       |
|---------------|-------|
| 1. P. Loucka  | 15:55 |
| 2. R. Skrjanc | 15:28 |

A.M.A. INDOOR STICK - OP

|                  |       |
|------------------|-------|
| 1. J. Richmond   | 30:02 |
| 2. R. Doig       | 22:33 |
| 3. P. Tryon      | 22:12 |
| 4. D. Belieff    | 20:36 |
| 5. W. Van Gorder | 20:02 |
| 6. J. Annis      | 17:11 |
| 7. R. Obarski    | 15:17 |
| 8. L. Mzik       | 13:00 |
| 9. W. Hulbert    | 10:40 |
| 10. W. Franklin  | 5:41  |

UNLIMITED RUBBER SPEED

|                |       |
|----------------|-------|
| 1. J. Voorhees | 17.34 |
| 2. F. Kieser   | att   |

ORNITHOPTER - OP

|                |      |
|----------------|------|
| 1. W. Erbach   | 3:48 |
| 2. R. White    | 3:33 |
| 3. F. Kieser   | 2:51 |
| 4. W. Franklin | 3:2  |

NOVICE PENNYPLANE - JR

|               |      |
|---------------|------|
| 1. P. Loucka  | 6:41 |
| 2. T. LaClave | 6:39 |

NOVICE PENNYPLANE - OP

|                   |      |
|-------------------|------|
| 1. W. Simmers     | 9:20 |
| 2. J. Nolin       | 9:15 |
| 3. D. Barber      | 9:09 |
| 4. B. Boehm       | 9:03 |
| 5. J. Jones       | 7:22 |
| 5. J. Hankes      | 7:22 |
| 7. C. Sotich      | 7:16 |
| 8. M. Colling     | 6:52 |
| 9. J. Voorhees    | 6:49 |
| 10. G. Wisniewski | 6:31 |
| 11. W. Van Gorder | 5:55 |
| 12. J. Lemon      | 5:36 |
| 13. A. Italiano   | 5:28 |
| 14. W. Franklin   | 1:07 |
| 15. E. Vargo      | 1:06 |

MANHATTAN CABIN - OP

|                  |      |
|------------------|------|
| 1. R. Ganser     | 8:03 |
| 2. W. Van Gorder | 8:00 |
| 3. H. Brodersen  | 6:38 |
| 4. L. Loucka     | 6:11 |
| 5. W. Everson    | 5:26 |
| 6. K. Groves     | 4:10 |
| 7. M. Colling    | 3:19 |

PENNYPLANE - JR

|               |      |
|---------------|------|
| 1. P. Loucka  | 8:08 |
| 2. R. Skrjanc | 8:07 |
| 3. T. LaClave | 7:39 |

PENNYPLANE - OP

|                  |       |
|------------------|-------|
| 1. G. Wisniewski | 12:01 |
| 2. W. Van Gorder | 11:01 |
| 3. W. Simmers    | 8:47  |
| 4. G. Skrjanc    | 8:41  |
| 5. R. Pivitt     | 8:26  |
| 6. A. Italiano   | 7:52  |
| 7. J. Nolin      | 7:46  |
| 8. J. Voorhees   | 7:16  |
| 9. E. Konkel     | 7:09  |
| 10. W. Franklin  | 6:52  |
| 11. W. Everson   | 5:49  |

R.O.G. CABIN - OP

|               |       |
|---------------|-------|
| 1. R. Doig    | 19:38 |
| 2. R. Ganser  | 19:17 |
| 3. D. Belieff | 18:53 |
| 4. L. Loucka  | 16:29 |

PAPER STICK - JR/SR

|               |       |
|---------------|-------|
| 1. R. Skrjanc | 15:10 |
| 2. P. Loucka  | 11:39 |

PAPER STICK - OPEN

|                  |       |
|------------------|-------|
| 1. R. Ganser     | 18:09 |
| 2. L. Loucka     | 17:24 |
| 3. R. Doig       | 17:06 |
| 4. D. Belieff    | 15:40 |
| 5. R. Obarski    | 15:15 |
| 6. G. Skrjanc    | 12:33 |
| 7. G. Wisniewski | 8:36  |
| 8. J. Annis      | 8:17  |
| 9. C. Sotich     | 3:32  |

EASY B - JR/SR

|               |       |
|---------------|-------|
| 1. P. Loucka  | 10:34 |
| 2. R. Skrjanc | 8:49  |

EASY B - OPEN

|                  |       |
|------------------|-------|
| 1. W. Van Gorder | 14:43 |
| 2. R. Doig       | 13:18 |
| 3. R. Obarski    | 12:59 |
| 4. K. Groves     | 12:18 |
| 5. G. Wisniewski | 11:53 |
| 6. W. Simmers    | 11:49 |
| 7. J. Nolin      | 11:23 |
| 8. D. Barber     | 11:03 |
| 9. E. Vargo      | 9:41  |
| 10. J. Jones     | 9:12  |
| 11. R. Pivitt    | 8:49  |
| 12. W. Everson   | 8:45  |
| 12. J. Voorhees  | 8:45  |
| 14. M. Wells     | 8:05  |
| 15. B. Boehm     | 7:57  |
| 16. M. Colling   | 7:06  |
| 17. G. Skrjanc   | 7:04  |
| 18. A. Italiano  | 6:54  |
| 19. J. Lemon     | 6:26  |
| 20. W. Franklin  | 6:18  |
| 21. G. Honda     | 1:07  |

FID - FAI INDOOR

|                    | Best 2 flights | Total |
|--------------------|----------------|-------|
| 1. L. Cailliau     | 30:14          | 29:55 |
| 2. W. Hulbert      | 25:39          | 25:42 |
| 3. P. Tryon        | 23:42          | 23:45 |
| 4. J. Richmond     | 21:31          | 25:00 |
| 5. W. Van Gorder   | 23:48          | 19:05 |
| 6. L. Loucka       | 20:31          | 20:30 |
| 7. R. Doig         | 21:25          | 19:10 |
| 8. R. Obarski      | 18:43          | 20:50 |
| 9. J. Annis        | 17:01          | 20:05 |
| 10. D. Belieff     | 13:36          | 12:04 |
| 11. L. Mzik        | 13:24          | 12:01 |
| 12. P. Loucka (JR) | 7:27           | 12:47 |
| 13. W. Shailor     | 5:48           | -     |
| 14. R. Ganser      | 3:48           | -     |

BOSTONIAN - OPEN

|                    | Best 2 flights | Charisma Factor | Points |
|--------------------|----------------|-----------------|--------|
| 1. J. McGillivray  | 6:05           | 1.2             | 438.0  |
| 2. J. Kubina       | 6:34           | 1.1             | 433.4  |
| 3. W. Shailor      | 6:31           | 1.1             | 430.1  |
| 4. K. Groves       | 5:51           | 1.1             | 386.1  |
| 5. P. Shailor      | 5:46           | 1.1             | 380.6  |
| 6. R. Ganser       | 3:45           | 1.2             | 270.0  |
| 7. F. Kieser       | 3:04           | 1.2             | 220.8  |
| 8. J. Martin       | 3:03           | 1.2             | 219.6  |
| 9. M. Wells        | 2:33           | 1.2             | 183.6  |
| 10. R. Bienenstein | 2:07           | 1.1             | 139.7  |
| 11. A. Fauquet     | 1:13           | 1.1             | 80.3   |

A.M.A. SCALE - OPEN

|                   | Model          | Ave.2 Best | Scale | Total Points |
|-------------------|----------------|------------|-------|--------------|
| 1. K. Groves      | Fike E         | 90         | 96    | 186          |
| 2. J. McGillivray | SE 5           | 90         | 95    | 185          |
| 3. J. Martin      | Cessna AW      | 84.5       | 85    | 169.5        |
| 4. W. Franklin    | Taylorcraft    | 60         | 67    | 127          |
| 5. M. Colling     | BristolBrownie | 20         | 83    | 103          |

PEANUT SCALE - OPEN

|                   | Model        | Best Flight | Hcp. | Scale | Total Pts. |
|-------------------|--------------|-------------|------|-------|------------|
| 1. J. McGillivray | Lacey        | 169         | 1.0  | 69    | 238        |
| 2. K. Groves      | Fike E       | 147         | 1.0  | 84    | 231        |
| 3. R. Bienenstein | Fike E       | 108         | 1.0  | 69    | 177        |
| 4. M. Wells       | Eastbourne   | 116         | .9   | 66    | 170.4      |
| 5. J. Miller      | Itoh         | 102         | 1.0  | 67    | 169        |
| 6. J. Miller      | Piper Vagab. | 91          | 1.0  | 66    | 157        |
| 7. W. Everson     | Found        | 69          | 1.0  | 67    | 136        |
| 8. D. Barber      | Fred         | 42          | 1.0  | 79    | 121        |
| 9. M. Wells       | Mr. Mulligan | 62          | .8   | 59    | 118.6      |
| 10. J. Martin     | Cessna AW    | 42          | 1.0  | 58    | 100        |
| 11. M. Colling    | Fred         | 20          | 1.0  | 67    | 87         |

The indoor events were flown in a convention hall measuring perhaps, 150 feet by 200 feet, with about thirty five feet of usable altitude.

There were six or eight feet additional ceiling space but it was a thick-et of rods, chains, wires, girders, venting ducts, lights, and speaker boxes. Models climbing up into the maze almost always hung. The air was quite stable and comfortable and the large floor area made it a good site for indoor flying scale-few scale models need more altitude than thirty five feet. But it was a frustration for the duration events. Many modelers test and sport fly in small gyms but it seems that they are not willing to travel long distances to fly in one. So the entry list was about as low as the ceiling! Surely a National Championship deserves a higher site!

The site was next door to ~~Bill~~ Headquarters so many people were able to walk in and see indoor flying. That was a good feature of the location. Quite a number saw microfilm models for the first time.

A number of Junior fliers did some good flying and at least two were Junior losses- Rosemary Primbs and Melinda Anderson. Very few Senior age contestants were at Reno and not a whole lot of Open age Class. There were a few "Old Pros" who haven't been at an indoor Nationals for along time though- Joe Bilgzi, Hank Cole, Joe Foster, and Frank Cummings, to name several!

Joe Bilgzi recovered a seventeen year old cabin model and flew it at Reno-it was the only open class cabin entry! He had an ARR Stick model that appeared to be a ninety centimeter FAG Stick of some years ago. Both models flew great though Joe had trouble keeping them down to thirty five feet!

Cezar Banks won both ARR Stick and FAG Stick with his models being groomed for the World Indoor Championships coming up in Japan. Cezar's models outflew all others by a comfortable margin. On his best flight the model climbed up at thirty-six rpm, touched the lowest part of the ceiling ornaments just once and did 24:48!

Four Manhattan Cabin models flew versus the one in ARR Cabin. Chuck Markos of Chicago won with 4:55. It has been proposed to drop ARR Cabin and keep the Manhattan event. Considering the few entries in ARR Cabin and the type of model being called a "cabin" the proposal deserves very

serious consideration.

Bill was the most popular of the powered events. The ceiling maze seemed to snag these models faster than the larger ones and so there was little banging around on top by the winning flights that I saw. Few Billows winning model had a slow cruise at low prop speed. It was of moderate proportions-none of the very long English type were seen.

Hank Cole won Pennyplane with a biplane that had shallow dihedral with the spines between the wing tips boxed in. It flew very well and Hank expects low flights in larger sites. Cezar Banks' Lovice Pennyplane placed second against the larger models thus continuing its excellent contest record.

Paper stick had a good competition going with Stan Chilton, Wichita, Kansas, making the winning flight near the close of the flying time.

The very light condenser tissue is no longer being manufactured and so a rule proposal to allow solid materials, commercially available, such as MicroLite, has been made. I feel that EZBs and Pennyplanes fill the need that the Paper Stick class was originally to do. Thus I think that we have enough events without a plastic covered paper stick one.

The two types of hand launch glider saw the Stoy brothers up among the leaders as always. Their Coot designs are hard to beat in low ceiling-especially when flown by them! However, Barrie Taylor came all the way from Winnipeg, Canada, with some beautifully crafted Coots and edged Stan Stoy in the High Tech Division. His winner weighed just five grams and glided very slowly. In the all-wood class Stan and Mike placed first and third with Charlie Primbs, Redford, Washington, taking second. Charlie flew a very large conventional type glider and handled it well. The gliders could be thrown a few feet above the lowest ceiling garbage and dodge them to the floor-sometimes!

There is talk of having several permanent national sites and rotating from one to the other year by year. Reno had some good features for the lots in general. I hope that a higher indoor site can be used if we come back!

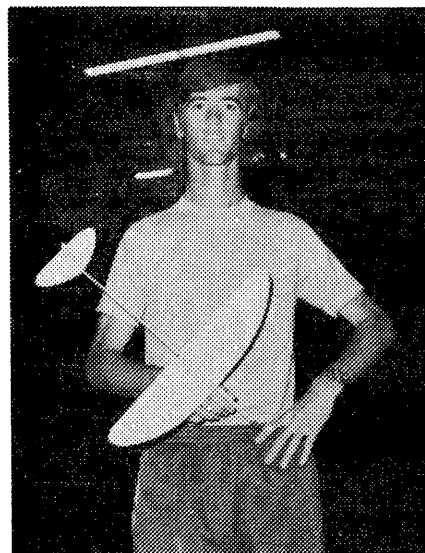
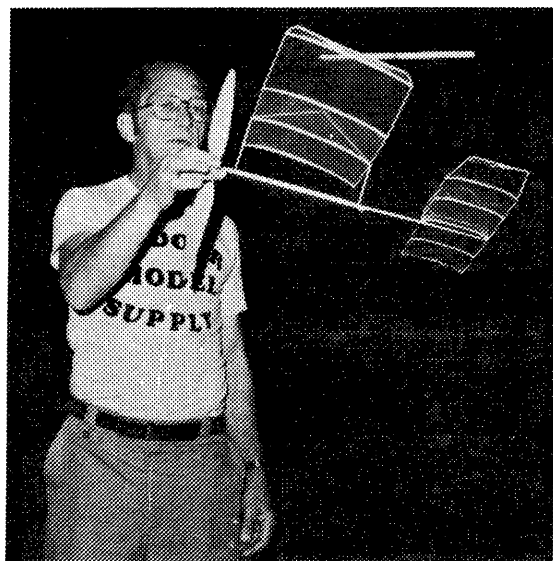
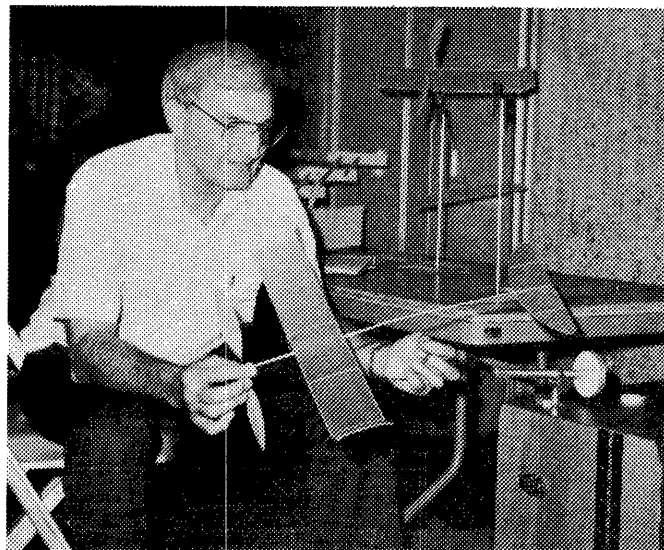
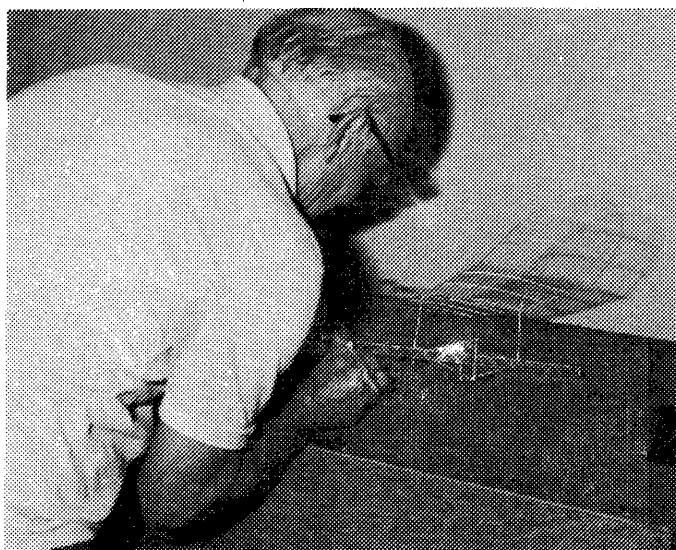
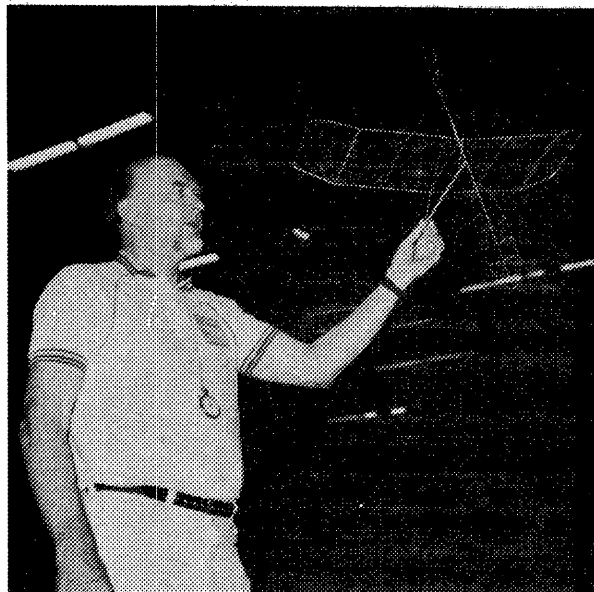
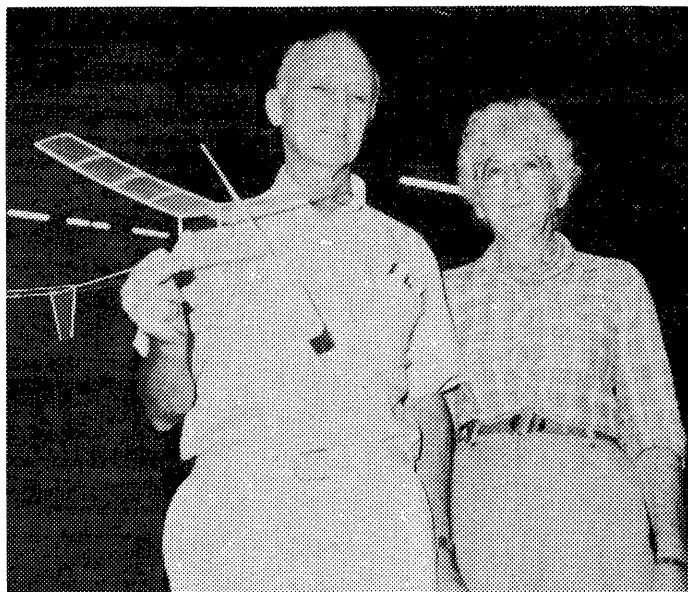
LATE WORD FROM A.M.A. EXECUTIVE COUNCIL :

At the October meeting in response to this year's Nationals - poor attendance, bad indoor site, third rate contest, etc. - steps were taken to completely restructure NATS planning and operations. The NATS planning committee as it has been known is no more. Details of what will replace it are not known, but if you have constructive ideas towards improving the NATS contact your AMA District Vice-President.

1984 A.M.A. NATIONALS

Text & results by Clarence Mather

Photographs by John Oldenkamp



Top left: Mr. & Mrs. Carl Goldberg (Northridge, CA) Carl is holding an EZB model. A top flier of the 1930's he is still active.

Top right: Cezar Banks' F1D. (San Diego, CA) Cezar won both microfilm events by large margins. This model climbed at 36 RPM.

Middle left: Joe Bilgri (Orville, CA) works on the body of his classic Cabin model. He was the only entry in Open Cabin.

Middle right: Stan Chilton with EZB. (Wichita, KS) Stan's model was one of the longest at the NATS.

Bottom left: Lew Gitlow (Garberville, CA) & Pennyplane. Lew flew a very wide chord monoplane against the more common biplanes.

Bottom right: Jim Leuken (Escondido, CA) with Hand Launch Glider an event in which he is very proficient.



11th ANNUAL MIDWESTERN STATES INDOOR  
FREE FLIGHT CHAMPIONSHIPS - RESULTS

| <u>AMA Stick</u>    |       |
|---------------------|-------|
| <u>Junior</u>       |       |
| <u>Senior</u>       |       |
| B Fulmer            | 2:34  |
| <u>Open</u>         |       |
| C Banks             | 21:18 |
| C Mather            | 18:18 |
| J Bilgri            | 17:24 |
| S Chilton           | 16:24 |
| J Foster            | 10:12 |
| <u>FAI Stick</u>    |       |
| <u>Junior</u>       |       |
| <u>Senior</u>       |       |
| <u>Open</u>         |       |
| C Banks             | 47:06 |
| C Mather            | 42:30 |
| L Gittlow           | 40:00 |
| J Foster            | 36:18 |
| J Bilgri            | 36:00 |
| <u>Paper Stick</u>  |       |
| <u>Junior</u>       |       |
| A Markos            | 4:14  |
| <u>Senior</u>       |       |
| B Fulmer            | 4:11  |
| <u>Open</u>         |       |
| S Chilton           | 12:18 |
| L Gittlow           | 11:24 |
| G Wisniewski        | 10:24 |
| J Foster            | 10:12 |
| C Sotich            | 8:30  |
| <u>AMA Cabin</u>    |       |
| <u>Junior</u>       |       |
| <u>Senior</u>       |       |
| B Fulmer            | 3:07  |
| R Mehmen            | 2:05  |
| <u>Open</u>         |       |
| J Bilgri            | 8:30  |
| <u>AMA Scale</u>    |       |
| <u>Junior</u>       |       |
| A Markos            | 98.4  |
| <u>Senior</u>       |       |
| J Godel             | 109.5 |
| B Fulmer            | 60.3  |
| <u>Open</u>         |       |
| R Baxter            | 148.2 |
| C Godel             | 117.1 |
| S Gillespie         | 115.3 |
| H Warner            | 113.7 |
| <u>Peanut Scale</u> |       |
| <u>Junior</u>       |       |
| A Markos            | 137.4 |
| M Anderson          | 86.8  |
| Ty Slade            | 43.1  |
| <u>Senior</u>       |       |
| B Fulmer            | 134.5 |
| F Godel             | 110.1 |
| B Relitz            | 104.5 |
| J Godel             | 82.0  |
| <u>Open</u>         |       |
| C Mather            | 179.8 |
| X Fulmer            | 165.4 |
| C Conover           | 149.1 |
| R Baxter            | 136.2 |
| D Stevens           | 129   |

| <u>EZB</u>             |       |
|------------------------|-------|
| <u>Junior</u>          |       |
| S Robbins              | 6:48  |
| A Markos               | 6:44  |
| J Primbs               | 3:54  |
| B Douglas              | 3:46  |
| <u>Senior</u>          |       |
| D Primbs               | 6:18  |
| B Fulmer               | 6:06  |
| <u>Open</u>            |       |
| L Gittlow              | 10:23 |
| C Banks                | 10:16 |
| S Chilton              | 10:03 |
| C Markos               | 8:20  |
| <u>Pennyplane</u>      |       |
| <u>Junior</u>          |       |
| A Markos               | 6:18  |
| M Anderson             | 5:18  |
| S Robbins              | 4:59  |
| B Douglas              | 3:31  |
| <u>Senior</u>          |       |
| B Fulmer               | 3:41  |
| <u>Open</u>            |       |
| H Cole                 | 8:18  |
| C Banks                | 7:49  |
| D Stevens              | 7:30  |
| T Koprieva             | 7:24  |
| G Wisniewski           | 7:13  |
| <u>Manhattan Cabin</u> |       |
| <u>Junior</u>          |       |
| <u>Senior</u>          |       |
| <u>Open</u>            |       |
| C Markos               | 4:55  |
| M Lavoe                | 4:18  |
| M Wittemore            | 3:56  |
| C Sotich               | 3:20  |
| <u>HCG High Tech</u>   |       |
| <u>Junior</u>          |       |
| <u>Senior</u>          |       |
| B Fulmer               | 67.6  |
| <u>Open</u>            |       |
| B Taylor               | 82.2  |
| S Stoy                 | 81.0  |
| M Stoy                 | 71.8  |
| M Wittemore            | 69.6  |
| J Slader               | 43.4  |
| <u>HCG All Wood</u>    |       |
| <u>Junior</u>          |       |
| A Markos               | 50.6  |
| J Primbs               | 47.4  |
| R Primbs               | 38.4  |
| <u>Senior</u>          |       |
| B Fulmer               | 60.2  |
| D Hooke                | 51.7  |
| R Mehmen               | 50.2  |
| <u>Open</u>            |       |
| S Stoy                 | 79.0  |
| C Primbs               | 75.6  |
| M Stoy                 | 73.8  |
| J Foster               | 70.8  |
| M McKeever             | 70.4  |

Indoor Stick (JSO)

|                  |         |
|------------------|---------|
| 1. Jim Richmond  | 34:07** |
| 2. Paul Tryon    | 19:16   |
| 3. Del Ogren     | 14:28   |
| 4. Rich Doig     | 7:18    |
| 5. Bill Franklin | 6:23    |

Indoor Cabin (JSO)

|              |       |
|--------------|-------|
| 1. Rich Doig | 16:10 |
|--------------|-------|

Paper Stick (Junior)

|                  |      |
|------------------|------|
| 1. Aaron Markos  | 9:12 |
| 2. Mark Richmond | 0:11 |

Paper Stick (Open)

|                    |       |
|--------------------|-------|
| 1. Jim Richmond    | 16:20 |
| 2. Rich Doig       | 14:40 |
| 3. G. Wisniewski   | 12:54 |
| 4. Walt Van Gorder | 11:56 |
| 5. Del Ogren       | 11:06 |
| 6. Terry Mrakava   | 8:56  |
| 7. Bernie Boehm    | 8:28  |

FAI Indoor (JSO)

|                    |       |
|--------------------|-------|
| 1. Paul Tryon      | 39:42 |
| 2. Rich Doig       | 34:20 |
| 3. Walt Van Gorder | 29:49 |
| Jim Richmond       |       |

NOVICE PENNYPLANE (JUNIOR)

|                 |      |
|-----------------|------|
| 1. Aaron Markos | 8:18 |
|-----------------|------|

NOVICE PENNYPLANE (SR/OP)

|                      |      |
|----------------------|------|
| 1. Bernie Boehm      | 8:08 |
| 2. Del Ogren         | 7:14 |
| 3. A.J. Italiano     | 6:54 |
| 4. Don Lockwood      | 6:17 |
| 5. Bill Schlarb      | 6:15 |
| 6. Jack Tisinai      | 5:34 |
| 7. Bryan Fulmer (Sr) | 4:24 |
| Chuck Markos         |      |

PENNYPLANE (JSO)

|                    |       |
|--------------------|-------|
| 1. Walt Van Gorder | 11:40 |
| 2. G. Wisniewski   | 10:31 |
| 3. Charlie Sotich  | 8:56  |
| 4. Bill Franklin   | 6:29  |
| 5. Roger Lane      | 6:19  |
| 6. Lucy Franklin   | 2:15  |

PEANUT SCALE (JSO)

|                  |                |       |
|------------------|----------------|-------|
| 1. Keith Fulmer  | Lacey M-10     | 189   |
| 2. Jim Miller    | Piper Vagbnd   | 161.5 |
| 3. Jim Miller    | Piper J-3      | 141.5 |
| 4. Bob Clemens   | Found Centen.  | 138.5 |
| 5. Bob Clemens   | Farmn Mosquito | 135.2 |
| 6. Eric Anderson | Nesmith Coug   | 112   |
| 7. Don Lockwood  | Fike E         | 103.5 |
| 8. Paul Helman   | Nieuport mono  | 89    |
| 9. Roger Lane    | Stinson 125    | 56    |
| 10. Roger Lane   | "              | 54    |

5 models did not fly

Chanute AFB Hanger #1 - a fire engine storage garage - 44' 2" high has a smooth ceiling with lights hanging down 1-2' in a 20' grid pattern. The flying here was superb eventhough the weather was unseasonably cold, with the only drift being at the ceiling & it was minimal. In warm weather this site could be fantastic. In spite of the weather 13 National & 1 World record were set in 2 days. Base Commander Merle Wilson made us feel welcome and the airmen assigned to us were most helpful. The few spectators we had - mostly base personnel and Rantoul residents - really seemed to enjoy our flying.

Indoor HLG (Open)

|                   |      |
|-------------------|------|
| 1. Chuck Markos   | 90.4 |
| 2. Bernie Boehm   | 86.8 |
| 3. Bill Schlarb   | 75.0 |
| 4. Jim Richmond   | 68.2 |
| 5. Bob Clemens    | 60.0 |
| 6. Rich Doig      | 53.0 |
| 7. A. J. Italiano | 48.0 |
| 8. R. C. Wicklund | 45.2 |
| 9. Eric Anderson  | 44.2 |

Indoor HLG (Senior)

|                 |      |
|-----------------|------|
| 1. Bryan Fulmer | 81.2 |
|-----------------|------|

Indoor HLG (Junior)

|                  |      |
|------------------|------|
| 1. Aaron Markos  | 76.0 |
| 2. Mark Richmond | 11.2 |

Indoor Catapult Glider

|                  |      |
|------------------|------|
| 1. Eric Anderson | 32.1 |
|------------------|------|

Easy-B (JSO)

|  |       |
|--|-------|
| 1. Walt Van Gorder                                     | 13:19 |
| 2. John Schlagetter                                    | 7:04  |
| 3. G. Wisniewski                                       | 5:02  |
| 4. Bernie Boehm  | 3:40  |
| 5. Bill Franklin                                       | 2:49  |
| Aaron Markos, Chuck Markos, Roger Lane, Terry Mrakava. |       |

MANHATTAN CABIN (JSO)

|                    |      |
|--------------------|------|
| 1. Walt van Gorder | 7:52 |
| 2. Chuck Markos    | 5:59 |
| 3. Bob Clemens     | 4:09 |
| 4. Del Ogren       | 3:23 |
| Charlie Sotich     |      |

KIT-PLAN SCALE (JSO)

|                   |                       |     |
|-------------------|-----------------------|-----|
| 1. Bob Clemens    | Pilatus Porter (MX)   | 274 |
| 2. Paul Helman    | Corbin Sup Ace (mgw)  | 184 |
| 3. Jim Miller     | Stinson Voyager (MX)  | 168 |
| 4. Eric Anderson  | Fike (12/76 MB)       | 165 |
| 5. Paul Helman    | Bristol Brownie (WCH) | 159 |
| 6. Jack Tisinai   | Mr Mulligan (Sig)     | 134 |
| Roger Wathen (Jr) | Aerona (Comet)        |     |
| Eric Anderson     | Avro-G (Auster)       |     |

WE CONTINUE TO PRINT THE 1986 INDOOR RULE PROPOSALS - CONTEST BOARD INITIAL VOTE IS DECEMBER 1, 1984.

LET YOUR CONTEST BOARD REPRESENTATIVE KNOW HOW YOU FEEL ABOUT THESE PROPOSALS !

EXHIBIT A

PROPOSAL NO. IND-86-5 POSTMARK DATE: 8/9/84  
(to be inserted by HQ) Red 8-22-84

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: FREE FLIGHT  INDOOR  OUTDOOR SCALE RADIO CONTROL:  Helicopter  Soaring  Racing  Aerobatics CONTROL LINE GENERAL  
USE BLACK INK

1. Brief summary of the proposed change: Delete the present requirement for paper covering and revert to the old rules which allowed any covering including mica film. Institute a 1 gram minimum weight to make the use of premium wood less critical. Also limit overall length to 25 inches to restrict long moment arms developed which would again give premium wood an advantage.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable. Example: Change "quote present rule book wording" to: "(exact wording desired)").  
Delete from 19.3: Precision hand-launched stick model  
Substitute in 19.3: Class B Hand-launched stick model  
Delete from 19.6: this entire article  
Substitute in 19.6: see over SEE BELOW

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: We need an event to allow transition from beginner's events to micro-tim, without the need for premium materials or complex construction. The continuing scarcity of good condenser paper has made paper stick very difficult to create is such that the models are very sensitive to climatic conditions.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).  
(1) Proposer: R. J. Sandley AMA No. 260 Member Cat. C (C.D.) Date of Signature 8/5/84

Street Address 420 Tupelo State IL Zip 60540

6. Class B Hand-Launched Stick Model. In order to be entered in the event, models must comply with all the general requirements applied to indoor rubber-powered models and the following additional requirements:  
6.1 The weight of the model, without rubber motor, shall not be less than 1 gram.  
6.2 The overall length of the model, less propeller, shall not exceed 25 in.

EXHIBIT A

PROPOSAL NO. IND-86-6 POSTMARK DATE: 8/9/84  
(to be inserted by HQ) Red 8-22-84

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: FREE FLIGHT  INDOOR  OUTDOOR SCALE RADIO CONTROL:  Helicopter  Soaring  Racing  Aerobatics CONTROL LINE GENERAL  
USE BLACK INK

1. Brief summary of the proposed change: Add a 1 gram minimum weight requirement to Class B rules to make premium materials less of a factor in competition.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable. Example: Change "quote present rule book wording" to: "(exact wording desired)").  
Delete 19.8.2.f as presently stated and substitute "f. The weight of the model, without rubber motor, shall be not less than 1 gram"

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: With the present condensing, shortage of very light condenser paper, the people who possess it hold a significant advantage in competition. Also, the models have become very flimsy and inconsistent as their weights go under 2 gram.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).  
(1) Proposer: R. J. Sandley AMA No. 260 Member Cat. C (C.D.) Date of Signature 8/5/84

Street Address 420 Tupelo State IL Zip 60540

Day phone (area code 312) 420-4559 Night phone (area code 312) 353-9674  
(2) Endorsement: R. J. Fisher AMA No. 88247 Member Cat. B Date of Signature 8-6-84  
(3) Endorsement: Lee R. Bunting AMA No. 612 Member Cat. C (C.D.) Date of Signature 8-6-84



PROPOSAL NO. IND-86-7  
(to be inserted by HQ)

POSTMARK DATE: 8/9/84  
(to be inserted by HQ)

Rec'd 8-22-84

RULES CHANGE PROPOSAL FORM

AUG 11 1984

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: FREE FLIGHT  INDOOR  SCALE  RADIO CONTROL:  Helicopter  Soaring  Racing  Aerobatics

USE BLACK INK

1. Brief summary of the proposed change: If, and only if, the proposal to institute a system minimum wt. limit in Easy B passes, rules about covering materials become meaningless. This rule would allow paper films or microfilm covering, so that currently available, stable, thin films could be used. I doubt that microfilm of the thinner types would be attractive.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording)" to: "(exact wording desired)".  
Delete the words "paper covered" from 19.8.2.a

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: Condenser paper is very difficult to use under varying climatic conditions and regaining it gives an advantage to those who have stocks of light paper. Very light microfilm would offer no advantage if the lightweight rule is instituted and the use of heavy microfilm should be encouraged.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: D. J. Lundley AMA No. 200 Member Cat. (C.D.) 8/5/84 Date of Signature

Street Address: 420 Tupelo

City: Napaerville State: IL Zip: 60540

Day phone (area code ) Night phone (area code )

(2) Endorsement: J. H. Fisher AMA No. 86247 Member Cat. apw 8-6-84 Date of Signature

(3) Endorsement: Ken R. Bunting AMA No. 612 Member Cat. (C.D.) 8-6-84 Date of Signature

PROPOSAL NO. IND-86-8  
(to be inserted by HQ)

POSTMARK DATE: 8/9/84  
(to be inserted by HQ)

Rec'd 8-22-84

RULES CHANGE PROPOSAL FORM

AUG 11 1984

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: FREE FLIGHT  INDOOR  SCALE  RADIO CONTROL:  Helicopter  Soaring  Racing  Aerobatics

USE BLACK INK

1. Brief summary of the proposed change: The proposed rule is designed to remove a potential advantage held by those with access to very light materials, which allow them to build extremely long models. It also helps limit the size of the model boxes required to transport these "simple" models.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording)" to: "(exact wording desired)".  
In 19.8.2.c, change present wording to "The overall length of the model, less propeller, shall not exceed 22 in."

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: The present trend toward very long Easy B models complicates transporting them and puts an additional impetus on the use of very scarce, very light wood.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: D. J. Lundley AMA No. 200 Member Cat. (C.D.) 8/5/84 Date of Signature

Street Address: 420 Tupelo

City: Napaerville State: IL Zip: 60540

Day phone (area code ) Night phone (area code )

(2) Endorsement: J. H. Fisher AMA No. 86247 Member Cat. apw 8-6-84 Date of Signature

(3) Endorsement: Ken R. Bunting AMA No. 612 Member Cat. (C.D.) 8-6-84 Date of Signature

PROPOSAL NO. IND-86-9 (to be inserted by HQ)

POSTMARK DATE: 8/9/84 (to be inserted by HQ) Rec'd 8-22-84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter Soaring Racing Aerobatics

USE BLACK INK

1. Brief summary of the proposed change: Delete Indoor Cabin from the rule book and the event from competition. The Stout Trophy will be awarded to the winner of Manhattan Cabin at the National Championships if this rule goes into effect

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording") to: "exact wording desired")

Delete from 19.3 "Rise-off-ground Cabin Model - The projected... 150 square inches" Delete 19.5 entirely "Cabin 3" " Delete from 19.2 "Cabin 3"

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: Cabin has been possibly contended for years, but was retained because there was no alternative. Also, the model has evolved into a fragile, complex rule book. Manhattan Cabin is a much better contended event and is more official

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: E.J. Lilly Member Date of Signature No. 200 Cat. (C.D.) 9/5/84

Street Address: 420 Trupala State: IL Zip: 60340

Day phone (area code 312) 420-4559 Night phone (area code 312) 357-9674

(2) Endorsement: J.H. Fisher Member Date of Signature No. 6047 Cat. 8-6-84

(3) Endorsement: R.P. R. Bunting Member Date of Signature No. G12 Cat. (C.D.) 9-6-84

PROPOSAL NO. IND-86-10 (to be inserted by HQ)

POSTMARK DATE: 8/25/84 (to be inserted by HQ) Rec'd 9-1-84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter Soaring Racing Aerobatics

Basic Proposal 1

1. Brief summary of the proposed change: To remove the 300 square inch restriction on Hand-Launched Stick Models.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording") to: "exact wording desired")

Change Sec. 19 F F Indoor Rubber paragraph 3. Delete after Hand-Launched Stick Model - "the projected area of the supporting surface(s) shall not exceed 300 square inches." Substitute Hand-Launched Stick Model - "no restrictions on model size."

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: The present rules require verification and processing. Most models of this size are built for record purposes. Since there is no practical limit for FAI records and flyers in other countries are exceeding our rules with excellent results, there is no reason to restrict U.S. modelers to the 300 sq. inches.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Gaurin Rodemsky Member Date of Signature No. 9440 Cat. C.D. AUG-25-1984

Street Address: 26 WARMSPRING State: CA Zip: 92714

(2) Endorsement: Curt Strom Member Date of Signature No. 219 Cat. C.D. 8-25-1984

(3) Endorsement: Forest Edwards Member Date of Signature No. 4429 Cat. C.D. AUG-25-1984

1. A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.

2. A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been "tentatively accepted" by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

EXHIBIT A

PROPOSAL NO. IND-86-11  
(to be inserted by HQ)

POSTMARK DATE: 8/22/84  
(to be inserted by HQ) Rec'd 4-7-84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE INDOOR RADIO CONTROL:  Helicopter  Soaring  Racing  Aerobatics GENERAL

USE BLACK INK

1. Brief summary of the proposed change: The object is to restrict steering to those events where it is appropriate. Presently, we are in a situation where steering ability is often deciding contests rather than craftsmanship or design abilities.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording" to: "(exact wording desired)".

Add after 14.14 Steering of Model: "Steering shall only be allowed in Hand-Launched Stick, P.D.G. Cabin and FA Indoor (FID) events. In all other events, keeping the model with the body or any device manipulated by the body, shall result in termination of the flight." continue with present wording.

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: Presently we are involved in a series of protests and interpretations brought about by the use (and abuse) of steering at contests and record trials. I feel that steering might be appropriate in events where great amounts of construction time and money are tied up in the models. However, it is excessive in the majority of cases. It is in situations in which it is not appropriate.  
4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: D. J. Sandberg AMA Member No. 260 Cat. C.D. Date of Signature 8/20/84

Street Address 420 Tupelo State IL Zip 60540

Day phone (area code 312) 420-4539 Night phone (area code 312) 355-9674

(2) Endorsement: John A. Fink AMA Member No. 8247 Cat. Open Date of Signature 8-22-84

(3) Endorsement: Kenneth R. Bunting AMA Member No. 618 Cat. C.D. Date of Signature 8-11-84

EXHIBIT A

PROPOSAL NO. IND-86-12  
(to be inserted by HQ)

POSTMARK DATE: 8/23/84  
(to be inserted by HQ) Rec'd 4-7-84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE INDOOR RADIO CONTROL:  Helicopter  Soaring  Racing  Aerobatics GENERAL

Basic Proposal<sup>1</sup>

1. Brief summary of the proposed change: eliminate penny plane event, and call novice pennyplane pennyplane

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording" to: "(exact wording desired)".

Page 15, ev nt 20-eliminate & NOVICE PENNYPLANE, eliminate 4. Novice Pennyplane paragraph 4.1, change 4.2 to 3.7, 4.3 to 3.8, 4.4 to 3.9, 4.5 to 3.10, 4.6 to 3.11, 4.7 to 3.12

The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: There are too many indoor events, so eliminating one would let more people fly in the same events and provide more competition.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Ray Givix AMA Member No. 8817 Cat. CD Date of Signature AUG 18, 1984

Street Address 367 Orange Ave. City Baldwin State FL Zip 32234

(2) Endorsement: Joseph W. Head AMA Member No. 1909 Cat. C.D. Date of Signature 8-17-84

(3) Endorsement: John Kramer AMA Member No. 99194 Cat. Member Date of Signature 8-19-84

1 A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.

2 A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been "tentatively accepted" by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

EXHIBIT A

IND-86-13

POSTMARK DATE: 8/23/84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter Soaring Racing Aerobatics CONTROL LINE GENERAL

1. Brief summary of the proposed change: eliminate paper stick event

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quote present rule book wording)" to: "(exact wording desired)".

eliminate paragraphs 6, 6.1, and 6.2 from rule book

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: There are too many events in indoor, so competition is spread out too much. Paper stick is a redundant event. Easy B and two pennyplane classes would be still available

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Guy Quint, AMA 8817, Member, Date of Signature: Aug 18 1984

Street Address: 367 Orange Ave., City: Baldwin, State: FL, Zip: 32234

(2) Endorsement: Joseph W. Truesel, AMA 71909, Member, Date of Signature: 8-17-84

(3) Endorsement: John Kramer, AMA 49194, Member, Date of Signature: 8-19-84

1 A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.

2 A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been "tentatively accepted" by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

NOTE: Rule proposals numbered IND-15, IND-16, IND-17, and IND-18 were deemed to be more appropriate for the Scale Contest Board. These proposals are for Provisional Rules for Radio Control Electric Powered Indoor Scale, Control Line Electric Scale Indoor, Indoor Rubber Powered Radio Control Scale, and Indoor Rubber Powered Radio Control Scale Duration. Indoor fliers should be concerned about how these proposed events could effect obtaining indoor flying sites - many building managers are concerned about letting planes with motors or engines fly in their buildings - and flying safety. Also these proposed events are very different from current Indoor events. Please let your Scale Contest Board member know how you feel on these events.

PROPOSAL NO. IND-86-19

POSTMARK DATE: 8/29/84

RULES CHANGE PROPOSAL FORM PROVISIONAL RULES

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter Soaring Racing Aerobatics CONTROL LINE GENERAL

1. Brief summary of the proposed change: RADIO CONTROL INDOOR ELECTRIC-POWERED Heavier Than Air Duration Rules, per AMA Provisional Rules.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change

Indoor RC Duration 1. Longest time in the air wins. 2. Maximum surface loading: 3 1/2 oz. sq. ft. Surface area includes wings) and horizontal stabilizer(s), based on horizontal projection. 3. Maximum overall weight: Total weight, including batteries, is 28 oz. No lighter-than-air assist permitted (such as helium, etc.). 4. Batteries: Limited to NiCd only. 5. Calling height: 34 ft. 6. Maximum wingspan allowed: 8 ft. 7. Flight task: Must be figure eight, but the size of the course can vary to accommodate the site dimensions. 8. Motors must be able to be shut off via RC (cannot be coupled to any flight control).

Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Tony Nakagawa, AMA No. 24538, Member, Date of Signature: 8-28-87

Street Address: 2121 N. Holly Woodway, City: Bunkin, State: CA, Zip: 91507

Day phone (area code 818) 842-5061, Night phone (area code 818) 842-3653

(2) Endorsement: Cap A. Adley, AMA No. 95012, Member, Date of Signature: 8-28-84

(3) Endorsement: John P. Mason, AMA No. 11093, Member, Date of Signature: 8-28-84

PROPOSAL NO. IND-86-14  
(to be inserted by HQ)

EXHIBIT A

POSTMARK DATE: 8/23/84  
(to be inserted by HQ)

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: INDOOR    RADIO CONTROL:    CONTROL LINE    GENERAL  
 (Circle one)     Helicopter

Type of Proposal:    Basic Proposal    Cross-Proposal?    (Identification No. of relevant  
 (Circle one)     Soaring    Basic Proposal: \_\_\_\_\_  
 Racing    \_\_\_\_\_  
 Aerobatics    \_\_\_\_\_

1. Summary of Proposal

This proposal changes Easy B characteristics to allow covering by material other than paper, limit minimum weight of model, and limit propeller diameter.

2. Wording of Proposal

From 1984-85 Rulebook Section 19 FF Indoor Rubber Article 8 Easy B Item 8.2 Easy B characteristics

Change line "a" to read: a. The Easy B model shall be a mono-plane covered with any material except microfilm.

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules:

SEE ATTACHED PAGES 213

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Proprietor W. Barber    AMA Member    Date of Signature 8-21-84  
 No. 20416 Cat. 0  
 Street Address: 146 STRATTON HOUSE  
 City: MAPLE SHADE    State: MS    Zip: 39458

(2) Endorsement: Thomas J. ...    AMA Member    Date of Signature  
 No. 2747 Cat. 0

(3) Endorsement: Alan W. ...    AMA Member    Date of Signature  
 No. 5008 Cat. 0

1 A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.

2 A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been "tentatively accepted" by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

2. continued

Change line "f" to read: f. The minimum weight of the model without the rubber motor shall be 1.2 grams.

Change line "i" to read: i. The propeller shall have a maximum diameter of 14 inches and no variable pitch or flaring mechanisms. The propeller blades shall be constructed entirely from wood, with the following exception: special novice or beginner events can be set up for local contests by permitting the use of plastic commercial propellers, provided advance notice is given in contest announcements.

3. Logic behind proposed change

The present rule must be changed because the very lightest grade of condenser paper is no longer readily available (if at all). This fact coupled with the no minimum weight limit means that the average modeler cannot build a truly competitive Easy B now. Furthermore, various films are readily available that cover this type model better under any circumstance.

Also the conflict between the concept of Easy B as a beginner's only event and the fact that it is the most popular indoor class and flown by all levels of indoor modeler has always caused rules problems.

England had the same problems. This proposal is based on the rules now used in England. These rules solved the problems there, raised participation greatly and made beginner and expert alike happy. This is fact, not theory.

Model processing time will change very little as it only requires a simple go-no go scale. This is done now in novice pennyplane, pennyplane and FAI.

The vast majority of Easy Bs now in use can be flown under these rules. Those that are lighter than 1.2 grams will be obsolete, but generally they have been winners already and their designer/builders could easily build models to meet these rules.

Participation will increase because these proposed changes will better accommodate modelers of all skill levels.

A PHOTOCOPY OF THE RULES PROPOSAL IS ACCEPTABLE IF YOU DO NOT WISH TO CUT UP THE MAGAZINE.

EXHIBIT A

PROPOSAL NO. IND-86-20 (to be inserted by HQ)

POSTMARK DATE: 8/31/84 (to be inserted by HQ)

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter Soaring Racing Aerobatics

USE BLACK INK

1. Brief summary of the proposed change: To time flights only while they are airborne. The present rule for timing allows models to have long take times at both ends of a flight to count as flight time. The present rule allows models to have a limited number of time yet count that as flight time.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording" to: "(exact wording desired)".

1/2 Change. Time of flights start the instant the model is launched by hand or released for take-off and ends when the model comes to rest on the floor. ... Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: The present rules allow a flight for just taking around! They also allow a model to fly around with the propeller hitting the floor and count that as a flight. A model could be trimmed to take a long time after a short time airborne yet all the time would count as a flight.

(1) Proposer: Clarence J. Mathes, AMA No. 8133, Member Cat. CD, Date of Signature 8-31-84, Street Address 3860 Escobar Ave, City San Diego, State Ca, Zip 92117
(2) Endorsement: Walter E. Marney, AMA No. 77000, Member Cat. M, Date of Signature 08-31-84
(3) Endorsement: Byron J. Banks, AMA No. 8310, Member Cat. CD, Date of Signature 8-31-84

PROPOSAL NO. IND-86-21 (to be inserted by HQ)

POSTMARK DATE: 8/25/84 (to be inserted by HQ)

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter Soaring Racing Aerobatics

USE BLACK INK

1. Brief summary of the proposed change: Rules change to make cabin models real cabin models, and eliminate the modified stick models now being flown as Indoor Cabin. Rule 19.5

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording" to: "(exact wording desired)".
3. Cabin Model. A cabin model has a built-up enclosed fuselage. The total volume of the fuselage(s) must be not less than 17/500 where "L" equals the overall length of the model excluding the propeller(s). In cases of doubt, the contestant shall present full size drawings of the model. The drawing shall be ruled into 1/2" squares. The fuselage(s) shall have not less than 90 percent of its total surface area covered. Outriggers and booms may be used. The rubber used for motive power shall be contained entirely within the built-up fuselage(s).

3. Logic behind proposal change, including alleged shortcomings of present rules: Cabin Models should be cabin models and have a true cabin not an outrigger or flat disk for a cabin. Allows for any configuration with a volume rule. A 20" model would have a 16 cu in cabin a 15" model 6.75 cu in.

(1) Proposer: Robert A. Case, AMA No. 95012, Member Cat. CD, Date of Signature 8-29-84, Street Address 5726 Case Ave., City North Hollywood, State Calif., Zip 91601
(2) Endorsement: Tony Narcomaty, AMA No. 24538, Member Cat. CD, Date of Signature 8-29-84
(3) Endorsement: Rella Mae Macomber, AMA No. 11093, Member Cat. CD, Date of Signature 8-29-84

A 16 cu.in. cabin could be 2"x2"x4" or 1.41"x1.41"x8" or 1x1x16 or any combination to give 16 cu.in. etc.

FF-86-9 and  
PROPOSAL NO. IND-86-22  
(to be inserted by HQ)

EXHIBIT A

POSTMARK DATE: 8/29/84  
(to be inserted by HQ)

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one)  FREE FLIGHT  INDOOR  SCALE  RADIO CONTROL  CONTROL LINE  GENERAL  
 Helicopter  Soaring  Racing  Aerobatics

Type of Proposal: (Circle one)  Basic Proposal  Cross-Proposal? (Identification No. of relevant Basic Proposal: \_\_\_\_\_)

1. Brief summary of the proposed change: Under 5. Free Flight, General, section 6. Ornithopter. (page 8 of 1984-1985 rulebook): Change "Horizontal stabilizing surfaces must be at the extreme front or rear of the model..." to "No part of the horizontal stabilizing surface(s) shall be within a horizontal distance of one-fourth the wingspan from any part of a wing."

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quote present rule book wording)" to: "(exact wording desired)").  
As above.

IMPACT ON PRESENT AMA RECORDS: None, inasmuch as the proposed change would make the rules less restrictive than the current ones.

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: The intent of the present rules was to permit canard models, with stab forward, to compete. The present rule, however, is too restrictive. If the stab is at the extreme forward part of the model, then weight must be added to the nose in order to get the model to balance correctly, or a swept-back stab must be used. It was not the intent of the rules to require such heroic measures. The proposed change would allow legitimate canards, but would prohibit the placement of the stab close to the CG where it would function more as a fixed wing.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Robert B. Meuser AMA Member No. 2736 Cat. CD Date of Signature 8/26/84

Street Address: 4200 Gregory Street City: Oakland, State: CA Zip: 94619

(2) Endorsement: Lawrence E. Parsons AMA Member No. 1105 Cat. CA Date of Signature 8-27-84

(3) Endorsement: Henry G. Cole AMA Member No. 3007 Cat. CA Date of Signature 8-28-84

1 A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose.

2 A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been "tentatively accepted" by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

\* In the rulebook, Free Flight includes both Indoor and Outdoor. So how can I "circle one"?

Academy of Model Aeronautics, 1810 Samuel Morse Drive, Reston, VA 22090

April 1984 125

EXHIBIT A

FF-86-10  
PROPOSAL NO. IND-86-23  
(to be inserted by HQ)

POSTMARK DATE: 8/29/84  
(to be inserted by HQ)

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one)  FREE FLIGHT  INDOOR  SCALE  RADIO CONTROL  CONTROL LINE  GENERAL  
 Helicopter  Soaring  Racing  Aerobatics

Type of Proposal: (Circle one)  Basic Proposal  Cross-Proposal? (Identification No. of relevant Basic Proposal: \_\_\_\_\_)

1. Brief summary of the proposed change: \_\_\_\_\_

Under the present ornithopter rules, a modeler could build a biplane with substantially identical wings except that one would flap by the normal amount while the other flapped by only a very small amount. The latter would, in effect, be a fixed wing.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quote present rule book wording)" to: "(exact wording desired)".  
Under 5. Free Flight, General, section 6. Ornithopter page 8 of 1984-1985 rulebook): In the sentence "If the model has more than one wing, these restrictions apply independently to each wing, and the wings shall be substantially identical in size, shape, relative areas of fixed or flapping parts, and extensions of the flapping parts." change "and extensions of the flapping parts.", which serves no purpose, to "and degree of flapping motion."

IMPACT ON PRESENT AMA RECORDS: None. No records have been set with models that violate the rules including the proposed changes.

3. Logic behind proposal change, including alleged shortcomings of present rules: \_\_\_\_\_

Included in above

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Robert B. Meuser AMA Member No. 2736 Cat. CD Date of Signature 8/27/84

Street Address: 4200 Gregory St City: Oakland State: CA Zip: 94619

(2) Endorsement: Lawrence E. Parsons AMA Member No. 1105 Cat. CA Date of Signature 8-27-84

(3) Endorsement: Henry G. Cole AMA Member No. 3007 Cat. CA Date of Signature 8-28-84

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Academy of Model Aeronautics, 1810 Samuel Morse Drive, Reston, VA 22090

EXHIBIT A

PROPOSAL NO. IND-86-24

POSTMARK DATE: 8/31/84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Form fields: Rule Category (Free Flight, Indoor, Scale, Radio Control, General), Type of Proposal (Basic Proposal), Cross-Proposal?

1. Brief summary of the proposed change: ADD 1 GRAM MINIMUM WEIGHT REQUIREMENT TO EASY B AS A PROVISIONAL CLASS. REASON EZB IS BEING VERY WELL AS IS. ALSO REMEMBER THAT RULES WHICH ALLOW SPIRITING MODELERS LEAD TO REDUCE RATHER THAN PROMOTE COMPETITION.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording" to: "exact wording desired").

DELETE 19.8.2.F OR PRESENTLY STATED AND SUBSTITUTE "F. THE WEIGHT OF THE MODEL, WITHOUT RUBBER MOTOR, SHALL BE NOT LESS THAN 1 GRAM"

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: I don't see any shortcomings to existing EZB rules other than the Condenser Paper problem.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Walter P. Van Sorder, (2) Endorsement: James L. Miller, (3) Endorsement: M. Q. Rygh

1 A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose. 2 A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been tentatively accepted by the Contest Board.

EXHIBIT A

PROPOSAL NO. IND-86-25

POSTMARK DATE: 8/31/84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Form fields: Rule Category (Free Flight, Indoor, Scale, Radio Control, General), Type of Proposal (Basic Proposal), Cross-Proposal?

1. Brief summary of the proposed change: EZB "PROVISIONAL CLASS" AT 1 GRAM WT MODEL CAN BE BUILT ON A LARGER PLAN FORM

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording" to: "exact wording desired").

IN 19.8.2.a change present wording to "The overall length of the model, less propeller, shall not exceed 22"

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: I don't see any shortcomings to existing EZB rules other than the Condenser Paper problem but if the model is not going to be built on a larger plan form.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Walter P. Van Sorder, (2) Endorsement: James L. Miller, (3) Endorsement: M. Q. Rygh

1 A Basic Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose. 2 A Cross-Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been tentatively accepted by the Contest Board.



EXHIBIT A

PROPOSAL NO. copy IND-86-26

POSTMARK DATE: 9/1/84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter Soaring Racing Aerobatics GENERAL

1. Brief summary of the proposed change: Require Indoor Rubber models with wheels be flown only in Rise Off Ground events.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quote present rule book wording)" to: "(exact wording desired)".

Add to section 19 paragraph 10 - new section 10.3 Any model equipped with wheels or other landing gear shall be declared an R.O.G. model and shall not be allowed to compete in events requiring Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: There are rumors of fliers intending to mount wheels on Pennyplanes with the express purpose of allowing the model to roll for some distance before coming to rest after touchdown. Since the timing continues until the model comes to rest. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Richard W. Day AMA Member No. 5322 Cat. 2 Date of Signature Sept 1, 1984 Street Address 6 CANARY HILL DRIVE City PONTIAC State MI Zip 48055

2. hand launching. be in process to accomplish essentially the same purpose. 3. (stops forward movement) this is an attempt to add time and thus cheat.

EXHIBIT A

PROPOSAL NO. copy IND-86-27

POSTMARK DATE: 9/1/84

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT INDOOR SCALE RADIO CONTROL: Helicopter Soaring Racing Aerobatics GENERAL

1. Brief summary of the proposed change: This proposal deals with what to do for an R.O.G. model that never becomes airborne.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "(quote present rule book wording)" to: "(exact wording desired)".

Section 19 - new paragraph added after paragraph 11 Note and before paragraph 12. In the case of R.O.G. models, in addition to the definition of an official flight, the model must become successfully airborne within 15 seconds or it will be Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: A Rise Off Ground model that never becomes airborne should not be an official flight. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Richard W. Day AMA Member No. 5322 Cat. 2 Date of Signature Sept 1, 1984 Street Address 6 Canary Hill Dr. City Pontiac State MI Zip 48055

2. considered a delayed flight.

EXHIBIT A

PROPOSAL NO. COPY IND-86-28

POSTMARK DATE: 9/1/84  
(to be inserted by HQ)

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT  INDOOR  SCALE  RADIO CONTROL:  Helicopter  Soaring  Racing  Aerobatics  GENERAL

Type of Proposal: (Circle one)  Cross-Proposal?  (Identification No. of relevant Basic Proposal):  Basic Proposal 1

1. Brief summary of the proposed change: To require a minimum enclosed volume of the fuselage(s) in Indoor Cabin models.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording" to: "(exact wording desired)". Change section 19 paragraph 5

CABIN MODEL: A cabin model has a built up, enclosed fuselage(s). The total maximum cross-section of the fuselage(s) must not be less than 2 3/16" and the minimum enclosed volume of the fuselage(s) must not be less than 4 3/16" where "L" equals the overall length

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: This proposal will legislate current conventional cabin models and eliminate the disk style which has caused so much controversy. A 25 inches long model will be required to have a minimum cross-section of 6.25 square inches and a minimum enclosed volume of 15.625 cubic inches.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Richard M. Day AMA Member No. 3372 Cat. CO Date of Signature SEPT 1 1984

Street Address 6 Canary Hill Drive State MI Zip 48065

City Pontiac

(2) Endorsement: Spredl Simon AMA Member No. 2532 Cat. A Date of Signature Sept 1 1984

2. of the model, excluding the propeller(s). In case of doubt, the contestant shall present a full-size drawing of the fuselage(s) showing all three views and giving all dimensions necessary to determine the cross-section and volume. The fuselage(s) is defined as the section of the model which contains the rubber motor and gears. The fuselage(s) shall be completely enclosed. Outriggers and booms may be used to support the flying surfaces and landing gear(s).

3. Traditional warren truss fuselage(s) and many built up structures over a rolled tube will fit this proposal provided their volume is large enough.

EXHIBIT A

PROPOSAL NO. COPY IND-86-29

POSTMARK DATE: 9/1/84  
(to be inserted by HQ)

RULES CHANGE PROPOSAL FORM

Send to AMA HQ. A copy will be forwarded to the appropriate CB Chairman. (Attach extra sheets if necessary.)

Rule Category: (Circle one) FREE FLIGHT  INDOOR  SCALE  RADIO CONTROL:  Helicopter  Soaring  Racing  Aerobatics  GENERAL

Type of Proposal: (Circle one)  Cross-Proposal?  (Identification No. of relevant Basic Proposal):  Basic Proposal 1

1. Brief summary of the proposed change: To prohibit the use of lighter than air gases in Indoor models.

2. Exact wording proposed for the rule book (list paragraph numbers where applicable: Example: Change "quote present rule book wording" to: "(exact wording desired)".

Add to section 19 paragraph 2 GENERAL: Filling or inflating any part of a Free Flight Indoor Rubber model with lighter-than-air gas (example: hydrogen, helium) is strictly prohibited.

Note: The Contest Board chairman may, at any time prior to submitting a proposal to the Contest Board for Final Vote, edit proposal wording to increase clarity and avoid ambiguity, provided the proposal intent is not changed.

3. Logic behind proposal change, including alleged shortcomings of present rules: With indoor models becoming larger this would be a possible way to reduce the weight and extend the time, thereby cheating. I want to prevent this before anyone tries this.

4. Signatures of three adult AMA members required (at least one must be a current AMA Contest Director).

(1) Proposer: Richard M. Day AMA Member No. 3392 Cat. CO Date of Signature SEP 1 1984

Street Address 6 Canary Hill Dr. State MI Zip 48055

City Pontiac

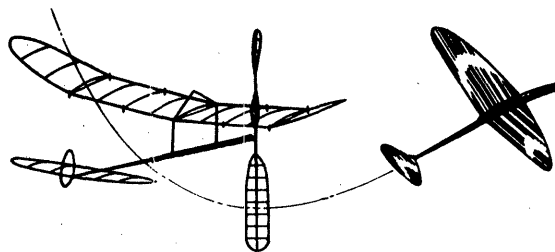
(2) Endorsement: Judith Wood AMA Member No. 2996 Cat. CD Date of Signature 9-1-84

Endorsement: Donald Benard AMA Member No. 7536 Cat. A Date of Signature Sept 1 84

Proposal is one for which no other proposal is known to be in process to accomplish essentially the same purpose. Proposal is an alternate method of accomplishing essentially the same purpose as some other proposal which has been tentatively by the Contest Board. Cross-Proposals cannot be accepted until after the result of the Contest Board Initial Vote has been published.

Academy of Model Aeronautics, 1810 Samuel Morse Drive, Reston, VA 22090

# INDOOR



**NEWS and VIEWS** Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080  
 THIS ISSUE ~ RICHARD & MELODY DOIG ~ 6 CANARY HILL DR. PONTIAC, MI 48055

1984 IN-DOOR PLANE WORLD CHAMPIONSHIPS - NAGOYA

| RANK | NAME                | COUNTRY       | SUM.-OF-BEST-2 | 1 R    | 2 R    | 3 R    | 4 R    | 5 R    | 6 R    |
|------|---------------------|---------------|----------------|--------|--------|--------|--------|--------|--------|
| 1    | James Richmond      | U.S.A.        | 1°17'27"       | 39'51" | 33'02" | 33'53" | 37'36" | 30'19" | 8'50"  |
| 2    | Cezar Banks         | U.S.A.        | 1°14'43"       | 37'40" | 5'09"  | 37'03" | 36'52" | 32'42" | 19'39" |
| 3    | Robert Randolph     | U.S.A.        | 1°12'04"       | 36'35" | 12'47" | 35'29" | 7'20"  | 5'25"  | 6'58"  |
| 4    | Pentti Nore         | Finland       | 1°10'22"       | 15'53" | 32'50" | 28'51" | 31'19" | 10'44" | 37'32" |
| 5    | Robin Leslie Bailey | Great Britain | 1°09'57"       | 9'43"  | 35'25" | 28'36" | 30'32" | 34'00" | 34'32" |
| 6    | Rene Butty          | Switzerland   | 1°09'53"       | 16'43" | 33'03" | 6'30"  | 35'07" | 8'41"  | 34'46" |
| 7    | Dieter Siebenmann   | Switzerland   | 1°09'41"       | 15'30" | 36'35" | 31'23" | 33'06" | 30'40" | 14'56" |
| 8    | Sylwester Kujawa    | Poland        | 1°09'24"       | 1'37"  | 34'42" | 25'06" | 32'34" | 17'31" | 34'42" |
| 9    | Ryszard Czechowski  | Poland        | 1°09'22"       | 8'40"  | 34'49" | 28'42" | 31'54" | 34'33" | 6'12"  |
| 10   | Popa Aurel          | Rumania       | 1°08'54"       | 34'21" | 9'01"  | 33'06" | 30'16" | 8'26"  | 34'33" |
| 11   | Jorgen Korsgaard    | Denmark       | 1°08'40"       | 33'30" | 33'24" | 11'29" | 25'25" | 32'18" | 35'10" |
| 12   | Otto Rodenburg      | Holland       | 1°08'02"       | 30'22" | 37'40" | 0'31"  | 27'49" | 28'04" | 28'42" |
| 13   | Ronald Higgs        | Canada        | 1°07'54"       | 34'49" | 29'48" | 26'35" | 27'39" | 0'23"  | 33'05" |
| 14   | Richard Blackam     | Australia     | 1°07'30"       | 7'12"  | 8'12"  | 33'43" | 31'42" | 33'47" | 8'26"  |
| 15   | Edward Ciapala      | Poland        | 1°06'12"       | 22'16" | 34'22" | 31'50" | 29'09" | 28'42" | 8'24"  |
| 16   | Morar Aurel         | Rumania       | 1°05'20"       | 1'40"  | 34'37" | 25'50" | 8'23"  | 14'03" | 30'43" |
| 17   | Leif G.A. Englund   | Finland       | 1°03'48"       | 30'37" | 33'11" | 25'18" | 27'29" | 7'04"  | 7'43"  |
| 18   | Zhou Wen Bin        | China         | 1°03'04"       | 28'43" | 29'09" | 20'39" | 24'50" | 31'12" | 31'52" |
| 19   | Mike Thomas         | Canada        | 1°01'35"       | 25'24" | 30'41" | 29'47" | 3'36"  | 30'54" | 13'43" |
| 20   | Harri Raulio        | Finland       | 1°00'18"       | 29'43" | 6'45"  | 8'59"  | 30'35" | 24'00" | 14'58" |
| 21   | Enomoto Hideyo      | Japan         | 0°59'58"       | 8'08"  | 27'59" | 7'45"  | 27'24" | 23'26" | 31'59" |
| 22   | Chen Guo Xiong      | China         | 0°59'16"       | 30'11" | 28'52" | 22'00" | 1'07"  | 0'12"  | 29'05" |
| 23   | Boyd Felstead       | Australia     | 0°59'04"       | 7'39"  | 31'52" | 7'14"  | 26'05" | 9'03"  | 27'12" |
| 24   | Nonaka Shieyoshi    | Japan         | 0°57'53"       | 29'12" | 28'41" | 27'02" | 23'19" | 27'26" | 13'26" |
| 25   | Werner Heise        | Switzerland   | 0°57'48"       | 17'53" | 12'22" | 25'47" | 28'26" | 26'34" | 29'22" |
| 26   | Carl Schueler       | Canada        | 0°57'27"       | 7'53"  | 12'59" | 29'22" | 28'05" | 27'46" | 5'53"  |
| 27   | Lu Xiu Seng         | China         | 0°56'27"       | 28'01" | 28'26" | 25'07" | 23'48" | 23'00" | 24'59" |
| 28   | Cornelis Wolthoorn  | Holland       | 0°55'21"       | 12'24" | 12'08" | 20'45" | 18'14" | 23'04" | 32'17" |
| 29   | Sakota Junichi      | Japan         | 0°54'00"       | 25'16" | 2'04"  | 18'47" | 22'00" | 24'42" | 28'44" |
| 30   | Edmund K.T. Liem    | Holland       | 0°52'42"       | 14'16" | 24'16" | 0'14"  | 0'12"  | 20'04" | 28'26" |
| 31   | David Kerr          | Australia     | 0°47'56"       | 22'05" | 23'52" | 17'16" | 22'49" | 23'49" | 24'04" |
| 32   | Bezman Nicu         | Rumania       | 0°45'33"       | 12'39" | 21'23" | 24'10" | 7'38"  | 3'56"  | 1'15"  |

| RANK | COUNTRY       | TIME     | NAME   | SUM.-OF-BEST-2                   |
|------|---------------|----------|--|----------------------------------|
| 1    | U.S.A.        | 3°44'14" | James Richmond<br>Cezar Banks<br>Robert Randolph         | 1°17'27"<br>1°14'43"<br>1°12'04" |
| 2    | Poland        | 3°24'58" | Sylwester Kujawa<br>Ryszard Czechowski<br>Edward Ciapala | 1°09'24"<br>1°09'22"<br>1°06'12" |
| 3    | Switzerland   | 3°17'22" | Rene Butty<br>Dieter Siebenmann<br>Werner Heise          | 1°09'53"<br>1°09'41"<br>0°57'48" |
| 4    | Finland       | 3°14'28" | Pentti Nore<br>Leif G.A. Englund<br>Harri Raulio         | 1°10'22"<br>1°03'48"<br>1°00'18" |
| 5    | Canada        | 3°06'56" | Ronald Higgs<br>Mike Thomas<br>Carl Schueler             | 1°07'54"<br>1°01'35"<br>0°57'27" |
| 6    | Rumania       | 2°59'47" | Popa Aurel<br>Morar Aurel<br>Bezman Nicu                 | 1°08'54"<br>1°05'20"<br>0°45'33" |
| 7    | China         | 2°58'47" | Zhou Wen Bin<br>Chen Guo Xiong<br>Lu Xiu Seng            | 1°03'04"<br>0°59'16"<br>0°56'27" |
| 8    | Holland       | 2°56'05" | Otto Rodenburg<br>Cornelis Wolthoorn<br>Edmund K.T. Liem | 1°08'02"<br>0°55'21"<br>0°52'42" |
| 9    | Australia     | 2°54'30" | Richard Blackam<br>Boyd Felstead<br>David Kerr           | 1°07'30"<br>0°59'04"<br>0°47'56" |
| 10   | Japan         | 2°51'51" | Enomoto Hideyo<br>Nonaka Shieyoshi<br>Sakota Junichi     | 0°59'58"<br>0°57'53"<br>0°54'00" |
| 11   | Great Britain | 1°09'57" | Robin Leslie Bailey                                      | 1°09'57"                         |
| 12   | Denmark       | 1°08'40" | Jorgen Korsgaard   | 1°08'40"                         |



AWARDS CEREMONY AT INDOOR NAGOYA '84  
 (left to right) Second place team from Poland; Ciapala, Kujawa, Czechowski. First place team from United States; Banks - holding giant mic ship used as a banner in the parade - Richmond, Randolph, Cailliau (manager). Third place team from Switzerland; Butty, Siebenmann, Heise.

## THIS ISSUE

This issue has been devoted solely to the recent World Championships in Nagoya. The next issue we will get to all the material that has been sent to us and we'll get into some technical items including more on variable diameter propellers. In the meantime we would like to thank:

Warren Williams for a copy of the program, his journal and some photographs  
Herb Robbins for his photographs and results  
Jim Richmond for his model plans and report  
Larry Cailliau for his report to Model Aviation and a copy of the program  
Boyd Felstead for more results and his report  
and Jack Carter who sent plans of Cezar Banks' model.

\* \* This issue was several days behind #15 & almost done when Richard fell off the back step at his office, tearing ligaments in his ankle bad enough to require surgery 2 days later. The cast is off now, his ankle is healing quickly & our schedule is getting back to its normal hectic pace. We'll never promise when an issue will arrive again, it seems to be bad luck. \* \*



U.S. team members placing 1st, 2nd, and 3rd. Has it ever been done before? Certainly not in Indoor. Our team selection methods produced a winning team of unprecedented strength this time!

After a safe ride from LA to Tokyo with the model boxes occupying honored positions in the 1st class section of the JAL 747, the plan was to go by bus to the bullet train and then to Nagoya. But there were, all 7 of us, stranded in front of Tokyo's teeming Narita terminal with our huge pile of luggage going nowhere. No one would touch Randolph's huge, fragile box with a 10 foot pole. The seemingly impossible problem was finally solved by all of us buying additional tickets on the last flight to Nagoya with an added ticket for Bob's box so it could ride in the passenger compartment. Cezar's box and mine went with the baggage. The flight was delayed several times and it was a very long night.

By Sunday, everyone had arrived and we spent most of the day participating in a very long parade. We felt like conquering heroes as we walked down the street amid throngs of waving people. The next day was official practice. We had hoped for an early start but when we arrived at the site there were no tables or chairs and no helium for our balloons so no serious testing was done before noon.

My first test hop was bombed out of the air by Werner Heise's plane which wrecked the stab. Scratch one. Things were certainly off to a bad start. I made 2 test flights with the variable diameter propeller which was the first serious testing I had done with that type of prop on an F1D model. It looked pretty good but the transition was late and flight times were only 32 - 33 minutes. Cezar and Bob were testing with half loops and seemed satisfied with results. "Flyers land your planes, the bus is leaving for the hotel in 10 minutes." They had trouble persuading us to stop flying so announcements like this were made to get our attention. It worked and we arrived at the hotel in time to attend a sumptuous party complete with food, drinks, geishas, and music.

Next morning was serious business as the competition began and we launched into round one. We had agreed to rotate our starting position each day, so Cezar was first off. He managed to survive the girders and posted a great 37:40. It should be noted that both Cezar and Bob are "go for it" flyers and don't seem to hold anything back when they fly. They have some hang-ups but they also have some very long flights.

## ORIGINAL MODEL DESIGN FEATURES OF JIM RICHMOND'S

### "FILM FLAM" F1D INDOOR AEROMODEL

**VARIABLE DIAMETER PROPELLER:** Diameter changes from 22" to 18" during flight to compensate for reduction in torque from the rubber motor. This is the first known use of this feature on a competitive FAI indoor model.

**PLUG-IN TAIL BOOM** for ease of adjustment & parts replacement. Also permits use of a smaller model box.

**KEVLAR spiral wrap on motor stick** for torsional strength. Believed to be the first use of Kevlar this way.

**BORON FILAMENTS (2)** are applied to the bottom of the motor stick to provide compressive strength.

**HINGED WING POSTS** made of thread at the junction with the wing. This permits folding the wing posts inward so the wings can be stored in a smaller space.

**SUPER LARGE WING** of 9 1/2" chord & the area of 224 sq. inches is one of the most ever used on a competitive FAI model.

**LONG OVERALL LENGTH** OF 37" one of longest in competition.

The variable diameter propeller I used was developed in an effort to get good flight times without the need to endanger the model with extensive rafter banging. It served well in this regard, producing the longest flight of the meet in the very first round. In fact we all did our best time in the first round which was rather remarkable since the air did not seem to be all that good and there was considerable drift.

Before the competition, I was concerned that the Variable diameter propeller might not produce as much duration as a normal one in a site of this ceiling height because it spins off the turns at a more rapid rate in the retracted phase (about 50 RPM). I still feel you can do just as well with a normal prop if you don't mind rattling around in the girders for a while. In fact, I think Cezar's last flight might have won it for him if it hadn't hung. After 19 1/2 minutes it was still at the roof!

Cezar and Bob hung their 2nd flights and my prop kicked in late at 5 feet altitude, but we all had one super flight under our belts with 4 rounds to go. The consistent Chinese team took the lead the first day, but we knew we were in a strong position.

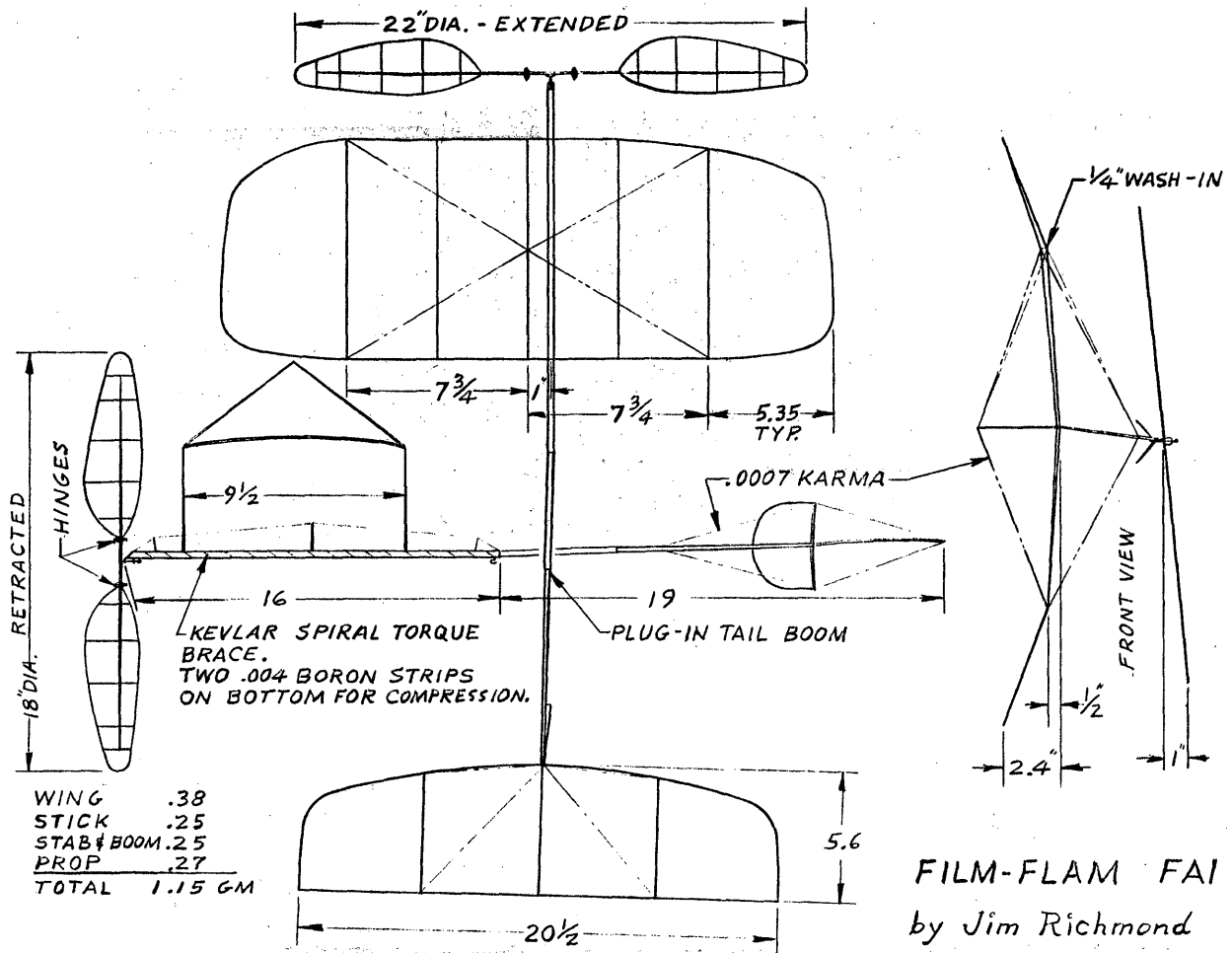
Drizzling rain the 2nd day, but no leaks in the roof. In spite of a downdraft at the center of the building and generally poor air, we were all able to post our 2nd best flights of the competition on this day which enabled us to take a commanding lead.

The last day was "go for it" day, but some bad luck and 4 hang ups kept us from improving our times which ultimately proved to be quite adequate.

The anxiety over a lost billfold - thank heaven we were in Japan, it was returned intact - and the struggle to get the boxes, luggage, and hardware home are now forgotten and the memory of a great and well run World Championships remains. Industrial financing of the meet provided many pleasant experiences. We even had a marching band to play for us at the conclusion of the meet. And I will treasure the Toyotomi Trophy which was said to cost 1,000,000 yen - always.

Many thanks to Stan Chilton who generously shared his best rubber with us. We all used it after testing proved it to be superior to anything we had. The supporters were all very helpful and seemed to enjoy the experience along with us at NAGOYA '84.

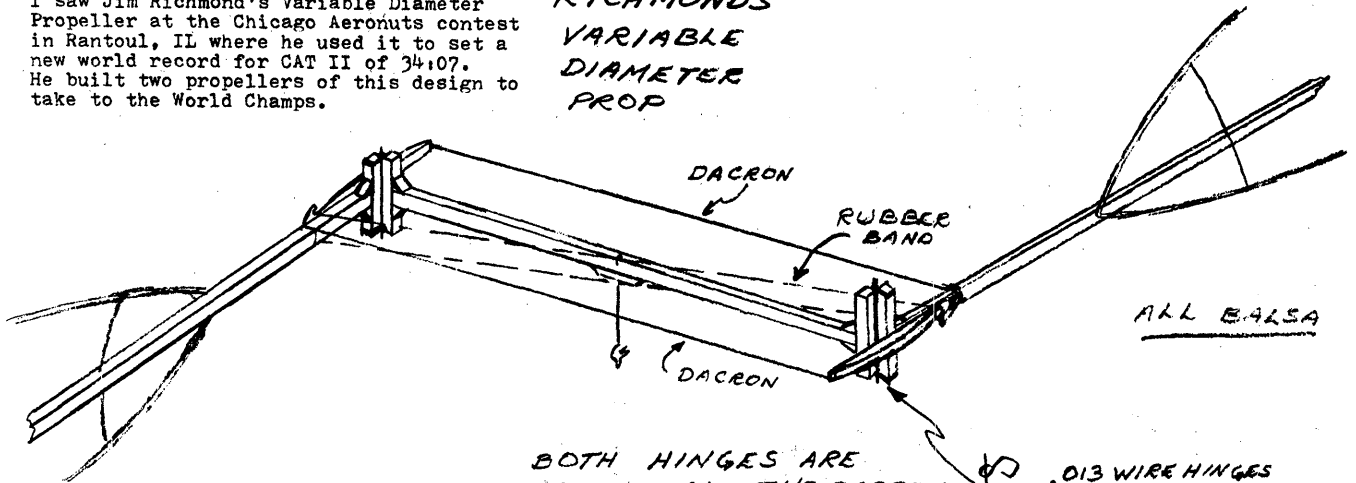
Jim Richmond  
1984 World Champion



FILM-FLAM FAI  
by Jim Richmond

I saw Jim Richmond's Variable Diameter Propeller at the Chicago Aeronauts contest in Rantoul, IL where he used it to set a new world record for CAT II of 34.07. He built two propellers of this design to take to the World Champs.

RICHMOND'S  
VARIABLE  
DIAMETER  
PROP



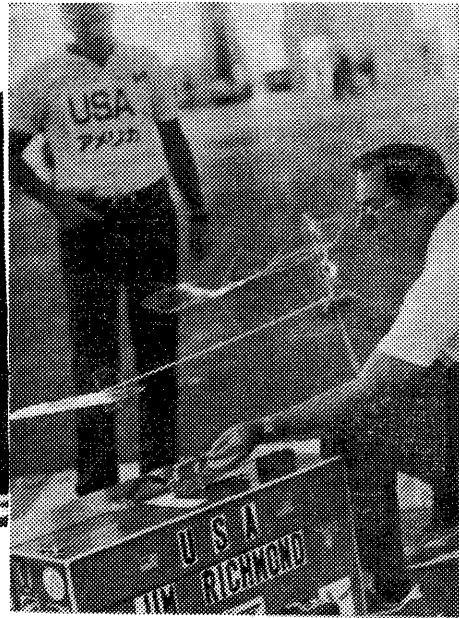
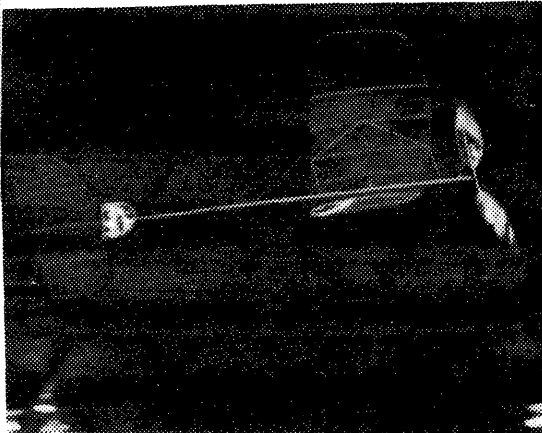
BOTH HINGES ARE IDENTICAL. THE DACRON TENSION "WIRES" PULL BOTH BLADES IN EVENLY  
22 INCH EXTENDED DIAMETER  
18 INCH FOLDED DIAMETER

DRAWN BY: R. DOIG

INDOOR 84 NAGOYA  
 室内飛行機選手権大会

|   |                 |        |
|---|-----------------|--------|
| 1 | James Richmond  | 39'51" |
| 2 | Cezar Banks     | 37'40" |
| 3 | Otto Rodenburg  | 37'40" |
| 4 | Robert Randolph | 36'35" |
| 5 | Dieter Siebman  | 36'35" |

Longest Flight



PHOTOS - Clockwise from upper left

One of the professional scoreboards used at the World Champs, a sign of a well run competition. This scoreboard displayed best single flight, photo taken after 2nd round. Pentti Nore (Finland) moved into 4th place during 6th round.

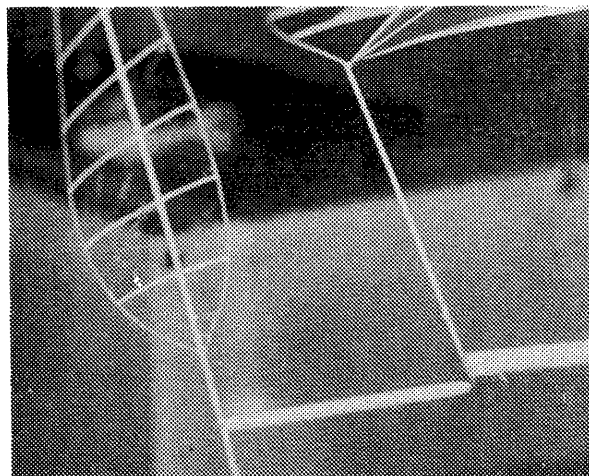
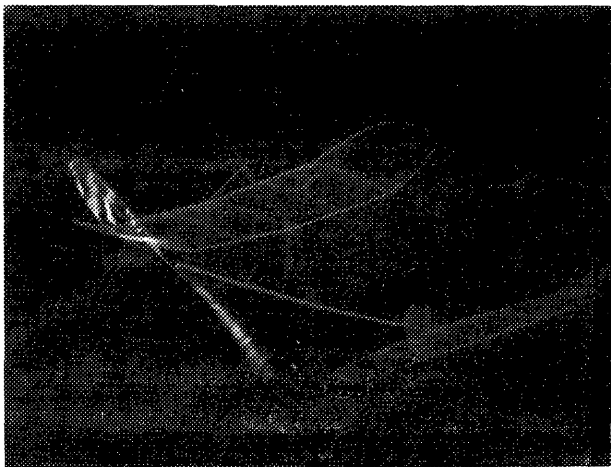
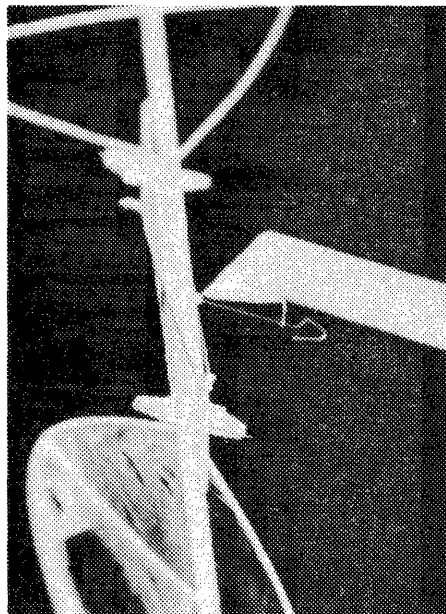
Jim Richmond's (USA) model "Film-Flam" climbs for the ceiling in Nagoya.

Richmond hooks on a motor while Larry Cailliau (USA team manager) looks on.

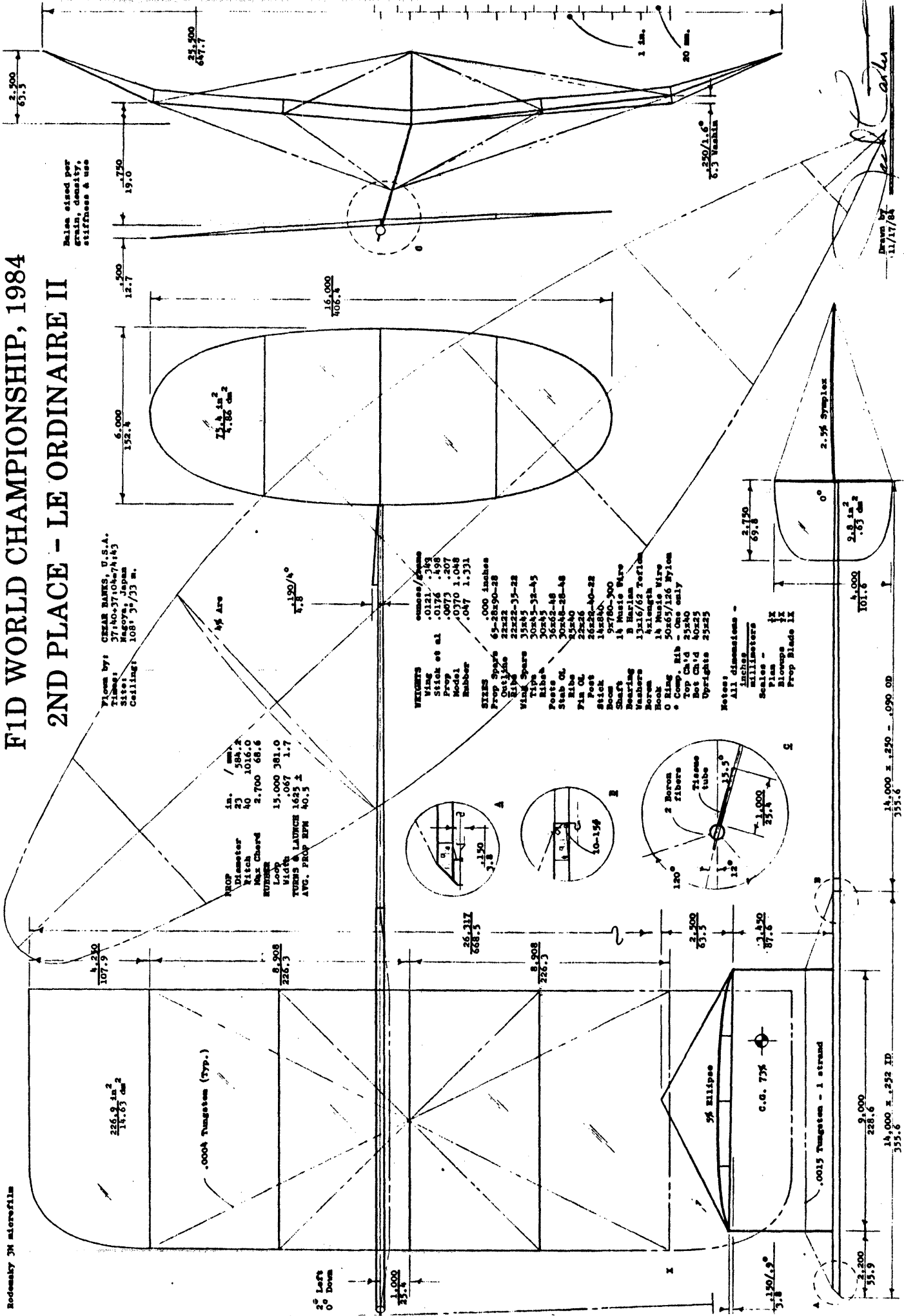
Richmond's Variable Diameter Propeller completely closed.

Rene Butty's (Switzerland) model had no motorstick ahead of wingpost with an extended propeller shaft.

Another view of Richmond's "Film-Flam" Richmond's Variable Diameter Propeller with one arm extended. Rubber band has been removed from its hooks & is hanging free in lower left of picture. Dacron can also be seen between hooks in this photo.



# F1D WORLD CHAMPIONSHIP, 1984 2ND PLACE - LE ORDINAIRE II



Lines sized per  
grain, density,  
stiffness & use

Plans by: CEAR MARKS, U.S.A.  
Times: 37, 40, 37, 40, 7, 4, 4, 3  
Sites: Nagoya, Japan  
Ceiling: 108' 3"/33 m.

PROP  
Diameter 23 584.2  
Witch 40 1016.0  
Max Chord 2.700 68.6

WINDERS  
Loop 15.000 381.0  
Witch .067 1.7  
TURNS & LAUNCHES 1625 2  
AVG. PROP RPM 40.5

WEIGHTS ounces/grams  
Wing .0121 343  
Stick ea sl .0178 498  
Prop .0873 247  
Model .0170 484  
Rubber .087 1.331

SIZES .000 inches  
PROP Spars 65-28x90-28  
Outline 22x22  
Line 22x22-35-22  
Wind Spars 35x45  
Tie 50x45-35-45  
Ribs 50x45  
Posts 56x62-48  
Stab GL 50x48-28-48  
Ribs 35x40  
Fin GL 22x26  
Post 26x28-40-22  
Stick 18x70-900  
Shaft 1/4 Music Wire  
Bearing 1/8 Marlin  
Washers 13x16/62 Teftlon  
Hook 1/4 Music Wire  
O Ring 50x65/126 Nylon  
Comp. Rib - One only  
Top Ch'd 25x40  
Bot Ch'd 40x25  
Uprights 25x25

Notes: dimensions -  
All inches  
Millimeters  
Scales -  
Plan 1X  
Blowups 1X  
Prop Blade 1X

Drawn by  
11/17/84

2.500  
63.3

19.0

12.7

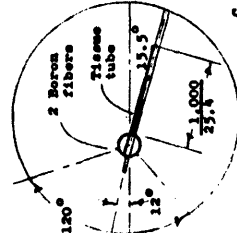
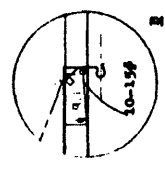
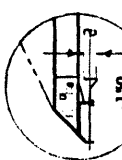
6.000  
152.4

16.000  
406.4

72.4 in<sup>2</sup>  
4.86 dm<sup>2</sup>

4 1/4 Arc

1.190/4°



2.720  
69.0

0°

2.8 in<sup>2</sup>  
.83 dm<sup>2</sup>

4.000  
101.6

14.000 ± .250 - .090 OD  
355.6

4.250  
107.9

8.908  
226.3

26.217  
668.3

2.500  
63.5

1.450  
37.0

226.9 in<sup>2</sup>  
14.63 dm<sup>2</sup>

.0004 Tungsten (Typ.)

5 1/2 Ellipse

C.G. 73%

.0015 Tungsten - 1 strand

9.000  
228.6

14.000 ± .252 ID  
355.6

2° Left  
0° Down

3.8  
96.5

2.200  
55.9

## INDOOR '84 NAGOYA

A Journal by Warren Williams

Twelve nations competed in the World Indoor Championships that was held in Nagoya, Japan. The site a dome shaped Nagoya City International Exhibition Hall. The diameter being 500 feet with a height of 107 feet. It was a roomy place, to fly, but our team had their troubles hanging up in the upper structure of the dome.

Experience, reliability, plus good fortune paid off, for not only did our team carry off all the top awards, but our veteran Indoor flier, Jim Richmond, won all the marbles.

The meet was spread over five days. The first day was registration at the hotel headquarters and the gathering of the arriving contestants. All team members and their groups were invited to march in the 30th Autumn Festival Parade. While passing the grandstand the Mayor of the city presented us with the key to the city. It was a wonderful sight, looking at wall-to-wall faces. I was told there were a half million spectators lined along our one mile march.

The second day we all left the hotel by bus to the flying site for a practice session. That evening we attended a banquet given by the Mayor welcoming us to the city, plus entertainment food and drinks. Their hospitality was well received. The following morning (day three) the competition started. It was decided by the pick of straws that Bob Randolph would be the first to fly. As the spot light centered around Bob and his cement shoe - Bob broke his ankle two weeks before coming to Japan and was in a cast - while hooking up his fully wound motor, the motorstick collapsed, thus wiping out his number one model. Bob then launched his number two model and it powerstalled. After staggering around, hanging on the prop, neither gaining nor losing altitude for a breath-taking minute, the model leveled out and began to climb. Fortunately the model climbed to the top, but was off center weaving its way through the maze of girders. By using a balloon to center the model, the plane was on its way to its best flight of 36:35.

Jim Richmond's first flight took off smooth and slowly climbed to the top, but dangerously off center. He too had to balloon his model to steer it away from danger. As the model slowly descends, within 80 feet of the floor, what am I seeing, yes it is his new 22 inch variable diameter propeller shifting to its low power diameter of 18 inches. As the prop shortens I notice the prop had picked up more RPM and the model was back into cruise once again. The transition had taken place faster than an eye blink. Remarkable. As the model proceeded to stay at this altitude we sensed it would be a great flight and a great flight it was, 40:21, but wait, due to the 30 seconds steering with the balloon, 30 seconds had to be subtracted from the total and it came to 39:51. This turned out to be the longest flight of the competition, thus earning the Ernest Kopecky trophy.

Cezar Banks' first flight climbed steadily to the top and flying very comfortably it was in no danger at any time. He landed with the second highest time of the day, a fine 37:40.

Bob Randolph's second round flight, a good launch and flying well, but as it drifted out of the center it was in danger of hitting the side at the eighty foot level, a balloon was used to steer it, but the wing broke and the model spiraled to the floor at 12:47.

Jim Richmond's second flight was up and away, but it failed to climb as high as the first flight. He did however manage to grind out a 33:02.

Cezar Banks' second flight took off like gang busters, climbed to the top and hung up in the beams at 5:09. Banks then climbed the ladder and retrieved his model at the center of the dome. Model intact, ho hum, no problem. Otto Rodenburg of Holland on his second flight tied Cezar for second place with an identical 37:40. Well tomorrow is another day.

On the second day the third round began, Cezar was first off, climbing too fast, hitting several beams and hung up for a second and tailslid losing altitude and his bad position. After regaining some altitude at about 80 feet the time was 29 minutes, the beginnings of a great flight, but his model collided with another, cancelling out the flight. Cezar quickly put another ship in the air and racked up an excellent flight of 37:03. Bob Randolph's third flight resulted in a collision with another, spinning down from about 60 feet; washing out his number two model at 26:30. Bob was allowed to re-fly without losing the flight and quickly posted a 35:29. Jim Richmond's third round flight climbed steadily, the model circled in some bad air that seemed to be a down draft, losing valuable altitude, thus coming down safe at 33:53.

Cezar Banks' fourth flight climbed like a home-sick angel hitting the top of the dome several times. The model was centered and looking very good, but it too ran into the bad, rough air and down drafts. The model descended rapidly but clocked a 36:53. Bob Randolph's fourth flight was real good looking, but climbed to the top and hung up at 7:20.

The following day round five started. Jim Richmond was first off with his new propeller, determined to do a forty minute flight, but the prop did not kick in to its 18" diameter until the model got within 8 feet off the floor. A short flight of 30:19 was recorded. One to go as Jim readjusted the rubber tension for his prop to shift sooner. Cezar Banks' fifth round flight-going for broke with max. winds, motorstick bending to a banana shape, sweating it out, will it hold together or will it snap; luck prevails. The model climbs as if it was pulled by an invisible string, up, up and away. At about 8 minutes the model hits the top, after colliding with the beams ten times with the left wing tip, the leading edge breaks. The drag of the broken wing shortened the possibility of a good flight. It hit the floor at 32:42. Bob Randolph's fifth flight, bad luck prevailed as bob's model hung at 5:35. Bob's rhythm has been broken - good flight, bad flight good flight and two bad flights in a row. Whats next?

Jim Richmond's sixth flight, last round, was a disaster. His model hit the catwalk at the top, hung up for a moment, then tailslid, but did not recover as the wing folded. Our chances now are slim to break forty minutes. Cezar Banks' sixth round flight hung at 19:39 after banging the beams for ten minutes and was looking good until it drifted to the side and hung. Bob's sixth and last hung up at 6:59 ending our flights and competition.

When awards were given, our team won the Championship. Jim Richmond won Individual Champion trophy, longest flight (39:51) trophy and the Toyotomi Cup trophy for the best model design. The Toyotomi Cup is a lovely 18 inch solid bronze statue of the Greek Goddess Psyche.

Congratulations to our team manager Larry Cailliau for his leadership, experience and hard work.

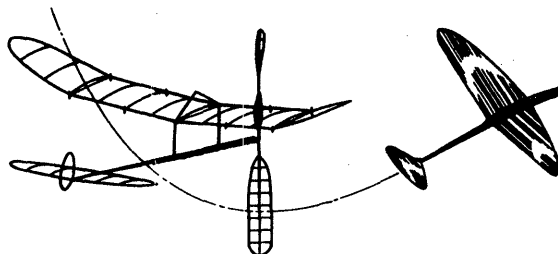
A beautiful farewell party was given by Mr. Nakamura, President of the Toyotomi Kogyo Co. who sponsored the event. The gathering gave us time to exchange gifts and say farewells. The Japanese hosted a memorable contest and one of the very few where excellent planning, hard work and dedication prevailed. No moans were heard about the organization or officials for which congratulations are due to all concerned. It was an experience we will cherish for years to come.

FOR SALE Polish gimballled Torque meters. \$50.00  
Contact Erv Rodemsky (719) 786-0277  
26 Warmspring, Irvine, CA 92714



**INDOOR****NEWS and VIEWS**

THIS ISSUE ~ RICHARD & MELODY DOIG ~ 6 CANARY HILL DR. PONTIAC, MI 48055



#17

(313) 373-5374

THIS ISSUE

As we promised here is more on Variable Diameter Propellers, in fact it has turned into an entire issue on them.

INDOOR NEWS & VIEWS UPDATE

Eight months and four issues after taking on INAV most of the production bugs have been worked out. We had hoped to do more issues but this is what we realistically expected. Because Bud Tenny is still handling the money and sends us the address labels there is often a gap between sending renewal notices, crediting your subscription and us getting the updated mailing labels. We had #16 labels almost a month before the issue was mailed, we're sorry if receiving redundant renewal notices caused anyone problems.

Also with issue #15 we found that with the combination of our printer's paper and envelopes it is possible to send three sheets of paper overseas on one stamp. This means that we can include more information in each issue.

SAD NEWS

Dennis Jaecks of Janesville, Wisconsin died on January 20, 1985 of a heart attack. This was a great shock to us as he was in his forties.

We first met Dennis at the Chicago Aeronuts' Championships and flew with him many times in Chicago and West Baden. The last year in West Baden (1983) his daughter Jeni came along and both set records for Pennyplane in CAT III. Not only did he do much for the popularity of Pennyplanes, he also helped share his knowledge with others. We shall miss him.

Modeling legend and indoor pioneer Carl Goldberg of Northridge, California died on January 28, 1985. Carl may best be remembered for his landmark flight of 22:59 at the 1934 NATS in the Goodyear Airdock, Akron, Ohio. Our condolences to his wife and family.

FOREIGN SUBSCRIBERS

The FOURTH UNITED STATES INDOOR CHAMPIONSHIPS will be held June 18 - 20, 1985 at the Niagara Falls Convention Center Arena, Niagara Falls, New York. If you will be in the States this summer you are welcome to compete. This may be the largest indoor contest in the world, 16 events will be flown, along with movies and a banquet. Site is CAT III with a large floor area (260'x310'). For a copy of the schedule and entry form send a large (10 cm x 24 cm) self-addressed envelope to: U.S.I.C.  
1655 Revere Drive  
Brookfield, WI 53005 USA

U.S. and Canadian copies of this issue will have a copy of the schedule and entry form included.

HANGER PILOT SUBSCRIBERS

Have you missed some issues? Hanger Pilot editor "Doc" Martin's Labrador puppy ate the master mailing list in October and "Doc" needs your help to reconstruct the mailing list. If you are a subscriber please mail a postcard with your name and address to:

The Hanger Pilot  
Dr. John Martin, Editor  
2180 Tigertail  
Miami, FL 33133 U.S.A.

For those of you who might be interested The Hanger Pilot is the newsletter of the Miami Indoor Aircraft Model Association - the only active all indoor free flight club in AMA. This group who's motto is "it must be fun" is interested in all types of indoor models especially Scale models of all shapes and sizes. Subscriptions are \$10.00 a year for 8 to 9 issues.

NEW NEWSLETTER

Bill Baker has started a newsletter, The Okie Free Flight Flyer, to help unite the scattered members of the Sooner Free Flight Society of Oklahoma. He hopes this can keep members informed as to what is going on in the area for both indoor and outdoor free flight activities. There is no subscription fee.  
Contact: Bill Baker  
1902 Peter Pan St.  
Norman, OK 73069

WANTED - Set or several sets of plastic 1/4 inch Atwood Gears formerly sold by Microdyne. Please phone or write Bob Randolph, (714)796-9706 or 25145 Lawton Av., Loma Linda, CA 92354.

CONTEST CALENDERCALIFORNIA - BURBANK

Blacksheep Squadron (flying activities for Juniors) at Luther Burbank Jr.H.S. gym -CAT I- on Maple between Jefferies and Allan. March 14 Indoor Record Trials, June 13 Indoor Scale Contest. Both Dates 7 - 10 pm. Contact Tony Naccarato, 3512 Victory Blvd., Burbank, CA 91505 or (818)842-5062

CALIFORNIA - SAN DIEGO

Contest towards High Point Championship Trophy after monthly business meetings on 2nd Friday of each month. Indoor flying sessions also the 4th Friday of each month. These activities start 7:30 pm at the Colina Del Sol Community Center, 5319 Orange Av. Contact San Diego Orbiters' Program Chairman John Hutchison (619)465-7698

VARIABLE DIAMETER & PITCH PROPELLERS

When I saw Jim Richmond's Variable Diameter Propeller last September in Rantoul, IL I asked him why he was using it and his reply was that it was a more reliable way to change the pitch than changing the blade angle. Which brings us to the heart of the matter, when this type of propeller folds you get a dramatic reduction in pitch.

**BACKGROUND**

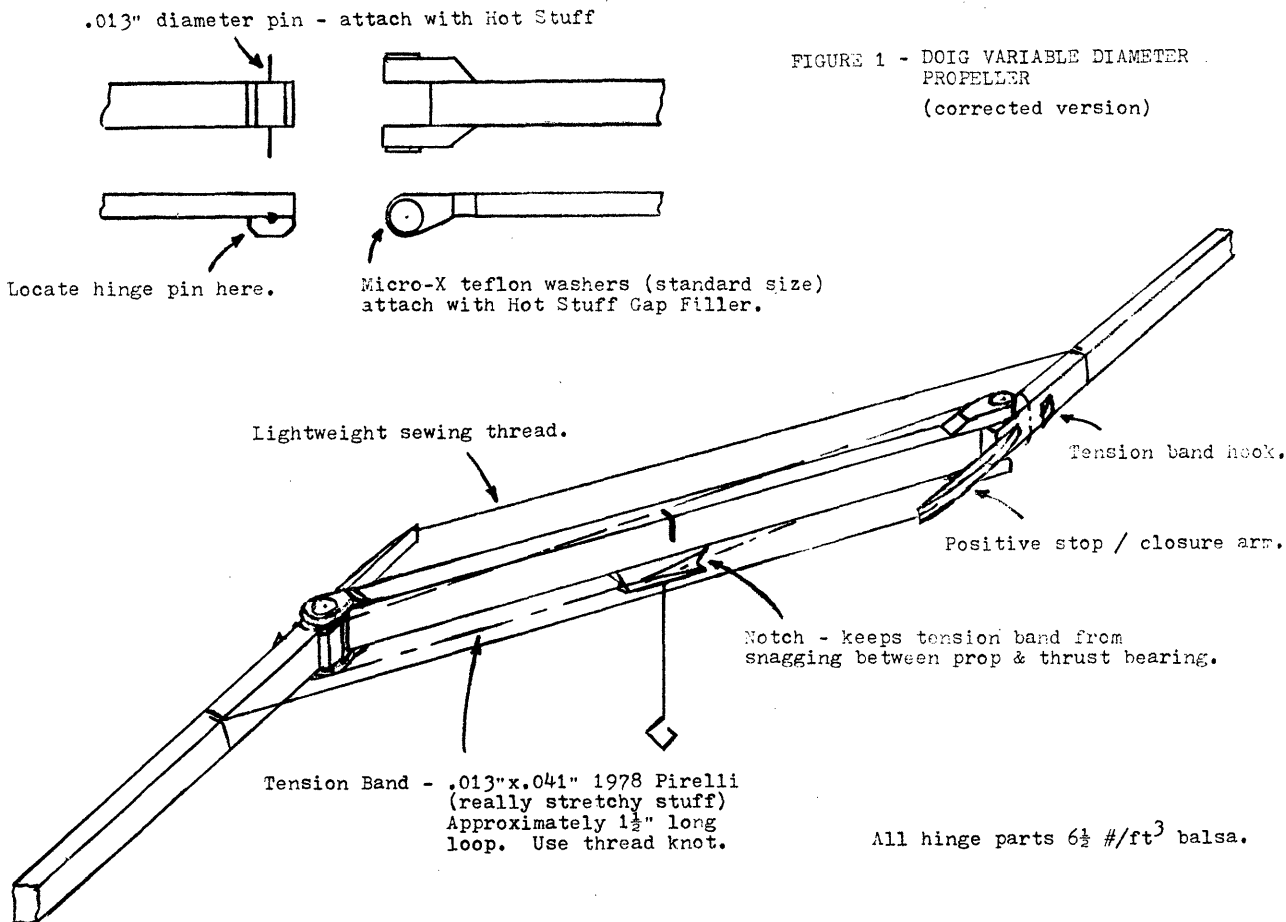
Variable Diameter Propellers are nothing new, as Hewitt Phillips and Jim Clem have been experimenting with them for many years. (See accompanying articles.) Up until very recently, however, no one had succeeded with a variable diameter prop without incurring a severe weight penalty. That all changed last September 29, when Jim Richmond broke the CAT II World Record using one. (34:07 under 44 feet) This flight had an interesting flight pattern in that the model climbed to 20 feet or so and cruised for 10 minutes. Then over the next 2-3 minutes the prop folded and the model climbed to a peak altitude of 40 feet. This was advantageous as the ceiling height was 44 feet with lights which hung down 2 feet and there was noticeable drift close to the ceiling. Richmond succeeded in staying below the drift. At the World Champs in October, Richmond was able to fly top times without touching the ceiling and without risk of hanging up, while everyone else bashed the girders. His prop was clearly the hit of the World Champs.

**DOIG VARIABLE DIAMETER PROPELLER**

Richmond's prop made extensive use of bent wire hinges and other parts - which he is very good at making. I took a different approach, using Micro-X teflon washers as hinge bearing surfaces around straight pieces of wire. As originally built this prop would not completely open but stopped 15° short. However it still flew well enough to win the Balsa Bug's MI State Championships in October - 23:43 at 60 feet in 50° F air.

The propeller has since been modified to reduce the distance that the rubber has to stretch for full opening and this corrected the problem. (see figure 1) This mechanism added about .0040 ounce to the weight of the prop (mostly in Hot Stuff required to repair the many breaks caused by my clumsiness during building). Properly done, this mechanism should add about .0015 - .0020 ounce.

Opinion seems to be very strong concerning Variable Diameter & Pitch Propellers. Those who oppose them are adamant that the extra work involved will reduce participation even further. Those who favor them can see their value at making models last longer because you stay out of the girders. It does take less time to build one of these props than a replacement model. Most flyers don't see any benefit from Variable Diameter & Pitch Propellers in high ceilings (CAT IV) at this point. However in lower ceilings, especially those with cluttered ceilings - girders, lights, sprinkler systems - the benefits of staying several feet below these obstacles are great.



Please note that this type of propeller is specifically outlawed in the A.M.A. Rulebook for Novice Pennyplane and Manhattan Cabin.

#### HOW THE CHANGE IN PITCH WORKS

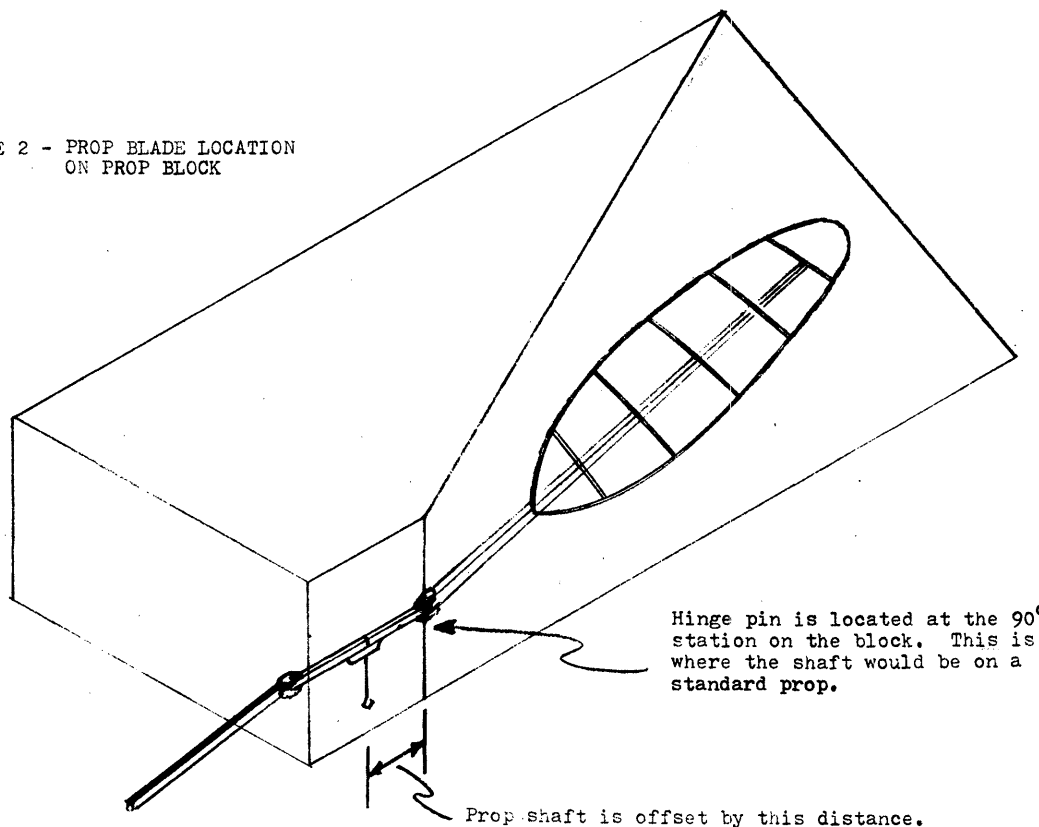
In Jim Jones' accompanying article he discusses pitch change as the blades are folded inward. However he presumes that the pitch was helical when the prop was fully extended. This is not necessarily the case. When I asked Richmond where he placed the blades, he was non specific except to say that helical pitch occurred part way through the fold. In the case of my own prop I set true helical pitch to occur when the prop was halfway through the fold. That is, I glued the blades onto the spars with the hinge pin at the point on the pitch block where I normally put the hook, see figure 2. (Actually this is the only way it would fit.) This creates a situation where, when the prop is fully extended the pitch is very high at the hub and decreases toward the tip and the average pitch is higher than the prop block. The higher pitch at the hubs slows the R.P.M.

way down while keeping the tip at a shallower pitch so the tips don't stall. When the prop is fully folded the opposite is true. The pitch is low at the hub and increases toward the tip and the average pitch is much lower. The R.P.M. increases dramatically due to reduced drag and if you are high enough on the rubber's torque curve the model will begin to climb again. This prop construction gradually folds to approximately  $90^\circ$  over a long period of time, 2-3 minutes or more. When the mechanism gets to  $90^\circ$  and goes over center, the next  $90^\circ$  of travel happens very quickly and abruptly taking 2-3 seconds. If properly done, the fold will not begin until 10-12 minutes into the flight (or even longer).

#### WHAT DOES THIS ALL MEAN ?

Only experimentation by several modelers under a variety of flying conditions will provide the answers along with discussion amongst modelers, especially if we are to come up with mechanisms which are easy to build and lightweight.

FIGURE 2 - PROP BLADE LOCATION ON PROP BLOCK



Reprinted from Indoor News & Views, April 1966. Look at what it has taken us nineteen years to learn!

### The Variable Diameter Prop

by Hewitt Phillips

I have built two or three of the variable diameter props, and they really work. However, the additional weight and drag of the mechanism would be more of a penalty on today's models than it was in the old days.

The principle of operation is shown on the attached sketches. The two blades are kept in the same relative position by a parallelogram linkage (absolutely essential, as discovered on the first trial when one blade would stay full out and the other full in). The blades wind out against the tension of a fine rubber band wrapped around a small pulley. The rate of climb or descent of the model depends solely on the tension in this rubber band and is independent of the winds or torque of the rubber motor. Thus, the model may be adjusted to fly level throughout the flight by carefully adjusting the tension in this fine rubber band.

Variations in the characteristics may be obtained by changing the pulley from circular to elliptical or cam-shaped. Usually, it is desirable to obtain some climb at the start followed by a long level cruise. Otherwise, the drafts near the floor will eventually bring the model down.

Also, blade angle change may be obtained simultaneously with diameter by canting the hinges. This may be used to compensate for twist of the blades under high torque at the start of the flight.

It is perfectly easy to obtain peculiar effects, such as a descent at the start under full power, with the prop stretched out to maximum diameter, followed by a climb near the end of the flight with the blades pulled in and the propeller buzzing around like a beginner's ROG. This condition obviously should be avoided for endurance.

In Boston, we flew in the old Irvington Street Armory which had a 55' ceiling. The variable diameter prop was really advantageous under these conditions. I don't think it would compete with fixed diameter props in ceilings above about 80 feet.

F.Y.I. (FOR YOUR INFORMATION)

by Jim Jones

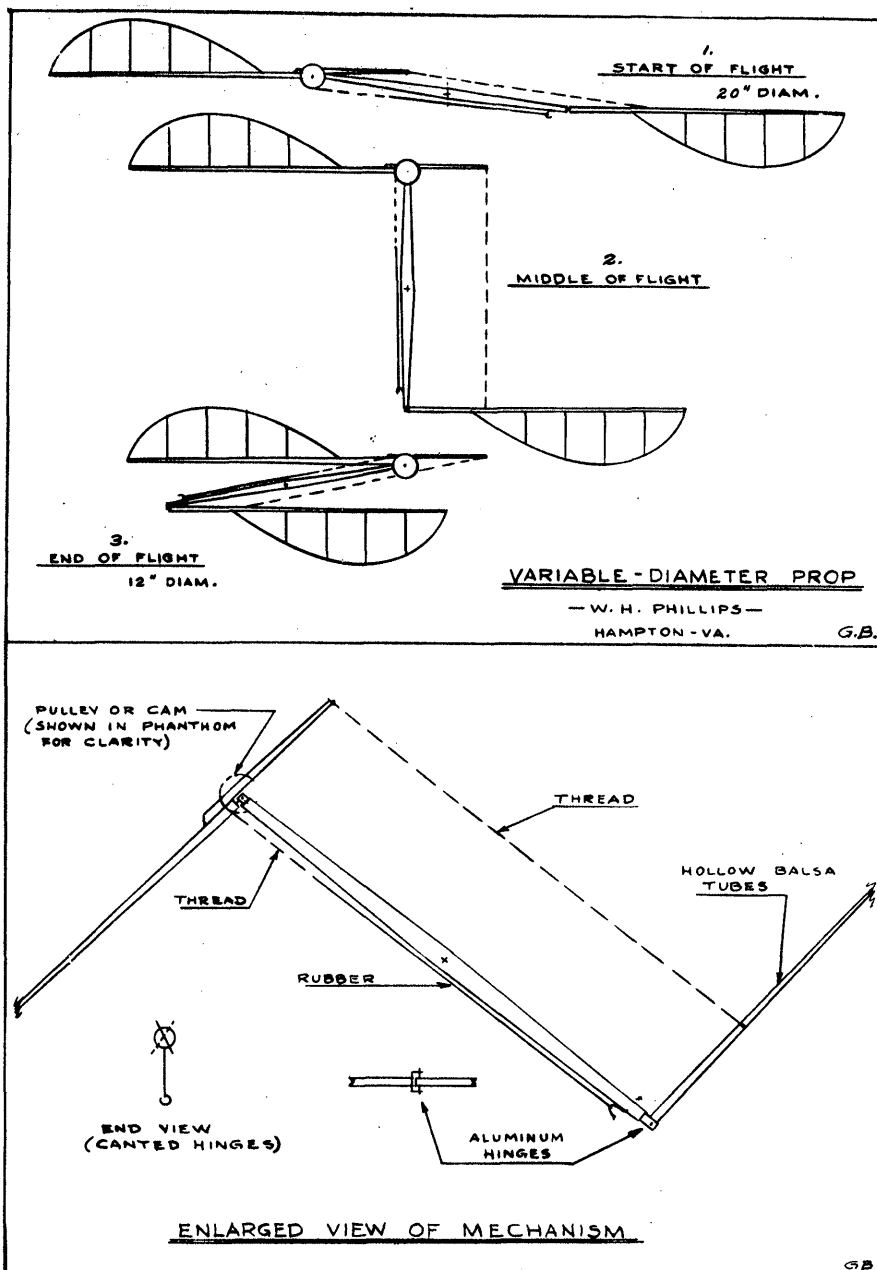
Since Jim Richmond won the Indoor World Championships in Japan, I have seen two published drawings of his winning model. One in N.I.M.A.S.'s INAV & the other in my latest edition of "Bat Sheet" both articles mention the variable pitch prop but they refer to it only as a variable diameter. When the diameter changes, the pitch also changes, & it happens like this.

For the sake of explaining this condition I will assign a pitch of 36 inches to the fully extended 22 inch position. The  $45^\circ$  section of a true helical pitch prop exists at 11.5 inches. When the blades are retracted to the 18" diameter minimum, the  $45^\circ$  sections also retract. These  $45^\circ$  sections now exist at a diameter of 7.5 inches. The pitch now is only 23.4 inches, but it is no longer a true helical pitch. To illustrate, the tip angle of a 36" prop at a diameter of 22 inches is  $27.5^\circ$ . When this prop retracts to its 18" diameter minimum, this tip angle

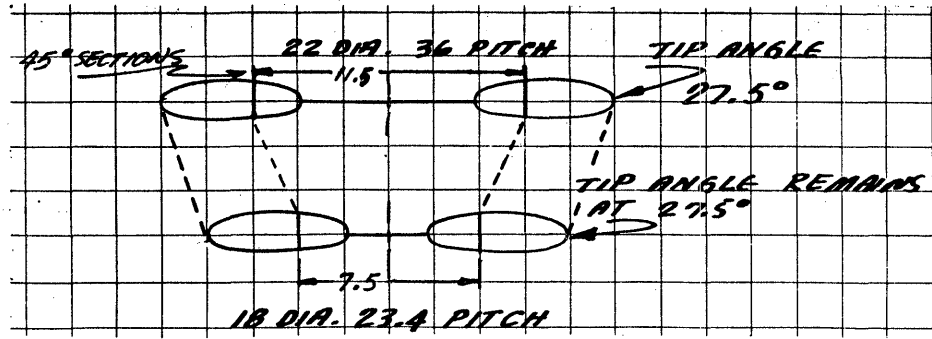
remains the same. When you figure the pitch of a blade with a diameter of 18 inches, & a tip angle of  $27.5^\circ$  it calculates out to a pitch of 29.5 inches. This prop now has a pitch of 23.4 inches at the  $45^\circ$  section and a pitch of 29.5 inches at the tip.

These calculations are based on the premise that the blade extends & retracts in a straight line without rotating on its axis. It also is figured without taking into account any of the flexing that an indoor prop has to endure. To summerise, from the center of the hub to the  $45^\circ$  section the angles will be less than they would be if it were a true helical pitch, & from the  $45^\circ$  section outboard the angles are just a bit higher than they should be. - But the change is great enough to allow the prop to pick up a few R.P.M.s & extend the cruise. When the conventional fixed pitch & diameter prop would be slowing down too much to maintain lift.

Jim Jones  
36631 Ledgestone Dr.  
Mt. Clemens, MI 48043



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Reprinted from NFFS Free Flight Digest, MAY, 1976

INDOOR PROPS - VARIABLE PITCH AND VARIABLE DIAMETER

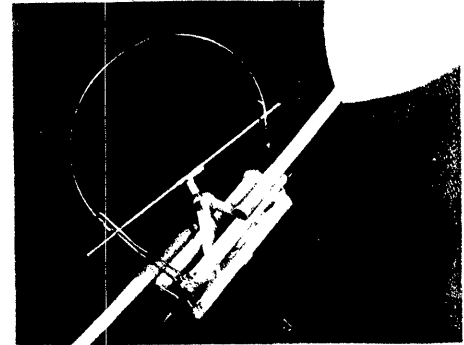
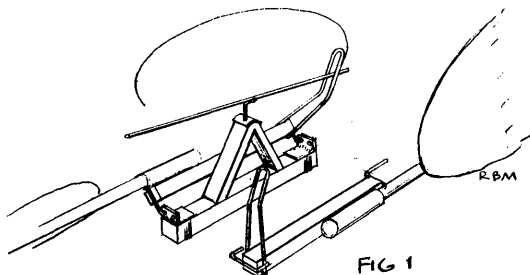
by Hewitt Phillips

Ever since the days of hand-carved balsa indoor props, attempts have been made to build in a distribution of area and structural stiffness which would allow the blade to "flare" at the start of the flight to slow down the climb and prop R.P.M. during the initial kick of the rubber motor. The slower climb was especially beneficial in low ceilings, but as performance of indoor models improved, it was found that under good conditions, models without a flaring prop would climb too high for even the tallest dirigible hangers. Thus, most all modern microfilm props are designed to increase pitch at the start of the flight.

The conventional prop with flexible spars is definitely limited in the amount of flare that can be provided. If the spars are made too flexible or the prop area is centered too far forward, a disastrous type of instability sets in under full power. One blade will diverge to a full high pitch condition but this will slow the R.P.M. to a point that the other blade will twist to low pitch. The resulting unbalance will usually shake the model out of the air.

Several prop designs have been suggested and tried in past years which allow much greater pitch change without the instability. These systems usually added some weight, which, for models without a minimum weight rule, almost always outweighed any advantage that might be obtained from the device. In the case of FAI models, Pennyplane, etc., in which the minimum weight is specified in the rules, a device weighing a few thousandths of an ounce can frequently be accommodated without exceeding the specified weight. In fact, a weight at the nose may often be beneficial from the stability standpoint. The interest in variable-pitch propellers is therefore growing.

A variable-pitch propeller was described in an article by Jeff Annis in the 1975 Symposium volume of the NFFS. The feature of this propeller which allows a greater pitch change than that of a conventional flaring prop is that the change in pitch of the two blades is kept equal through a linkage. Another prop design incorporating this principle has been proposed by Bob Meuser (figure 1). Both these prop designs should prove very beneficial whenever the ceiling height is less than that of the very biggest hangers.



Theoretically, more efficiency could be obtained by increasing the prop diameter rather than the pitch at the start of the flight. A larger diameter prop acts on a larger volume of air, thereby losing less energy in slipstream velocity. Also, a blade stall may occur if the pitch increases excessively. A method of increasing prop diameter was proposed many years ago by John P. Glass, and was tried by the author in several different versions.

The method of varying prop diameter is shown in figure 2. The propeller blades are synchronized through a parallelogram linkage, and the blade position is determined by balancing the torque against the tension of a thin rubber band wrapped around a pulley. By changing the shape of the pulley from a circle to an arbitrary cam shape, most any climb profile for the model may be obtained. For example, the model may climb rapidly to 20 feet altitude, then cruise at this altitude for the rest of the flight until the propeller reaches its minimum diameter. So long as the propeller is in this "regulating" condition the climb of the model is not affected by changes in motor torque. The effect of reduced torque due to breaking in the rubber is therefore eliminated. To offset these advantages, however, the propeller spars have high drag and the overall efficiency is generally less than that of a conventional prop. A final possibility that may be mentioned is to change both pitch and diameter simultaneously by skewing the hinges of the blades.

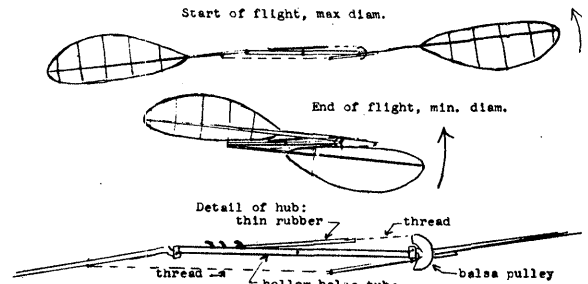


Fig. 2 - Variable-diameter indoor prop.

## CONTEST CALENDER CONTINUED

REMINDER - When writing for more information on a flying session or contest we suggest you include a self-addressed, stamped business size envelope. This will help speed the information back to you and save the contact person some money and effort.

### CALIFORNIA - TUSTIN

FAI Team Selection Local in Hanger #1-CAT IV- on Tustin. M.C.A.F. the first weekend of each month. The last we heard the hanger doors were stuck open, so check with Curt Stevens before making plans to fly. To gain admittance to the Base contact Curt Stevens 24692 Nympha, Mission Viejo, CA 92691 or (714)586-5779

### CONNECTICUT - GLASTONBURY

Flying and contests at Glastonbury H.S. gym -CAT II March 3 8:00 am - 12:30 pm flying session. April 14 8 am - 5 pm contest: EZB, HLG, AMA Peanut Scale, FAC Scale, Mass Launch WWI Peanut, Mass Launch WWII Fighter, FAC No-Cal Scale, 7 gram Bostonian. Contact George Armstead (203)633-7836

### FLORIDA - MIAMI

MIAMA indoor meet #5, Feb.10 and World Proxy Inter-Gnats on April 13 & 14. Miami Dade South College, 11011 S.W. 104th Street -CAT II- Events: Scale, Peanut Pistachio, Kit/Plan, "A" ROG, FAC Mass Launch, EZB, Pennyplane, Novice Pennyplane, Manhattan/Bostonian. Contact "Doc" Martin 2180 Tigertail, Miami, FL 33133 or (305) 858-6363.

### FLORIDA - TAMPA

MIAMA Indoor meets #6 March 9 & 10 (dates confirmed) #7 May 11 & 12 (not confirmed) at MacDill A.F.B.-CAT III- Events: EZB, Peanut Scale, Manhattan/Bostonian, "A" R.O.G., HLG, Pennyplane, Novice Pennyplane, Kit/Plan. To gain admittance onto the base you must contact Dick Obarski 2349 Barcelona Av., Fort Myers, FL 33905 or (813)693-1996.

### MASSACHUSETTS - CAMBRIDGE (BOSTON)

Flying sessions at M.I.T. Dupont gym -CAT II-the first Saturday of each month. 6 - 10 PM. Events flown based on participants' interest. Contact Ray Harlan, 15 Happy Hollow, Wayland, MA 01778 or (617)358-4013.

### MASSACHUSETTS - CHIOPEE

A.M.A. Nationals at Westover A.F.B.-CAT III- July 27 through August 4. For more information check Model Aviation.

### MINNESOTA - BURNSVILLE (MINNEAPOLIS)

Contests at Burnsville H.S., 600 E Highway 13. Feb.17: EZB, Pennyplane, HGL-all wood, Peanut, Bostonian-West Coast, Modified-FAC Peanut, Manhattan Cabin. Contact G. Oakins, 291 Jay St., Birchwood, MN 55110 or (612) 429-3150 April 14: EZB, Pennyplane, HGL-all wood, Peanut Scale, FAC Peanut, FAC Walnut Scale, FAC No-Cal, Phantom Flash and CAT II Record Trials. Contact D. Mendenhall 5100 50th Av. N., Crystal, MI 55429 or (612)535-2976.

### MISSOURI - STANLEY (KANSAS CITY)

Contest at Stanley Elementary School Gym, 150th and Metcalf, enter at rear. March 17, 1 - 4:30 pm, EZB, Pennyplane, Comet ROG. April 21, 1 - 4:30 pm, EZB, Pennyplane, Open Stick, No touch duration, Ornithopter. Contact Roger Schroeder, 4111 W. 98th St., Overland Park, KS 66207 or (913)648-4265.

### NEBRASKA - LINCOLN

Contest at Lincoln National Guard Armory -CAT II- March 10 EZB, HLG, AMA Scale, Peanut Scale, 14 gram Bostonian, One Design B. Contact Walt Erbach, 2979 Dudley, Lincoln, NE 68503 or (402)477-9044

### NEW JERSEY - GLASSBORO

Contest at Glassboro State College, Student Activity Building, 2nd floor ballroom. March 17, 10 am - 4 pm. Events: HLG, EZB, Novice Pennyplane, Peanut Scale. Contact Al Mkitarian (609)829-6573.

### NEW JERSEY - LAKEHURST

Flying should resume in Hanger #1-CAT IV- later this spring. Contact Russ Russo, 143 Willoway, Clark, NJ 07066 or (201)382-0871.

### NEW JERSEY - MIDDLESEX

Contest at Middlesex H.S.-CAT I-Route 28, Middlesex. Feb. 24, 10 am - 4 pm. Events: EZB, Pennyplane, Peanut Scale, No-Cal Scale, Chili Bean & Peck ROG. Contact Gene Sellers (201)725-4186.

### NEW JERSEY - PRINCETON

Fun Fly and Contest at Princeton University, Jadwin Gym.(you must wear gym shoes) May 5,9 am - 5 pm. Events to be arranged. Contact David Aronstein, 50 Pasture Lane, Poughkeepsie, NY 12603 or (609)734-0696.

### NEW YORK - CANTIAGUE (LONG ISLAND)

Contest at Cantiague Park Hockey Rink after the ice is removed for the season sometime around June 1. Contact John Carbone (576)271-5548.

### NEW YORK - COLUMBIA

Contest at Columbia University's Low Library Rotunda -CAT III- Feb. 17, 9 am - 5 pm. Events: EZB& Pennyplane, April 21, 9 am - 5 pm. Events: Mooney judged Peanut & Scale, all models turned in by 11 am. Contact Ed Whitten P.O. Box 176, Wall Street Station, NY, NY 10005 or (212) 724-0282.

### NEW YORK - NIAGARA FALLS

Contests at Niagara Falls Convention Center Arena, downtown Niagara Falls, CAT III. May 5, 8 am - 6 pm. Events: HLG, FAC Scale, GHQ Peanut Scale, No-cal Scale, Embryo Endurance, Bostonian 7 gram, WWI Biplane Mass Launch, EZB, Novice Pennyplane, Manhattan Cabin, FAI (FID) Stick. Contact Jack Brown 1446 Red Jacket Rd. Grand Island, NY 14072 or (716)773-5674.

FOURTH UNITED STATES INDOOR CHAMPIONSHIPS, June 18-20. See flyer included in U.S. and Canada copies of this issue or contact Tony Italiano, 1655 Revere Dr. Brookfield, WI 53005 or (414)782-6256 after 7 pm EST.

### NEW YORK - ROCHESTER

Bi-monthly flying sessions at Kodak Office Auditorium the first and third Sundays of each month, 1 - 5 pm. Contact Bob Clemens, 95 Shoreway Dr., Rochester, NY 14612 or (716)392-3346.

### NEW YORK - WESTCHESTER

Flying at Chappaqua's Horace Greeley H.S. on March 3 and March 17, 1 - 4 pm. Contact Art Maiden (914)769-2284.

### OKLAHOMA - OKLAHOMA CITY

Flying at Oklahoma City National Guard Armory, 200 N.E. 23rd St. CAT II Fun Fly on Feb. 17, 9 am - 5 pm. Contest: S.F.F.S. Indoor Champs on March 17 9 am - 5 pm. Events: EZB, Novice Pennyplane, Pennyplane, Manhattan Cabin, HLG, Scale, Peanut Scale, Ornithopter, Bostonian 14 grams, local rule Jetco ROG. Contact Bill Baker 1902 Peter Pan St., Norman, OK 73069 or (405)329-1018.

### OREGON - ALBANY

Flying at South Albany H.S. gym. CAT II Nor'Wester Record Trials on Feb. 10 and March 17 Events: EZB, Pennyplane, HLG-all wood, Scale, Peanut Scale, P24 & Bostonian. Contact J. Lenderman, Route 3 Box 551, Clatskanie, OR 97016 or (503)728-2134. Nor'Westers' Endurance Indoor Record Trials on April 21. Events: FAI (FID) Stick, EZB. Contact Dave Hagan, 19957 S. Redland Rd., Oregon City, OR 97045 or (503)631-7373.

### PENNSYLVANNIA - EDINBORO

FAC Scale contest on April 28. Contact Claude Powell at (301)872-4105.

### TEXAS - BEDFORD (DALLAS/FORT WORTH)

Contest at Bedford Boys Ranch gym-CAT I-on Forrest Ridge at Harwood. Feb. 23, 6 pm - 11 pm. Events: HLG Peanut Scale, Profile Scale, Bostonian, WWII Mass Launch EZB, and Pennyplane. Contact Jesse Shepperd 2713 Summit View, Bedford, TX 76021 or (817)282-3770. Next contest is March 23.



# FOURTH UNITED STATES INDOOR CHAMPIONSHIPS

June 18, 19, 20, 1985

At Niagara Falls International Convention Center Arena  
Niagara Falls, New York



Sponsored by:  
National Free Flight Society  
National Indoor Model Airplane Society

Sanctioned AAAA by AMA  
Category III  
(Ceiling is 70')

|           | 8 AM                 | 9 | 10 | 11      | NOON    | 12                     | 1         | 2                      | 3 | 4 | 5 | 6       | 7 | 8 PM |
|-----------|----------------------|---|----|---------|---------|------------------------|-----------|------------------------|---|---|---|---------|---|------|
| TUESDAY   | HAND LAUNCHED GLIDER |   |    | FLD (1) | FLD (2) | FLD (3)                | AMA STICK | ORNOTHI/AUTOGIRO/SPEED |   |   |   |         |   |      |
| WEDNESDAY | PP/NFP/MANH/BOST     |   |    |         |         | FLD (4)                | FLD (5)   | FLD (6)                |   |   |   | BANQUET |   |      |
| THURSDAY  | EASY B/PAPER STICK   |   |    |         |         | PEANUT/AMA SCALE/MIAMA |           | GRAND PRIX             |   |   |   |         |   |      |

CHAIRS AND TABLES WILL BE AVAILABLE.

BRING YOUR OWN BALLOONS (HELIUM AVAILABLE)

BANQUET - WED., JUNE 19, 1985 - 8:00 p.m. - \$11.00 Per Person

Contest Directors: H. Brodersen, A. Italiano  
D. Lindley, C. Sotich  
G. Wisniewski

All Senior and Open Flyers will be required to time flights and assist as called upon (be happy and VOLUNTEER!)

NO DISPUTES ALLOWED - CD's HAVE THE LAST WORD FOR FAIRNESS.

Entries must be postmarked by May 1, 1985 - late fee \$10.00 payable on site.

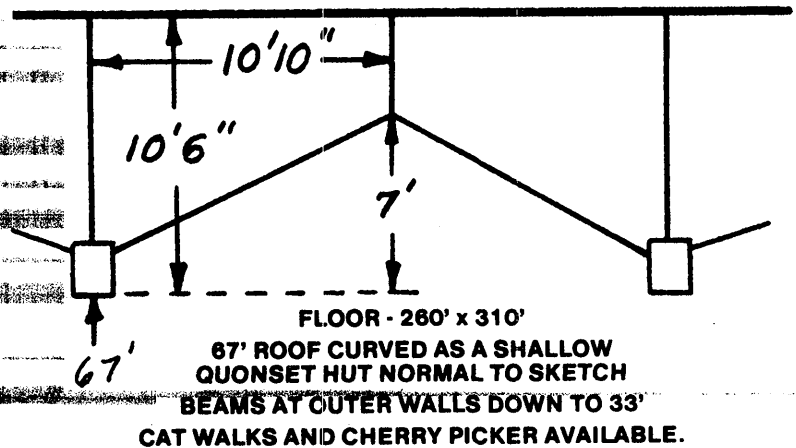
NOTE: FOR DETAILS OF THE MIAMI PEANUT GRAND PRIX, SEND A LARGE SASE TO: Dr. J. Martin, 2180 Tigertail Ave., Miami, FL 33133 - (June 20, 1985).

NOTE: ALL 1984/1985 AMA RULES APPLY. ALL RULE CHANGE PROPOSALS DO NOT APPLY! ALL OTHER INTERPRETATIONS NOT WITHSTANDING.

NOTE: All models for scale judging are to be submitted by 10:00 a.m. June 19 or earlier (along with documentation and name of contestant).

NO FAULT INSURANCE: Check your model before you come to the contest - disqualified if your out of dimension model is due to lack of self discipline.

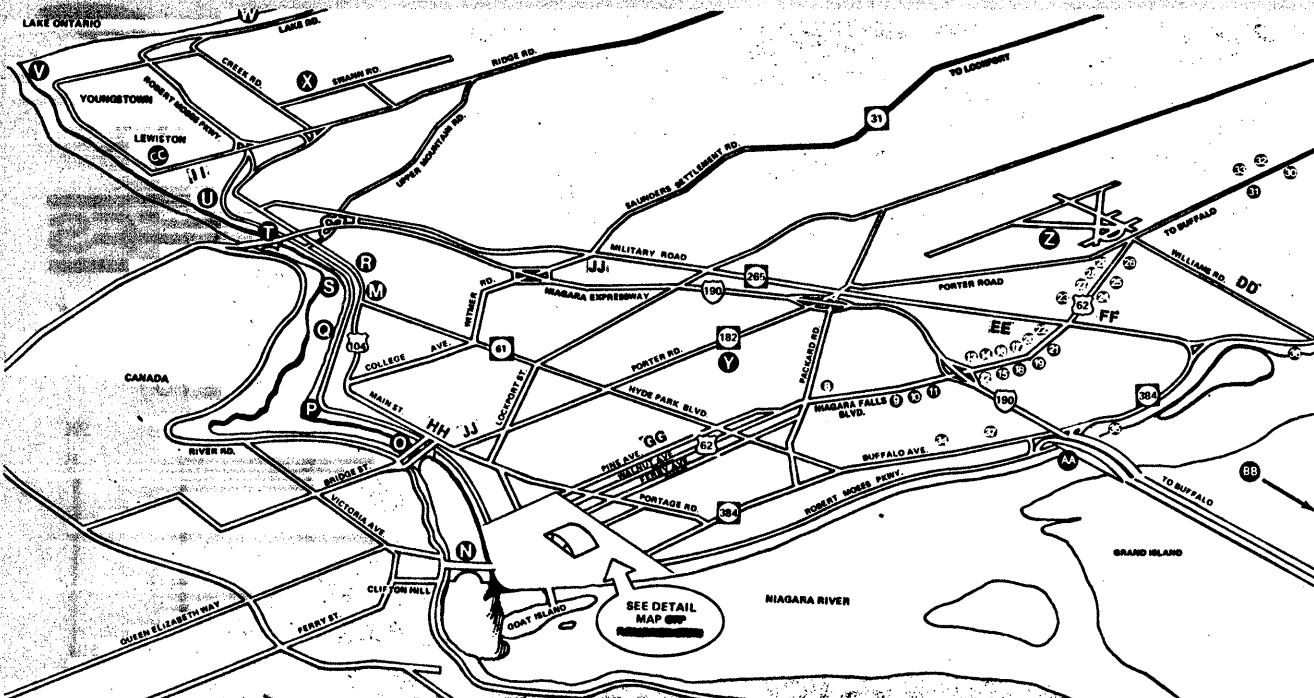
DOORS OPEN AT 7:00 A.M. FOR PRACTICE FLYING -



| AWARDS TO 3rd PLACE |                           | Includes One Event | Each Add'l. Ev |
|---------------------|---------------------------|--------------------|----------------|
| OP                  | NFFS AND NIMAS MEMBER     | \$12.00            | \$3.00         |
|                     | NON NFFS AND NIMAS MEMBER | \$30.00            | \$5.00         |
| JR                  |                           | \$4.00             | \$2.00         |
| SR                  |                           |                    |                |

All entries must be AMA Member or of their countries governing body (contestant provides proof).

Send your entry payable to:  
USIC  
1655 Revere Drive  
Brookfield, WI 53005  
(414) 782-6256 (after 7 p.m.)



## GREATER NIAGARA FALLS AREA

### ATTRACTIONS

- M. Buscaglia-Castellani Art Gallery
- N. Rainbow Bridge
- O. Whirlpool Rapids Bridge
- P. Whirlpool State Park
- Q. Devil's Hole
- R. Niagara University
- S. Power Vista
- T. Lewiston-Queenston Bridge
- U. Artpark
- V. Fort Niagara
- W. Four-Mile Creek State Park
- X. Fatima Shrine
- Y. Hyde Park Golf Course

- Z. Niagara Falls Airport
- AA. Grand Island Bridge
- BB. Fantasy Island (Grand Island)
- CC. McDonald's® Frontier House

### SHOPPING AREAS

- DD. Summit Park Mall
- EE. Niagara Factory Outlet
- FF. LaSalle Business District
- GG. Pine Ave. Business District
- HH. Main St. Business District
- II. Lewiston Business District
- JJ. Ammex Duty Free Shop

### HOTELS AND MOTELS

- 8. Parkard Motel
- 9. Thundering Water Motor Inn
- 10. Thruway Inn
- 11. Sunrise Motel
- 12. Howard Johnson's Motor Lodge East
- 13. Holiday Motel
- 14. Honeymoon Deluxe
- 15. Riviera Motel
- 16. Caravan Motel
- 17. Sharon Motel
- 18. Pelican Motel
- 19. Castaways Motel
- 20. Cascade Motel
- 21. Moonlite Motel
- 22. Clarkes Motel
- 23. Niagara Falls Motel
- 24. Henwood's Motel
- 25. Sands Motel
- 26. 3 Star Motel
- 27. Bel-Aire Motel
- 28. Castel Court Motel
- 29. Bit-O-Paris Motel
- 30. Startire Motel
- 31. Driftwood Motel
- 32. Esquire Motel
- 33. Summit Park Court Motel

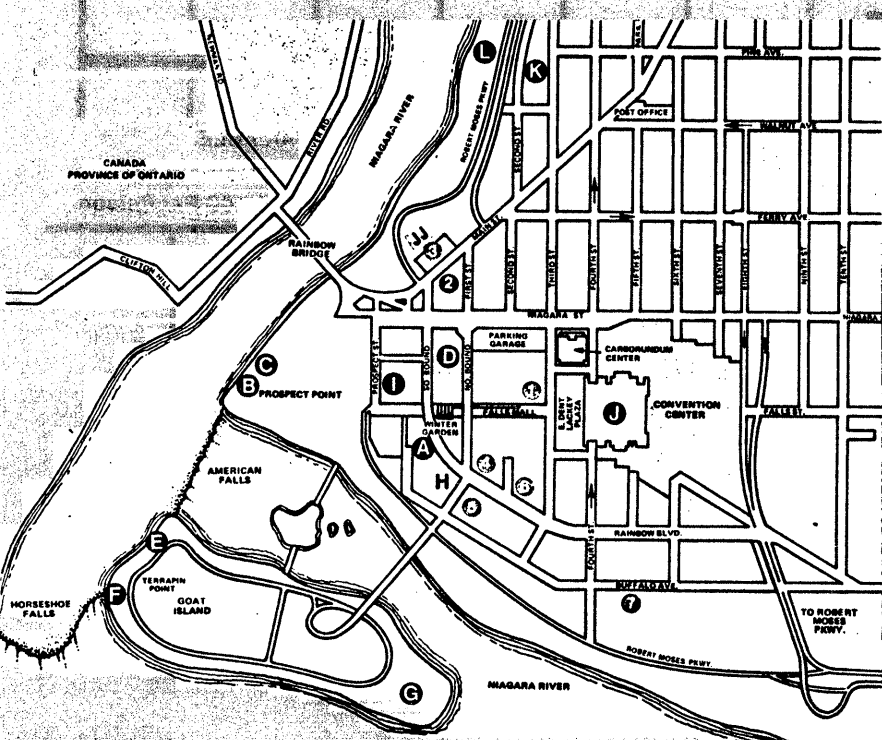
### ROUTE 384

- 34. Falls Motel
- 35. Best Western Red Jacket
- 36. Anchor Motel
- 37. Holbens Travelodge

### PEANUT SPEED

The Unlimited Rubber Speed rules apply except:

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



## DOWNTOWN CONVENTION COMPLEX

### ATTRACTIONS

Shopping areas are shaded

- A. Turtle-Native American Indian Museum
- B. Prospect Point & Observation Tower
- C. Maid of the Mist
- D. Rainbow Centre
- E. Cave of the Winds
- F. Terrapin Point

- G. Helipoint
- H. Artisans Alley
- I. Niagara Wax Museum
- J. Convention Center
- K. Aquarium
- L. Schoelkopf Geological Museum
- JJ. Ammex Duty Free Shop

### HOTELS AND MOTELS

- 1. Niagara Hilton Hotel
- 2. Quality Inn Intown
- 3. Howard Johnson's Motor Lodge
- 4. John's Hotel Niagara
- 5. Holiday Inn
- 6. Travelodge
- 7. Ramada Inn

CASH PRIZES ONLY

|                 | JR                   | SR | OP |
|-----------------|----------------------|----|----|
| HI-TECH & HLG   | X                    | X  | X  |
| PAPER STICK     | JR. & SR. (COMBINED) |    | X  |
| ROG CABIN       |                      |    | X  |
| FLD             |                      |    | X  |
| EASY B          | JR. & SR. (COMBINED) |    | X  |
| PENNY PLANE     | X                    | X  | X  |
| NOVICE PP       | X                    | X  | X  |
| MANHAT.         |                      |    | X  |
| BOSTONIAN       |                      |    | X  |
| INDOOR STICK    | JR. & SR. (COMBINED) |    | X  |
| PEANUT SCALE    | JR. & SR. (COMBINED) |    | X  |
| AMA SCALE       |                      |    | X  |
| PEANUT SPEED    |                      |    | X  |
| UNLIMITED SPEED |                      |    | X  |
| ORNIHOPTER      |                      |    | X  |
| AUTOGIRO        |                      |    | X  |

### BOSTONIAN RULES:

1. Maximum projected wingspan(s) 16" and chord(s) 3".
2. Maximum propeller diameter 6".
3. Maximum overall length w/o prop is 14".
4. Minimum weight w/o motor(s) 7 grams (bi-planes - 14 g).
5. Fuselage contains a "box" 1 1/2 x 2 1/2 x 3" (min).
6. Longeronis must support the motor(s) and form "box".
7. Fixed landing gear, two or more rotating 3/4" dia. min. wheels - model must ROG.
8. Must have a windshield and a window on each side with min. of 1 sq. in. each.
9. Charisma factor: Judge rates model on appeal to him, construction neatness, scale like details, uniqueness, etc. A 1.0 to 1.2 rating is used.
10. Seven official flights over 10 seconds, total in full seconds of the best two flights multiplied by the charisma factor determines winner.

### UNLIMITED RUBBER SPEED (BrokenSper Event)

1. Models must be rubber powered and propeller driven.
2. Models must start from an unassisted ROG launch from a three-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 determined by the two pylons and ends when it crosses the line after completing two laps.
6. Shortest time for two full laps determines winner.
7. No limit to the number of models or launches.



# FOURTH UNITED STATES INDOOR CHAMPIONSHIPS

June 18, 19, 20, 1985

Niagara Falls International  
Convention Center Arena



Please Print

Name \_\_\_\_\_ AMA NO. \_\_\_\_\_  
                     Last                      First                      Initial  
 Street \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

I hereby certify that I understand all of the rules under which I will compete and will diligently follow the official AMA safety code as well as any that may be established on site as well as apply the use of good accepted common sense in all my flying and affairs at the contest site.

Signature \_\_\_\_\_

### CIRCLE EVENTS ENTERED

- 1A. Hi-Tech HLG
- 1. Hand Launched Glider (All Wood)
- 2. Paper Stick
- 3. ROG Cabin
- 4. FID
- 5. Easy B
- 6. Pennyplane
- 7. Novice Pennyplane
- 8. Manhattan
- 9. Bostonian
- 10. Indoor Stick
- 11. Peanut Scale
- 12. AMA Scale
- 13. Peanut Speed
- 14. Unlimited Speed (BrokenSpar Event)\*
- 15. Ornithopter
- 16. Autogiro

CASH AWARDS { 13. Peanut Speed  
 14. Unlimited Speed (BrokenSpar Event)\*

|                  |                                  | Includes<br>One Event | Each<br>Additional Event |
|------------------|----------------------------------|-----------------------|--------------------------|
| Open             | NFFS or<br>NIMAS<br>Member       | \$12.00               | \$3.00                   |
|                  | Non NFFS<br>and NIMAS<br>Members | \$30.00               | \$5.00                   |
| Junior<br>Senior |                                  | \$4.00                | \$2.00                   |
|                  |                                  |                       |                          |

Junior     Senior     Open

Banquet - \$11.00 per person

NOTE: You can join NFFS or NIMAS and  
AMA on premises.

\*Sponsored by Hardy Brodersen  
\$5 per each m.p.h. over 6 m.p.h. to winner only (\$100 max.)

In case of emergency please contact:

NAME \_\_\_\_\_ PHONE \_\_\_\_\_

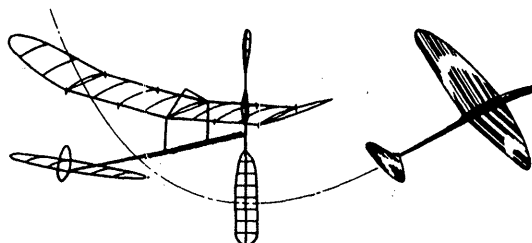
STREET \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Send fees payable to:  
USIC  
1655 Revere Drive  
Brookfield, WI 53005

Contest Sponsors:  
National Free Flight Society  
National Indoor Model Airplane Society

Must be postmarked by May 1, 1985.  
Late entry fee of \$10.00 payable on site.

# INDOOR



#18

## NEWS and VIEWS Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

THIS ISSUE ~ RICHARD & MELODY DOIG  
6 CANARY HILL DR, PONTIAC, MI 48055  
(313) 373-5374

### THIS ISSUE

Since the last issue we have been to several contests: Illinois Model Airplane Club (IMAC) at Chicago in February, Bong Eagles at Delafield, WI in March, Chicago Aeronauts Banquet in April, Can-Am meet at Niagara Falls in May & now a FAI local at Akron, OH.

We continue the construction articles with this issue's topic: plug-in tail booms. Also a report on the Niagara Falls Convention Center, site of this year's Indoor Champs. Hope we see many of you there.

### 1986 INDOOR RULE PROPOSALS VOTE

The results of the final vote on the 1986 rule proposals are in. The rules that passed go into effect with the new rulebook starting in January 1986.

- IND-86-2 Passed: Allow any covering except microfilm in Paper Stick and change the name to Intermediate Stick.
- IND-86-9 Failed
- IND-86-10 Passed: Remove 300 sq.in. limit in HL Stick
- IND-86-12 Failed
- IND-86-20 Passed: Time flights from instant model is launched or leaves floor until it touches floor.
- IND-86-22 Passed: Allows ornithopter stabs no closer than  $\frac{1}{2}$  the wingspan from the wing.
- IND-86-23 Passed: Ornithopters with more than one wing, both wings must be substantially the same size, shape and degree of flapping motion.
- IND-86-24 Failed
- IND-86-25 Failed
- IND-86-26 Failed
- IND-86-27 Failed
- IND-86-28 Failed
- IND-86-29 Passed: Prohibit use of lighter than air gases in indoor models.

This means that Pennyplane, Easy B, and R.O.G. Cabin all remain the same.

### CONTEST CALENDER

#### CALIFORNIA - BURBANK

Blacksheep Squadron (Flying activities for Juniors) at Luther Burbank Jr. H.S. gym -CAT I- on Maple between Jefferies and Allan. June 13 Indoor Scale Contest. 7 - 10 pm Contact Tony Naccarato, 3512 Victory Blvd., Burbank, CA 91505 or (818) 842-5062.

#### CALIFORNIA - SAN DIEGO

Contest towards High Point Championship Trophy after monthly business meetings on 2nd Friday of each month. Indoor flying sessions also the 4th Friday of each month. These activities start 7:30 pm at the Colina Del Sol Community Center, 5319 Orange Av. Contact San Diego Orbiteer's Program Chairman John Hutchison (619) 465-7698.

#### CALIFORNIA - TAFT

United States Free Flight Championships - Indoor events at Taft gym on Saturday, May 25, 1985 6 - 11 pm Peanut scale, HLG, Novice Pennyplane, Easy B. Only tennis shoes or stocking feet allowed in gym. Because of heat suggest no condenser paper on models. See Free Flight Digest, Feb 1985 for details or contact W.R. Stroman 12218 Dune St., Norwalk, CA 90650 or (213) 868-1479.

### FAI INDOOR TEAM SELECTION REPORT

| CONTESTANTS         | BEST LOCAL | BEST REGIONAL | TOTAL POINTS |
|---------------------|------------|---------------|--------------|
| Cezar Banks         | 10.00*     | 100.00        | 110.00       |
| Dan Belleff         | 10.00      | 42.68         | 52.68        |
| Bill Bigge          | 6.21       | -             | -            |
| Joe Bilgri          | -          | -             | -            |
| Larry Cailliau      | 10.00*     | 100.00        | 110.00       |
| Stan Chilton        | 10.00      | 100.00        | 110.00       |
| Jim Clem            | 7.19       | 96.54         | 103.73       |
| Frank Cummings      | 7.28       | 88.77         | 96.05        |
| Rich Doig           | 10.00      | 91.74         | 101.74       |
| Joe Poster          | -          | 91.77         | 91.77        |
| Ron Ganser          | 9.99       | 93.96         | 103.95       |
| Dick Ganslen        | -          | 71.30         | 71.30        |
| Bob Gibbs           | 8.89       | 59.72         | 68.61        |
| Lew Gitlow          | 9.54       | 92.60         | 102.14       |
| Jon Harlan (JR)     | -          | 77.61         | 77.61        |
| Ray Harlan          | -          | 59.10         | 59.10        |
| Earl Hoffman        | 9.77       | -             | -            |
| Bill Hulbert        | 9.88       | 88.88         | 98.76        |
| Larry Loucka        | 10.00      | 79.13         | 89.13        |
| Clarence Mather     | 10.00      | 90.80         | 100.80       |
| Larry Mzik          | 8.43       | 54.34         | 62.77        |
| Dick Obarski        | 2.40       | 100.00        | 102.40       |
| Bob Randolph        | 10.00*     | 94.38         | 104.38       |
| Jim Richmond        | 10.00*     | 100.00        | 110.00       |
| Bud Romak           | -          | 100.00        | 100.00       |
| Jesse Shepherd      | 3.86       | 74.19         | 78.05        |
| Bobby Skrzjanc (JR) | -          | -             | -            |
| Andrew Tagliafico   | 10.00      | 100.00        | 110.00       |
| Paul Tryon          | 10.00      | 82.92         | 92.92        |
| Tom Vallee          | 8.66       | -             | -            |
| Walt Van Gorder     | 9.05       | 94.03         | 103.08       |

\* 10 points for 1984 team

The program to choose the 1986 FAI Indoor team is well underway. The results above show the points earned through May 1, 1985. Regionals are scheduled at Akron and Santa Ana on July 6 & 7. At-large Regionals will be at the U.S.I.C. on June 18 & 19 at Niagara Falls and at the NATS on July 29 & 30 at Westover A.F.B. The Finals will be Labor Day weekend Aug. 31, Sept. 1 & 2 at a site not yet determined.

All FAI Indoor participants will be mailed a complete set of results in the near future.

Its not too late to join the program. All that is needed is an A.M.A. license with a \$10.00 FAI stamp added. To qualify for the Finals a participant must have scored at least 75 points in a Regional. For more information contact the Chairman Pro Tem, Richard Doig.

#### CALIFORNIA - TUSTIN

FAI Indoor team selection contests in Hanger #1 CAT IV, on Tustin M.C.A.F. the first weekend of each month. The hanger doors are being closed with a fork-lift. To gain admittance to the Base contact Curt Stevens 25108 Marguerite Pky, #B-160, Mission Viejo, CA 92692 or (714) 586-5779.

#### MASSACHUSETTS - CHICOPEE

A.M.A. Nationals at Westover A.F.B. CAT III July 28, 29, 30. AMA Scale, Peanut Scale, Easy B, Pennyplane, Manhattan Cabin, HLG-all wood & high-tech, Paper Stick, FAI Indoor, AMA Stick, ROG Cabin. **ALSO FAI REGIONAL.** More information in Model Aviation.

#### NEW YORK - LONG BEACH, LONG ISLAND

Contest at Nassau Arena, Long Beach, NY on June 2 8:30 am - 4:30 pm. HLG, Easy B, Peanut Scale, Pennyplane, Novice Pennyplane, H.L. Stick. FAI Regional Contact John Carbone (576) 271-5548.

Contest Calender continues on back page.

CAN-AM INDOOR CONTEST

NIAGARA FALLS CONVENTION CENTER

The first Can-Am Indoor Meet was held on Sunday, May 5, 1985 to test out the site of the United States Indoor Championships under contest conditions. It was a big success. More than thirty contestants came from New York state, Toronto, Cleveland, Detroit and in between. And when a nearby RC contest was rained out we had many spectators come see what Indoor is all about, including A.M.A. President John Grigg. He was quite impressed by the detail and workmanship required in Indoor models.

Of the eleven events, G.H.Q. Peanut Scale had the most contestants, but Bostonian was so hotly contested that a flyoff was needed between Jack McGillivray and Don Steeb to determine the winner. As shown in the following results many good times were posted. In FAI Indoor Canadian Ron Higgs was flying a conventional model (used at World Champs) with a mechanically varying pitch prop which got him two flights over 29:00. These long flights were his first and fifth flights. The prop is not always reliable as the second third and fourth flights were all around 15:00 because the prop shifted late. The FAI Indoor event also counted as a U.S. team local with Rich Doig earning 10 points.

The CAN-AM INDOOR MODELERS, who put on this contest, are a loose-knit group of indoor modelers on both sides of the border in the Toronto, Niagara Falls, Buffalo area. They will be flying in the Niagara Falls Convention Center as often as possible. Their next flying session is Wednesday, May 22 from 4 pm - 11pm. Call Jack Brown at (716) 773-5674 or Jack McGillivray (416) 421-1108 if you are interested in joining this group.

This building was not what I had imagined from previous information including the U.S.I.C. contest announcement. The beams run the long way of the building in a very shallow arch. (See photos) The lights are fluorescent, mounted flush along the bottom of the main girders and along the cross members. On Sunday all the main arch lights were on and half the cross member lights, giving plenty of light to see by, but when looking at the ceiling the lights were easy on your eyes - no spots before your eyes. There are two groups of speakers, one close to the south wall and the other is set off center towards the south and east walls. Both are mounted on the bottom of a main arch and are tightly packed. There are several catwalks and a cherry picker is available for model retrieval. The ceiling is quite flat, very clean and bouncing is possible. The large floor area (310 ft. by 260 ft.) is more than the Detroit Coliseum or West Baden. The floor is concrete so suggest you wear comfortable shoes. This will mean plenty of room for contestants and little congestion in the air. This is an excellent site for a national competition and if the weather cooperates we should see a high microfilm time of 32:00 or more. The drift in this building is minimal, mostly straight up and down, except for some slight drift towards the balcony in the morning. As far as I'm concerned this is one of the best sites for ceiling bouncing that I have flown in, including some flat or smooth ceiling sites. The building is quite new and very tight, no leaky ceiling - remember it rained May 5 and it was hardly noticed by the contestants. (I was so busy flying I didn't know it rained until later.)

The site in general is very clean, washrooms in the northwest and southwest corners of the site, and some tables and chairs will be available. The building's roof extends over Fourth Street resulting in a covered loading area at the main doors. The Convention Center has a \$1.00 parking concession along it's north and east sides. Two blocks west of the Convention Center is a shopping mall - Rainbow Center - which has a variety of food shops (hamburgers, hot dogs, sandwiches, Greek gyros, salads, and Haagen Dazs ice cream) all with carry out available. Another two blocks and you are at the Falls. With all the tourist attractions and hotels between the Convention Center and the Falls walking is encouraged and crime doesn't seem to be a problem.

NOVICE PENNYPLANE

B. Henderson 9:48  
L. Loucka 9:36  
J. McGillivray 9:13  
G. Hunter 9:00  
L. Leifer 8:44

EMBRYO ENDURANCE

K. Groves 9:23  
R. Marshall 8:46  
G. Roberts 6:19  
J. Low 3:41

EASY B

G. Hunter 12:42  
B. Mullins 12:06  
K. Groves 11:19  
B. Clemens 10:51  
R. Doig 10:48

G.H.Q. PEANUT SCALE

J. McGillivray 10:17  
K. Groves 9:74  
D. Steeb 7:38  
G. Roberts 6:91

WW I BIPLANE MASS LAUNCH

C. Brownhill 1:24  
J. McGillivray  
D.O. Norman  
K. Groves  
J. Peres

MANHATTAN CABIN

L. Loucka 6:44  
D. Steeb 5:05

HAND LAUNCHED GLIDER

R. Kluiber 119.4  
P. Loucka 88.8  
L. Mzik 66.6  
R. Rambo 55.2

FAC RUBBER SCALE

J. Peres 144.0  
J. McGillivray 139.0  
C. Brownhill 133.5  
B. Clemens 120.5

BOSTONIAN

J. McGillivray 535.16  
D. Steeb 500.16  
B. Clemens 325.68  
J. Peres 177.84  
C. Benkert 87.78

NO-CAL SCALE

K. Groves 11:58  
L. Leifer 8:44  
D. Steeb 7:59  
B. Clemens 1:57

FAI INDOOR

|             |       |       |       |
|-------------|-------|-------|-------|
| R. Higgs    | 29:18 | 29:44 | total |
| R. Doig     | 24:37 | 25:05 | 49:42 |
| L. Loucka   | 21:48 | 27:11 | 48:59 |
| C. Schueler | 21:27 | 26:30 | 47:57 |
| L. Mzik     | 19:34 | 19:43 | 39:17 |
| P. Loucka   | 11:01 | -     | 11:01 |

FOURTH UNITED STATES INDOOR CHAMPIONSHIPS

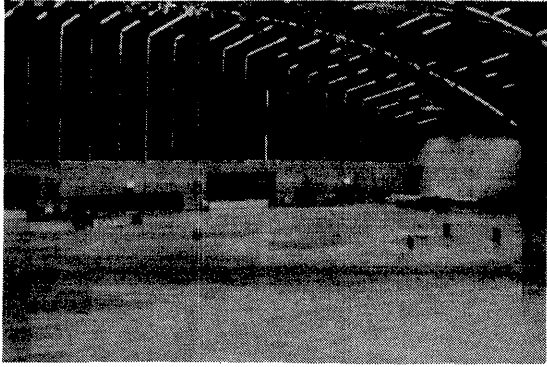
If you have not yet made up your mind about attending the U.S.I.C. this year, I strongly urge you to attend. This is one of those contests you should not miss, if at all possible. Because this ceiling height is in the middle of CAT III we probably will not see very many records set, the years in West Baden, also CAT III, saw to that. However with Canada so close by and many of the Canadian flyers planning on attending you will have the opportunity to attend a truly international contest, which there are very few.

So send in your entry now, if you are not sure you can get a model finished by then you can always add events at the contest without a late fee penalty. Entries for the U.S.I.C. go to 1655 Revere Dr., Brookfield, WI 53005.

If you fly scale events you will want to enter the Miama Peanut Grand Prix on June 20, more scale models, sizes, and events than you could imagine. For info send a large SASE or send in your entry to: Dr. John Martin, 2180 Tigertail Av., Miami, FL 33133.

LATE ADDITION - CONTEST CALENDER

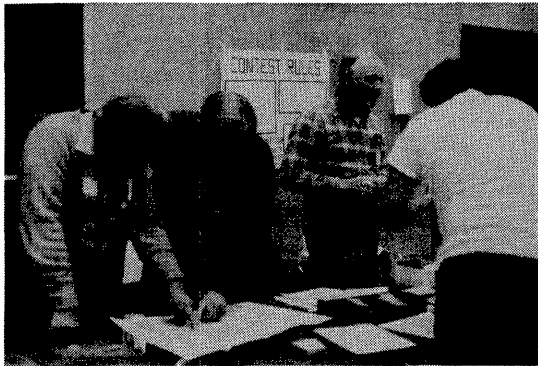
FAI Local and REGIONAL in Kibbe Dome, University of Idaho, Moscow, ID. CAT IV July 13 & 14. Contact Dave Hagen 19957 S. Redland Rd., Oregon City, OR 97045 or (503) 631-7373.



1.

NIAGARA FALLS CONVENTION CENTER

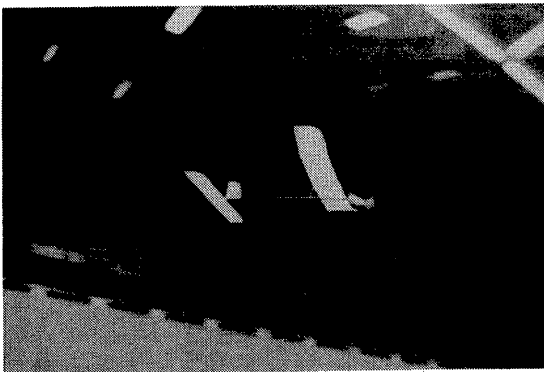
1. Interior of Niagara Falls Convention Center, looking from northwest corner of the balcony. Largest open floor area of any indoor site I've been to.
2. CD Jack Brown (second from left) and two of his hardworking crew. Larry Loucka with his back to camera.
3. Ron Higgs, Toronto, with winning FAI Indoor model. He had not taken the models out of the box since World Champs in Japan.
4. Rich Doig's Easy B, with balcony in Background.
5. Bob Clemens, Rochester, NY, readies his Scale model for flight.



2.



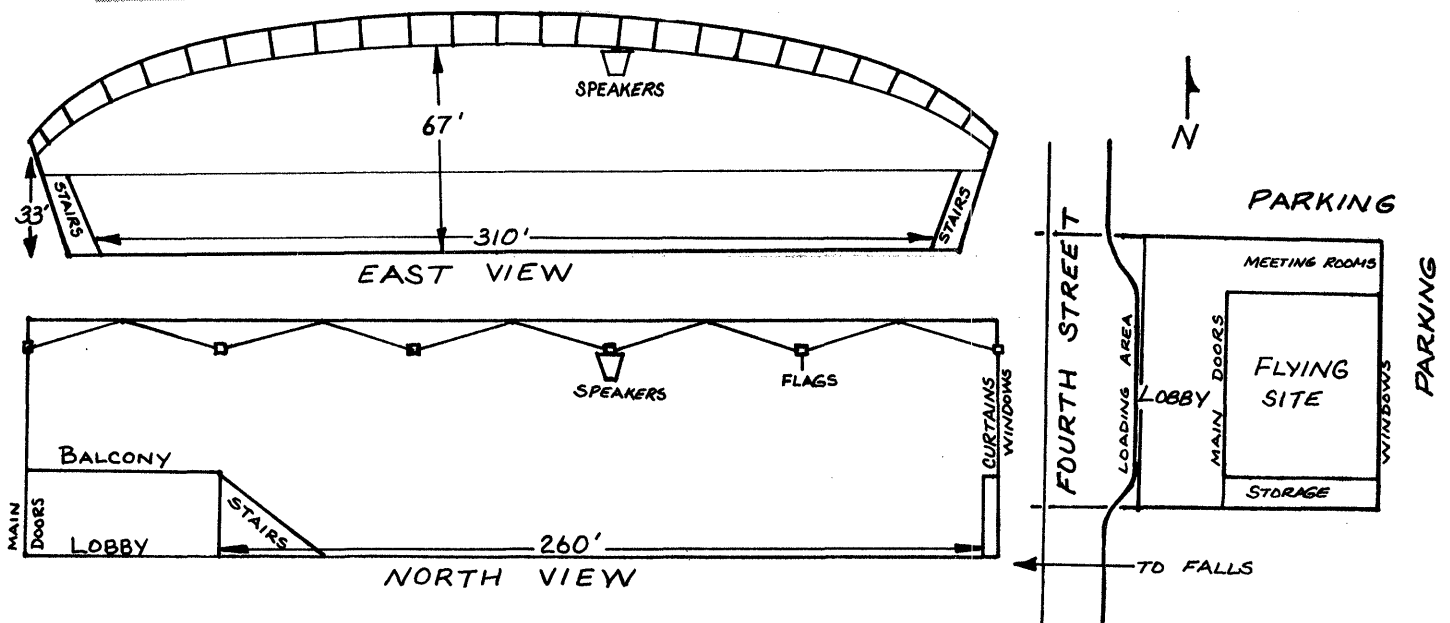
3.



4.



5.



# PLUG-IN TAIL BOOMS

FIGURE #1

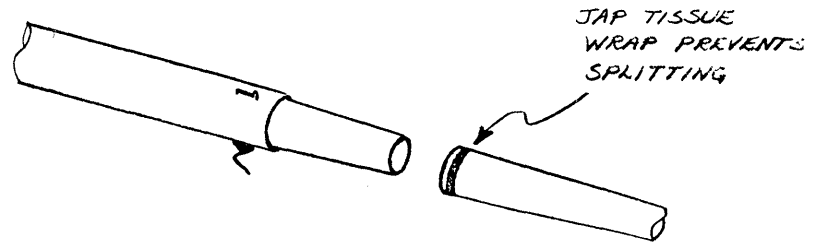


FIGURE #2

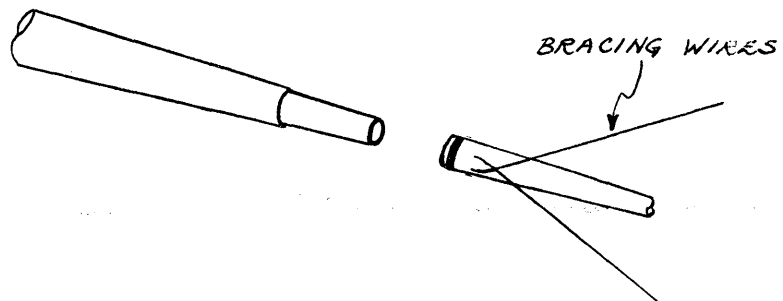


FIGURE #3

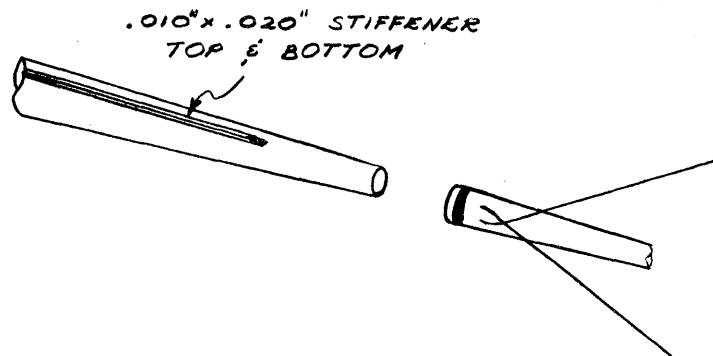
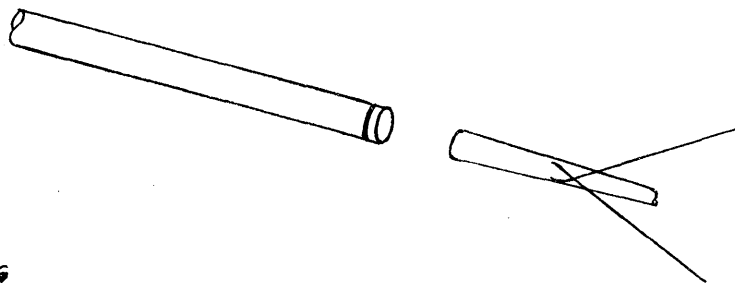


FIGURE #4



DRAWN BY: R. DOIG

## PLUG-IN TAIL BOOMS

The first time I saw a plug-in tail boom was on Al Rohrbaugh's "Big D" model at the 1972 NATS. The model had such a large stab that it would not fit in his car unless the stab was turned 90° on the back seat. I didn't think much more of plug-in tail booms until the 1980 World Champs. The Swiss had model boxes that were 27" x 19" x 13" and held five models apiece that when assembled were 35" long. The high density packing spurred me into plug-in tails.

### ADVANTAGES OF PLUG-IN TAIL BOOMS

1. Ease of packing - a smaller model box is possible or you can get more models in the box you are currently using.
2. Allows adjustment of the stab tilt - just by pulling the tail off it can be slid on at a different angle, no glue joints to melt.
3. Allows swapping of stabs with different motorsticks - this can be especially useful towards the end of a contest where several models have suffered damage, if you have an undamaged motorstick, stab, wing and propeller, you can assemble a complete model.

### DISADVANTAGES OF PLUG-IN TAIL BOOMS

1. An increase in weight - the extra wood of the plug and the Jap tissue wrap do add some weight, however using other weight saving techniques in the stab (fewer ribs, etc.) and rudder can result in a tail assembly of the same weight.

Below are four versions of plug-in tail booms that work and winning flights have been made with all four. Most important I have never had a tail boom come off during flight, even when I missed during steering and snagged the stab so hard it noticeably moved, and not even when a model has blown up, the plug has remained intact.

FIGURE #1 shows the construction technique used by the Swiss at the 1980 World Champs. (see INAV #5 - Bacillus by D. Siebenmann) I built many -10- models using this construction starting in late 1980 up until mid-1984. It had one drawback in the relatively large diameter joint tended to get mushy as the model aged. As it mushed the boom slid on further and further until it butted against the motorstick without being tight. However, it still worked extremely well. Total weight penalty was .0010 ounces for the plug and a Jap tissue wrap of negligible weight. Advantage of this version is the tail has a long handle with the full length of the boom available for packing. Its disadvantage is that the large diameter of the plug requires more wood and incurs a larger weight penalty. Also if the same thickness of wood is used in all versions this one will mush out sooner because of the large diameter to wall thickness ratio. The smaller the diameter for a given thickness, more force (side load) is needed to crush the tube. Ask an engineer-type to explain radial stresses sometime if you are interested.

FIGURE #2 is the arrangement I used on a model built in 1984 to repair a tail where the boom kinked and broke directly under the X in the stab bracing pattern. The stab bracing wire glues to the boom about 5" ahead of the stab leading edge. I made the plug arrangement to reinforce this area because the plug slides inside the section of boom that had kinked. The advantage of this version is that reinforcement is provided in the area of the boom bracing wires. (stab bracing in future INAV) This version is made by rolling a full length tail boom and the joint is made by slicing out a 1/8" long section of boom and then inserting a separately rolled plug. The 1/8" gap allows space for the rear section of the boom to tighten as it is slid over the plug. A disadvantage occurs in that as the joint wears, the rear part of the boom may butt up against the front section of the boom without the plug being a tight fit. If this happens the rear section of the boom may have to be trimmed and a new wrap applied. This version uses less wood than #1 because the plug is a smaller diameter.

FIGURE #3 shows a version similar to #2 except instead of a stepped front section it uses a telescoping section of boom. This is the same construction as Al Rohrbaugh used minus the stiffeners. The first one I built was from two scrap and broken tail booms and it came out slightly lighter in weight (.0004 oz.) than #2 but required reinforcing strips on top and bottom as it proved to be too flexible. This is the lightest of the three versions which I have built, with no noticeable difference in strength as compared to #2. As the joint wears the stab pushes on further to maintain the fit as long as it clears the stiffeners. It has a disadvantage in that it requires two separate booms to be made and the stiffening strips (.010" x .020") are tricky to handle. Also assembly #2 and #3 are harder to mount in a box than #1 because there is not much boom clear of the bracing wires.

FIGURE #4 shows the construction used by Jim Richmond on his Film Flam. It uses a straight tube front end and tapered rear section which slid inside. I believe he originally did this to lengthen an existing motorstick and boom combination. Since I have not built this version I have no experience with it, however I see a problem with the fit if the rear half of the boom is tapered because the tapered piece can move sideways within the straight section of the tube. It also does not provide any reinforcement around the bracing as in #2 and #3. However Richmond won the 1984 World Champs with it so it does work.

Forty Minute Club

9-83

| 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      |
| 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      |
| Gannizzo, 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  |
| Rodensky, 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 |
| Pym, Dave        | England    | 40:40 | X      |   |   | 1980 | Cardington |
| Hulbert, Bill    | USA        | 40:39 | X      |   |   | 1983 | Akron      |
| 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 ANA-D  
 2 - FAI 65cm - 1 gram  
 3 - FAI 65cm - no weight requirement

Listings are of official flights at officially sanctioned activities. (Best effort only, by individual, by class is shown.)

## CONTEST CALENDER CONTINUED

### NEW YORK - NIAGARA FALLS

FOURTH UNITED STATES INDOOR CHAMPIONSHIPS at Niagara Falls Convention Center. CAT III June 18, 19, 20, 1985 8:00 am - 8:00 pm. HLG, FAI Indoor, AMA Stick, Ornithopter, Autogiro, Speed, Pennyplane, Novice Pennyplane, Manhattan Cabin, Bostonian, R.O.G. Cabin, Easy B Paper Stick, Peanut Scale, AMA Scale, & Miama Peanut Grand Prix. Contact Tony Italiano, 1655 Revere Dr., Brookfield, WI 53005 for U.S.I.C. and for Miama Grand Prix: Dr. John Martin, 2180 Tigertail Av., Miami, FL 33133. See article in this issue. FAI Regional

### OHIO - AKRON

FAI Indoor team selection contests and record trials in Goodyear Airdock, Akron, OH. CAT IV May 18 & 19 FAI local, July 6 & 7 FAI regional. Due to Airdock security clearances you must contact the CD in advance. Bill Hulbert 174 Castle Blvd., Akron OH, 44313 or (216) 864-8030. NO CAMERAS!

### TEXAS - DALLAS/FORT WORTH

Contests at Bedford Boy's Ranch gym on Forrest Ridge at Harwood, Bedford, TX. CAT I Contact Jesse Shepherd, 2713 Summit View, Bedford, TX 76021 or (817) 282-3770.

### WISCONSIN - MILWAUKEE

Flying sessions with the Bong Eagles at Wauwatosa Savings and Loan, 7500 W. State St. Start 7:30 pm. Contact Gil Graunke 15260 Heather Hill Dr., Brookfield WI 53005 or (414) 781-7087.

## BORON FILAMENT UPDATE

The following article on Boron has appeared in The Hanger Pilot, Dec. '84, The Satellite, Dec. '84, FlightMasters Newsletter, Jan./Feb. '85 and El Torbellino, Jan. '85. We are reprinting it one more time so as many modelers can read it as possible, especially our friends outside the United States. This article was written by Bill Warner, Free Flight Scale columnist for Model Aviation, and a second article by Bill appears as part of the March 1985 "Safety First" column in Model Aviation.

"HIGH TECH PROGRESS: BORON STEEL WIRE is to be avoided like the plague. Sure, it stiffens up your model and lets you build nice and light but where you risking? At Sikorsky, they call the Boron Room the "Death Room". Protective clothing, masks and all the good stuff. When someone gets a bit of it in them, they cut it out immediately. Neat stuff. I tried using it, figured that I certainly was smart enough not to have any problems. Well, despite all my precautions which included protective glasses, taping all unused bits to a white paper so as not to lose any, some got away. When it gets away, it just disappears. It has the thickness of a human hair. It is nonmagnetic, so you can't pick it up that way. It gets lost in the carpet. It goes into the flesh easily and accidentally. I found I'd get a bit into a finger despite my best efforts. Finally, I began feeling a pain in my right foot. Somehow I had picked up a piece while barefoot (the bed is only 3 feet from my work space). I called Kaiser Permanente (editor's note: this is a health maintenance group in Southern California) about it and they did not know a damn thing, except that an X-Ray would be useless with something that size. Los Angeles County and UCLA Medical Center were also ignorant of what could be done. Finally, an end about .005" long worked itself out and my dear wife, Phyllis, performed surgery and got out the offending bit, a piece about 1/16" long. Even then, it broke off several times during the extraction process with tweezers, plus it keeps going deeper in when you try to get it out.

Since then, we have repeated the operation several times for other bits, and it is not fun. Also my foot still is hurting, with the boron steel somewhere inside. The articles

sound the alarm that when it gets in the bloodstream, look out. Great. The worry alone and the ignorance of the medical profession regarding it makes for something less than mental tranquillity. I'll keep you posted. In the meantime, I suggest you do not get yourself into a similar predicament."

And from Erv Rodemsky, 1980 World Champion, comes his comments "I think this boron thing is the most important issue we have ever faced! My family and I have had at least 6 pieces of the stuff in our feet, one in mine went in and never came out - it's somewhere in my body. Boron should be outlawed in all forms of modeling RIGHT NOW! The above article is from the December '84 issue of "The Hanger Pilot" and should be read by all. Do we wait until some kid puts out an eye, or worse, before we do ban the stuff?"

We have received several letters and phone calls expressing concern about Boron. Stan Chilton got a piece into his hand and when his thumb and forefinger became numb several days later he became very concerned. Materials experts we've spoken with feel it is inert and won't cause problems except they admit they know very little about Boron. We also consulted Dr. Jim Thornberry, a free flighter from Madison, WI, whose major concern is that because Boron has a rough surface and is not sterile it would carry germs, etc. into the body and become an infection site.

Boron, once it pierces the flesh and enters your body, it appears to continue to travel in the same direction through the body. Eight months after some Boron entered my own foot it came out in many pieces each about 1/32 inch long. The Boron had entered at the front of the arch and travelled forward exiting by my little toe some inch and a half away. During this same time span I suffered a respiratory infection which my doctor could not identify and it did not respond to treatment. Whether this illness was connected to the Boron or not is only speculation.

First off Boron Filament is not wire, its structure and the way it behaves is more like glass fiber and should be treated like glass fiber. Use extreme caution WEAR SAFETY GLASSES and to contain the small pieces that fracture at the ends when you break off a piece. Ray Harlan suggests you work inside a container. I suggest you store Boron in an unpenetrable container such as a coffee can.

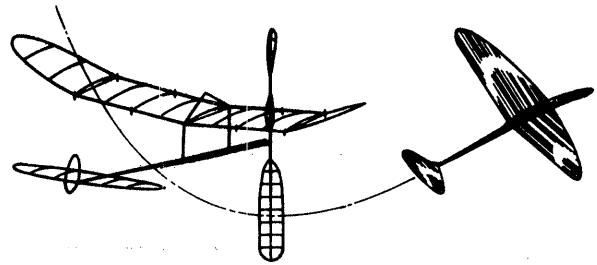
Here in the Great Lakes region drastic changes in humidity are common, often occurring within hours. As a result, unless Boron strands are placed in a symmetrical pattern, when the humidity changes and the balsa swells or shrinks, the part can warp. Also Boron applied to a motorstick of mine in January 1984 is now coming loose and falling off from repeated expansion and contraction of the wood. Another problem occurred when I had a motor come apart at the roof in Akron, causing damage to the wing, when I got the model down the wing was repairable and all the balsa pieces were accounted for, but some of the Boron which had been on the wingposts was missing. What would happen should a model explode close to the floor, near modelers and spectators? Are we endangering these people by exposing them to flying pieces of Boron?

I have found an alternative to Boron in using a .0010 x .0020 strip of balsa every place I had thought to use Boron. The wood gives extra strength while being lighter in weight than the Boron, without warpage from humidity changes. Sure, it isn't as stiff, but in most cases it is stiff enough.

Several modelers - Rodemsky and Chilton - are considering a ban on the use of Boron filament and I personally am not adverse to a ban. However, a ban only in the United States would not be effective and would possibly put U.S. teams at a disadvantage in international competitions. Note: The A.M.A. Indoor Contest Board ruled in 1984 that all high-tech materials, which include Boron, are banned from Easy B. Only wood, Condenser paper, suitable adhesives, and wire for prop hook and rear motor hook are allowed in Easy B.

We are very interested in the opinions of modelers from countries other than the U.S., especially the British and Swiss flyers who have used Boron in their models.

# INDOOR



**NEWS and VIEWS** Editor: Bud Tenny · Box 545 · Richardson, Texas · 75080

THIS ISSUE ~ RICHARD & MELODY DOIG ~ 6 CANARY HILL DR, PONTIAC, MI 48055

(313)373-5374

FOURTH UNITED STATES INDOOR CHAMPIONSHIPS

JUNE 18 - 20, 1985

NIAGARA FALLS CONVENTION CENTER

**JUNIOR HAND LAUNCH GLIDER - ALL WOOD**

- 1. Don Slusarczyk 36.8 34.8 71.6
- 2. Matt Gagliano 27.0 26.0 53.0

**JUNIOR HAND LAUNCH GLIDER - HIGH TECH**

- 1. Don Slusarczyk 33.6 36.0 69.6

**OPEN HAND LAUNCH GLIDER - ALL WOOD**

- 1. Bernie Boehm 62.4 62.4 124.8
- 2. Ron Higgs 56.8 56.0 112.8
- 3. Rudy Kluiber 55.2 55.4 110.6
- 4. Bill Schlarb 51.2 51.6 102.8
- 5. Dan Belieff 51.0 35.0 95.4
- 6. Chuck Slusarczyk 45.2 44.2 89.4
- 7. Nick Pitas 42.2 44.0 86.2
- 8. Wally Simmers 42.4 43.6 86.0
- 9. George Honda 41.0 41.2 82.2
- 10. Vic Gagliano 29.0 46.0 81.0
- 11. Richard Doig 25.0 27.4 52.4
- 12. Bob Rambo 23.6 22.6 46.2
- 13. Chuck Markos 24.6 20.0 44.6

**OPEN HAND LAUNCH GLIDER - HIGH TECH**

- 1. Bernie Boehm 58.2 58.4 116.6
- 2. Rudy Kluiber 58.6 58.0 116.6
- 3. Bill Schlarb 47.8 50.0 97.8
- 4. Chuck slusarczyk 41.2 44.4 83.6

**JUNIOR/SENIOR INDOOR STICK**

- 1. Bob Skrjanc 15:06
- 2. Don Slusarczyk 10:25

**OPEN INDOOR STICK**

- 1. Ron Ganser 27:22
- 2. Bill Hulbert 25:38
- 3. Richard Doig 24:18
- 4. Dick Obarski 22:31
- 5. Paul Tryon 22:24
- 6. Larry Loucka 21:58
- 7. Dan Belieff 21:15
- 8. Walt Van Gorder 20:59
- 9. Bill Franklin 15:52
- 10. Del Ogren 15:46

**ORNITHOPTER**

- 1. Frank Kieser 5:46
- 2. Les Garber 4:37
- 3. Joe Krush 3:09
- 4. Juer Kortenbach 2:35

**AUTOGIRO**

- 1. Larry Loucka 6:27
- 2. Don Slusarczyk 1:37
- 3. Bill Franklin 0:02

**UNLIMITED RUBBER SPEED**

- 1. Chuck Markos 14.2 mph
- 2. Bill Henderson 8.5 "
- 3. Doc Martin 7.3 "
- 4. Otto Curth 6.8 "
- John Voorhees 6.8 "
- 5. Doug Barber 3.2 "

**PEANUT SPEED**

- 1. Doc Martin 7.4 mph
- 2. Don Steeb 4.8 "

**JUNIOR NOVICE PENNYPLANE**

- 1. Juer Kortenbach 6:54
- 2. Matt Gagliano 6:33
- 3. Don Slusarczyk 4:43

**OPEN NOVICE PENNYPLANE**

- 1. Doug Barber 10:09
- 2. Jack McGillivray 10:03
- 3. Del Ogren 9:55
- 4. Chuck Markos 9:47
- 5. Bill Henderson 9:31
- 6. Larry Loucka 9:26
- 7. Wally Simmers 9:18
- 8. Jim Clem 9:10
- 9. Charlie Sotich 8:44
- 10. Bernie Boehm 8:40
- 11. Don Steeb 8:34
- 12. Lou Leifer 8:19
- 13. Les Garber 8:17
- 14. Walt Van Gorder 7:51
- 15. Otto Curth 7:34
- 16. Gordy Wisniewski 7:24
- 17. John Hanks 7:21
- 18. John Voorhees 7:16
- 19. Richard Doig 6:59
- 20. Joe Krush 6:56
- 21. Jerry Nolin 6:44
- 22. Bill Schlarb 6:18
- 23. Jim Jones 5:28
- 24. Tony Becker 4:33
- 25. Tony Sutter 3:49

**JUNIOR PENNYPLANE**

- 1. Don Slusarczyk 9:18
- 2. Bob Skrjanc 5:44
- 3. Matt Gagliano 4:30

**SENIOR PENNYPLANE**

- 1. Charles Gagliano 7:20

**OPEN PENNYPLANE**

- 1. Walt Van Gorder 11:42
- 2. Doug Barber 10:22
- 3. Dave Lindley 9:43
- Chuck Slusarczyk 9:43
- 5. Jerry Skrjanc 9:21
- 6. Gordy Wisniewski 9:07
- 7. Wally Simmers 8:50
- 8. Jim Clem 8:45
- 9. Tony Becker 6:56
- 10. Tony Italiano 6:41
- 11. Bill Franklin 6:38
- 12. John Voorhees 6:31
- 13. Tony Sutter 4:33
- 14. Ken Gearhart 2:47
- 15. Fred Franklin 2:07

**OPEN MANHATTAN CABIN**

- 1. Walt Van Gorder 8:21
- 2. Chuck Markos 8:14
- 3. Larry Loucka 7:47
- 4. Ron Ganser 7:37
- 5. Hardy Brodersen 7:14
- 6. Keith Fullmer 7:05
- 7. Tony Sutter 6:54
- 8. Bill Franklin 6:03
- 9. Don Steeb 5:38
- 10. Del Ogren 2:37

**OPEN R.O.G. CABIN**

- 1. Larry Loucka 21:57
- 2. Richard Doig 20:07
- 3. Ron Ganser 18:48
- 4. Dan Belieff 15:32
- 5. Tony Sutter 10:13
- 6. Bill Franklin 2:31

**JUNIOR/SENIOR PAPER STICK**

- 1. Don Slusarczyk 10:01
- 2. Bob Skrjanc 6:38

**OPEN PAPER STICK**

- 1. Dan Belieff 18:20
- 2. Richard Doig 18:01
- 3. Ron Ganser 15:33
- 4. Gordy Wisniewski 14:35
- 5. Larry Loucka 14:19
- 6. Dick Obarski 13:55
- 7. Jerry Skrjanc 13:48
- 8. Walt Van Gorder 13:01
- 9. Bob Mullins 12:11
- 10. Wally Simmers 11:03
- 11. Joe Krush 10:53
- 12. Tony Sutter 9:00
- 13. John Voorhees 6:36
- 14. Bill Franklin 6:32



OPEN FAI INDOOR (F1D)

|                    | Round 1 | Round 2 | Round 3 | Round 4 | Round 5 | Round 6 | Total Best 2 | Regional Points |
|--------------------|---------|---------|---------|---------|---------|---------|--------------|-----------------|
| 1. Ron Higgs       | 32:57   | 11:37   | 32:34   | -       | -       | -       | 65:31        | -               |
| 2. Larry Cailliau  | 8:55    | 27:29   | 27:12   | 20:33   | 31:49   | 30:55   | 62:44        | -               |
| 3. Richard Doig    | 4:03    | 4:09    | 26:40   | 6:29    | 26:03   | 27:41   | 54:21        | 100.00          |
| 4. Larry Loucka    | 19:03   | 24:13   | 26:05   | 18:21   | -       | 15:25   | 50:10        | 92.55           |
| 5. Walt Van Gorder | 13:42   | 16:50   | 26:16   | 21:24   | 24:01   | 23:54   | 50:17        | 92.52           |
| 6. Bill Hulbert    | 15:07   | 22:50   | 24:45   | 7:37    | 7:25    | 24:22   | 49:07        | 90.37           |
| 7. Dan Belieff     | 15:47   | 21:44   | 24:17   | 24:00   | -       | -       | 48:17        | 88.84           |
| 8. Paul Tryon      | 21:22   | 6:32    | 22:25   | 20:51   | 23:49   | 23:49   | 47:38        | 87.64           |
| 9. Carl Schueler   | -       | 20:31   | 3:25    | 22:03   | 5:02    | 6:20    | 42:34        | -               |
| 10. Bill Franklin  | 9:03    | 3:53    | 2:11    | 10:09   | 10:34   | 14:56   | 25:30        | -               |
| 11. John Voorhees  | 7:59    | 7:02    | 6:56    | -       | 6:27    | 8:26    | 16:25        | -               |

JUNIOR/ SENIOR EASY B

|                     |      |
|---------------------|------|
| 1. Charles Gagliano | 7:19 |
| 2. Don Slusarczyk   | 6:51 |
| 3. Bob Skrjanc      | 6:12 |

OPEN EASY B

|                      |       |
|----------------------|-------|
| 1. Walt Van Gorder   | 13:52 |
| 2. Dick Obarski      | 13:48 |
| 3. Chuck Markos      | 13:26 |
| 4. Jim Clem          | 13:20 |
| 5. Jim Miller        | 13:17 |
| 6. Larry Loucka      | 12:59 |
| 7. Jerry Skrjanc     | 12:39 |
| 8. Jim Jones         | 12:33 |
| 9. Doug Barber       | 12:28 |
| 10. Jerry Nolin      | 12:27 |
| 11. Gordy Wisniewski | 12:06 |
| 12. Ron Ganser       | 12:05 |
| 13. Wally Simmers    | 12:02 |
| 14. Joe Krush        | 11:36 |
| 15. Richard Doig     | 11:33 |
| 16. Del Ogren        | 10:58 |
| 17. Don Steeb        | 10:53 |
| 18. Tony Becker      | 10:17 |
| Tony Italiano        | 10:17 |
| 20. Tony Sutter      | 10:09 |
| 21. John Voorhees    | 10:00 |
| 22. Bob Clemens      | 9:17  |
| 23. George Honda     | 9:00  |
| 24. Otto Curth       | 8:32  |
| 25. Bill Franklin    | 7:20  |
| 26. Bill Henderson   | 6:55  |
| 27. Vic Gagliano     | 5:37  |
| 28. Chuck Slusarczyk | 5:19  |
| 29. Fred Franklin    | 4:31  |
| 30. Ken Gearhart     | 1:45  |

BOSTONIAN

|                     | Best 2 flights | Total Time | C.F. | Points    |
|---------------------|----------------|------------|------|-----------|
| 1. Bob Bienenstein  | 3:13           | 3:03       | 6:16 | 1.1 413.6 |
| 2. Don Steeb        | 3:01           | 2:48       | 5:49 | 1.1 383.9 |
| 3. Jack McGillivray | 2:49           | 2:53       | 5:42 | 1.1 376.2 |
| 4. Bob Baldwin      | 2:53           | 2:46       | 5:39 | 1.1 372.9 |
| 5. Bob Clemens      | 2:23           | 2:28       | 4:51 | 1.1 320.1 |
| 6. Ray Marshall     | 2:05           | 2:15       | 4:20 | 1.1 286.0 |
| 7. Tony Sutter      | 1:55           | 1:56       | 3:51 | 1.1 254.1 |
| 8. Doc Martin       | 1:27           | 1:45       | 3:12 | 1.1 211.2 |
| 9. Bill Franklin    | 1:11           | :52        | 2:00 | 1.1 132.0 |
| 10. Hal Stewart     | 1:02           | :54        | 1:48 | 1.1 118.8 |
| 11. Fred Franklin   | :45            | :44        | 1:29 | 1.0 89.0  |
| 12. Del Ogren       | :57            | -          | :57  | 1.1 62.7  |

OPEN A.M.A. SCALE

|                     |                   | scale pts. | time | score |
|---------------------|-------------------|------------|------|-------|
| 1. Jim Miller       | Fike E            | 77         | 81   | 158.0 |
| 2. Jack McGillivray | Issac's Fury MKII | 69         | 86.5 | 155.5 |
| 3. Bob Clemens      | Cloudbuster       | 77         | 66.5 | 143.5 |
| 4. Les Garber       | Lacey M-10        | 49         | 90   | 139.0 |
| 5. Doc Martin       | Cessna AW         | 33         | 90   | 123.0 |
| 6. Juer Kortebach   | Newport II        | 51         | 47   | 98.0  |
| 7. Bill Franklin    | Stinson           | 10         | 33.5 | 43.5  |
| Doug Barber         | Fred              | 48         |      |       |
| Ken Groves          | Fike Dream E      | 38         |      |       |
| Fred Franklin       | Monocoupe         | 10         |      |       |

JUNIOR/SENIOR PEANUT SCALE

|                   |                 |    |      |       |
|-------------------|-----------------|----|------|-------|
| 1. Juer Kortebach | Neuport II      | 76 | 61.5 | 137.5 |
| Juer Kortebach    | Farman Mosquito | 35 |      |       |

OPEN PEANUT SCALE

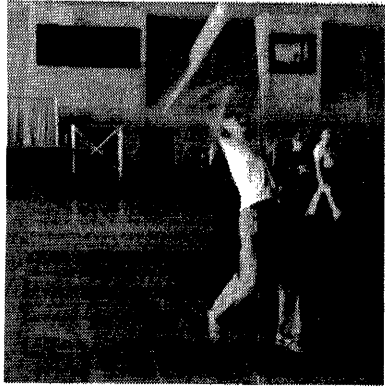
|                     |                    |       |      |       |
|---------------------|--------------------|-------|------|-------|
| 1. Jim Miller       | Bleriot VII        | 105   | 93.5 | 198.5 |
| 2. Jack McGillivray | Issac's Fury MKII  | 103.5 | 92.5 | 196.0 |
| 3. Keith Fulmer     | Lacey M-10         | 95    | 95   | 190.0 |
| 4. Ken Groves       | Fike Dream E       | 80    | 80   | 160.0 |
| 5. Les Garber       | Lacey              | 76.5  | 76.5 | 153.0 |
| 6. Doc Martin       | Polish Canard      | 63    | 63   | 126.0 |
| 7. Doug Barber      | Fred               | 56    | 41   | 97.0  |
| 8. Tony Sutter      | Zippy Sport        | 48    | 48   | 96.0  |
| 9. Bill Henderson   | White Monoplane    | 38.5  | 38.5 | 77.0  |
| 10. Hal Stewart     | Bede BD-4          | 40    | 27   | 67.0  |
| 11. Tony Sutter     | Piper Vagabond     | 28    | 28   | 56.0  |
| Don Steeb           | Wright Plane       | 112.5 |      |       |
| Jack McGillivray    | SE5                | 108   |      |       |
| Don Steeb           | Fike E             | 105   |      |       |
| Bob Clemens         | Curie Wot          | 94.5  |      |       |
| Harvey Pastel       | Glosshire Gannet   | 90    |      |       |
| Bob Clemens         | Langley Aerodrome  | 85.5  |      |       |
| Jim Miller          | Volksplane VPI     | 84    |      |       |
| Tony Sutter         | Bat Baboon         | 70    |      |       |
| Tony Sutter         | Annulate Monoplane | 70    |      |       |
| Fred Franklin       | Lacey              | 63    |      |       |
| Doc Martin          | Cessna AW          | 45    |      |       |
| Bill Franklin       | Stinson            | 24    |      |       |

GET WELL WISHES

Boyd Felstead (Wahroonga, Australia) was in a serious car accident in early June, which totaled the car. He wrote us from his hospital bed that the broken ribs etc. were healing slowly and he would be out of action for several months. Boyd, get the doctor to include building models in your physical therapy.

PHOTO PAGE ONE

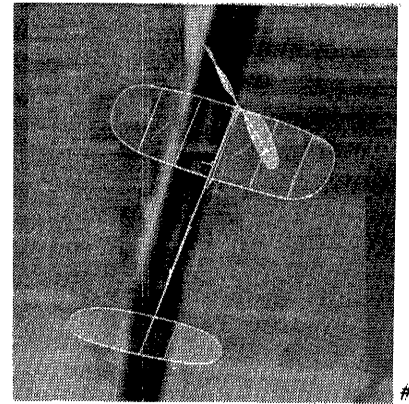
- #1. Wally Simmers, long time indoor modeler and NFFS supporter, launches his Hand Launch Glider.
- #2. Bernie Boehm gets a running start on his way to winning Hand Launch Glider and setting a new All Wood HLG record.
- #3.#4.#5. Former U.S. team member, Larry Cailliau was the top American flier placing 2nd in FAI Indoor. His model has a 9" chord with conventional prop. #3 & #5 by Ron Schifferle, photographer for the Niagara Falls Gazette
- #6. Paul Tryon processes his FAI Indoor model by weighing it on a 1 gram go/no go balance.
- #7. Paul Tryon checks launch torque with a hand held torque meter which works directly off the prop for best accuracy.
- #8. Richard Doig hooking on stab on R.O.G. Cabin model using an arrangement to allow unassisted winding and assembly.
- #9. This photo is included to show how much microfilm can balloon up from the spars and ribs. Doig FAI Indoor model.
- #10. Rick Doig, ignore the fat stomach, launches AMA Stick model (300 sq.in.) on its last flight. It was destroyed in the girders 4 minutes later.



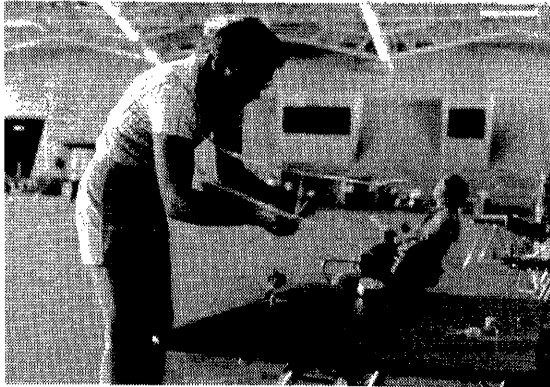
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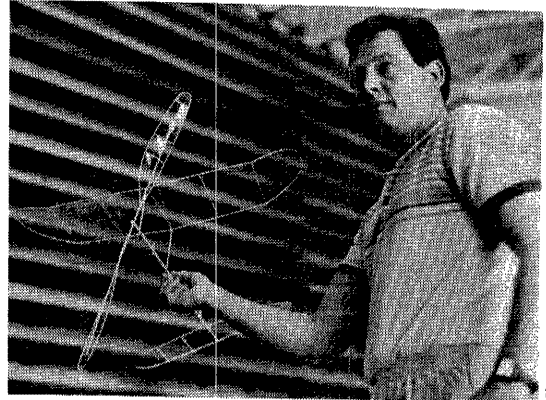
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#3



#4



#5



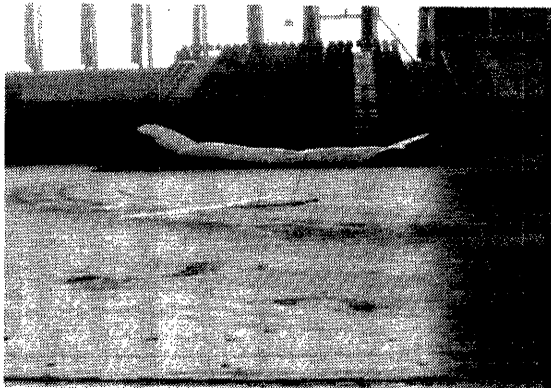
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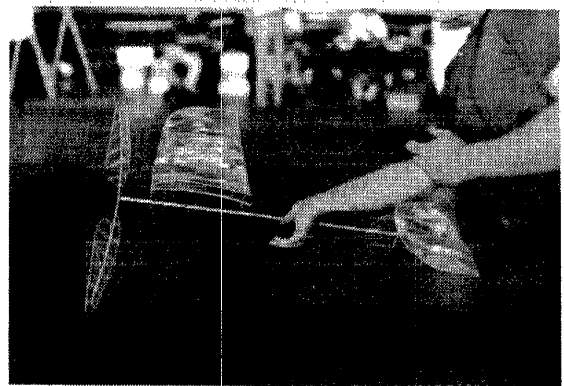
#7



#8



#9



#10



#11



#12



#13



#14



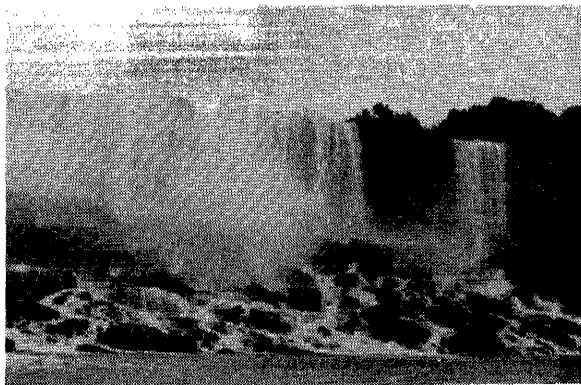
#15



#16



#17



#18

PHOTO PAGE TWO

- #11. Walt Van Gorder readies his model "Manhattan Pieces" for another winning flight.
- #12. Jerry Nolin launches his Easy B, he did his personal best times in this event during the meet.
- #13. Gordon Wisniewski hooks motor onto his biplane Pennyplane, during his morning off from being CD.
- #14. Bernie Boehm eyes the competition while helping Wally Simmers get his Novice Pennyplane wound.
- #15. Jim Miller hooks on prop onto his wimming Fike scale model.
- #16. Doc Martin launches his scale Polish canard, this crazy looking model flew quite well.
- #17. Scale models lined up for judging, the large number of entries kept the judges busy all day.
- #18. Yes, we really were at Niagara Falls. When we could not test fly on Monday we did all the things tourists do. This photo of the American Falls was taken from the Maid of the Mist boat ride to the base of Horseshoe Falls (Canadian side).

We arrived in the Niagara Falls area on Sunday around dinnertime. After checking into our motel, we decided to drive to the Convention Center to see if anything was going on. Things certainly were jumping. It was day four of a Polka Festival. The floor was covered with bleachers, tables, chairs, a stage complete with a polka band playing, polka dancers and banners hung from the ceiling. It was a contest director's nightmare. Consequently, workers spent Monday stacking tables, chairs, removing the banners and generally cleaning up the place. This did not allow for any test flying until late in the day and even then there were still some workers finishing up.

Tuesday morning we arrived early to find all the tables and chairs stacked and moved off to the side and half of the bleachers were folded up, but three banks along one wall were still open and this reduced the floor area considerably. Several Hand Launch Glider fliers were already warming up. The bleachers caught a few gliders that had large circles, but most of the fliers soon got the hang of where to launch to avoid them. Many of the U.S.I.C. regulars were in attendance along with some newcomers, even though they are not newcomers to hand launch glider. Competition was tough with Bernie Boehm (South Bend, IN) and Rudy Kluber (Lakewood, OH) tying for first place in High Tech Hand Launch Glider. However Kluber's "lucky Hand Launch Glider shirt" only netted him third place in All Wood Hand Launch Glider, with Ron Higgs (Scarboro, ONT) second and Bernie Boehm winning with a new CAT III record of 124.8 seconds. There were not many Juniors or Seniors at this U.S.I.C. and Don Slusarczyk (Brecksville, OH) won both Junior Hand Launch Glider classes.

Tuesday afternoon brought a great contrast as the microfilm models came out to contest the first three rounds of FAI Indoor and also AMA Stick. A number of the fliers, Ron Higgs and Larry Cailliau (Westlake Village, CA) among them, chose not to enter AMA Stick, but it was still well contended. However by looking at the results you will find these times lower than FAI Indoor by more than five minutes, even though a larger model is allowed in this event. (300 sq.in. maximum wing area) It would appear that FAI Indoor has replaced AMA Stick as the premier indoor event in this country. It also appears that CAT IV is the only place where the really large models have an advantage in doing the high times. Ron Ganser (Pittsburgh, PA) flew a conventional model with a variable pitch propeller - slightly modified Higgs/Thomas prop mechanism - to a winning time of 27:22.

Many of Tuesday's first flights in microfilm hung in the girders or crashed into the ceiling upsetting the flight. This was especially true of the fliers who do most of their flying in CAT IV sites, Akron or Santa Ana, and was not helped by the lack of test flying time before the contest. The air proved to be quite buoyant in spite of the cool weather and intermittent rain showers.

FAI Indoor counted as an at-large FAI Indoor Team Regional as well as an event in the U.S.I.C. In the results listing, those fliers who entered the Regional have the points they earned noted. Ron Higgs and Carl Schueler (Toronto, ONT) were not eligible and Larry Cailliau chose not to enter because he already had 100 points from a previous Regional (last year's U.S.I.C. Regional). Ron Higgs solved the reliability problems he was having with his Variable Pitch prop at the May contest and rose to my challenge in INAV #18 to do flights of better than 32:00. In Round 1 he posted a flight of 32:57 for the high time of the meet. Great flying! He then put up a back-up flight of 32:34 in the third round, clearly out distancing the competition. Most of the rest got their acts together in the second and third rounds with Belleff, Cailliau, Doig, Hulbert, Loucka, Tryon, and Van Gorder all putting up flights over 22 minutes.

Richard Doig (Pontiac, MI) probably had the most dramatic flight of the day when late in Round three, he had to steer his model away from colliding with Bill Hulbert's model which was at almost 15:00. During the steer at about 4:00 into the flight, the Variable Diameter prop folded, even though it was trimmed to fold at about 12:00. This caused the model to climb up into the girders where it hung, fell off the beam, and tail slid 10 feet before recovering and climbing back into the girders where the model repeated the maneuver - hang, fall off, tail slide, and recover. When the flight finally landed it had a time of 26:40 and a one inch square hole in one prop blade, on the other blade the tip had a 90° break in it, the left wing tip had an extremely large hole in it (almost one rib bay) and the stab had 3 inches more stab tilt than it started with. The prop was repairable along with the stab. By the way Hulbert's flight landed at 24:45. More FAI Indoor to come on Wednesday afternoon.

Tuesday evening brought more contrasts as the ornithopters, autogiros, and rubber speed models took to the air. Ornithopter activity has really increased lately with Al Rohrbaugh holding all four ceiling category records for awhile and the formation of an Ornithopter Society this past year. Frank Kieser (Jacksonville Beach, FL) won with a time of 5:46 flying a double wing canard. The flapping section reminds me of a bat's wing.

There has not been much autogiro activity except for what Larry Loucka (Willoughby, OH) has been doing. He won the event with a time of 6:27.

Rubber speed is an event that really took off this year. John Voorhees (Sidney, OH) obviously had so much fun with this event last year, many more contestants joined in on the fun this year. Chuck Markos (Deerfield, IL) won with a speedy 14.2 miles per hour. Doc Martin (Miami, FL) won Peanut Speed at 7.4 miles per hour. I do not know who had more fun in this event, the contestants of those running the event, especially timers John Grigg and Don Lindley. Some models produced much laughter when they would make one circle of the course before diving into the floor or taking off for the far corner of the building. Anyone who thinks this event is easy should give it a try. It is not as easy as it looks!

Wednesday morning was crowded with models as Novice Pennyplane, Pennyplane, Manhattan Cabin, and Bostonian were flown. Junior Novice Pennyplane was won by Juer Kortenbach (Bolton, ONT) with a time of 6:54. This young man has only been building indoor models for a year, but if the large number of good flying models he brought is any indication he should be flying indoors a long time. Don Slusarczyk (Brecksville, OH) won Junior Pennyplane with a time of 9:18 and Senior Pennyplane was won by Charles Gagliano (Floral Park, NY) at 7:20 with no competition.

Twenty five Open competitors took official flights in Novice Pennyplane with Doug Barber (Maple Shade, NJ) winning at 10:09, Jack McGillivray (Toronto, ONT) was hot on his heels at 10:03 and Del Ogren (Deerfield, IL) at 9:55 was third. Welcome to the big leagues, Doug!

Walt Van Gorder (Cincinnati, OH) with a flight of 11:42 won Open Pennyplane and was more than a minute ahead of second place, Doug Barber's 10:22 flight. Third place was a tie between Don Lindley (Naperville, IL) and Chuck Slusarczyk at 9:43.

Manhattan Cabin had ten competitors and once again Walt Van Gorder won the event with a time of 8:21 with Chuck Markos a close second at 8:14. Walt currently holds all four ceiling category records and plans for his "Manhattan Pieces" will be published in Model Aviation very soon. This proven winner would make a good building project this winter.

Bostonian is an event that is proving popular with fliers from all backgrounds and had twelve competitors. This is an event which looks like a scale model but there is no corresponding full size aircraft. Bob Bienenstein (Allen Park, MI) won flying "The Boston Beany" posting the best two flight, both over three minutes, and scoring 413.6 points. Second place Don Steeb (Rochester, NY) also had a flight over three minutes, but only scored 383.9 points.

Wednesday afternoon the remaining microfilm events were flown, R.O.G. Cabin and the last three rounds of FAI Indoor. Larry Loucka won R.O.G. Cabin with a time of 21:57 flying a disk style model. The big advantage these models have is about a 10% weight reduction in spite of the increased drag. Both Rick Doig and Ron Ganser flew their best times with rolled tube through the structure models, as Ganser could not get his disk style to fly. Dan Belieff (Wheaton, MD) flew his old style cabin (warren truss body) but it did not want to climb correctly. Toward the end of the contest, he discovered a broken tail bracing wire. He fixed the wire, which fixed the climb problems but the event was already over.

By the third round of FAI Indoor, late on Tuesday afternoon, most of the high ceiling fliers had figured out how to keep from boring holes in the ceiling and this continued on Wednesday. Dan Belieff started the second half off with a 24:00 flight for the high time in Round 4. Larry Cailliau, who had spent the previous evening rebuilding a stab, put up the best flights for Rounds 5 and 6, 31:49 and 30:55 respectfully putting him in second place. The fifth round flight was long enough that Ron Higgs got a model out of his box ready to fly in Round 6 in case Cailliau threatened his first place. Rick Doig got his Variable Diameter prop to work okay in Round 5 and after a minor adjustment to the tension band, it worked better in Round 6 to a time of 27:41, no touch. This put him in third place.

Wednesday dinnertime was upon us and it was time to clean up for the banquet. This was at the Como restaurant, Italian buffet, with the speaker, Jack Beilman, from Calspan in Buffalo, NY. (Formerly called Cornell Aeronautical Laboratory) They do in-flight simulations of various aircraft for the Navy, Air Force, and NASA, including simulating the flight of the space shuttle. The highlight was the films he brought of test aircraft, including some crashes.

Thursday morning the paper covered models, Paper Stick and Easy B were flown. Junior/Senior Paper Stick was won by Don Slusarczyk who also took second in Junior/Senior Easy B. This event was won by Charles Gagliano. Once again not many Juniors or Seniors attended. (We found out later that the school year had not ended for some.)

In Open Paper Stick, Rick Doig and Ron Ganser were once again battling it out. First Rick Doig posted a flight over 15 minutes which Ron bested by flying a 15:33. Then Rick took another flight, this time to 18:01, a sizable margin, only to discover that Dan Belieff who was set up at the other end of the site had a 18:20 flight posted.

Once again Open Easy B was the most popular event, with 30 competitors taking official flights. The top six finishers were all within one minute of each other with Walt Van Gorder winning in a time of 13:52. Dick Obarski (Ft. Myers, FL) had a 13:48 for second place and Chuck Markos' 13:26 placed third, but what was scale flier Jim Miller doing placing fifth? As can be seen, this is a popular event with both newcomers to indoor and the expert builder alike.

Thursday afternoon was time for the Scale models including the Peanut Grand Prix. (For those results see Doc Martin's newsletter, The Hanger Pilot.) Junior/Senior Peanut Scale was won by Juer Kortenbach flying a Neuport 11. Open Peanut Scale was won by Jim Miller (Cincinnati, OH) and his Bleriot VII, second place Jack McGillivray's Issac's Fury and third place Keith Fulmer (Mishawaka, IN) flew a Lacey M-10. Open AMA Scale also was won by Jim Miller this time with a Fike E, second place was Jack McGillivray with the same Issac's Fury, and third place went to Bob Clemens' Cloudbuster. (Rochester, NY)

You may notice Ken Groves (Unionville, ONT) missing from several events and especially not placing in the scale events. Ken's mother died on the first day of the contest and Ken had to spend much of the time back home making the necessary arrangements. Our condolences to him and his family.

In general, this was once again a very well run contest. Thanks to Jack Brown (Grand Island, NY) for all the site arrangements, he did a good job in spite of three changes in Convention Center management this year. Thanks to Contest Directors, Tony Italiano, Gordon Wisniewski, Hardy Brodersen, Charlie Sotich and Ed Stoll, whom they drafted at the site for Wednesday morning's events.

Seventy three contestants signed up (this included a couple of no-shows) which is still less than the best year at West Baden, but is more than last year. This shows that this contest will not die out even though West Baden is not available now. We had contestants from the local area to New York city to Miami to Corpus Christi, Texas to Los Angeles and a large group from Toronto, Canada. Once again this shows a well run contest in a better than average site will draw people from long distances. Besides who would you rather spend a week with, than a bunch of indoor fliers?

This building has very little drift and except for the thunderstorms on Thursday the weather was not a problem. The area's weather was cooler and wetter than is normal for this time of year. Many of the flight times during the three days were exceptional for a 70 foot ceiling, in the middle of Category III.

Jack Brown (716-773-5674) and Jack McGillivray (416-421-1108) are working very hard on a continuing program in the Convention Center possibly including a model building and flying program. We urge those in the area to get involved and support this effort. Because we are only 5½ hours travel time away we intend to attend many of their weekend contests.

Arrangements were made in advance with the local papers and TV and consequently we got great write-ups in the Niagara Falls Gazette - a whole page - and the Buffalo News - half the photo page plus a long article with a photo. These brought in many spectators some who had never seen an indoor model and others who had not built one in many years. Some of the spectators who had not built a model since they were children brought their children to see the models. Some of these spectators just watched, but others were so intrigued they bought out all of Micro-X's indoor kits. It looks like the publicity has gained us some new participants.

John Grigg, AMA President, who lives about 20 miles from Niagara Falls, spent all of Tuesday and Wednesday at the contest. When was the last time an AMA President spent considerable time at an indoor contest? He got to see at close range the joys and frustrations of indoor modelers. Of the 100,000 AMA members in 1985 only a few hundred are indoor fliers, so we are a minority and this was a good opportunity for someone to get a better understanding of indoor. In fact I hope the next Niagara Falls contest, John Grigg will come fly an indoor model, even though he complains the job of AMA President does not leave him enough time for his own models.

Hope we see more indoor modelers in 1986.

#### 1986 WORLD CHAMPS SITE

Bernard Aslett tells us (via Jorgen Korsgaard) that they are working on bringing the World Champs to Cardington next year. We should know more after the FAI meeting in December.

THIS ISSUE

This issue which covers the fourth United States Indoor Championships has been sent to all who attended in addition to our regular subscribers. Subscriptions can be had by sending \$5.00 (covers 10 issues) to either address on the masthead.

1986 INDOOR RULE PROPOSAL VOTE

The vote results we published in INAV #18 are correct. The results in Model Aviation, August 1985, are wrong. There was some confusion over what constituted a passing vote (7-4 or 8-3) but all that has been resolved. Hope no one is confused now. IND-86-2, 10, 20, 22, 23, & 29 passed.

FAI INDOOR TEAM

By now all who are qualified for the FAI Indoor Team Finals are in a mad building spree in order to complete enough models by the Labor Day weekend competition. This year's finals are being held in the Goodyear Airdock, Akron Ohio. This looks to be a good choice of sites as it seems the World Champs may be in Cardington, also a CAT IV airdock.

Because of the large number of qualifiers and the tight security situation at the airdock, spectators are discouraged. The next issue of INAV will contain complete results.

FAI TEAM SELECTION STANDINGS AS OF 8/19/85

|  | CONTESTANTS       | BEST LOCAL | BEST REGIONAL | TOTAL POINTS |
|--|-------------------|------------|---------------|--------------|
| QUALIFIED - 75 points or more in best regional | Cezar Banks       | 10.00*     | 100.00        | 110.00       |
|  | Larry Cailliau    | 10.00*     | 100.00        | 110.00       |
|  | Stan Chilton      | 10.00      | 100.00        | 110.00       |
|  | Richard Doig      | 10.00      | 100.00        | 110.00       |
|  | Ray Harlan        | 10.00      | 100.00        | 110.00       |
|  | Dick Obarski      | 10.00      | 100.00        | 110.00       |
|  | Jim Richmond      | 10.00*     | 100.00        | 110.00       |
|  | Andrew Tagliafico | 10.00      | 100.00        | 110.00       |
|  | Walt Van Gorder   | 10.00      | 100.00        | 110.00       |
|  | Lew Gitlow        | 9.54       | 100.00        | 109.54       |
|  | Bob Randolph      | 10.00*     | 99.54         | 109.54       |
|  | Tom Vallee        | 8.66       | 100.00        | 108.66       |
|  | Manny Radoff      | 10.00      | 97.84         | 107.84       |
|  | Dan Belieff       | 10.00      | 97.08         | 107.08       |
|  | Earl Hoffman      | 9.77       | 96.37         | 106.14       |
|  | Bob Gibbs         | 8.89       | 95.45         | 104.34       |
|  | Ron Ganser        | 9.99       | 93.96         | 103.95       |
|  | Jim Clem          | 7.19       | 95.54         | 103.73       |
|  | Larry Loucka      | 10.00      | 92.55         | 102.55       |
|  | Bill Hulbert      | 9.88       | 92.31         | 102.19       |
|  | Clarence Mather   | 10.00      | 90.80         | 100.80       |
|  | Bud Romak         | -          | 100.00        | 100.00       |
|  | Paul Tryon        | 10.00      | 87.64         | 97.64        |
|  | Frank Cummings    | 7.28       | 88.77         | 96.05        |
|  | Joe Foster        | -          | 91.77         | 91.77        |
| Larry Mzik                                     | 8.43              | 81.12      | 89.55         |              |
| Jon Harlan (JR)                                | 1.47              | 77.61      | 79.08         |              |
| Sal Cannizzo                                   | -                 | 75.00**    | 75.00         |              |
| NOT QUALIFIED                                  | Jesse Shepherd    | 3.86       | 74.19         | 78.05        |
|  | Dick Ganslen      | -          | 71.36         | 71.36        |
|  | Warren Williams   | -          | 68.60         | 68.60        |
|  | Mark Dreila       | 9.22       | -             | -            |
|  | Walt Everson      | 6.48       | -             | -            |
|  | Bill Bigge        | 6.21       | -             | -            |
|  | Ellis Oglesby     | 4.07       | -             | -            |
|  | Paul Loucka (JR)  | 2.22       | -             | -            |
|  | Joe Bilgri        | -          | -             | -            |
|  | Don Godfrey       | -          | -             | -            |
| Bobby Skrjanc (JR)                             | -                 | -          | -             |              |

\* 10 points for 1984 Indoor team members  
 \*\* allowed to enter Finals by committee vote

CONTEST CALENDER

CALIFORNIA - SAN DIEGO

San Diego Orbiteer's indoor flying after monthly business meeting on 2nd Friday of each month and also on 4th Friday of each month. Start 7:30 pm at Colina Del Sol Community Center, 5319 Orange Av. Contact John Hutchison (619)465-7698.

CALIFORNIA - TUSTIN

FAI Indoor team selection contests in Hanger #1 on Tustin M.C.A.F. the first weekend of each month. CAT IV. To gain admittance to the Base contact Curt Stevens 25108 Marguerite Pky, #B-160, Mission Viejo, CA 92692 or (714)586-5779.

ILLINOIS - RANTOUL

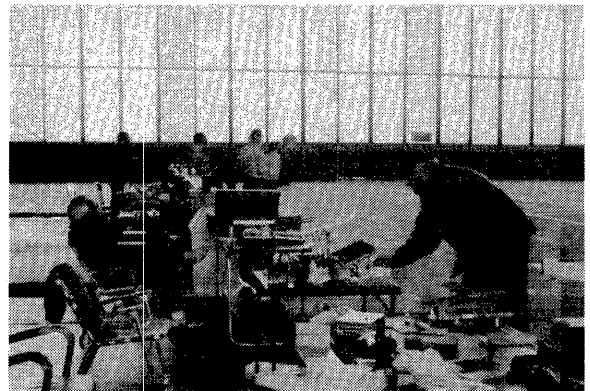
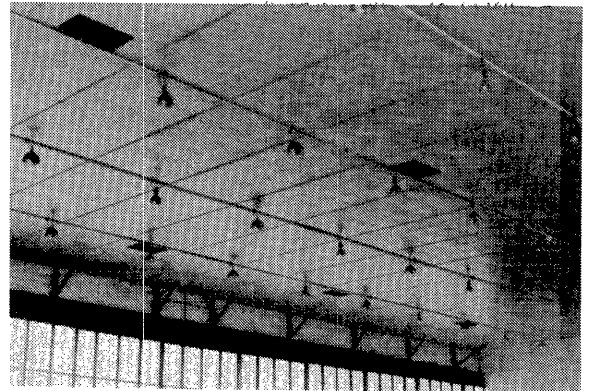
Chicago Aeronuts 12th Midwestern States Indoor Championships on September 28 - 29 at Chanute A.F.B. hanger #1. CAT II.AMA Stick, FAI Indoor, Cabin, Paper Stick, Easy B, Novice Pennyplane, Pennyplane, Manhattan Cabin, Peanut Scale, Sport Scale, Bostonian, Hand Launch Glider. Contact Chuck Markos, 655 Carlisle Av, Deerfield, IL 60015 or (312)945-9225.

MICHIGAN - DETROIT

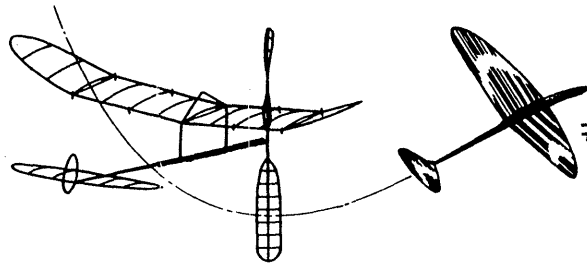
Michigan State Indoor Championships at State Fair Coliseum on November 10, 1985, 8:30 am- 6 pm. CAT III Details of events in next issue. Contact Richard Doig (313) 373-5374.

CHANUTE A.F.B. HANGER #1

The two photos below are of the interior of this site, where last year 13 AMA records and one World record were set in two days of flying. Rantoul is a 1/2 hour drive north of Champaign, IL and even though it really is not close to anyone it is well worth the drive. Ceiling height is 44'2" just under the maximum for CAT II. The lights are the only ceiling obstructions and they presented only a few problems. The floor area, approximately 150' x 250' gives lots of room for models and competitors. So come fly the last weekend in September and do your part in setting some new CAT II records.



# INDOOR



# 20 &amp; 21

SPECIAL  
DOUBLE  
ISSUE

## NEWS and VIEWS

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

THIS ISSUE ~ RICHARD &amp; MELODY DOIG ~ 6 CANARY HILL DR. PONTIAC, MI 48055

(313)373-5374

### 1986 FAI INDOOR TEAM SELECTION FINALS

GOODYEAR AIRDOCK, AKRON, OHIO - AUGUST 31, SEPTEMBER 1 &amp; 2, 1985

| CONTESTANTS        | ROUND 1 | ROUND 2 | ROUND 3 | ROUND 4 | ROUND 5 | ROUND 6 | ROUND 7 | ROUND 8 | ROUND 9 | TOTAL<br>BEST 2 | FINALS<br>POINTS | BEST<br>LOCAL +<br>REGIONAL | TOTAL<br>POINTS |
|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------------|------------------|-----------------------------|-----------------|
| 1. Cezar Banks     | 41:21   | 42:59   | -       | -       | 34:40   | 32:02   | 40:02   | 40:03   | 24:20   | 84:20           | 1000.00          | 110.00                      | 1110.00         |
| 2. Bob Randolph    | 30:12   | ATT.    | ATT.    | 38:14   | 40:45   | 37:01   | 20:32   | 43:15   | 11:27   | 84:00           | 996.05           | 109.54                      | 1105.59         |
| 3. Larry Cailliau  | 36:20   | 17:30   | 9:29    | 35:25   | 35:07   | 11:35   | 37:45   | 42:29   | 36:49   | 80:14           | 951.38           | 110.00                      | 1061.38         |
| 4. Bud Romak       | 38:01   | 25:33   | 36:12   | 11:59   | 41:32   | 36:30   | 39:20   | ATT.    | 38:04   | 80:52           | 958.89           | 100.00                      | 1058.89         |
| 5. Richard Doig    | 15:11   | 22:46   | 13:49   | 39:40   | 3:28    | 10:50   | 37:06   | 40:01   | ATT.    | 79:41           | 944.86           | 110.00                      | 1054.86         |
| 6. Ray Harlan      | -       | -       | 12:21   | 32:25   | 38:00   | 41:16   | -       | ATT.    | 11:47   | 79:16           | 939.92           | 110.00                      | 1049.92         |
| 7. Lew Gitlow      | ATT.    | 33:01   | 35:46   | 38:58   | 39:12   | 23:26   | 13:47   | 35:20   | 36:00   | 78:10           | 926.88           | 109.54                      | 1036.42         |
| 8. Sal Cannizzo    | -       | 35:34   | 42:00   | ATT.    | 12:58   | 20:01   | 36:56   | 30:19   | 36:12   | 78:56           | 935.97           | 75.00                       | 1010.97         |
| 9. Bill Hulbert    | 14:21   | 8:50    | 37:49   | 34:04   | 12:27   | 36:48   | 35:42   | ATT.    | 22:35   | 74:37           | 884.78           | 102.19                      | 986.97          |
| 10. Dick Obarski   | ATT.    | -       | 31:14   | 36:49   | 35:18   | 13:00   | 33:13   | 33:29   | 35:11   | 72:07           | 855.14           | 110.00                      | 965.14          |
| 11. Walt VanGorder | 26:55   | 30:51   | 31:38   | 32:12   | 36:32   | 10:52   | 33:21   | 34:20   | 35:29   | 72:01           | 853.95           | 110.00                      | 963.95          |
| 12. Manny Radoff   | ATT.    | 25:46   | 29:25   | 22:07   | ATT.    | 32:23   | 38:02   | -       | 33:40   | 71:42           | 850.20           | 107.84                      | 958.04          |
| 13. Bob Gibbs      | -       | 28:57   | 32:43   | 32:19   | 27:24   | 33:55   | 13:47   | 32:47   | 37:28   | 71:23           | 846.44           | 104.34                      | 950.78          |
| 14. Stan Chilton   | 29:31   | 13:05   | 10:18   | 27:58   | 32:44   | 37:11   | 8:57    | 22:39   | 18:55   | 69:55           | 829.05           | 110.00                      | 939.05          |
| 15. Paul Tryon     | 20:54   | 25:35   | 32:40   | 34:00   | 12:00   | 34:29   | 28:46   | 33:44   | 13:51   | 68:29           | 812.06           | 97.64                       | 909.70          |
| 16. Larry Loucka   | 26:28   | 34:00   | 9:10    | 32:24   | 30:18   | 9:28    | -       | -       | -       | 66:24           | 787.35           | 102.55                      | 889.90          |
| 17. Ron Ganser     | ATT.    | 31:13   | 1:10    | 20:56   | ATT.    | 29:01   | 29:47   | 30:42   | 32:02   | 63:15           | 750.00           | 103.95                      | 853.95          |
| 18. Jon Harlan     | 24:49   | -       | 27:54   | 28:55   | 29:30   | 34:44*  | 28:23   | -       | 24:30   | 64:14           | 761.66           | 79.08                       | 840.74          |
| 19. Dan Belieff    | 21:05   | 26:55   | 28:22   | 3:16    | 33:00   | -       | 15:48   | -       | -       | 61:22           | 727.67           | 107.08                      | 834.75          |
| 20. Jim Richmond   | -       | -       | -       | 22:10   | -       | -       | 11:09   | -       | -       | 33:19           | 395.06           | 110.00                      | 505.06          |

### U.S. FAI INDOOR TEAM

The FAI Indoor Team selection Finals were held over Labor Day weekend, August 31, September 1 & 2, 1985 at the Goodyear Airdock in Akron, Ohio. Twenty of the best FAI Indoor fliers gathered to determine the team to represent the U.S. at the World Championships in 1986.

The competition was extremely tough with team positions up for grabs through the last round on day three.

Earlier this Spring when it appeared that Lakehurst would not be available for flying, the team selection committee voted that the Finals should be held at Akron as a suitable alternate site. All the competitors agree that Akron is a challenging site. The Airdock is used as a stamping plant and both short and long term storage yard. Several interior buildings jut out into the airdock and the piles of stock, scraped out machinery, and cyclone fences make for some interesting obstacles. Plus as with many large buildings the drift can be considerable and must be contended with. On the first day several flights drifted into the doors and then were blown down the clamshells ending their flights. This past

winter the center section of the roof was recovered eliminating the leaks and new vents replaced the original ones which had rusted shut. As a result the center section of the building was found to be a better area for flying than it ever had been in the past. Also this session a couple of doors were closed that had never been closed before, one needed a forklift to get it unstuck and the other needed three people and a sledgehammer.

Round one started out with a bang. Any thoughts of putting up safe flights on the first day were dashed when Cezar Banks first flight was 41:21, the high time of the round. Bud Romak and Paul Tryon collided early in the round and Romak came back with a 38:01 reflight for the second high time of the round. Four other fliers could only muster attempts at flights and three skipped the round completely. Round two was a repeat with Banks having the high flight at 42:59 and Romak had another collision. In round three Sal Cannizzo got a flight of 42:00, the first other than Banks to go over the 40 minute mark. At the end of day one, Banks had first place sewn up with Cannizzo second and Romak third. (Based on flight times and figured points.)

Even though the second day had better weather, no one broke 40 minutes until the fifth round. The high time in found four was a respectable 39:40 by Richard Doig. In mid afternoon Bob Randolph broke 40 minutes (40:45) and Romak had high time of the round at 41:32. This got Banks to get the models back out of the box. Round six had the most action. Cannizzo hit a wire ending his flight at 20:01 and Larry Loucka hung in the girders at 9:28 ending his flying. While at the other extreme, Jon Harlan was setting a new Junior CAT IV record at 34:44 for FAI Indoor and Hand Launched Stick. Father, Ray was also doing well as his flight of 41:16 was high time in the round.

Jim Richmond was also doing some interesting flying, though not officially part of the contest. Early in the afternoon he flew an old FAI Indoor model to which he attached a set of landing floats so he could R.O.W., the model did over 27 minutes which he intends to submit to the FAI as a new World rubber powered Seaplane record. Later in the afternoon he got out his Variable Diameter Propeller and put up a flight of 40:43 under 100 feet. Because Richmond is current World Champ, he is allowed to attend the next World Championships as defending champion without being a member of the U.S. team, and as a result did not do much serious flying. (He placed last of the 20 contestants in the official competition.)

At the end of the second day Cezar Banks was still in first place with Ray Harlan in second place and Bob Randolph in third. (Based on figuring points.)

The weather on day three was still sunny and warmer with five flights over 40 minutes. In round seven Larry Cailliau started to make his move with a flight of 37:45 that had a shaky start, almost flying into a machine. While Banks once again had high flight at 40:02. Round eight conditions were the best of the three days and all those in contention were making their moves. Richard Doig tried for a team spot with a flight of 40:01 and Larry Cailliau secured a team place with a 42:29 flight. Randolph gained a team position with the high flight of the contest at 43:15. In round nine Banks hoped to up his times but hung his last flight at 24:20 and Doig blew up two models while trying to duplicate his 40 minute flight. Ray Harlan also had a good flight going late in the round, until it hung at 11:47. High time of the round was 38:04 by Romak.

In the final standings there is a gap between second and third place and another gap between eighth and ninth place, with first through sixth places all breaking 40 minutes.

The team of Cezar Banks, Bob Randolph, and Larry Cailliau with Bud Romak managing should make a strong showing at the next World Championships. With Jim Richmond attending as defending World Champion I would not be surprised to see them place first, second, third, and fourth. The exact order though I'll not predict.

We would like to thank the people at Goodyear Aerospace who were most cooperative. On Saturday morning several supervisors came out with a forklift to rearrange the stamping parts-in-progress to give us as large a clear floor space as possible and to close several doors. Security appreciated our sending someone out to bring back lunch to those who wanted food.

Contest Director Ed Stoll did an excellent job ably assisted by Melody Doig. Many, many thanks also go to non-flying timers Tony Becker, Jack Carter, Jack Henry, Joe Hervat, Jerry Nolin, and Herb Robbins.

The preceding article, written by Melody and Richard Doig, was submitted as the official account of the Finals for publication in Model Aviation. We include it in this issue of INAV for our subscribers who do not receive the A.M.A. magazine, especially those overseas.

## FAI INDOOR FINALS

Now we will get to what you really want to know, the technical things, who flew what type of model and other important details.

Except for Stan Chilton's 43 inch long almost tandem and Bob Randolph's all boron tail, there were no radically new and different designs at this Finals. Chilton's long model was beautifully built, stab span about 60 cm with short wing tip dihedral, but it did not fly as well as he had hoped. Problem was in getting the nose up to slow the prop down and get the model to float. Randolph's boron tail section had a truss work boom out of boron with boron stab and rudder outlines. He was heard muttering about glueing the boron with Hot Stuff (CyA glue) next time since it kept coming apart.

Considering the amount of boron Randolph uses in his models you would think he owns stock in the company that makes the filament. Even in his more traditional looking models his rudder outlines and prop outlines are of boron. Banks, Doig, and Romak also used boron extensively in their models.

Models in general were 30 to 36 inches long, 5 rib wings with 8 to 9 inch chord and 3 rib stabs, except for Radoff whose stab had 4 ribs. Most had suspended stabs - stab completely in back of tail boom - and Banks' had an arrangement with a socket around the bracing post and one brace wire so that the incidence setting could be changed. Rodemsky film was most commonly used. Props that did the best were high pitch, 40 inch pitch and 23 inch diameter was about the largest. Some, especially Banks and Cannizzo, also had a large blade area. Competitors who brought more than one size model used the smaller size. The larger models had trouble climbing, especially through the layer that forms at the windows, and they did not float well, overall result was short flights. Rich Doig managed to get his flights through the layer hitting the roof in 4 to 5 minutes. He lengthened the time out to 8 to 9 minutes to the roof by rebuilding a couple props at the site on the second morning before official flying started. Banks' models really floated and even though many of his flights topped out at the windows (about 130 feet) it sure did not hurt his times - 4 flights over 40 minutes. He also used fairly short motors, 16 inch motors on 16 inch sticks. Most models were down to weight or real close, no real heavies, with one of Randolph's and a couple of Gitlow's being right at one gram. One of Gitlow's models in particular needed ballasting with a pin. His planes were a pain to process in the drafty site.

For those of you who fly the airlines to contests here is a way of getting one model there and intact. Both Banks and Cailliau had a model box containing one complete model that fit into the overhead compartment of the airliner. Both used folding wing posts to conserve space. The rest of their models went in with the luggage.

There was nothing new in support equipment with everyone using their usual set ups. Chilton had a countdown timer to help him keep track of how many minutes were left in the round and Banks brought a different trail mix (fruit and nut combination) to munch on. (It was bananas at West Baden in 1983.)

The best flights were done on motors of Pirelli even though some used FAI rubber. The general scuttlebutt is the Pirelli is running out and several are quite concerned. (See article on Pirelli by Tony Italiano in this issue.) Most fliers use O-rings on their motors of one sort or another. Small (size 002 and 003) Buna-N O-rings are popular as are rings of nylon tubing or nylon cut from push rod sleeves. One hundred percent of the competitors wound motors on torque meters and then transferred the wound motor onto the model. The old red torque meters built by Dennis Jaecks (sold by Ron Plotzky during the 1970's) are still the most popular. Several fliers used Kujawa torque meters or have made their own version.



There are some new trends in rubber lubes. Radoff still uses castor oil and Chilton uses his glycerin concoction, while most of the rest use lubes bought from Micro-X or other model suppliers. The new trend is using vinyl preservatives bought in auto supply stores. Rich Doig started using ArmorAll brand protectant 3 years ago and found he could get more turns into a motor. And treated motors left lying around are still good 6 months to a year later. The only problem was the knots (Richmond style thread knots) started coming apart. A redesigned all rubber knot solved that problem. Bill Hulbert used a product called Pizazz! also intended for vinyl car tops. This product is a different formula and feels slicker to the touch, but it also works.

Because of the cluttered floor in Akron many flights needed a short steer at the end of the flight so the model could land on the floor. Some even needed a long steer! A few flights needed a steer at the beginning when the modeler missed the launch and the model headed for an obstacle. (There was alot of drift at floor level.) Many fliers use a plastic (1 inch diameter) tube between the balloon and the line. Cailliau started this in 1983 and it caught on quickly because it is almost impossible to foul the prop. However, it is possible to rip the film off the prop. Most inflate the tube, Harlan even uses a small auxillary balloon to keep the tube inflated, even though the increased drag makes the balloon slower to maneuver. Doig prefers to use the tube deflated and flat.

Probably the most noteworthy aspect of the Finals had nothing to do with the models, but rather with the flying experience of the contestants. The first through third place finishers all had access to monthly flying sessions at Santa Ana (CAT IV). Fourth place has regular access to the Cow Palace (CAT III). While the fifth and sixth place finishers drove 1000 miles apiece over the past 2 years to their half dozen flying opportunities in both CAT III and CAT IV sites. The monthly flying sessions at Santa Ana produced our 1986 FAI Indoor Team. A big thank you goes to Curt Stevens who is the site contact for Santa Ana and the Contest Director for many of these sessions.

#### Product notes:

- Plastic steering tubes are available from Ray Harlan 15 Happy Hollow Rd, Wayland, MA 01778
- Jaecks torque meters are no longer available, but Jim Jones sells a similar model 36631 Ledgestone Dr, Mt. Clemens, MI 48043
- Kujawa torque meters are currently not available.
- Rodemsky microfilm 1600 Rockspring Pl, Walnut Creek, CA 94596
- Micro-X, Box 1063, Lorain, OH 44055
- Indoor Model Supply, Box 39, Garberville, CA 95440

#### 1986 WORLD CHAMPIONSHIPS

Next year's World Championships are set for Cardington, England on Sunday, August 24 and Monday, August 25. Hanger 1 or 2 will be used depending on availability as both are "working sheds" as the English put it. The schedule has Friday, August 22 for arrival and registration, Saturday the 23 for practice. Sunday and Monday will have 3 contest flights each day between 12 noon and 6 pm, the banquet will follow at 9 pm. Departure will be Tuesday the 26 before noon. Supporters and/or spectators are welcome at a cost of £107.48p each. Daily costs for spectators will be £26.29p for accommodations and three meals. The banquet will cost £6.00. With Laurie Barr the overall director of the competition, it will be a well run event given his considerable experience. U.S. supporters wishing to travel with the team can do so by making arrangements through A.M.A. HQ before May 1, 1986, after this date arrangements will have to be made with the World Champs organizers.

#### OTHER 1986 WORLD CHAMPIONSHIPS TEAMS

- British team: 1. Bernard Hunt  
2. Dave Pymm  
3. Bernard Aslett  
4. Laurie Barr (team manager ?)
- West Germany: 1. Werner Nimptsch  
2. Rainer Lotz  
3. Helmut Jakob

#### FIFTH U.S.I.C.

NFFS and NIMAS are going ahead with plans for the Fifth U.S.I.C. at the Niagara Falls Convention Center Tuesday, June 17 through Thursday, June 19, 1986. Tentative schedule is very similar to last year's, with the banquet on Wednesday evening. Also plans are in the works for a A.M.A. Cub build and fly session on Monday, but we will need lots of help. Also considering some "classes" in such topics as pouring microfilm, covering techniques, rolled tubes, etc. If you have an idea for a topic or would volunteer to conduct a class please let Tony or us know.

#### N.I.M.A.S. INDOOR SUPPLIES

From time to time we get indoor modeling supplies which we will make available to the indoor flier for free or at a nominal cost. Currently we have Kevlar, a very fine fiber, good for bracing when using a single strand. To obtain approximately 15 feet of Kevlar tow (a tow is hundreds of strands) on a cardboard spindle, send a SASE to 6 Canary Hill Dr, Pontiac, MI 48055.

#### INAV MAILING LISTS

From time to time we get requests for someone's address or the entire INAV mailing list. Currently the mailing list is not in a form that is easy to run off copies. However if you need only a couple of addresses that is no problem. We also have a personal address file of several hundred entries, including many outdoor fliers and various others.

#### OBITUARIES

Unfortunately this may become a regular column if the last year was any indication.

Joe Sovo from Youngstown, Ohio passed away suddenly July 1, 1985. Joe and his son Tom competed in many local and national meets in the Midwest during the 1970's. Those of us who knew him will miss him.

Roman Szymula of the M.I.A.M.A. club lost his fight with lung cancer on October 26, 1985. Roman was a microfilm flier and many time Florida state champion. Our condolences to his wife and children.

When Pete Andrews did not show at the Team Finals we all knew it was because his wife Georgia was not up to the trip. Jack Carter bought a get well card which we all signed and sent to her. Two weeks later we received a note from them asking that the following be put in INAV " My thanks to all my friends for the 'get well card'. Perhaps in the future I can thank each of you personally. Good luck to the team. Your friend,  
Georgia Andrews "

Unfortunately she did not get to thank many of the senders as she lost her fight with cancer on October 22, 1985. This was a gutsy lady who did not let her stroke or cancer defeat her. Georgia attended every contest that Pete attended and she will be greatly missed.

THE SUSPENDED STAB

At the U.S. Team Finals, Banks, Romak, Doig, and Richmond all used versions of the "suspended stab". Figure 1 shows the version used by Banks. It features adjustable tail incidence to allow quick trimming.

Figure 2 shows the tail used by Doig at the Finals. It is similar to the arrangement first worked out by Jim Richmond in 1982, but has been strengthened by running the rudder's rear post through the boom rather than gluing the rudder on the side.

Figure 3 shows an improved version of the Doig stab allowing adjustable incidence.

Figure 4 shows the construction detail of the boom/stab connecting joint on the Doig stab.

All these versions offer about a 10 % weight savings over conventional boom-to-back-of-stab construction.

Figure 1

ADJUSTABLE INCIDENCE SUSPENDED STAB

as flown by Cezar Banks at 1985 Finals

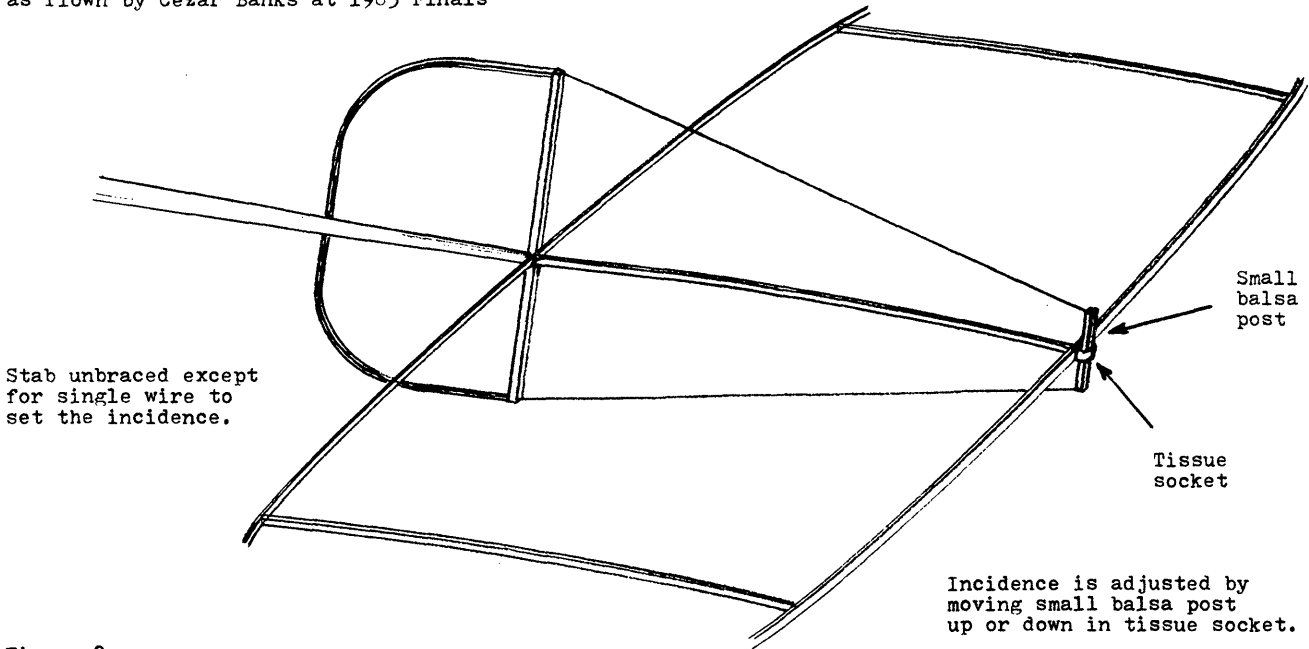


Figure 2

FULLY BRACED SUSPENDED STAB

as flown by Rich Doig at 1985 Finals.

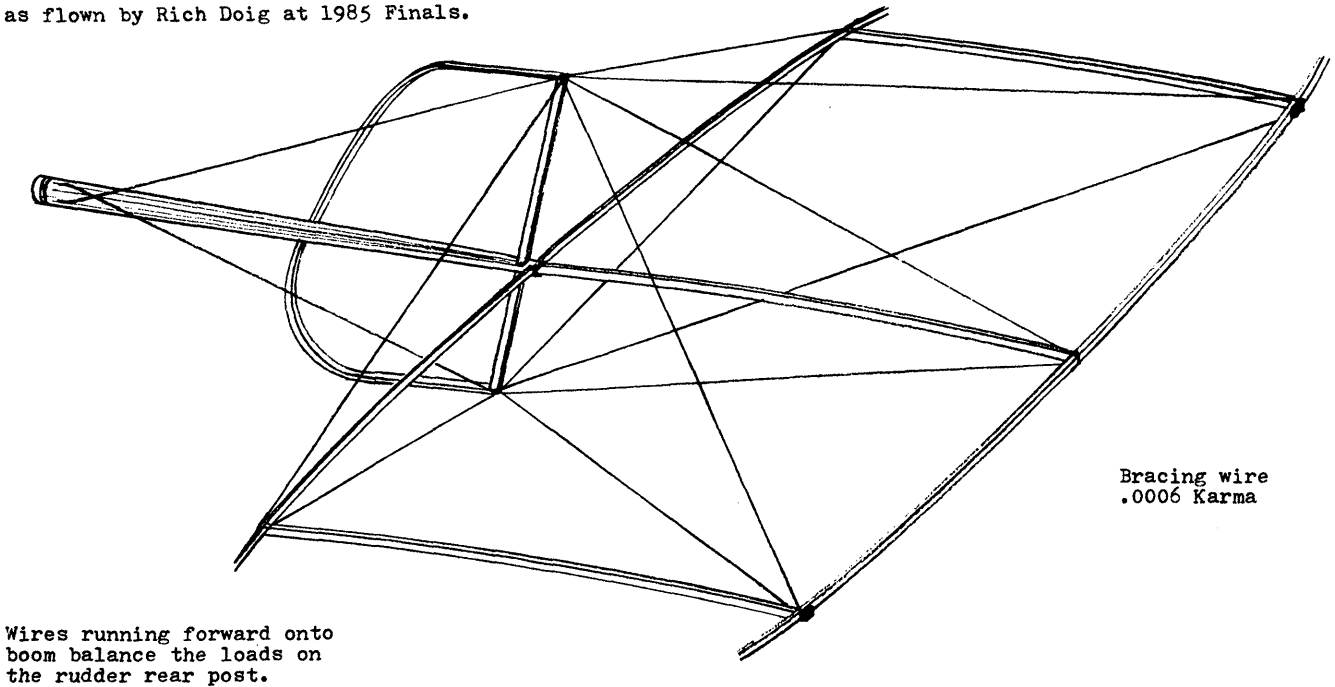


Figure 3

DOIG SUSPENDED STAB

Rebuilt to add adjustable incidence setting after seeing Banks' models at Finals.

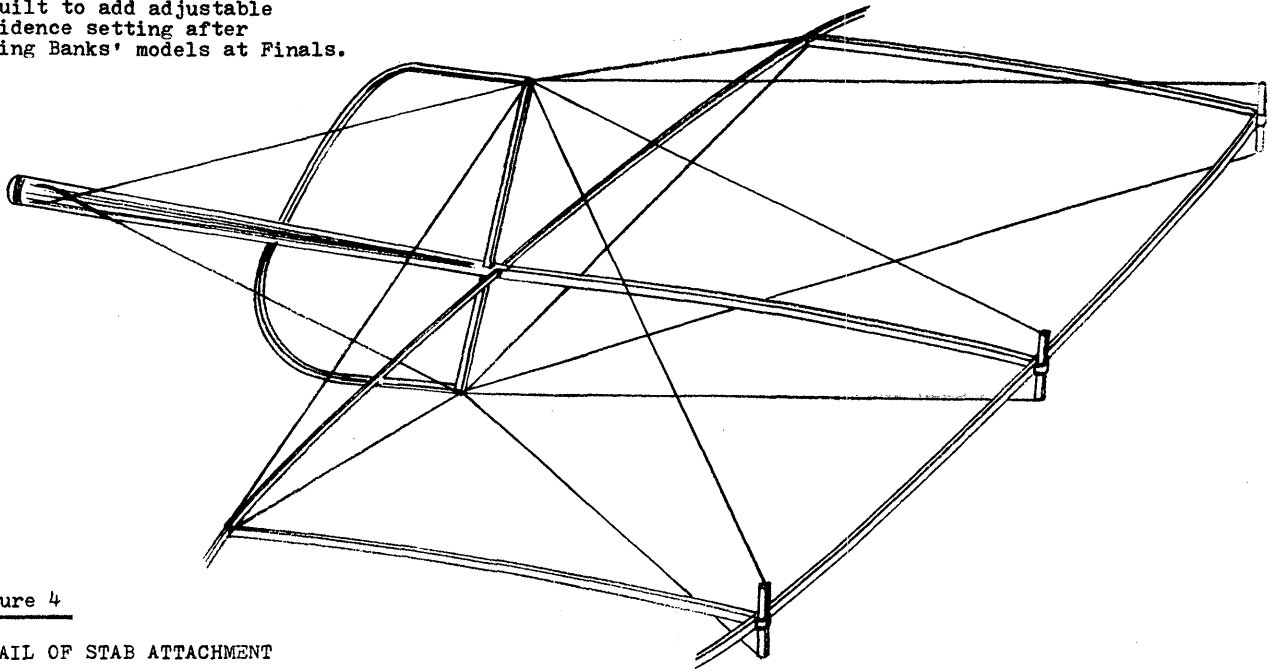
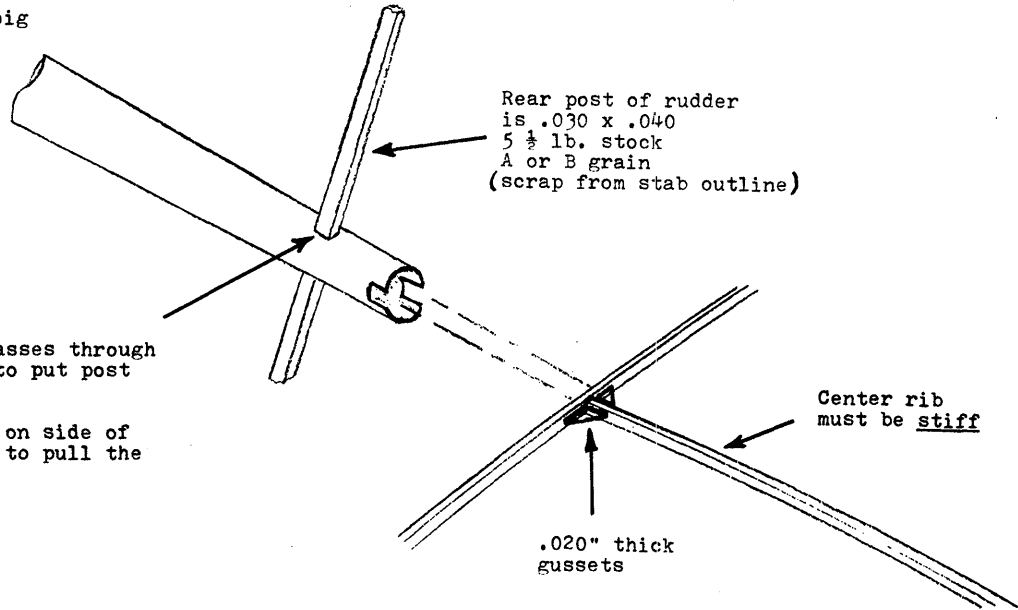


Figure 4

DETAIL OF STAB ATTACHMENT

as built by Rich Doig



Rudder rear post passes through hole in tail boom to put post on centerline.

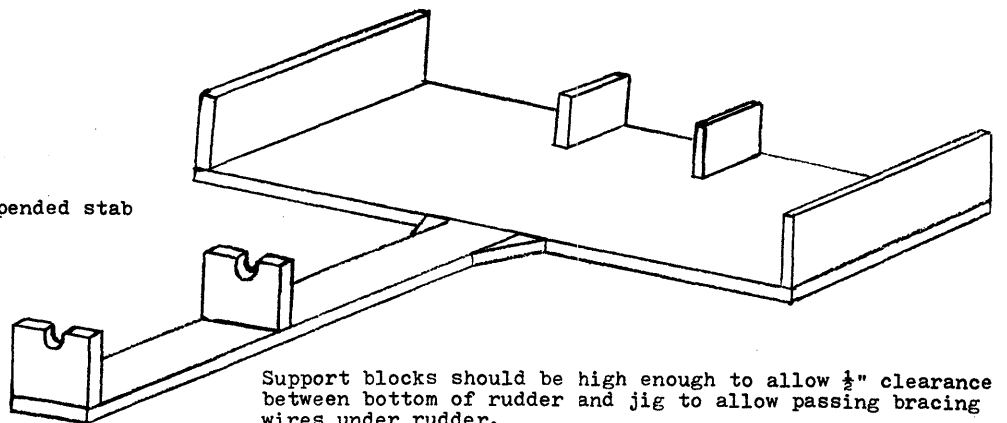
If post is mounted on side of boom, it will tend to pull the stab to that side.

Figure 5

STAB BRACING JIG

for Doig fully braced suspended stab

3/16" balsa  
8 lb. "RC" stock  
stiff & straight  
built with "Hot Stuff"



Support blocks should be high enough to allow 1/8" clearance between bottom of rudder and jig to allow passing bracing wires under rudder.

## REPORT ON AVAILABILITY OF PIRELLI RUBBER

By Anthony J. Italiano

I went to Europe on April 25, 1985. I visited London and had an opportunity to meet with Ian Kaynes, a very fine gentleman and rubber flyer and active participant in CIAM activities. He was not aware of any rubber source other than FAI supply.

Eventually, I landed in Florence, Italy - home of Modellissimo, (Italian Model Magazine). Co-incidentally, the magazine operation was only located approximately four blocks from my sister's home. I had a most enjoyable visit with Mr. Chiodo (Editor/Publisher). He also has a model shop located three doors away, which is operated by his son. Mr. Chiodo was eager to help me try to find out the facts regarding the whereabouts of Pirelli machinery for the fabrication of the rubber. All he knew was that he could not get any and all were using FAI supply. One contact was the original representative for Pirelli in Varese, Italy. Upon contact, he knew nothing or said so to get us off his back. He thought the rubber was made at Bergamo by an affiliate - Ditta Filati Lastex Elastofil Spa, Via Guslin, Italy.

It is interesting to note that the Modelissimo Magazine is produced by two people, ie., Mr. Chiodo and his attractive assistant. Art work is performed by an outside free lancer, as also any translation effort. Photo reductions and final set-up are done outside as well as printing and mailing. Circulation is in the neighborhood of 18,000. It appears that Mr. Chiodo is very efficient in maintaining costs to a very minimum.

I visited a hobby shop outside of Florence and learned from "Hobby-Model" (Sesto Fiorentino) that they procure their rubber from Ditte Aereopiccole, Corso Monto Cucco, 87, Torino, Italy. The last batch was purchased approximately two months ago. I procured a small sample of 1/4 x 1/8 rubber. Color was a very dark grey (almost black), but also had a textured surface as if rubber was pressed between two coarse cloths. Samples were acquired for test purposes. Hobby-Model states that they have never been without any rubber. Upon ordering they have received delivery.

On 5/16/85, I visited with Piero Pecchioli at his place of business. His business is manufacturing various lighting fixtures for the home and business, as well as bedsteads. Most of the very high grade products are fabricated from brass and glass. Piero has been building and flying FLB for the last 12 years, since he broke his leg in a skiing accident. He is unaware of any new production Pirelli. The last batch he used was over two years ago, but was not good for FLB. He stated that it gave a good power burst for approximately 5 to 10 seconds and then just flattened out completely without any further climb. He and all of the Italian flyers use FAI supply rubber. He stated that from what he knew was that Pirelli has the equipment and expects that in the future Pirelli would produce it, but the quantity sold is too small to be economical. He also stated that they heard that the Israelis produce some, but for their own use. (Piero does not speak any English.)

Since my command of the Italian language is more of a comedy than it is practical, I enlisted the aide of Professor G. Anzilotti, (University of Florence, and also my sister) to perform the direct communication honours. (Notice-fancy for honor.) The Professor had to really push very hard to get the contacts to talk and give meaningful information. Without her I am sure I would not have been able to get at the facts, (such as they are).

Between 5/13 and 5/16 many contacts were made with the "Pirelli" organizations to seek out the true facts. The initial problem was to locate the Pirelli factory that actually produced the rubber. Approximately four phone calls later it was decided that we were not in contact with the right people. But, on another final call we were finally put in contact with a Pirelli engineer, who worked at Pirelli for the last 20 years and was somewhat familiar with the

rubber and knew some history. Signore Moltini offered the following information:

Pirelli at Milan made the sheet rubber. Filati at Gergamo did the stripping. Elio Broggi was Filati's representative at Varese.

Title of the rubber is - Filo Elastico  
Through a number of phone calls, I finally determined that the Pirelli rubber formula is in the possession of a gentleman that works with rubber products. Contact with him verified this fact. He stated that he was no having very much luck producing a good batch of our favorite gum bands. He had to process a minimum of 200 kg of rubber in order to get a fairly homogenous batch. The problem that he was facing was that with all the failures, he was getting to the point where he could not afford any more experimentation, and resultant failures. He had hopes and good intentions, but he needed a break-through.

As of July 5, 1985, he stated that he has produced acceptable "Pirelli" rubber. He stated that he will send me an amount for testing. I hope it gets here soon so tests can be run and performance compared against FAI stock and old Pirelli.

As the opportunity permitted, I visited model shops in England and Italy. Radio control is supreme on the shelves. Engines in the display cases were mostly over .25 cu. in. in displacement. Balsa wood grade was as we see in USA model shops (heavy). There seemed to be more ship model kits on the shelves than in the USA. The biggest influence in kits and supplies was Graupner. There was some American influence, but decidedly below 10 % of the total.

So ends the first chapter on the "Search for Pirelli Rubber".

### NEW PIRELLI RUBBER UPDATE

Tony Italiano did receive some sample rubber recently made in Italy and sent samples to various modelers for testing and comment. Fred Pierce tested the rubber out at approximately 1800 ft lbs/lb. (Most good Pirelli is over 3500 ft lbs/lb.) This is slightly worse than the Filati of 1974. Tony advised me not to waste my time testing my sample and I have followed his advise. One modeler described it as looking like an old shoelace. Hope they have better luck with the next batch. I do not think it can be any worse!

### INAV SUBSCRIPTION RATE CHANGE

With last year's U.S. Postal rate increase both for domestic and overseas mail we have changed the INAV subscription rate to \$5 for 10 issues for U.S. and Canadian subscribers. Overseas surface mail is \$6.50 and overseas airmail is \$7.25, both for 10 issues. Existing subscriptions will be pro-rated (more or less).

The number in the upper right corner of your mailing label is the last issue of your subscription. Renewal reminders are sent in the next to last issue of each subscription. Renewals can be made to either address on the masthead.

### INAV SAMPLE COPIES

For your modeling friends who do not subscribe, we will send out sample copies of the most recent issue printed. To obtain send a SASE business size (#10) envelope to 6 Canary Hill Dr, Pontiac, MI 48055.

### OTHER NEWSLETTERS

New York Indoor Times: For 10 issues send your name & address including zip with a \$5 check (make check payable to "ED WHITTEN") to Ed Whitten, P.O. Box 176, Wall Street Station, New York, NY 10005

**BORON FILAMENT UPDATE**

I personally have received some challenges in my positions on the Indoor Contest Board and FAI Indoor Team Selection Committee. They amount to: "You're the Team Selection chairman, when are you going to do something about Boron?"

Well, here is what was done. At the U.S.I.C. we circulated a survey and 37 modelers responded. Only two things had strong support.

1. The vote was 2:1 against any kind of ban.
2. There was a trend to limit its use to certain events. However the feeling is that it should be limited solely to produce a certain kind of model, but not for safety reasons.
3. At least two people felt the survey was slanted towards a ban which was not intentional.

In related items, I spoke to Stan Chilton at Akron over the 4th of July. He told me that when his thumb went numb after the Boron injury reported in INAV #18, that the numbness was actually caused by a pinched nerve in his neck, not by the Boron as he previously thought.

I recently bought some Boron from Ray Harlan. This is a carbon core filament. Curt Steven's Boron is a tungsten core. The carbon core Boron seems to cut easier with less shattering than the tungsten core Boron. Also, Ray packages it in 2 foot lengths inside a clear plastic tube, capped at both ends. This makes the Boron much easier to handle.

I built four new models for the 1985 team finals with Harlan's carbon core Boron on motorsticks, tail booms, and wing posts. Almost 30 feet of it and I did not get stuck once. I ran only 4 feet of the tungsten core Boron two years ago, and got stuck three times, including several months later. I think the carbon core Boron is a lot safer as far as shattering.

Here is how I cut my Boron now without losing pieces.

1. Put on your safety glasses
2. Hold the Boron between the thumb and first finger of your left hand about 1/4 inch from where you want to cut it.
3. Stick your hand down inside a waste basket, box, or coffee can.
4. Cut the Boron using a pair of right-handed scissors. The shearing action of the scissors throws the pieces down and your thumb and forefinger damp out the shock waves that would normally shatter the filament about 1/4 " to 3/8 " from the cut. (At least most of the time. Coating the inside of the can with sticky both sides tape will catch and adhere the pieces. To dispose of the can, just snap on the lid.

The biggest thing we've found in discussing the safety hazards of Boron is not that Boron is particularly dangerous, but some of the other materials we use are even worse. Examples:

Cyanoacrylate glues (Hot Stuff, Zap): they can glue your eyes shut or cause a multitude of injuries. Also there are an increasing number of allergic reactions to these glues as reported in the safety column of Model Aviation.

Acetone, Methyl ethyl keytone, Toluene, Toluol: all poisons - all will absorb through the skin.

Spray contact cement: if you breathe the spray it can coat the insides of your lungs. Yuck.

Micro-film solution: the fumes are toxic.

Polyester resin catalyst: if it splashes in your eyes it can cause instant blindness. If mixed in the wrong proportions, it can ignite and even explode. Fun Stuff.

Balsa wood: Yes, even balsa. Do not breathe the dust if you sand it.

Razor blades and X-acto knives: I think the hazards are obvious but very real.

The list goes on and on. The message is "BE CAREFUL" Safety goggles and disposable dust masks are available at all hardware stores. Buy them and use them. If possible, don't build if you are alone. Always have someone available to help you if you get hurt, including taking you to the hospital emergency room if the injury is bad.

Share your experiences with us, both good and bad.

The latest I read is that soft drinks containing Aspartame (marketed as Nutrasweet) can impare hand-eye coordination in some people. Boy, life is dangerous all over.

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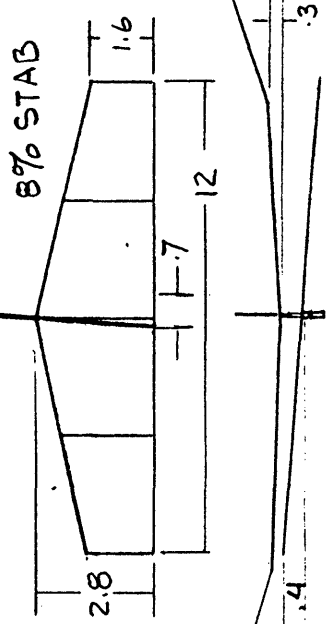
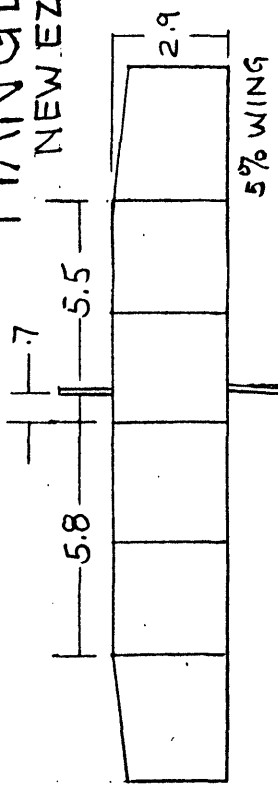
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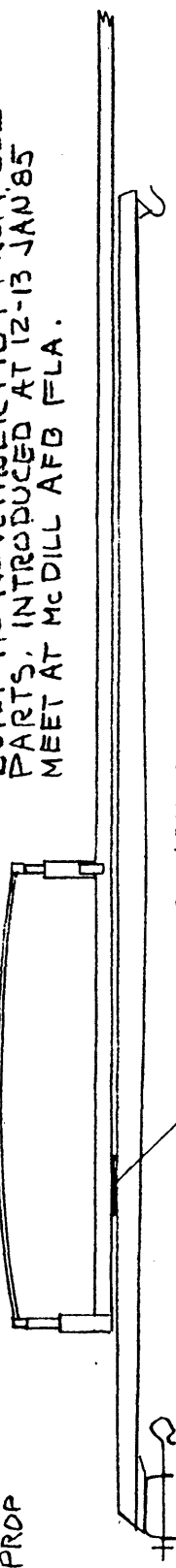
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TAILBOOM - 15.1 x .095 x .090 → .095 x .025  
 MOTOR STICK - 8.8 x .105 x .150 ↔ .115 x .085

(APOLOGIES TO DICK HARDCASTLE)

AIRFRAME DISTORTION FROM THE FULLY-WOUND RUBBER MOTOR IS THE PLAQUE OF THE CONVENTIONAL EZB LAYOUT.

WITH THIS DESIGN, THE MOTOR STICK IS SEPARATED FROM THE AIRFRAME, WHICH IS THEN FREE FROM THE TWISTING EFFECT OF THE TIGHTLY WOUND MOTOR.

A. WING TWIST CAN BE ADJUSTED BY MOVING THE CONNECTING JOINT FORE OR AFT.

B. THE C.G. IS ADJUSTED BY MOVING THE MOTOR STICK FORE OR AFT.

C. TURN IS ADJUSTED BY SKEWING THE TAILBOOM AND/OR THE MOTOR STICK. ALSO BY WING OFFSET.

NOTES:

1. THE WING POSTS AREN'T NECESSARY. CEMENT THE WING SPARS DIRECTLY TO THE TAILBOOM. ADJUST AT REAR OF STAB. USE A TUBE SOCKET IN THE TAILBOOM.
2. THE CONNECTING JOINT IS NOT NEEDED. JUST PUT A DROP OF CEMENT IN THE RIGHT SPOT.
3. A MUCH LIGHTER MOTOR STICK CAN BE USED.

BUILT IN NOVEMBER 1984 FROM OLD PARTS, INTRODUCED AT 12-13 JAN 85 MEET AT McDILL AFB FLA.

## A.M.A. NATIONALS

It all started on the first day of the 1985 NATS at Westover A.F.B. when Pennyplane, Easy B, and Manhattan Cabin were scheduled from 9 am - 2 pm. Advance entries had 42 in Pennyplane, 52 in Easy B, and 21 in Manhattan Cabin. Now 5 hours is too short a time for 115 event entries to fly three events, especially if all take all their 5 official flights. Several modelers brought this to headquarters' attention in early July before the contest and yet nothing was done in the way of extending the flying time.

When congestion problems occurred at the NATS as some had predicted it would, along with some other problems, this really aggravated several fliers.

Ed Whitten in the first issue (#33 Sept 15) of his newsletter, New York Indoor Times, after the NATS, published some of what had occurred. But more importantly he was appealing to modelers to get busy writing letters for the 1986 NATS planning meeting to be held on September 28, 1985.

In Whitten's next issue (#34 Oct 22) he published 5 pages of comments on the 85 Indoor NATS from modelers who had been there. We did not attend but from reading the comments and hearing some directly, there were more problems in 85 than just congestion.

Because of all the complaints NATS management and HQ received it was decided that NFFS (National Free Flight Society), as the **recognized** Free Flight special interest group, should be a part of the 86 NATS planning meeting. Tony Italiano, President of NFFS, could not attend because of the Midwest States Indoor Championships in Rantoul, IL that same weekend. So Tony asked if we could attend the meeting as indoor representative of NFFS. But we were going to Rantoul also. In the end Hardy Brodersen, Executive Director of NFFS, attended the meeting carrying what seemed like reams of paperwork we had prepared for him.

As a result of that meeting NFFS and NIMAS will have a continuing role in NATS planning and in the actual running of the contest.

Also from that meeting, a letter was circulated within the indoor community with a proposed schedule. Approximately 40 letters were sent out. This is the first time I have been on the receiving end since I have been on the Indoor Contest Board. (I have been on the ICB since it's inception in 1982.) The initial schedule worked out by Homer Smith, Hardy Brodersen, and Sandy Frank at the meeting was a great improvement over what has been used in recent years: 6 hours for Pennyplane and Novice Pennyplane, 6 hours for Easy B and Paper Stick, 6 hours for FAI Indoor and Hand Launch Stick, 6 hours for FAI Indoor and ROG Cabin, 6 hours for Hand Launch Glider, 4 hours for Scale (not enough) and 4 hours for Manhattan Cabin (too much). Plus test flying time. The letter also wanted input on which of 2 indoor sites to use, Lake Charles Civic Center or Burton Coliseum. The problem with Burton is the floor is to be concreted some time in 1986 and with our luck it will happen during NATS week. The question is, do we take a chance on the dirt floor? Or do we take a chance on the building not being available the end of July, because the concrete work is being done then?

Because the letter invited comment several of us got out the typewriters and went to work. Ed Whitten sent 3 pages plus the next issue (#34) of New York Indoor Times with his comments. We wrote 3 pages plus 2 pages of alternate schedules, minor changes to balance the time allocations. And Ray Harlan was another who replied in detail.

Indoor NATS planning with Homer Smith at its head, gave consideration to all the comments received and responded with a revised schedule. Homer felt a 50 % response was really good, however we are appalled at such a low rate. The decision to commit to the site will be delayed until June 1, 1986. The schedule had some problems, mostly with conflicts with Outdoor Free Flight as a result of AMA plans to have a 50 th NATS anniversary celebration at the end of NATS week.

These conflicts with Outdoor were quickly brought to NATS planning attention by Whitten in another letter and phone calls from others including ourselves.

As a result the schedule has been modified once again to have as few conflicts with Outdoor Free Flight events as possible. Here is the schedule:

|                   |              |                                     |
|-------------------|--------------|-------------------------------------|
| Saturday, July 26 | 8 am - 1 pm  | Hand Launch Glider                  |
|                   | 1 pm - 9 pm  | FAI Indoor<br>Hand Launch Stick     |
| Sunday, July 27   | 8 am - 9 am  | Test flying                         |
|                   | 10 am        | Scale model turn in                 |
|                   | 9 am - 3 pm  | Novice Pennyplane<br>Pennyplane     |
|                   | 3 pm - 9 pm  | FAI Indoor (4-10)*<br>R.O.G. Cabin  |
| Monday, July 28   | 8 am - 1 pm  | AMA Scale, Peanut                   |
|                   | 1 pm - 4 pm  | Manhattan Cabin                     |
|                   | 4 pm - 10 pm | Intermediate Stick<br>Easy B (3-9)* |

Monday Outdoor FF events: A/1, C Gas, Payload  
judge scale events

Note: This schedule was confirmed by Homer in a phone call on January 12, 1986 and takes the place of all previously published schedules. The NATS entry blank official schedule has 2 printing errors, shown above by the asterisks, the above schedule is what will be followed.

We and Ed Whitten also addressed the other problems at the NATS dealing with interference by onlookers, improper or incomplete model processing, proper floor etiquette by contestants, timers, contest officials, and spectators, etc. Most of these problems are a result of non-indoor fliers running the Indoor NATS. In our contact with Homer Smith both by letter and phone, we are confident that these will be dealt with for the 86 NATS.

## NATS 1987

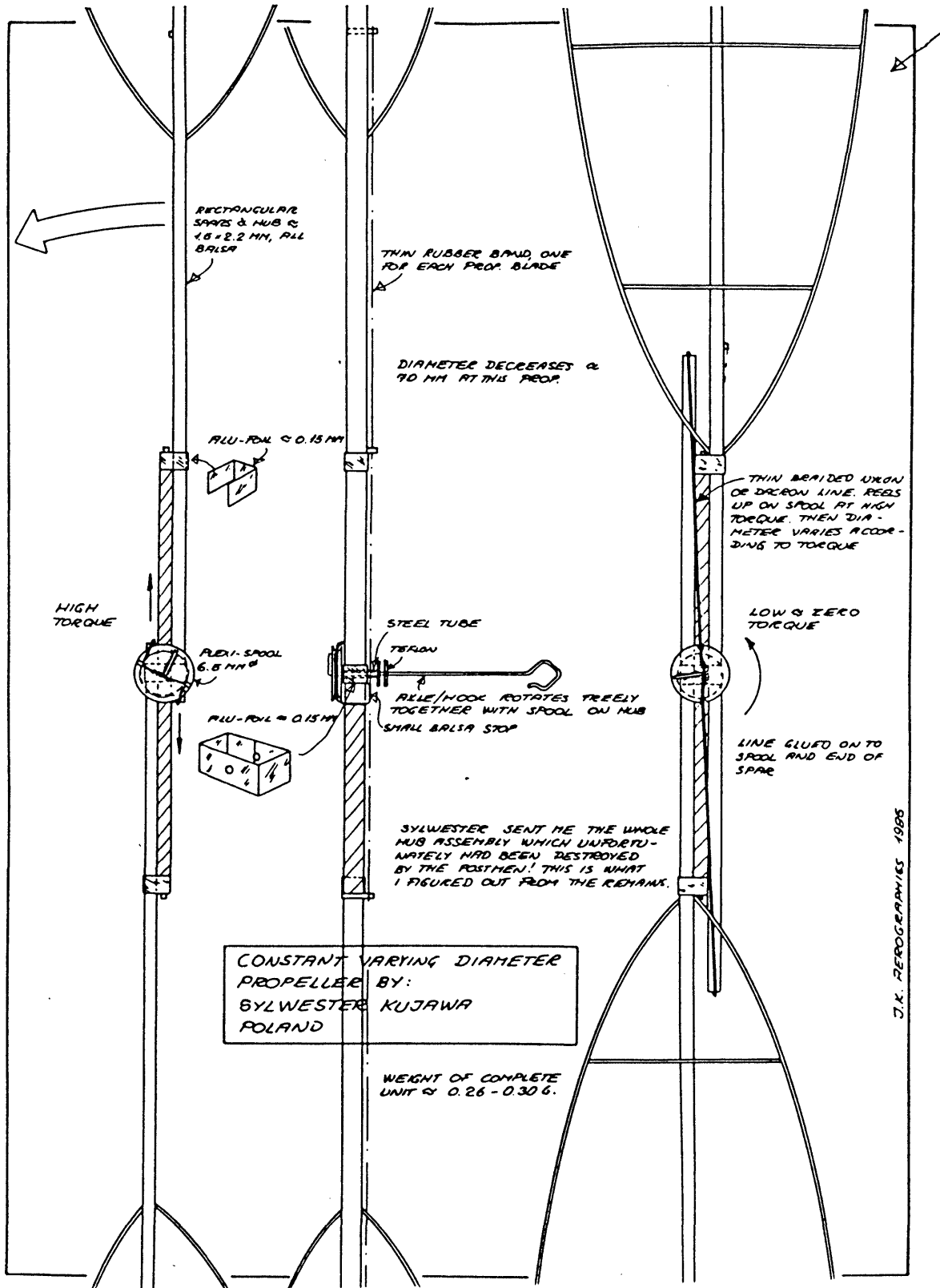
Would you believe we are also working on the 1987 NATS? NATS planning has to be done further in advance of the actual event than most fliers realize, and that included us.

AMA District VII Vice President Pete Waters is very interested in putting together a NATS package in western Michigan for 1987. Because Pete is not an indoor flier, he called us asking for our opinion and help. From our viewpoint this is highly unusual and long overdue. We strongly feel that local Contest Board and Team Selection committee members, in all categories, should be consulted when selecting NATS sites.

We had to make a trip to Chicago at Christmas and we used both drives to check out potential sites. Then in early January we spent one Saturday and almost 400 miles checking out additional sites. So far we have not found a suitable indoor site in western Michigan. Our recommendation is to use a proven good contest site in either Detroit or Chicago, as everything else we have seen would be second rate. If you know of a good site, especially an obscure one, please let us know. It may come to the point where we ask your opinion on site A or site B. Until then we will keep you posted.

## THIS ISSUE

Since the last issue #19, Rich had major knee reconstructive surgery (Oct. 1), the recovery & necessary physical therapy have occupied most of our free time. The knee is progressing well & on schedule. In addition we have: flown in 5 contests, 3 indoor & 2 outdoor, run 3 contests, been in on 1986 NATS planning & scheduling, searched for an indoor site for 1987 NATS and finished the administrative paperwork for the 1985-86 FAI Indoor Team. No wonder we have been busy. With this double issue, INAV is now caught up.



RECTANGULAR SPARS & HUB @ 1.6 x 2.2 MM, ALL BALSA

THIN RUBBER BAND ONE FOR EACH PROP. BLADE

DIAMETER DECREASES @ 90 MM AT THIS PROP.

THIN BRAIDED URON OR DRAGON LINE. REELS UP ON SPOOL AT HIGH TORQUE. THEN DIAMETER VARIES ACCORDING TO TORQUE

HIGH TORQUE

LOW & ZERO TORQUE

STEEL TUBE

TERON

FILE/HOOK ROTATES FREELY TOGETHER WITH SPOOL ON HUB

SMALL BALSA STOP

SYLVESTER SENT ME THE WHOLE HUB ASSEMBLY WHICH UNFORTUNATELY HAD BEEN DESTROYED BY THE POSTMEN! THIS IS WHAT I FIGURED OUT FROM THE REMAINS.

CONSTANT VARYING DIAMETER PROPELLER BY: SYLVESTER KUJAWA POLAND

WEIGHT OF COMPLETE UNIT @ 0.26 - 0.30 G.

J.K. FEROGRAPHIES 1995



## A PROPELLER WITH CONSTANTLY VARYING DIAMETER

from Sylwester Kujawa by Jørgen Korsgaard

In September I got a letter from Sylwester containing the hub and some part of the blades of his newly developed C.V.D. prop. Unfortunately the postal services had been rather brutal to the envelope, so quite a lot of bits and pieces fell out, when I opened it! I tried to put the prop together again, and on the drawing you can see, what I figured out.

Editor's Note: Bud Romak was in Romania this autumn and saw Kujawa's props up close. He says that Korsgaard's drawing is correct. This prop appears to be much easier to build than the hinged versions by Richmond or Dolg.

This drawing was stolen from Jørgen Korsgaard's newsletter, Indoor News. Jørgen is doing a good job and makes beautiful drawings as you can see. He started the newsletter for his Danish modelling buddies and it has grown to cover most indoor activities in Europe with some from the U.S. and Australia.

The newsletter is published 3 times a year, about March, July and November. Subscription rates are:  
Scandinavia Dkr. 45,-  
Europe Dkr. 50,-  
Overseas Air Dkr. 60,-  
Send name and complete address to:  
Jørgen Korsgaard  
Ahornweg 5  
D-2397 Ellund-Handewitt  
West Germany

On January 1, 1986 the event Paper Stick becomes Intermediate Stick. The only real change is that commercially available plastic coverings (not micro-film) are now allowed on these models. The following directions for applying Ultrafilm, a plastic film, make the job easy, they also work well for applying condenser paper.

## APPLYING ULTRAFILM WITH SPRAY CEMENTS

by Ray Harlan

With proper care, spray cements can provide a lighter, more uniform adhesive for Ultrafilm (and other plastics and condenser paper) than any brushed on coating. Brushed-on adhesives are difficult to control and take much longer to apply. A light spray adhesive will add less than .00012 oz. per sq. in., or less than .0002 oz. for an Easy B wing. One of the best features of spray cement is that it allows repositioning of the film if a mistake is made while covering.

The first step is to choose the right product. Many spray cements (such as 3-M Spray-ment) produce a cream-colored lacy pattern that is too heavy and is not uniform. Much more suitable are 3M Super 77 and 75, and Grumbacher 548 with fine, transparent sprays. The Super 77 is a high-tack adhesive that now comes with an extra fan-spray nozzle ideal for indoor models. For the lightest covering, Number 75 is best. It has a lower, but more than adequate tack, and is formulated for temporary bonds. The air loads on indoor models are so low that this adhesive is essentially permanent. Grumbacher 548 sprays uniformly, has moderate tack, but is heavier than No. 75. It has an orange tint that makes it easier to see.

When setting up to cover a model, two essential items must not be overlooked. First, be sure the room is well ventilated. This means open windows and fresh air. Second, cover the floor where you will spray with lots of newspapers, at least three feet beyond each edge of the largest frame you will spray. You don't want gummy furniture. Spraying in a large, open-top box will help contain the overspray.

To help see where you are spraying, try this: shine a flashlight horizontally across the spray zone a few inches above the floor. Turn out all other lights when you spray. The aerosol droplets will reflect light from the flashlight so you can see them more easily. This is a good way to estimate how much

cement you are applying, and where. A black plastic background also helps you see the droplets and can be cleaned with paint thinner.

Use just one pass on a narrow wing, and no more than two on a wider wing (one each for the leading and trailing edges). For No. 75 and 548, hold the can 12 to 24 inches above the frame. For No. 77, use 24 to 36 inches. Spray at about one foot per second. You will be surprised how little adhesive is required. Remember, less is lighter.

The best covering method is to borrow a microfilm technique: cover the wing flat and add dihedral later. If the sprayed frame is put over a traced outline on the board, it can be adjusted to eliminate skew and wiggly outlines. You may need to tack glue it to the board if it doesn't want to stay in place. There is no rush; the spray adhesive will stay tacky enough for several hours.

Ultrafilm can be applied either from a light balsa hoop larger than the frame to be covered, or two people can hold it with a hand at each corner. A little practice will get smooth coverings without crushing curved ribs. If you make a mistake, carefully peel back the covering and rework it. Lightly press on the outline to secure the Ultrafilm. Then cut it out with a pencil soldering iron ( a 23 to 47 watt iron with a thin chisel tip is good). Not only is this much easier than trying to use a razor blade, it seals the film edge and prevents rips that might propagate readily. After cutting off the excess film, turn the frame over and press the ribs to secure the film to them.

Dihedral in wings can be added at this stage. The film near dihedral ribs will loosen. To draw it tighter, wet a small brush in spray cement (from a spot sprayed on paper) and lightly coat the film on top of the rib. You may want to thin the cement with some toluene (Elmer's contact cement solvent) to make it brush easier. When the coat gets tacky, gently nudge the loose film against it with a thin flat (but dull) tool, or balsa sliiver, from below the wing. Be careful not to push too much film onto the cement strip or the diheral rib will bow excessively. If this happens, pull the film apart and rework it. This technique requires some practice. But remember, loose film is not too detrimental to long flights.

These covering suggestions should get you well on your way to indoor modelling without the frustrations encountered with paper and other plastic covering materials. Soon you will be devising your own special techniques to further simplify the job.

EDITOR'S NOTE: Plastic film coverings are not allowed in current Easy B rules.

The spray cements mentioned in the above article can be found in artist's supply stores.

For the black plastic background, use a garbage bag and throw it out when you are finished.

# NATIONAL FREE FLIGHT SOCIETY

DEDICATED TO THE INTERESTS OF FREE FLIGHT MODELING

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

10 Models of the Year (1986)

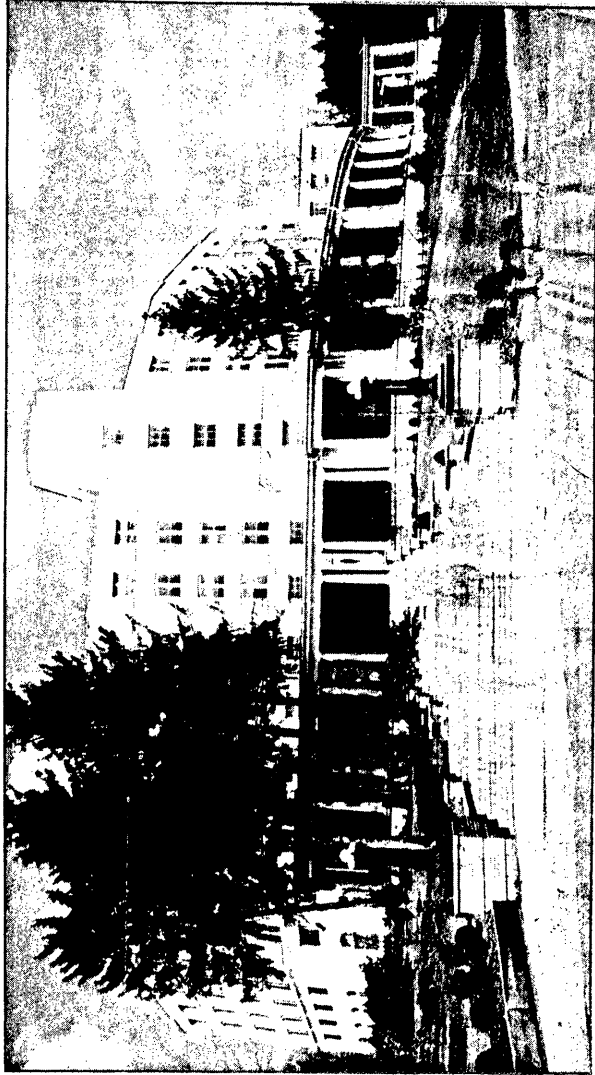
Send to: Gil Morris  
2810 Brackley Rd.  
Columbus, OH 43220

Free Flight Hall of Fame (1986)

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

Have your information in by January 1, 1986

Thank You for your assistance.



Renovation underway at historic West Baden Springs Hotel

## Renovated hotel at West Baden will employ 500

By Claude Parsons  
Times-Mail Executive Editor

WEST BADEN — The long-awaited renovation of the historic West Baden Springs Hotel is now underway following purchase of the 94-year-old structure by a partnership headed by a California firm.

"When the revamped hotel is completed, it will employ an estimated 500 persons from the Springs Valley area, and surrounding communities," stated Gene MacDonal, president of MacDonal Hotels Management Corp., which will lease and manage the building.

In addition, a \$3.5 million ski resort is being planned with the Paoli Peaks organization, "and when the resort is completed, it will employ another 300 persons," MacDonal added.

"Preliminary renovation has begun and we are now preparing for the installation of new facilities in the building," stated MacDonal. Marlin Properties, a real estate syndication firm based in Beverly Hills, purchased the hotel and surrounding 250 acres for \$1.5 million through the partnership it heads, according to MacDonal. The sale was finalized last Friday.

MacDonal said his corporation is leasing the property from the partnership for a 45-year period, and that the hotel operation will be under his direction. The partnership has raised \$5 million of a planned \$12 million so far, and loans are expected to cover the remainder of the \$25 million planned for the project.

"There will be 425 new rooms, see Hotel page 2

shops and stores in the hotel, along with conference room facilities, and we hope to be open to the public by spring or late summer," MacDonal pointed out.

The rooms will surround the 60,000-square-foot, 130-foot-high domed atrium. There will be two restaurants, two bars, a men's shop, a ladies shop, gift shop, beauty shop, flower shop, candy store, sundry shop, and others, MacDonal added.

"Also planned at the hotel are spa facilities, a golf course, and tennis courts and we hope to have them in operation — as well as the ski facility, to be known as Mount Arie Ski Resort... — by the end of 1986," MacDonal said.

"We want to include all of the amenities to make the structure into a four-star hotel," the French Lick native added.

He pointed out that the heating, ventilating and air conditioning contract has been awarded to Goff Refrigeration of Bedford, and that work is nearly completed. Roofing of the entire hotel is three-quarters done, MacDonal added, and four new elevators have been ordered and will be installed by AB Elevator in Louisville.

"The main thing that helped the project was the indecisiveness of Congress regarding the proposed new tax bill," said MacDonal. "This made investors hesitant to invest in tax-sheltered rehabilitation projects."

"When the bill failed to materialize and apparently will not be

did additional study in hotel management at Cornell University.

Northwood Institute operated the hotel in West Baden as a college campus from 1967 until the end of the 1982-83 school year. The original West Baden Springs Hotel was destroyed by fire June 14, 1901, but owner Lee Sinclair rebuilt the structure, reopening it on June 14, 1902.

Sinclair later sold the hotel to Ed Ballard, who operated it until it was forced to close its doors in the fall of 1931. Ballard sold the building in 1934 for \$1 to the Society of Jesus, and it became a seminary to train students for the priesthood. In 1965, the Jesuits moved to Chicago, where the seminary became part of Loyola University.

## Hotel

From page 1

instituted until Jan. 1987, this was the impetus that permitted the sale of our tax-sheltered credits and allowed work to continue on the hotel," he added.

MacDonal, a veteran of over 40 years in the hotel business, has been searching for a syndicator for the hotel property ever since leasing it from Northwood Institute in the fall of 1983. He had originally hoped to have the hotel in operation by the spring of 1984, but plans were delayed.

The 1942 French Lick High School graduate received a degree in hotel and restaurant management in 1949 from Michigan State University, and

In September we received word via Tony Italiano that the West Baden Springs hotel building has been bought by Eugene MacDonal. Indoor model flying in the Atrium are not in his plans. Tony is optimistic that all is not lost forever. Now it is January and we hear that MacDonal has sold the building, we do not know if this is good or bad. We will keep you posted.

### WEST BADEN UPDATE

### UPDATE ON THE UPDATE

On January 18, 1986 we received this newspaper clipping from Stan Chilton, concerning West Baden, Bedford, Indiana is a few miles down the road from West Baden. (Notice the misprint in the paper's date, actual publication date was January 2, 1986.)

## 1986 AMA RULEBOOK

Miracle of miracles we received our advance copy of the new rulebook on December 12, 1985. By now the general membership should have received their copies. HQ has told us that some copies went out with blank pages. If you get one of these a simple phone call to HQ will correct the problem.

The only mistakes or omissions are that there are no page numbers for the individual sections in the Table of Contents and the Scale Score sheets are missing. Other than that everything for Indoor seems to be there. The Scale Score sheets will appear in an upcoming issue of Model Aviation.

### NEW INDOOR CONTEST BOARD MEMBER

We welcome Charlie Sotich as the new District VI (Illinois, Indiana, Kentucky, Missouri) Indoor Contest Board member. His long experience in indoor modelling will be a welcome addition to the board.

### EASY B ALTITUDE CONTEST

Yes, you read it right. An Easy B contest for altitude to be held April 19 & 20, 1986 in the 130 meter high atrium of the Shinjuku NS building in Tokyo, Japan. This building claims to have the highest atrium in the world - at 130 meters it is more than twice the height of the Akron Airdock. Competition sponsors will pay three days meals and lodging if you can get to Tokyo. There may also be proxy flying and an endurance competition. For more details contact Jim Kagawa, 1910 W. 181st Street, Torrance, CA 90504 or call (213)324-0570 after 7 pm Pacific time.

### CONTEST CALENDER

#### CALIFORNIA- SAN DIEGO

San Diego Orbiteer's indoor flying after monthly business meeting on 2nd Friday of each month and also on 4th Friday of each month. Start 7:30 pm at Colina Del Sol Community Center, 5319 Orange Av. Contact Program Chairman Don Murin.

#### CALIFORNIA - TUSTIN

FAI Indoor team selection contests in Hanger #1 on Tustin M.C.A.F. the first weekend of each month. CAT IV. To gain admittance to the base, contact Curt Stevens, 25108 Marguerite Pwy, #B-160, Mission Viejo, CA 92692 or (714)586-5779.

#### COLORADO - DENVER

Denver area Indoor Model Airplane Association funflays at Martha B. Crawford Elementary School gym, 17th Av. & Florence St. near downtown Aurora. Friday evenings from 6:30 pm - 9:30 pm (start at 7:30 pm during January and February) scheduled thru mid-April. Easy B, Glider and Peanut Scale - also permitted. Bostonian, Embryo, Helicopters, Ornithopters. Juniors are welcome, children 12 and under must be accompanied by an adult. For more info call: Richard John (303) 477-5564 or Jeff Pakiz (303)366-6580.

#### CONNECTICUT - GLASTONBURY

Glastonbury Modelers indoor flying at Glastonbury High School gym. CAT II. Feb. 2, 8 am - 5 pm Contest, March 2, 8 am - 12:30 pm funfly, April 6 8 am - 5 pm contest, May 4 8 am - 12:30 pm funfly. Contact George Armstead, 89 Harvest Ln, Glastonbury, CT 06033 or call (203)633-7836.

#### FLORIDA - M.I.A.M.A.

Indoor contests at Miami Dade South College, 11011 S.W. 104th St. CAT II. Feb 9 meet #5, April 13 World Pistachio Inter-Gnats (Postal proxy contest for the world's smallest indoor scale models). Flying on Feb 23, March 23, and May 18 to be announced. Contact John "Doc" Martin 2180 Tigertail Av, Miami, FL 33133 or (305) 858-6363.

#### ILLINOIS - CHICAGO

Flying at Richard L. Jones (Washington Park) Armory, 51st St. & Cottage Grove. CAT III. Feb 16 IMAC Contest - Hand Launch Glider, Novice Pennyplane, Pennyplane, Easy B, Bostonian, Profile Scale Mass Launch, Kit Plan Scale. CD: George Flemming, 2819 E. 103rd St, Chicago, IL 60617 or (312)768-4970.

April 12-13 Chicago Aeronuts' Midwest States Indoor Championships - FAI Indoor, Intermediate Stick, Easy Pennyplane, Novice Pennyplane, Hand Launch Glider, Manhattan Cabin, Bostonian, Peanut Scale, Kit Plan Scale. CD: Don Lindley 420 Tupelo, Naperville, IL 60540 or (312)355-9674.

#### INDIANA - INDIANAPOLIS

The Indianapolis Free Flight Fellowship had such a good response to their first indoor contest that they will schedule another one in March. The site is the Heritage Christian School Gym, 6401 East 75th St. For more info contact: M.J. Whittemore, R.R. #1, Box 296, New Palestine, IN 46163

#### KANSAS - WICHITA

Fun flays on February 2, & March 2 in a CAT I gym, 18 ft. Contact Jim O'Reilly, 4760 N. Battin, Wichita, KS 67220 or (316) 744-0851.

#### LOUISIANA - LAKE CHARLES

A.M.A. INDOOR NATS on Saturday, July 26 through Monday, July 28. See the article on 1986 NATS in this issue for the schedule and Model Aviation for more info on other details.

#### MASSACHUSETTS - CAMBRIDGE (BOSTON)

Tech Model Aircrafters Indoor flying sessions at M.I.T. DuPont Gym, Vassar St. & Massachusetts Av. CAT II. First Saturday of each month (2/1, 3/1, 4/5, 5/3) from 6 pm - 10 pm. For information & site availability contact Ray Harlan (617)358-4013 or 258-4137 or 15 Happy Hollow, Wayland, MA 01778

#### MINNESOTA - BURNSVILLE (MINNEAPOLIS)

Minneapolis Modelers Indoor flying at Burnsville High School gym, 600 E. Highway 13. Contact D. Mendenhall 5100 50th Av, N., Crystal, MN 55429 or (612)535-2976.

#### NEW JERSEY - GLASSBORO

Southern New Jersey Indoor Model Flyers contest at Glassboro State College, Route 322, Student Center Ballroom on February 25, 1986 from 9:30 am - 4 pm. No-Cal Scale, HLG, EZB, Peanut Scale & Novice Pennyplane. Contact CD: Al Mkitarian (609)829-6973 or Larry Peters (609)881-1404.

#### NEW JERSEY - LAKEHURST

No flying dates yet.

#### NEW JERSEY - MIDDLESEX

Middlesex Modelers flying sessions at Middlesex High School, Route 28. CAT I. Contact Al Gentzel (201)231-0515 or Gene Sellers (201)725-4186.

#### NEW JERSEY - PRINCETON

Princeton University M.A.C. contest in Jadwin Gym on May 11, 1986. CAT III. Contact David Aronstein 50 Pasture Ln, Poughkeepsie, NY 12603

#### NEW YORK - CHAPPAQUA

Somers R/C Club indoor flying session at Horace Greeley High School Gym, CAT I. Contact Dave Acton (914)628-0526.

#### NEW YORK - NEW YORK

Columbia Indoor Model Airplane Society flying in Columbia University Low Library Rotunda. CAT III. Contact Ed Whitten for dates and events, P.O. Box 176 Wall St. Station, New York, NY 10005 or (212)724-0282.

NEW YORK - NIAGARA FALLS

Possible contest in early May, contact Jack Brown 1446 Red Jacket Rd, Grand Island, NY 14072 or (716) 773-5674.

FIFTH UNITED STATES INDOOR CHAMPIONSHIPS at Niagara Falls Convention Center on June 17-19, 1986. Meet flyer will be in an upcoming issue of INAV.

OHIO - AKRON

FAI Indoor Team Selection contests and Record Trials in Goodyear Airdock, CAT IV, third weekend in May, July 4th weekend, & Labor Day weekend. You must contact CD in advance, Bill Hulbert, 174 Castle Blvd. Akron, OH 44313 or (216)864-8030.

OHIO - BROOK PARK (CLEVELAND)

Cleveland Free Flight Society Annual Indoor Contest for CAT I at Brook Park Armory on February 16. 5 pm - 10:30 pm. Easy B, Peanut Scale, Scraps & mites, Jetco ROG, FAC P-Nut, FAC No-Cal, FAC WW I. Contact M. Zand, 7055 Seven Hills Blvd, Seven Hills, OH 44131 or (216)524-3480.

OKLAHOMA - OKLAHOMA CITY

Okie Free Flight Flyer sponsored indoor flying at 23rd Street Armory, CAT II. February 9 record trials. March 9 contest for HLG, EZB, Pennyplane, Manhattan Cabin, Ornithopter, 14 gram Bostonian, Peanut, AMA Scale, local rule 5 gram ROG, Profile Scale. Contact Bill Baker, 1902 Peter Pan St, Norman, OK 73072 (405)329-1018.

PENNSYLVANIA - PHILADELPHIA

Delaware Valley Federation of Model Airplane Clubs sponsored flying sessions at Memorial Hall in Fairmont Park near the zoo. CAT II. Saturday sessions about every 4 weeks. For the next date contact Joe Krush 409 Warner Rd., Wayne, PA 19087 or (215)688-3927 or Doug Barber 146 Stratton House, Maple Shade, NJ 08052 or (609)235-5318.

TEXAS - BEDFORD (DALLAS/FORT WORTH)

Monthly flying sessions at Bedford Boy's Ranch gym on Forrest Ridge at Harwood, CAT I. For dates and events contact Jesse Shepperd, 2713 Summit View, Bedford, TX 76021 or (817)282-3770.

VIRGINIA - CHRISTIANSBURG

Montgomery County Model Aviation Club's first ever Indoor contest for CAT I at Christiansburg Armory on Jan 26. Hopefully this will be the first of many contests. Contact R. Lefrancois, 465 Chinquapin Trail, Christiansburg, VA 24073 or (703) 382-2816.

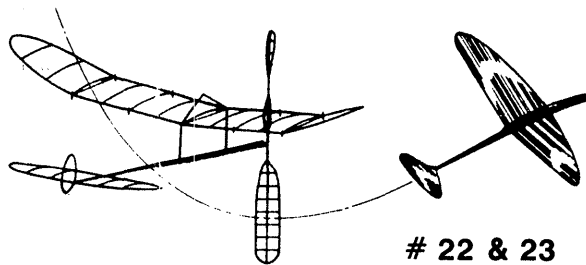
WISCONSIN - DELAFIELD (MILWAUKEE/ MADISON)

Bong Eagles indoor contest at St. John's Military Academy gym, CAT I, on April 6, 1986. HLG, Novice Pennyplane, Scale. Contact Gil Graunke, 15260 Heather Hill, Brookfield, WI 53005 or (414)781-7087.

Indoor flying sessions every Tuesday night at Hamilton High School. Contact Gordy Wisniewski, 4790 Stratford Dr, Greendale, WI 53129 or (414)421-3696.

# INDOOR

## NEWS and VIEWS



# 22 & 23

Editors: Richard & Melody Doig - 6 Canary Hill Drive, Pontiac, MI 48055 (313) 373-5374

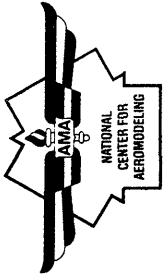
**!! INDOOR NATS MOVED TO MIDWEEK - DETAILS ON PAGE 2 !!**

Indoor Events schedule for 1986 NATS at Lake Charles Civic Center,

| Tuesday, July 29  | Wednesday, July 30 | Thursday, July 31   |
|---|--------------------|---|
| 8 am  |                    |   |
| 9 am Site not available until after 2 pm.                                     | A.M.A. Scale       | Unofficial events<br>Ornithopter<br>Autogiro<br>Helicopter<br>Bostonian<br>Rubber Speed, etc. |
| 10 am   | Peanut Scale       |   |
| 11 am   |                    |   |
| 12 noon   |                    |   |
| 1 pm  |                    |   |
| 2 pm  |                    |   |
| 3 pm See note below   | Easy B             | Novice Pennyplane } enter one only  |
| *4 pm   | Intermediate Stick | Pennyplane }  |
| 5 pm  |                    |   |
| 6 pm Hand Launch Glider - all wood only & Scale judging 7 pm turn in deadline |                    | Manhattan Cabin   |
| 7 pm  |                    |   |
| 8 pm  | FAI Indoor (F1D)   | FAI Indoor (F1D)  |
| 9 pm  |                    |   |
| 10 pm   | Hand Launch Stick  | R.O.G. Cabin  |
| 11 pm   |                    |   |
| 12 pm   |                    |   |

NOTE: This 3 hour gap is to allow time to set up the scoreboard shroud and because I don't think they will have the building cleaned up from the event (Wrestlemania) the night before by 2 pm.

\*4 pm: All Outdoor Free Flight events are scheduled to end at 4 pm. This gives those modelers who fly both indoor and outdoor events a chance to do so at this NATS. Driving time between the sites is about 20 minutes.



## ACADEMY OF MODEL AERONAUTICS

1810 Samuel Morse Drive  
Reston, Virginia 22090  
703-435-0750

TO: Vince Mankowski, NATS General Manager  
Homer Smith, Free Flight Events Manager  
John Guenther, Scale Events Director  
Indoor and Free Flight Newsletter Editors  
Indoor Contest Board  
Indoor Modelers

FROM: Richard Doig, NATS Indoor Contest Director  
DATE: June 1, 1986

SUBJECT: Indoor Events at 1986 NATS

From the beginning of NATS 1986 planning, Burton Coliseum was the preferred indoor site with the Lake Charles Civic Center as an alternate site. An alternate site was planned from the beginning as Burton Coliseum was to get its floor concreted during 1986 and last fall the exact timetable for this was not known. In mid-March we found out that the Lake Charles Civic Center had disregarded the tentative hold for the dates during NATS week and rented the building out to other parties for both weekends (July 26-28 and August 1-3). This meant that we had to go with Burton Coliseum with no backup site. In mid-April we found out that the Burton Coliseum renovations (new lights and service catwalks along with concrete floor) were delayed and the contract would not be let until May. If we were to use the building in July, we would be able to do so only if the contractors would agree. In early May we found that some of the sub-contractors would not give permission for us to use Burton Coliseum as there would be two cranes in the building along with other construction equipment.

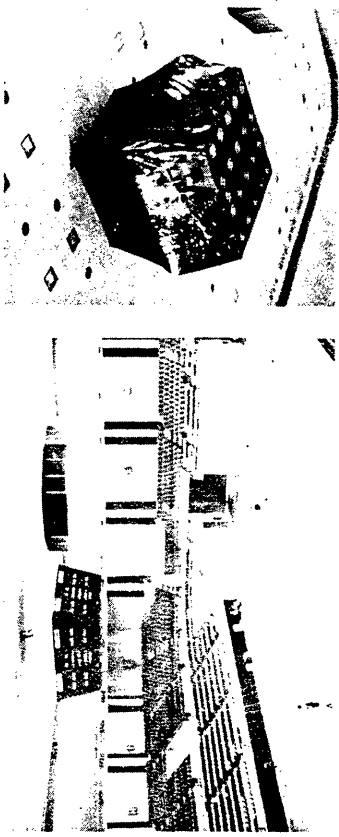
Now a mad scramble to find an indoor site began. With Vince Mankowski at A.M.A. headquarters doing all the negotiations and contacting all the individual sites, Homer Smith, Richard Doig, Tony Italiano, and Hardy Brodersen began feeding him suggestions. Sites within 500 miles of Lake Charles were considered, including:

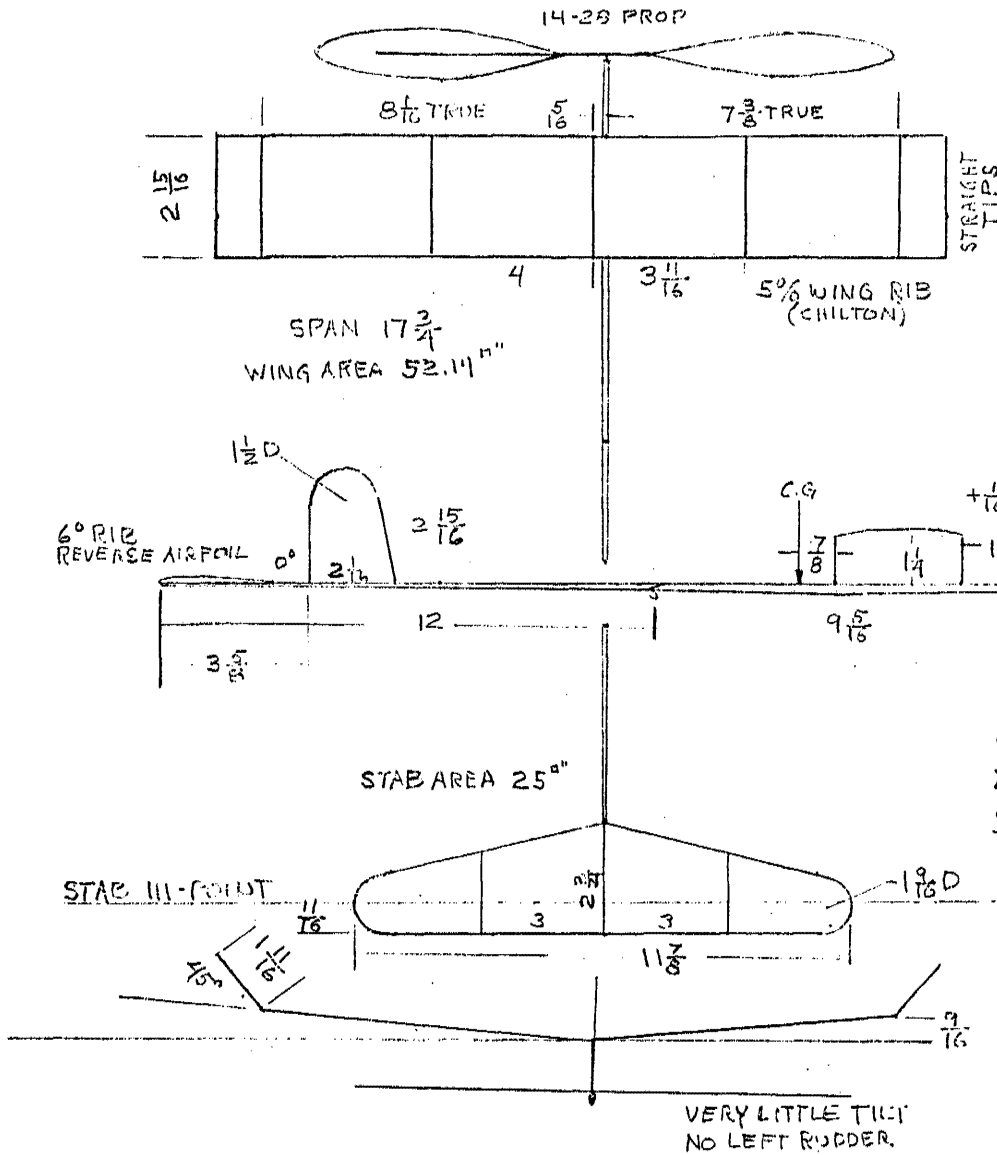
- University of Southwestern Louisiana in Lafayette - booked
- Louisiana State University in Baton Rouge - booked
- Superdome in New Orleans - booked (and expensive!)
- Goodyear Hangar in Spring, Texas - building new blimp in hangar this summer.
- Houston, Texas area - no sites or motels available as pre-Olympic trials are that week.
- Site (30') in Galveston, Texas - available but the 200 mile drive for 30 feet was unacceptable.

At this point consideration was given to having no indoor events at the NATS, or having the events at a different site and time. I suggested that as a final effort we should see if the Civic Center or the Lafayette site were available evenings during the week. As it turned out the Lake Charles Civic Center was available mid week and on May 28, Vince Mankowski decided to go with this rather than cancel the indoor events. The Civic Center is available Tuesday afternoon, July 29, all day Wednesday, July 30 and all day Thursday, July 31. Vince contacted me so that a suitable schedule could be worked out. I contacted John Guenther, Scale Events Director, who is responsible for the Indoor A.M.A. Scale and Peanut Scale events, as we had to work around when he could get Scale judges and when the Indoor Scale Contest Director would be available. The following schedule is what was worked out and has been approved by Homer Smith and Vince Mankowski. Events were scheduled to minimize conflicts between Indoor and Outdoor Free Flight events, and this is why most of the events were shifted to the afternoon and evening. Also having flown in the Civic Center in 1975 until midnight, I personally know that the conditions should be good until after midnight.

The Lake Charles Civic Center is 55 feet, arena style floor surrounded by stands, with sealed concrete floor and acoustic tile ceiling. The only hanging obstructions are a scoreboard, which will be shrouded with plastic and one speaker enclosure which models cannot get inside.

Photos reprinted from Indoor News and Views, August 1974 and August 1975.





G.R. NOLIN'S "SERENDIPITY"  
 21:23 ON 2 MARCH 1986 AT  
 SANTA ANA (TUSTIN) BLIMP  
 HANGAR (150')  
 NEW CAT. IV RECORD

WEIGHT .039 OZ.  
 MOTOR .029 OZ.  
 17" OF .040 PIRELLI  
 CLIMBED 140', NEVER  
 TOUCHED.  
 DID IT TWICE! 21:20  
 21:23

AMA 12306

MAR '86

G.R. NOLIN, FAIRBORN, OHIO

SERENDIPITY EASY B

THIS ISSUE

This issue is late! No sooner did we get 20 & 21 mailed than a staph infection set into Richard's rebuilt knee, requiring immediate surgery, one week in the hospital, a month of intravenous medication, followed by another operation to remove the screws from the operation last October. Even after all of this the infection is gone and the knee is doing remarkably well, but we lost almost three months. We are done making predictions about being caught up.

So most of this issue is material provided by others including some pretty neat stuff. At least one subscriber complained that issue 20 & 21 was too much reading all at once. (Too bad, Charlie.) This issue has lots of pictures. The double issue format seems to be more convenient for us to work with at the present time.

To everyone who submitted items to us, thank you. Your items may not get used right away, but we will use them eventually if Richard can stay out of the hospital. So keep them coming.

Jerry Nolin has become the man to beat in high ceiling Easy B flying having broken the CAT IV record three different times, twice in Santa Ana on March 2 and the latest a flight of 22:01 in the Akron Airdock on May 18. We just received a letter from Jerry describing the attempt and he tells the story better than we could.

"You've probably heard that Larry Mzik touted me into a 'hopeless' attempt at a new record just before quitting time at Akron. Conditions were like in the old movie "The Birth of Frankenstein". Wind, lightning, torrential rain, deepening gloom. I had been working on the high torque performance of my new ship. Up to then it hadn't been good at all.

As luck would have it everything worked perfectly. The ship got right up to the roof and stayed there until nearly 15 minutes passed. I think it lost significant power at about 130 feet, but due to the neutral trim it just glided down very slowly, prop ticking over and hit some boxes about 3 feet off the floor. I'd got 22:01!

I've decided to change the name from "Serendipity" to "SERENDIPITY!".

# F1D WORLDWIDE

## F1D in Holland

sent to us by Thedo André

F1D Semi-finals on June 1, 1985 & Finals on March 8, 1986 at Schipol Hangar - 25 meter ceiling clear.

|                   |                       |
|-------------------|-----------------------|
| 1. Otto Rodenburg | 34:45 + 34:15 = 69:00 |
| 2. Edmund Liem    | 32:29 + 28:40 = 61:09 |
| 3. Thedo André    | 30:09 + 29:46 = 59:55 |
| 4. Wm. Beekmeyer  | 29:21 + 26:24 = 55:45 |

Rodenburg's flights were made with a standard micro-film ship (190 mm wing chord) with no VP or VD props. He also had a 35 minute plus test flight. Liem and André, both had their first 30 minute plus flights at this meet.

André writes that they were somewhat lucky to get the March session in because of the hangar not being available and also running out of Helium.

So you see flying sites are hard to get all over the world.

## F1D in Japan

From JIAC Indoor News - translation by George Honda

F1D Semi-finals, April 6 & 7, 1985 in Gout Gym- 14 meters (bad storm limited entries and I suspect lowered times, best times were during rounds 5 and 6)

|                       |                       |
|-----------------------|-----------------------|
| 1. Enomoto, Hideyo    | 27:57 + 29:34 = 57:31 |
| 2. Kihara, Kazumasa   | 26:28 + 27:10 = 53:38 |
| 3. Nonaka, Shigeyoshi | 25:59 + 27:32 = 53:31 |
| 7. Ota, Kenichi       | 22:43 + 24:30 = 47:13 |

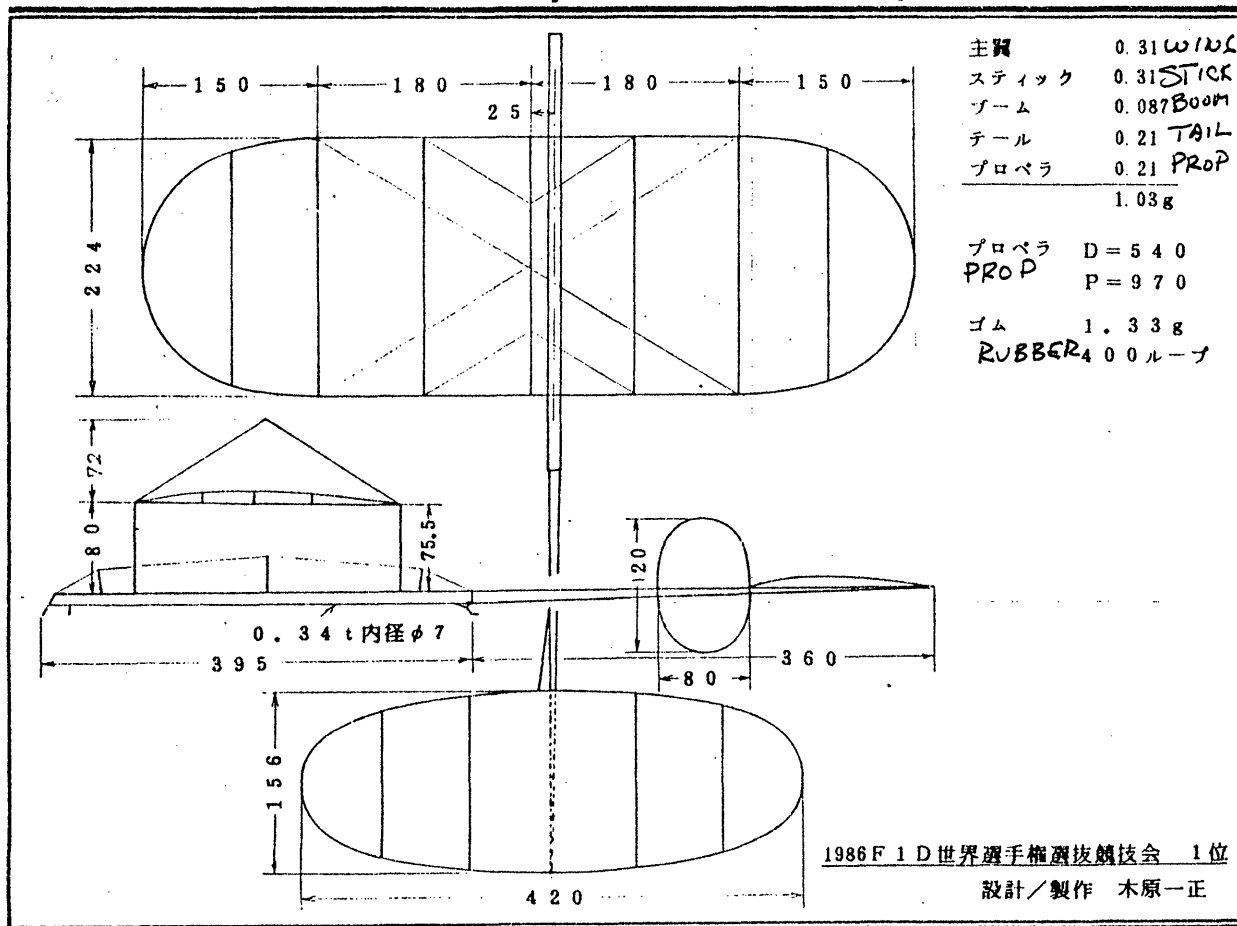
F1D Finals, August 18, 1985 in Ume-No-Jima - 25 meters (this site has a light fixture gridwork at 15 meters and no one has successfully flown through the gridwork and landed the flight)

|                     |                       |
|---------------------|-----------------------|
| 1. Kihara, Kazumasa | 26:03 + 28:49 = 54:52 |
| 2. Enomoto, Hideyo  | 23:57 + 24:17 = 48:14 |
| 3. Ota, Kenichi     | 21:01 + 21:45 = 42:46 |

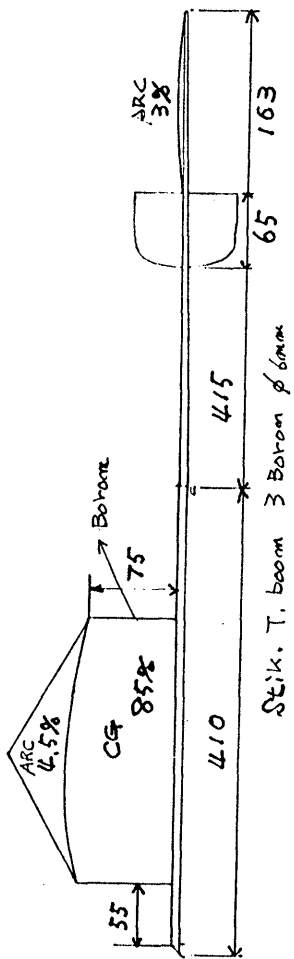
alternate: Nonaka, Shigeyoshi 16:41 + 21:34 = 38:15

Kihara is new to international competition and just may be one to watch. We will see how well he does in Cardington. The other three are all from the 1984 Japan World Championship Team.

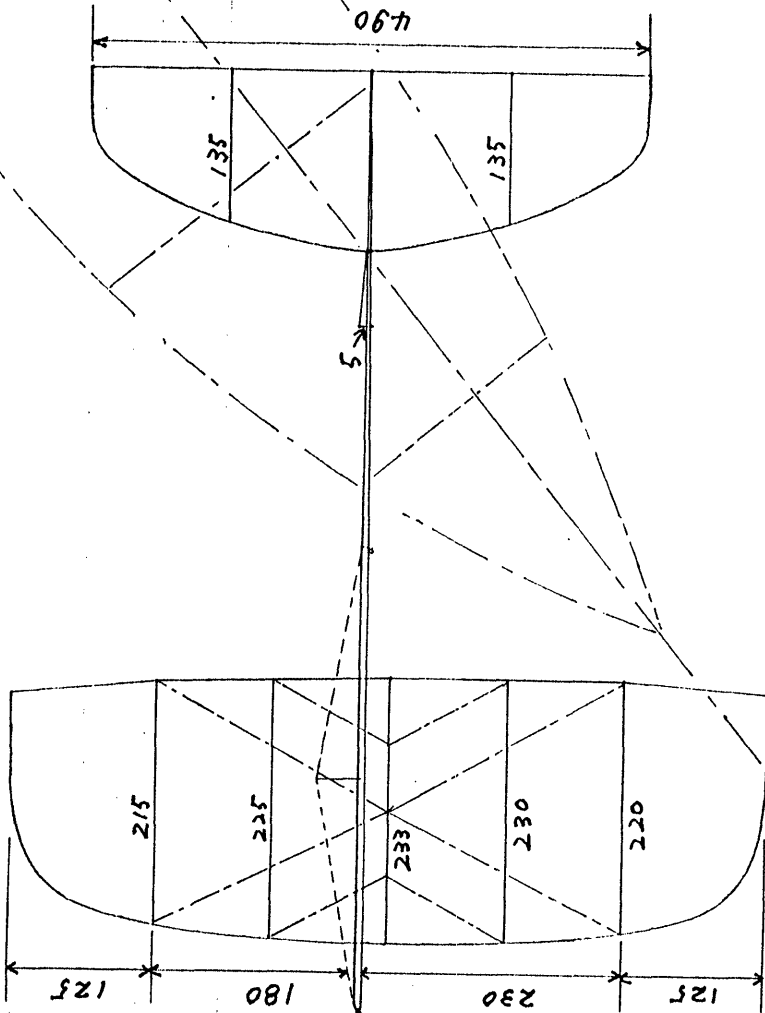
## 1986 F1D Model by Kihara, Kazumasa (Japan)







Stik. T. boom 3 Bohane  $\phi$  6mm

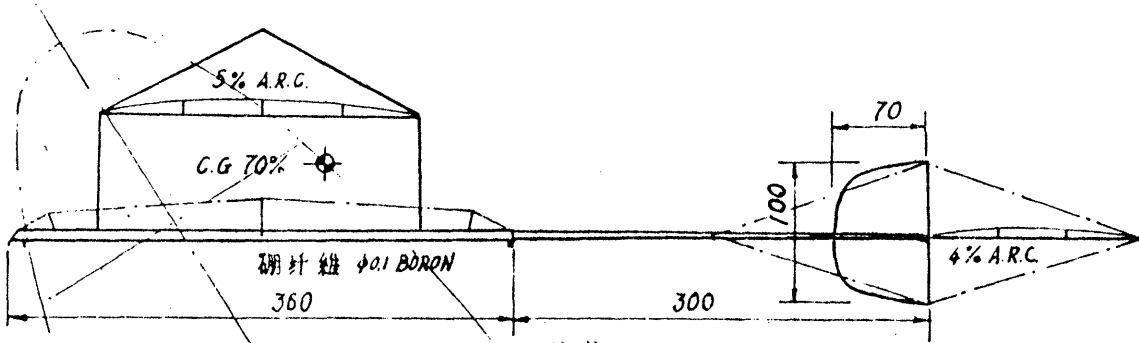


Prop  
550 Dia  
930 Pitch

Wing 0.35g  
Prop 0.16g  
Stik 0.32g  
Stab  
T. boom 0.25g  
1.08g

Time Challenger  
1985 by BAMBA

1985 F1D Model by Lu Xiu Sing of Shanghi, Peoples Republic of China

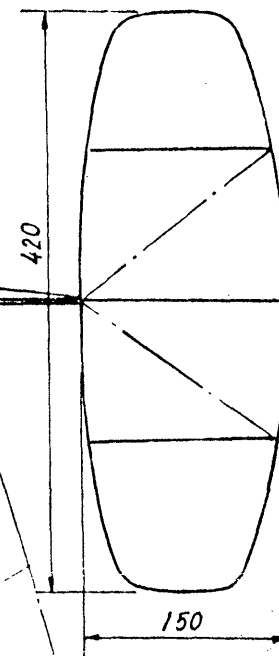
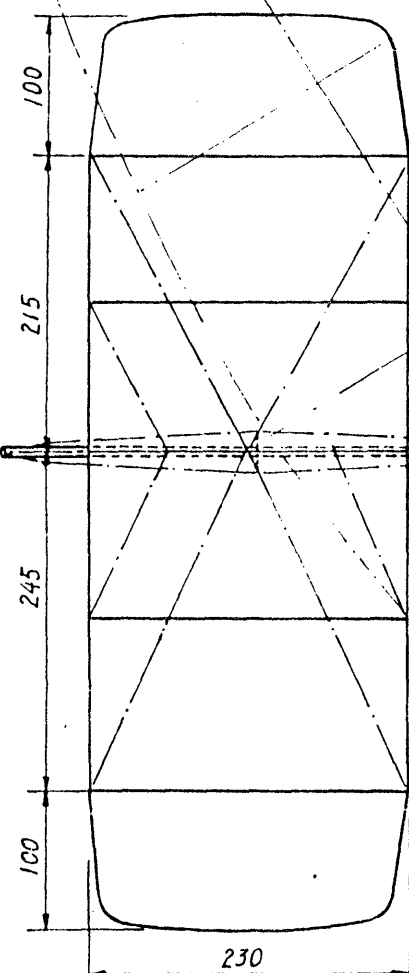


技术数据

|     |               |                      |
|-----|---------------|----------------------|
| 螺旋桨 | PROP          |                      |
| 直径  | DIAMETER      | 560                  |
| 螺距  | PITCH         | 950                  |
| 橡筋  | RUBBER        |                      |
| 环长  | LOOP          | 380                  |
| 宽度  | WIDTH         | 17                   |
| 绕圈数 | TURN O LAUNCH |                      |
|     |               | 1500 - 100      1400 |

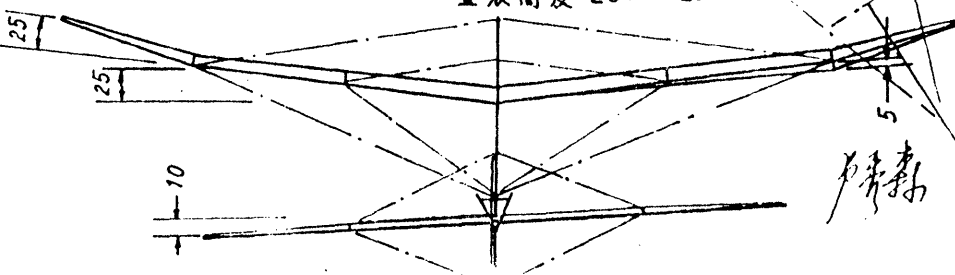
螺旋桨平均转速

|               |             |      |
|---------------|-------------|------|
| AVG. PROP RPM | 45          |      |
| 重量            | WEIGHTS     |      |
| 机翼            | WING        | 0.35 |
| 机身            | STICK AT AL | 0.60 |
| 螺旋桨           | PROP        | 0.20 |
| 模型            | MODEL       | 1.15 |
| 橡筋            | RUBBER      | 1.30 |



1985年上海市锦标赛 F1D第一名

Ⅱ级高度 20M 28:06 + 26:00 = 54:06



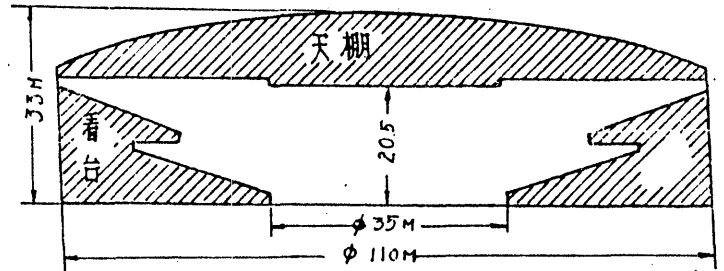
陈嘉

## SHANGHAI INDOOR MODEL NEWS

Translation by Lu Xiu Sing, sent by Herb Robbins

All events of 1985 Shanghai aeromodel championships were finished on November 31st. F1D competition arranged on November 11 & 12 and on 6-9 for practice. The flying space was the Shanghai Sports Hall with 20.5 meters ceiling height (3rd class). At competition time it was very fine, inside air very stable. Organizers did not allow use of Hydrogen balloons and Helium is too expensive so all of the competitors could not steer. And then some of the hopeful flights landed on the spectator's platform. The results were better than in 1984. First place in 1984 was 23:48 + 23:02 = 46:50 and in 1985 it was 28:07 + 26:00 = 54:09.

Editor's Note: These times of 28:07 + 26:00 = 54:09 were made by Lu Xiu Sing, who is number one man on Chinese F1D team, the other two member's names were not translated.



上海体育馆示意图

## INDOOR WORLD CHAMPIONSHIPS

Indoor World Championship 1986 Class F.1.D. to be held at Cardington Airship Hangers, Bedfordshire, England. 22nd to 26th August 1986.

### To help the organiser

Please send your entry with money, as soon as possible (but not later than 15th July 1986)

to: Laurie Barr,  
4, Hasting Close, Bray, Berkshire, England.

| Number of Supporters/Spectators is                                  | x £107.48 ea | Total       |
|---|--------------|-------------|
| All money must be pre-paid, in Sterling.<br>Payable to Laurie Barr. |              | Grand Total |

British National Indoor Model Championships to be held on Saturday 31st August & Sunday 1st September 1986. Entry and competition in this event is open to any model flyer from any Country, at Cardington Airship Hangers.

### Saturday 31st August 1986

- Events: (1) E.Z.B.  
(2) Peanut Duration  
(3) Manhattan 4g & 6g  
(4) C.O.2. Duration  
(5) Novice Penny Plane

Note: Some Countries have different rules, but any EZB is allowed, but no wire bracing of flying surfaces is allowed.  
(6) All in scale Contest. Any size, any power unit (i.e. C.O.2/Rubber is OK), flown to Miami rules, Contest Director Butch Hadland!

### Sunday 1st September 1986

All Microfilm models

- Events: (7) Open  
(8) F.1.D.  
(9) 35 c.m. wingspan.

This is a special event for those wishing to either stay on to the week-end after the World Championships, or those who come just to fly the week-end 31st August - 1st September.

The same 1st class food & accommodation is available at £28 per person, as for the World Championships.

Send your entries as soon as possible to:

Laurie Barr,  
4, Hasting Close,  
Bray,  
Berkshire.  
England.

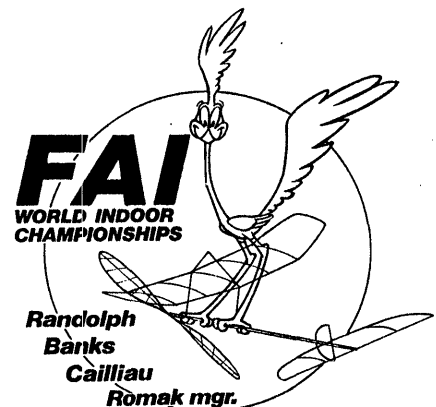
## FAI RULE PROPOSALS

Any modeler wishing to submit a rule proposal must do so through their national aeroclub. In the U.S. proposals must be sent to A.M.A. headquarters, attention M. Madison by August 1, 1986. The proposal is then sent to the FAI Team Selection committee for review and voting on. This vote deadline is September 15, 1986. If passed by the committee, it then goes to the U.S. representative on the appropriate CIAM subcommittee, the A.M.A. President and the U.S. voting delegate for review before it can be submitted as an agenda item.

There is no official form for submitting proposals. Any proposal must refer to the appropriate sections and paragraphs in the FAI Sporting Code (1984). The exact wording of any change must be given and also a briefly stated reason for the change.

## FAI RULES SEMINAR

On this very subject, Erv Rodemsky will host a session during the 1986 World Championships on F1D rules and what should be different and long range changes. Time and place to be announced.



Logo designed by Herb Robbins & friend

INVITATION

APRIL 1986

I have decided to serve the indoor scene with a collection of F1D drawings and sketches, and it is to be published and distributed at the World Champs in August 1986 .....

But the collection will be nothing without your comprehensive cooperation ..... so .....

ALL the competitors who are going to fly at Cardington are asked to contribute with ....

- 1:5 or 1:4 scale drawings of their models including
- 1:1 airfoils and details
- wood sizes and densities
- full prop details
- rubber size
- design comments, biographies and pictures are also welcome

Those who are not draftsmen should just send pencil drawings and I'll do the rest .....

Contributions can be sent to me at any time from now - the earlier the better - but not after the 15th July which is absolute deadline .....

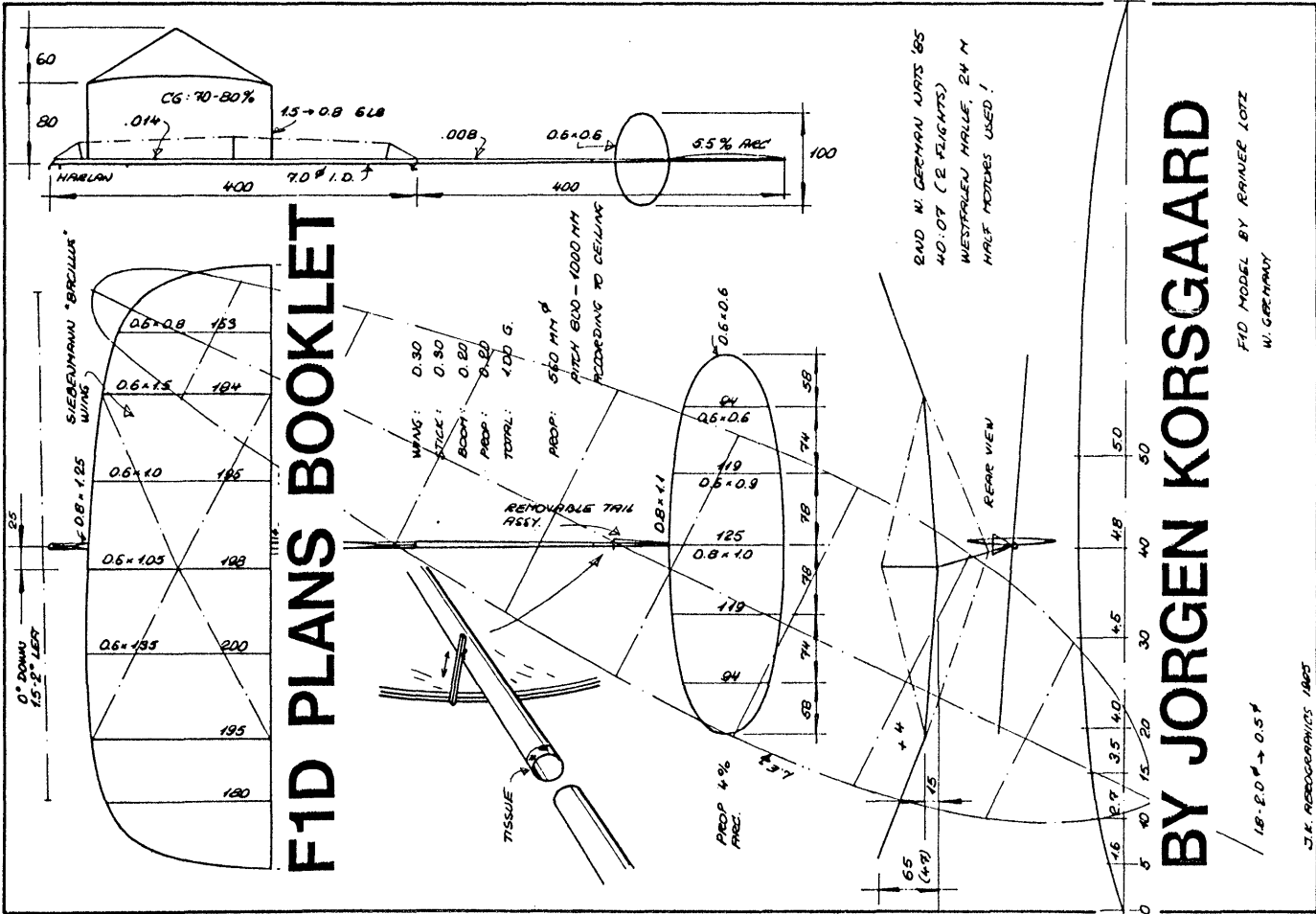
My address is:  
 Jørgen Korsgaard  
 Ahornweg 5  
 D-2397 Ellund-Handewitt  
 W. Germany

I'm convinced that such a collection of drawings etc. can be very helpful in getting more people to fly the beautiful F1D class, also it might serve as inspiration etc. for the "old foxes" ....

Yours sincerely

Jørgen Korsgaard  
 F1D fan, editor of  
 INDOOR NEWS etc....

Editor's note: Jørgen is taking on a large task with this plans booklet, but it is something we look forward to receiving. We hope all the World Championships' competitors submit their plans.



F1D PLANS BOOKLET

BY JØRGEN KORSGAARD

F1D MODEL BY RANVEE LOTZ  
 W. GERMANY

18-20" → 0.5"

J.K. AERODYNAMICS 1985

BAUD W. GERMAN WARTS '85  
 40-07 (2 FLIGHTS)  
 WESTERLEU WALLE, 24 M  
 HALF MODELS USED!

INAV ISSUES

Just how many issues of INAV have been printed? We have been asked this question and here is a listing of all the issues we know about - all 221. We are not offering to run complete sets of back issues. We are looking for others who have complete sets, who would be willing to share them - for photocopying - with the have nots. If you are missing a couple of issues we can fill out your set if you send us a large self-addressed envelope and 25¢ for each issue.

The first number after the date is the number of pages in my library

The letter following the number is a code as follows:

- P Photocopy
- O Original Printing
- M Master is in our possession

|      |               |      |                        |      |                      |      |                               |
|------|---------------|------|------------------------|------|----------------------|------|-------------------------------|
| 1961 | November 4 P  | 1966 | January 5 P            | 1970 | January 4 0          | 1974 | May 4 0                       |
|      | December 4 P  |      | February 5 P           |      | February ?           |      | June 4 0                      |
| 1962 | January 4 P   |      | March 4 P              |      | March 4 0            |      | July 5 0                      |
|      | February 5 P  |      | April 5 P              |      | April 4 0            |      | August 4 0                    |
|      | March 5 P     |      | May #1 4 P             |      | May 4 0              |      | September 4 0                 |
|      | April 5 P     |      | (labeled May Feb 1966) |      | June 4 0             |      | October 4 0                   |
|      | May 6 P       |      | May #2 2 P             |      | July 4 0             |      | November 4 0                  |
|      | June 5 P      |      | May #3 2 P             |      | August 5 0           |      | December 4 0                  |
|      | July 5 P      |      | June 5 P               |      | September 4 0        | 1975 | January 4 0                   |
|      | August 5 P    |      | July 3 P               |      | October 4 0          |      | February 4 0                  |
|      | September 5 P |      | August 4 P             |      | November 4 0         |      | March 4 0                     |
|      | October 5 P   |      | September 4 P          |      | December 4 0         |      | April-May 5 0                 |
|      | November 5 P  |      | October 5 P            | 1971 | January 4 0          |      | June 4 0                      |
|      | December 4 P  |      | November 5 P           |      | February 4 P         |      | July 4 0                      |
| 1963 | January 5 P   |      | December 5 P           |      | March 4 0            |      | August 4 0                    |
|      | February 6 P  | 1967 | January 6 P            |      | April 4 0            |      | September 5 0                 |
|      | March 5 P     |      | February 6 P           |      | May 4 0              |      | October 4 0                   |
|      | April 6 P     |      | March 6 P              |      | June 4 0             |      | November 4 0                  |
|      | May 6 P       |      | April 5 P              |      | July 3 0             |      | December 4 0                  |
|      | June 4 P      |      | May 5 P                |      | August 4 P           |      | (dated February 1975)         |
|      | July 4 P      |      | June 5 P               |      | September 3 0        | 1976 | January 4 0                   |
|      | August 5 P    |      | July 4 P               |      | October-November 4 0 |      | February 3 0                  |
|      | September 4 P |      | August 4 P             |      | December 4 0         |      | March 3 0                     |
|      | October 5 P   |      | September 4 P          | 1972 | January 4 0          |      | April-May 5 0                 |
|      | November 5 P  |      | October 4 P            |      | February 4 0         |      | June 5 0                      |
|      | December 4 P  |      | November 5 P           |      | March 4 0            |      | July 4 0                      |
| 1964 | January 4 P   |      | December 5 P           |      | April 4 0            |      | August 4 0                    |
|      | February 5 P  | 1968 | January 4 P            |      | May 4 0              |      | September 4 0                 |
|      | March 4 P     |      | February 4 P           |      | June 4 0             |      | October 5 0                   |
|      | April 4 P     |      | March 4 P              |      | July 4 0             |      | (includes insert letter)      |
|      | May 5 P       |      | April 4 P              |      | August 5 P           |      | November 6 0                  |
|      | June 4 P      |      | (dated March 1968)     |      | September 5 0        |      | (includes 2 pg insert letter) |
|      | July 4 P      |      | May 4 P                |      | October 4 0          |      | December 4 0                  |
|      | August 4 P    |      | June 4 P               |      | November 5 0         | 1977 | January 3 0                   |
|      | September 4 P |      | July 4 P               |      | December 4 0         |      | February 4 0                  |
|      | October 4 P   |      | August 3 P             | 1973 | January 4 0          |      | March 4 0                     |
|      | November 4 P  |      | September 4 P          |      | February 5 0         |      | April 4 0                     |
|      | December 4 P  |      | October 4 P            |      | March-April 5 0      |      | May 3 0                       |
| 1965 | January 5 P   |      | November 5 P           |      | May 5 0              |      | June-July 5 0                 |
|      | February 5 P  |      | December 4 P           |      | June 4 0             |      | August 3 0                    |
|      | March 4 P     | 1969 | January 4 P            |      | July 4 0             |      | September 4 0                 |
|      | April 5 P     |      | February 4 P           |      | August 5 0           |      | October 4 0                   |
|      | May 5 P       |      | (dated February 1964)  |      | September 4 0        |      | November-December 5 0         |
|      | June 5 P      |      | March 4 P              |      | October 4 0          | 1978 | January-February 4 0          |
|      | July 4 P      |      | April 4 P              |      | November 5 0         |      | March ?                       |
|      | August 5 P    |      | May 4 P                |      | December 4 0         |      | April-May 5 0                 |
|      | September 4 P |      | June 3 P               | 1974 | January 4 0          |      | June-July 5 0                 |
|      | October 4 P   |      | July-August 5 P        |      | February 4 0         |      | August-September 5 0          |
|      | November 5 P  |      | September 5 P          |      | March 4 0            |      | October-November 5 0          |
|      | December 5 P  |      | October 4 P            |      | April 4 0            |      | (includes VNART entry blank)  |
|      |               |      | November 4 P           |      |                      |      |                               |
|      |               |      | December 4 0           |      |                      |      |                               |

1979 Dec-Jan 5 0  
 (Includes scale score sheet)  
 Feb-Mar 5 0  
 Apr-May 5 0  
 June-July 5 0  
 Aug-Sept 5 0  
 Oct-Nov 5 0

(Includes SNART entry blank)  
 December 4 0

1980 Starting with the  
 next issue, issues  
 are numbered.

- #1 August 1981 4 0
- #2 October 1981 4 0
- #3 January 1982 4 0
- #4 March 1982 5 0  
 (includes VIINART entry blank)
- #5 April 1982 4 0
- #6 August 1982 5 0  
 (includes rule change form)
- #7 September 1982 4 0
- #8 November 1982 4 0
- #9 May 1983 5 0  
 (includes ENART entry blank)
- #10 July 1983 5 0
- #11 September 1983 4 0
- #12 October 1983 5 0  
 (includes USIC survey)
- #13 June 1984 6 M  
 (includes USIC entry blank)
- #14 August 1984 7 M  
 (includes 3 pgs rule proposals)
- #15 Oct-Nov 1984 17 M  
 (includes 11 pgs rule proposals)
- #16 December 1984 6 M
- #17 February 1985 9 M  
 (includes 3 pg USIC entry blank)
- #18 May 1985 6 M
- #19 August 1985 7 M
- #20-21 January 1986 14 M

NEW INDOOR CONTEST BOARD MEMBERS

We would like to welcome two new ICB members to the group. In District II (New York & New Jersey) Pete Andrews moved out of the District and Doug Barber has been appointed. In District XI (Alaska, Idaho, Montana, Oregon & Washington) Dave Hagan has resigned and Andy Tagliafico has replaced him.

PECK POLYMERS FIRE

The Peck Polymers factory burned down on Feb. 2, 1986. Sandy and Bob now have a new building and are delivering orders. They should be back to full production soon. The mailing address is the same as before: Peck Polymers, Box 2498, La Mesa, CA 92041 with a new telephone number (619) 488-1818. Catalog is \$2.00.



# NATIONAL FREE FLIGHT SOCIETY

DEDICATED TO THE INTEREST OF FREE FLIGHT AEROMODELING

Anthony J. Italiano  
 1655 Revere Drive  
 Brookfield, WI 53005

May 10, 1986

PRESS RELEASE      PRESS RELEASE      PRESS RELEASE

The National Free Flight Society has announced the recipients of the Free Flight Hall of Fame for 1986. The Society is extremely proud to recognize their contributions to the development and continuity of free flight model airplane activities throughout the USA and the world.

**Joseph W. Foster** - Wakefield Team flyer (World Champion 1953), 1952 Grand Nats champion, Power champion, Indoor record holder, a real competitor!

**Annie M. Gieskieng-** (Deceased) NFFS administrator during the formative years in the 1960's.

**William C. Hannan** - Publisher of modeling books that are intriguing and excellent for young and old.

**Robert L. Hatschek-** Flyer of renown, tow hook experimenter and chronicler of concepts.

Awards will be held during the 1986 Nationals (Lake Charles, LA) at the NFFS Symposium on Tuesday, July 29, 1986.

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

40 MINUTE CLUB UPDATE

Please add these new members to the club:

| <u>Name</u>   | <u>Country</u> | <u>Time</u> | <u>Class</u> | <u>Year</u> | <u>Site</u> |
|---------------|----------------|-------------|--------------|-------------|-------------|
| Kalina, Jiri  | CSSR           | 40:11       | 3            | 1975        | Cardington  |
| Gitlow, Lew   | USA            | 40:52       | 2            | 1985        | Santa Ana   |
|               |                | 41:52       | 2            | 1985        | Santa Ana   |
| Randolph, Bob | USA            | 44:37       | 2            | 1986        | Santa Ana   |

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

INAV SUBSCRIPTION RATES

Subscription rates including membership in the National Indoor Model Airplane Society are ten (10) issues for:

- \$5.00 U.S., Canada, Mexico
- \$6.50 overseas surface mail
- \$7.25 overseas Air Mail

Please remit in U.S. dollars by cash, money order, U.S. Postal money order, or check drawn on a U.S. bank - payable to the order of Richard Doig.

Send to: Richard Doig  
 6 Canary Hill Drive  
 Pontiac, MI 48055 U.S.A.

# FIFTH UNITED STATES INDOOR CHAMPIONSHIPS

June 17, 18, 19, 1986  
At Niagara Falls International Convention Center Arena  
Niagara Falls, New York



Sponsored by:  
National Free Flight Society  
National Indoor Model Airplane Society

Sanctioned AAAA by AMA  
Category III  
(Ceiling is 72')

|                            | AM                   |   |    |    |     |   |   |   |                  |   |   |   | NOON              |   | PM |   |         |   |   |   |   |  |
|----------------------------|----------------------|---|----|----|-----|---|---|---|------------------|---|---|---|-------------------|---|----|---|---------|---|---|---|---|--|
|                            | 8                    | 9 | 10 | 11 | 12  | 1 | 2 | 3 | 4                | 5 | 6 | 7 | 8                 | 1 | 2  | 3 | 4       | 5 | 6 | 7 | 8 |  |
| JUNE 17, 1986<br>TUESDAY   | HAND LAUNCHED GLIDER |   |    |    | F1D |   |   |   | AMA STICK        |   |   |   | OPEN/AUTOG/BOSTON |   |    |   |         |   |   |   |   |  |
| JUNE 18, 1986<br>WEDNESDAY | PP/NPH/MANH          |   |    |    |     |   |   |   | F1D              |   |   |   | SPEED             |   |    |   | BANQUET |   |   |   |   |  |
| JUNE 19, 1986<br>THURSDAY  | EASY B/INTER.STICK   |   |    |    |     |   |   |   | PEANUT/AMA SCALE |   |   |   | GRAND PRIX        |   |    |   |         |   |   |   |   |  |

SPECIAL instructional classes for TUBE ROLLING/FLIGHT ADJUSTING/ETC, will be held during the meet. See bulletin board for times, subject and lecturer.

**NOTE: OPEN EVENTS WHICH HAVE LESS THAN 4 ENTRIES WILL BE CANCELLED!**

F1D -NOT IN ROUNDS

NOTE: All models for scale judging are to be submitted by 9:00 a.m. June 18 or earlier (along with documentation and name of contestant).

On Monday, June 16 at 12:00 Noon to 5 PM, AMA and the USIC operation have joined efforts to promote a Delta Dart program with approximately 200 children. There is a need for 30 "instructors", (that's you!) Please volunteer and help tomorrow's modelers get started on 6/16/86.

All Senior and Open Flyers will be required to time flights and assist as called upon (be happy and VOLUNTEER!) Bring your own stopwatch.

(Ceiling- 72', Floor- 260'x310')

NOTE: FOR DETAILS OF THE MIAMI PEANUT GRAND PRIX, SEND A LARGE SASE TO:  
Dr. J. Martin, 2180 Tigertail Ave.  
Miami, FL 33133

ENTRIES MUST BE POSTMARKED BY MAY 8, 1986- LATE FEE \$10.00 PAYABLE ON SITE.

NOTE: ALL 1986/1987 AMA RULES APPLY. All rule change "proposals" DO NOT apply!

CHAIRS AND TABLES WILL BE AVAILABLE BRING YOUR OWN BALLOONS (HELIUM AVAILABLE)

BANQUET -WED. JUNE 18, 1986 - 8.00 p.m.  
\$12.00 Per Person  
BANQUET SPEAKER -- JACK BEILMAN

Contest Directors:  
H. Brodersen, A. Italiano  
D. Lindley, C. Sotich  
G. Wisniewski

| AWARDS TO 3rd PLACE |                           | Includes One Event | Each Addl. Ev |
|---------------------|---------------------------|--------------------|---------------|
| OP                  | NFFS AND NIMAS MEMBER     | \$12.00            | \$4.00        |
|                     | NON NFFS AND NIMAS MEMBER | \$30.00            | \$5.00        |
| JR                  |                           | \$4.00             | \$2.00        |
| SR                  |                           |                    |               |

All entries must be AMA Member or their countries' governing body (contestant provides proof).

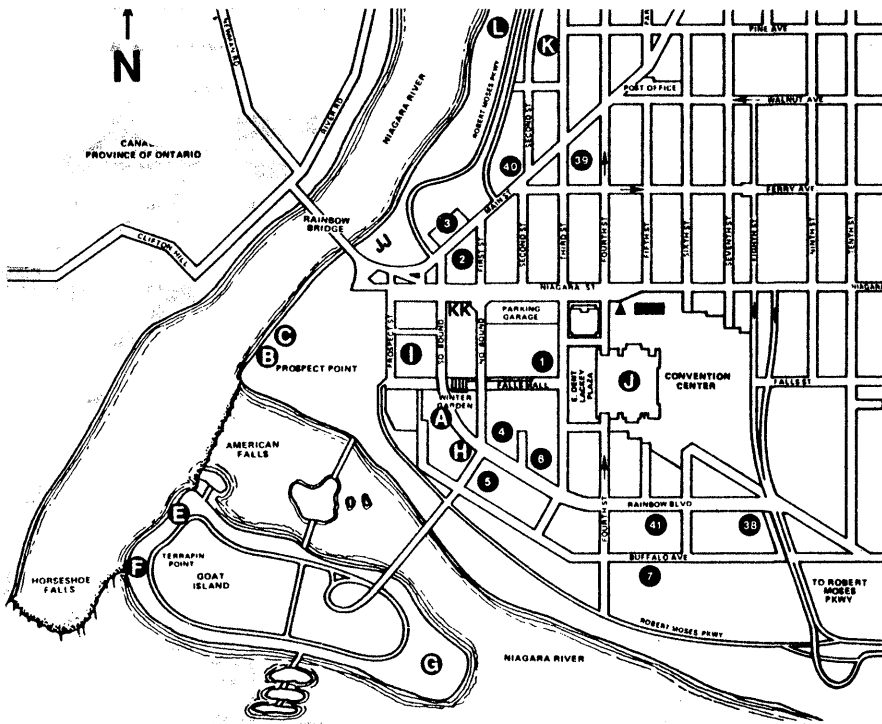
Send your entry payable to:

USIC  
1655 Revere Drive  
Brookfield, WI 53005

(414) 782-6256 (after 7 p.m.)

NO FAULT INSURANCE: Check your model before you come to the contest-- disqualified if your out of dimension model is due to lack of self discipline.

DOORS OPEN AT 7.00 A.M. FOR PRACTICE FLYING



## DOWNTOWN CONVENTION COMPLEX

▲ VISITOR INFORMATION  
Welcome Center

### ATTRACTIONS

Shopping areas are shaded

- A. Turtle - Native American Indian Museum
- B. Prospect Point & Observation Tower
- C. Maid of the Mist
- KK. Rainbow Centre Shopping Mall
- E. Cave of the Winds
- F. Terrapin Point

■ BUS TERMINAL  
Open Summer 1985

- G. Heliport
- H. Artisans Alley
- I. Niagara Wax Museum
- J. Convention Center
- K. Aquarium
- L. Schnelkopf Geological Museum
- JJ. Ammex Duty Free Shop

### HOTELS AND MOTELS

- 1. Niagara Hilton Hotel
- 2. Quality Inn Intown
- 3. Howard Johnson's Motor Lodge
- 4. Hotel Niagara
- 5. Holiday Inn
- 6. Travelodge
- 7. Ramada Inn
- 38. Waldorf Niagara
- 39. Coachman Motel
- 40. Uptowner Motel
- 41. Rainbow Guest House

### BOSTONIAN RULES:

1. Maximum projected wingspan(s) 16" and chord(s) 3".
2. Maximum propeller diameter 6".
3. Maximum overall length w/o prop is 14".
4. Minimum weight w/o motor(s) 7 grams (bi-planes - 14 g).
5. Fuselage contains a "box" 1 1/2 x 2 1/2 x 3" (min).
6. Longerons must support the motor(s) and form "box".
7. Fixed landing gear, two or more rotating 3/4" dia. min. wheels - model must ROG.
8. Must have a windshield and a window on each side with min. of 1 sq. in. each.
9. Charisma factor: Judge rates model on appeal to him, construction neatness, scale like details, uniqueness, etc. A 1.0 to 1.2 rating is used.
10. Seven official flights over 20 seconds, total in full seconds of the best two flights multiplied by the charisma factor determines winner basis.

### UNLIMITED RUBBER SPEED (BrokenSpar Event)

1. Models must be rubber powered and propeller driven.
2. Models must start from an unassisted ROG launch from a three-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 determined by the two pylons and ends when it crosses the line after completing two laps.
6. Shortest time for two full laps determines winner.
7. No limit to the number of models or launches.

### PEANUT SPEED

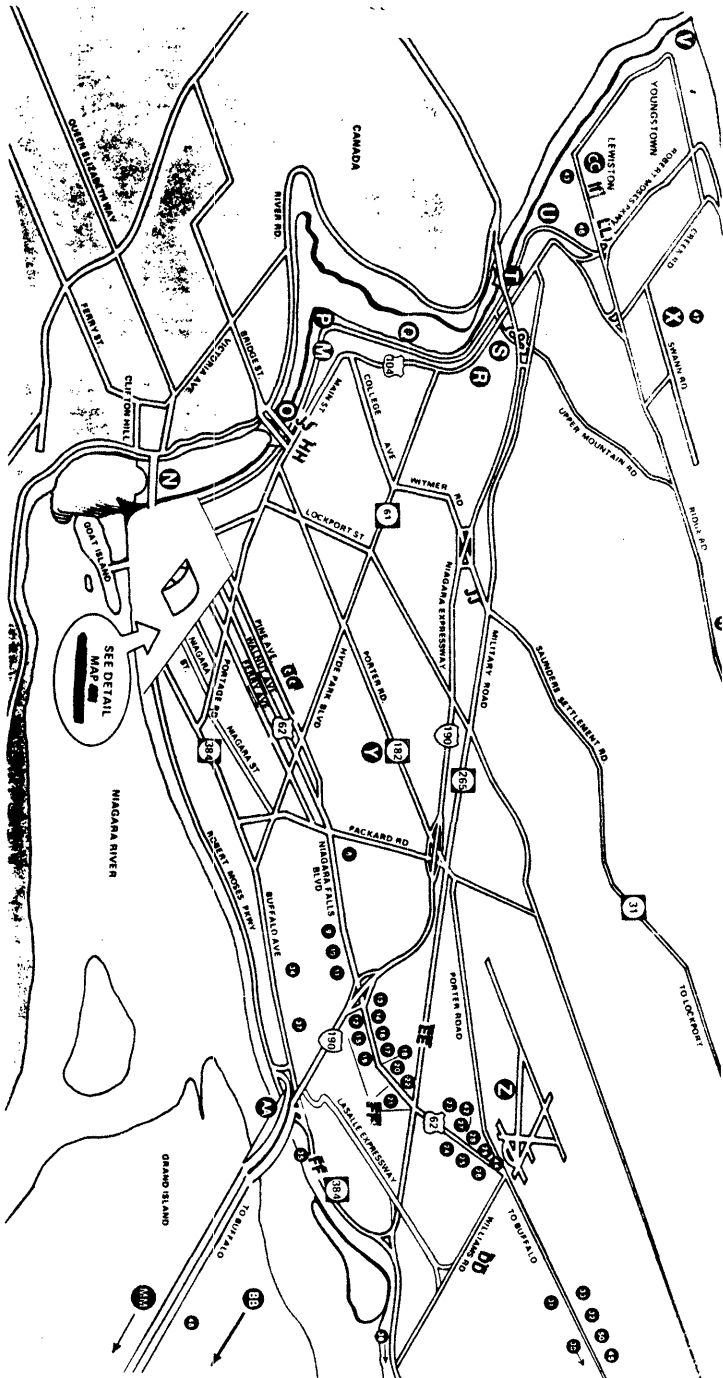
The Unlimited Rubber Speed rules apply except:

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

|                 | JR                   | SR | OP |
|-----------------|----------------------|----|----|
| A W HLG         | X                    | X  | X  |
| PAPER STICK     | JR. & SR. (COMBINED) |    | X  |
| ROG CABIN       |                      |    | X  |
| FLD             |                      |    | X  |
| EASY B          | JR. & SR. (COMBINED) |    | X  |
| PENNY PLANE     | X                    | X  | X  |
| NOVICE PP       | X                    | X  | X  |
| MANHAT.         |                      |    | X  |
| BOSTONIAN       |                      |    | X  |
| INDOOR STICK    | JR. & SR. (COMBINED) |    | X  |
| PEANUT SCALE    | JR. & SR. (COMBINED) |    | X  |
| AMA SCALE       |                      |    | X  |
| PEANUT SPEED    |                      |    | X  |
| UNLIMITED SPEED |                      |    | X  |
| ORNIHOPTER      |                      |    | X  |
| AUTOGIRO        |                      |    | X  |

CASH PRIZES ONLY





## GREATER NIAGARA FALLS AREA

### HOTELS AND MOTELS

- ATTRACTIONS**
- M. Buechler-Caselliani Art Gallery
  - N. Rainbow Bridge
  - O. Whirlpool Rapids Bridge
  - P. Whirlpool State Park
  - Q. Devil's Hole
  - R. Niagara University
  - S. Power Project Visitor Center
  - T. Lewiston-Queenston Bridge
  - U. Artpark
  - V. Old Fort Niagara
  - W. Four-Mile Creek State Park
  - X. Fatima Shrine
  - Y. Hyde Park Golf Course/Tennis
  - Z. Niagara Falls Airport

### SHOPPING AREAS

- AA. Grand Island Bridge
- BB. Fantasy Island (Grand Island)
- CC. McDonald's Frontier House
- MM. Shea's Buffalo Theatre

A special Sightseeing Tour has been arranged for your visit to Niagara Falls. You will be picked up at the Niagara Falls Convention center at 9AM, tour the Falls on the American side, take a ride on the famous Maid of the Mist boat at the base of the Falls, travel down the Niagara River to the power vista and go through Fort Niagara at the mouth of the Niagara river. Now you will cross over the Queenston Lewiston Bridge to Canada, travel to Brooks Monument and Queenston Heights, one of the most historic sights in North America. Here you stop for lunch at the Park Restaurant, overlooking the lower Niagara River, continue up along the Canadean shore to the Floral Clock, Aero Car, whirlpool rapids and arrive at the brink of the Horseshoe Falls; in Queen Victoria Park. After touring the park you will go to the Thundering Waters of the Falls, and back across the Rainbow Bridge to your starting point at 4 PM. This deluxe tour includes admissions to Maid of the Mist ride, entrance to Fort Niagara and the Minolta Tower. Lunch at Queenston Heights is not included in Package. Net cost per person \$18.00 US. This tour will be on Tuesday, June 17, 1986. Reservations and payment are required by May 8, 1986.

### ROUTE 384

- 8. Packard Motel
- 9. Thundering Water Motor Inn
- 10. Thrifty Inn
- 11. Sunrise Motel
- 12. Howard Johnson's Motor Lodge East
- 13. Holiday Motel
- 14. Honeymoon Delux
- 15. Riveria Motel
- 16. Caravan Motel
- 17. Pizza Court RV Park
- 18. Caraways Motel
- 19. Cascade Motel
- 20. Moonlit Motel
- 21. Carfax Motel
- 22. Carfax Motel
- 23. Niagara Falls Motel
- 24. Herwood's Motel
- 25. Sands Motel
- 26. A Star Motel
- 27. Bel Air Motel
- 28. Castle Motor Inn
- 29. Big O Park Motel
- 30. Saffire Motel
- 31. Deltwood Motel
- 32. Esquire Motel
- 33. Summit Park Court Motel
- 34. Eagle Motel
- 35. Niagara Falls North
- 36. Niagara Falls KOA
- 37. Hobbes' Travellers Lodge
- 38. Niagara Falls Lakes Campground
- 39. Norston's Campsite
- 40. New Dairy Barn Campgrounds
- 41. Niagara Falls Motel
- 42. Herwood's Motel
- 43. Sands Motel
- 44. A Star Motel
- 45. Bel Air Motel
- 46. Castle Motor Inn
- 47. Big O Park Motel
- 48. Saffire Motel
- 49. Deltwood Motel
- 50. Esquire Motel
- 51. Summit Park Court Motel
- 52. Eagle Motel
- 53. Niagara Falls North
- 54. Niagara Falls KOA
- 55. Hobbes' Travellers Lodge
- 56. Niagara Falls Lakes Campground
- 57. Norston's Campsite
- 58. New Dairy Barn Campgrounds

### CAMPGROUNDS

- 47. KOA Niagara Falls North
- 48. Niagara Falls KOA
- 49. Norston's Campsite
- 50. New Dairy Barn Campgrounds

These accommodations are at a special rate for USIC. When making reservations with these hotels/motels, you must mention USIC and the special rate will then be applicable.

|  | single  | double  | triple  | quad    |
|--|---------|---------|---------|---------|
| BEST WESTERN/RED JACKET INN<br>7001 Buffalo Ave<br>Niagara Falls, NY 14303<br>(716) 283-7612 | \$47.00 | \$53.00 | \$59.00 | \$65.00 |
| BREITWAY INN<br>114 Buffalo Ave<br>Niagara Falls, NY 14303<br>(716) 285-2521                 | \$54.00 | \$60.00 | \$66.00 | \$72.00 |
| BUNYON HOTEL NIAGARA<br>201 Rainbow Blvd<br>Niagara Falls, NY 14303<br>(716) 285-8240        | \$52.00 | \$57.00 | \$65.00 | \$73.00 |
| NIAGARA HILTON<br>Third at Rainbow Mall<br>Niagara Falls, NY 14303<br>(716) 285-3361         | \$55.00 | \$65.00 | \$75.00 | \$85.00 |
| QUALITY INN<br>443 Main St.<br>Niagara Falls, NY 14301<br>(716) 284-8801                     | \$52.00 | \$57.00 | \$65.00 | \$73.00 |
| RAMADA INN<br>401 Buffalo Ave<br>Niagara Falls, NY 14303<br>(716) 285-2541                   | \$44.00 | \$50.00 | \$56.00 | \$62.00 |

Also, special rates at these Inns:  
**Thundering Water Inn** 5919 Niagara Falls Blvd. (716) 283-9874  
**Castle Motor Inn** 9802 Niagara Falls Blvd. (716) 297-3730  
 Double bed- 2 person - \$24.00 + tax (extra person @ \$.3.00).  
 2 Double beds- 2 persons - \$29.00 + tax (extra person @ \$3.00)

(SEE OTHER SIDE)

A delightful change of pace describes a one day shopping trip to the most beautiful city in North America, TORONTO, ONTARIO CANADA. You will take an express bus from Niagara Falls direct to Toronto and the fabulous Eaton shopping center in the heart of downtown Toronto. You will be returned by express bus back to Niagara same evening. Besides the wonderful time you will experience an exchange rate of \$1.37 Canadian for each \$1.00 American. Cost to you for round trip \$16.95, US funds. Reservations required in advance. This trip will be available on Monday, June 16th only. Payment required with reservation. This offer is not available beyond 8, 1986.



# FIFTH UNITED STATES INDOOR CHAMPIONSHIPS

June 17, 18, 19, 1986

Niagara Falls International  
Convention Center Arena



**NFFS**

Please Print

Name \_\_\_\_\_ AMA NO. \_\_\_\_\_  
                     Last                      First                      Initial

Street \_\_\_\_\_

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

I hereby certify that I understand all of the rules under which I will compete and will diligently follow the official AMA safety code as well as any that may be established on site as well as apply the use of good accepted common sense in all my flying and affairs at the contest site.

JUNIOR \_\_\_\_\_ SENIOR \_\_\_\_\_ OPEN \_\_\_\_\_

Signature \_\_\_\_\_

**CIRCLE EVENTS ENTERED**

|                  |                                  | Includes<br>One Event | Each<br>Additional Event |
|------------------|----------------------------------|-----------------------|--------------------------|
| Open             | NFFS or<br>NIMAS<br>Member       | \$12.00               | \$4.00                   |
|                  | Non NFFS<br>and NIMAS<br>Members | \$30.00               | \$5.00                   |
| Junior<br>Senior |                                  | \$4.00                | \$2.00                   |
|                  |                                  |                       |                          |

1. Hand Launched Glider (All Wood)
2. Paper Stick
3. ROG Cabin
4. FID
5. Easy B
6. Pennyplane
7. Novice Pennyplane
8. Manhattan
9. Bostonian
10. Indoor Stick
11. Peanut Scale
12. AMA Scale
13. Peanut Speed
14. Unlimited Speed (Broken Spar Event)\*
15. Ornithopter
16. Autogiro

BANQUET- No. of res. @ \$12.00 \_\_\_\_\_

NIAGARA FALLS TOUR- No. of res. @\$18.00 \_\_\_\_\_

TORONTO TOUR- No. of res. @ \$16.95 \_\_\_\_\_

I VOLUNTEER TO INSTRUCT DELTA DART \_\_\_\_\_

In case of emergency please contact:

CASH AWARDS {

\*Sponsored by Hardy Brodersen  
\$5 per each m.p.h. over 6 m.p.h. to winner only (\$100 max.)

Check for \$ \_\_\_\_\_ is enclosed

NAME \_\_\_\_\_ PHONE \_\_\_\_\_

STREET \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Send fees payable to:  
USIC  
1655 Revere Drive  
Brookfield, WI 53005

Contest Sponsors:  
National Free Flight Society  
National Indoor Model Airplane Society

Must be postmarked by May 8, 1986  
Late entry fee of \$10.00 payable on site.

NOTE: You can join NFFS or NIMAS and  
AMA on premises.

## INTERMEDIATE STICK RECORDS

Judging by recent record applications there seems to be some misconception about Intermediate Stick and records. The Paper Stick records in effect as of December 31, 1985 became the Intermediate Stick records on January 1, 1986, since all Paper Stick models fit the Intermediate Stick rules. The fact that my notification of this to headquarters was not in writing until March is the reason that the spring record listing did not reflect the name change. The July issue of Model Aviation has an accurate listing for Intermediate Stick.

## R.O.G. STICK

Bob Underwood (A.M.A.'s new Technical Director) was given the job of revising the contest calendar listing and sanction forms to provide for consistent event numbering to be used on all associated paperwork. This was a huge job and it was inevitable that some mistakes would creep in. Unfortunately R.O.G. Stick was one of those and it does not appear on sanction applications or in the contest calendar listing or in the rulebook Table of Contents. It has been assigned #214 and it will appear in revised forms shortly. The omission was simply an oversight.

## CONTEST CALENDER

### CALIFORNIA- SAN DIEGO

San Diego Orbiteer's indoor flying after monthly business meeting on 2nd Friday of each month and also on 4th Friday of each month. Start 7:30 pm at Colina Del Sol Community Center, 5319 Orange Av. Contact Program Chairman Don Munn.

### CALIFORNIA - TUSTIN

FAI Indoor team selection contests in Hanger #1 on Tustin M.C.A.F. the first weekend of each month. CAT IV. To gain admittance to the base, contact Curt Stevens, 25108 Marguerite Pwy, #B-160, Mission Viejo, CA 92692 or (714)586-5779.

### LOUISIANA - LAKE CHARLES

A.M.A. INDOOR NATS on Tuesday, July 29 through Thursday, July 31. See new Indoor schedule on cover of this issue and article on page 2. See Model Aviation for more info on other details.

### NEW YORK - NIAGARA FALLS

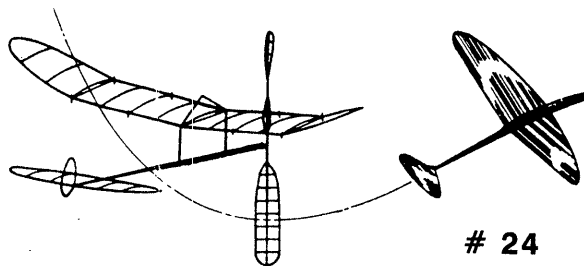
FIFTH UNITED STATES INDOOR CHAMPIONSHIPS at Niagara Falls Convention Center on June 17-19, 1986.

### OHIO - AKRON

FAI Indoor Team Selection contests and Record Trials in Goodyear Airdock, CAT IV, third weekend in May, July 4th weekend, & Labor Day weekend. You must contact CD in advance, Bill Hulbert, 174 Castle Blvd. Akron, OH 44313 or (216)864-8030.

# INDOOR

## NEWS and VIEWS



Editors: Richard & Melody Doig - 6 Canary Hill Drive, Pontiac, MI 48055 (313) 373-5374

### !! INDOOR NATS SCHEDULE CHANGED AGAIN !!

HAND LAUNCH GLIDER MOVED TO THURSDAY SCALE JUDGING MOVED TO CHENNAULT

ALL OTHER EVENTS UNCHANGED - SEE BACK PAGE (DOMESTIC ISSUES ONLY)

### FIFTH UNITED STATES INDOOR CHAMPIONSHIPS

Niagara Falls, N.Y. June 17-19, 1986

|                           |                            |                           |
|---------------------------|----------------------------|---------------------------|
| HAND LAUNCH GLIDER - JR   | AUTOGIRO                   | EASY B - JR/SR            |
| 1. D. Slusarczyk 63.4     | 1. L. Loucka 10:18*        | 1. R. Skrjanc 12:01       |
|                           | 2. D. Slusarczyk 1:10      | 2. D. Slusarczyk 10:24    |
|                           |                            | 3. R. Smith 9:14          |
| HAND LAUNCH GLIDER - OP   | UNLIMITED RUBBER SPEED     | EASY B - OP               |
| 1. R. Kluiber 131.4*      | 1. R. Higgs 14.55          | 1. G. Nolin 16:36         |
| 2. B. Boehm 128.6         | 2. C. Markos 10.12         | 2. M. Andrews 14:22       |
| 3. R. Higgs 113.6         | 3. J. Voorhees 9.88        | 3. W. Van Gorder 14:05    |
| 4. W. Schlarb 107.4       | 4. C. Slusarczyk 8.14      | 4. C. Markos 13:37        |
| 5. C. Slusarczyk 102.0    | 5. H. Phillips 6.02        | 5. R. Obarski 13:07       |
| 6. D. Belieff 96.6        | 6. W. Henderson 5.46       | 6. L. Garber 13:00        |
| 7. H. Phillips 57.6       | 7. H. Stewart 5.10         | 7. K. Groves 12:53        |
| 8. H. Stewart 55.4        |                            | 8. A. Becker 12:45        |
| HAND LAUNCH STICK - JR/SR | PEANUT RUBBER SPEED        | 9. G. Skrjanc 12:09       |
| 1. D. Slusarczyk 12:44    | 1. J. Martin 17.11         | 10. D. Barber 12:09       |
| 2. R. Skrjanc 5:02        |                            | 11. J. Maret 12:03        |
| HAND LAUNCH STICK - OP    | INTERMEDIATE STICK - JR/SR | 12. J. Miller 11:56       |
| 1. R. Higgs 33:56         | 1. R. Skrjanc 8:09         | 13. J. McGillivray 11:47  |
| 2. R. Doig 33:32          | 2. R. Smith 7:45           | 14. C. Slusarczyk 11:46   |
| 3. D. Belieff 33:29       | 3. D. Slusarczyk 1:05      | 15. W. Henderson 11:38    |
| 4. W. Van Gorder 25:56    |                            | 16. G. Underwood 11:34    |
| 5. L. Loucka 25:30        | INTERMEDIATE STICK - OP    | 17. G. Wisniewski 11:29   |
| 6. R. Ganser 25:29        | 1. D. Belieff 19:31        | 18. A. D'Alessandro 11:24 |
| 7. D. Barber 17:12        | 2. L. Loucka 19:24         | 19. J. Clem 10:48         |
| 8. B. Boehm 13:48         | 3. J. McGillivray 18:56    | 20. J. Voorhees 10:47     |
| 9. J. Voorhees 5:29       | 4. R. Obarski 18:25        | 21. D. Steeb 10:22        |
| ORNITHOPTER               | 5. M. Andrews 17:05        | 22. A. Mkitarian 9:21     |
| 1. F. Kieser 8:16*        | 6. D. Barber 16:45         | 23. H. Phillips 8:51      |
| 2. J. Kortenbach 6:21     | 7. R. Ganser 16:44         | 24. J. Krush 8:47         |
| 3. L. Garber 5:28         | 8. G. Nolin 14:51          | 25. D. Erbach 8:41        |
| 4. R. White 4:26          | 9. G. Skrjanc 13:57        | 26. M. Colling 7:51       |
| 5. H. Phillips 2:12       | 10. W. Van Gorder 13:06    | 27. A. Italiano 7:37      |
| 6. J. Krush 1:33          | 11. J. Krush 13:00         | 28. L. Cailliau 5:49      |
|                           | 12. B. Boehm 11:03         | 29. D. Krupp 5:34         |
|                           | 13. K. Groves 6:06         |                           |
|                           | 14. A. D'Alessandro 4:10   | R.O.G. CABIN              |
|                           |                            | 1. L. Loucka 20:11        |
|                           |                            | 2. R. Ganser 17:42        |
|                           |                            | 3. D. Belieff 15:01       |
|                           |                            | 4. R. Doig 13:09          |

\* New records set.

FAI INDOOR (FLD)

At-large  
Regional  
Points

|                     |                       |        |
|---------------------|-----------------------|--------|
| 1. R. Higgs         | 32:37 + 32:41 = 65:18 | - *    |
| 2. R. Doig          | 33:47 + 30:15 = 64:02 | 100.00 |
| 3. M. Andrews       | 26:27 + 26:14 = 52:41 | 82.27  |
| 4. L. Cailliau      | 25:36 + 26:32 = 52:08 | 81.39  |
| 5. W. Hulbert       | 21:39 + 28:49 = 50:28 | 78.81  |
| 6. L. Loucka        | 27:45 + 20:40 = 48:25 | 75.59  |
| 7. W. Van Gorder    | 24:23 + 23:40 = 48:03 | 75.04  |
| 8. D. Beileff       | 23:51 + 23:33 = 47:24 | 74.02  |
| 9. D. Godfrey       | 19:53 + 15:33 = 35:26 | -      |
| 10. J. Chizmadia    | 14:48 + 15:50 = 30:38 | -      |
| 11. R. Skrjanc (Jr) | 5:02 + 0 = 5:02       | -      |

\* not eligible for U.S. Team program (Canadian)

BOSTONIAN

|                   | Time     | Charisma | Total  |
|-------------------|----------|----------|--------|
| 1. J. McGillivray | 396 sec. | 1.18     | 467.28 |
| 2. K. Groves      | 372      | 1.20     | 446.40 |
| 3. R. Clemens     | 316      | 1.20     | 379.20 |
| 4. H. Phillips    | 309      | 1.10     | 339.90 |
| 5. D. Steeb       | 246      | 1.18     | 290.28 |
| 6. J. Miller      | 253      | 1.14     | 288.42 |
| 7. J. Maret       | 245      | 1.11     | 271.95 |
| 8. D. Ogren       | 211      | 1.15     | 242.65 |
| 9. H. Stewart     | 183      | 1.15     | 210.45 |
| 10. D. Erbach     | 170      | 1.18     | 200.60 |

A.M.A. SCALE

| Subject           | Flight Scale    | Ave. Points | Total |       |
|-------------------|-----------------|-------------|-------|-------|
| 1. J. McGillivray | SE 5            | 87          | 84    | 171.0 |
| 2. K. Groves      | Dreame Fike     | 86.5        | 84    | 170.5 |
| 3. L. Garber      | Fike            | 90          | 71    | 161.0 |
| 4. J. Kortenbach  | Langley Aero.62 |             | 80    | 142.0 |
| 5. R. Clemens     | Sop Sparrow     | 43.5        | 84    | 127.5 |
| 6. J. Miller      | Fike E          | 40          | 79    | 119.0 |
| 7. J. Kortenbach  | Neuport 11      | 51          | 67    | 118.0 |
| 8. J. Martin      | Voisin          | 31.5        | 76    | 107.5 |
| 9. H. Stewart     | Pilatus         | 6.5         | 83    | 89.5  |
| 10. M. Colling    | Arro 560        | 15.5        | 68    | 83.5  |
| L. Loucka         | DH 6            |             | 55    |       |
| D. Steeb          | Alco            |             | 42    |       |

PEANUT SCALE

| Subject           | Flight Scale | Ave. Points | Total   |        |
|-------------------|--------------|-------------|---------|--------|
| 1. J. McGillivray | SE 5         | 94.85       | 28.65   | 201.3  |
|                   |              |             | 106.425 |        |
| 2. J. Miller      | Santos 14    | 89.95       | 23.8    | 197.05 |
|                   | Bis          |             | 107.1   |        |
| 3. D. Steeb       | Fike E       | 92.25       | 20      | 184.5  |
|                   |              |             | 92.25   |        |
| 4. K. Fulmer      | Lacey M 10   | 90          | 20      | 180.0  |
|                   |              |             | 90      |        |
| 5. K. Groves      | Fike Dreame  | 76          | 19      | 152.0  |
|                   | E            |             | 76      |        |
| 6. J. Kortenbach  | Langley      | 47.95       | 22      | 146.95 |
|                   | Aerodrome    |             | 99      |        |
| 7. J. Martin      | Voisin       | 43.5        | 21      | 138.0  |
|                   | Hydroplane   |             | 94.5    |        |
| 8. D. Steeb       | Wright Flyer | 23.9        | 24.5    | 134.15 |
|                   |              |             | 110.25  |        |
| 9. L. Garber      | Lacey M 10   | 64.8        | 18      | 129.55 |
|                   |              |             | 64.75   |        |
| 10. W. Henderson  | Piper Pawnee | 38.25       | 18      | 119.25 |
|                   | Brave        |             | 81      |        |
| 11. J. Martin     | Ambrosini    | 63          | 16      | 119.0  |
|                   | SAI 207      |             | 56      |        |
| 12. D. Barber     | Fred         | 47.1        | 16      | 111.1  |
|                   |              |             | 64      |        |
| 13. L. Leifer     | Volksplane   | 53          | 18      | 107.0  |
|                   | VPI          |             | 54      |        |
| 14. J. Kortenbach | Neuport 11   | 17.05       | 18.5    | 81.8   |
|                   |              |             | 64.75   |        |
| 15. H. Stewart    | Bode BD 4    | 24.1        | 13      | 76.1   |
|                   |              |             | 52      |        |

NOVICE PENNYPLANE - JR

|                  |      |
|------------------|------|
| 1. D. Slusarczyk | 7:13 |
| 2. R. Smith      | 5:17 |

NOVICE PENNYPLANE - OP

|                      |       |
|----------------------|-------|
| 1. K. Groves         | 11:46 |
| 2. C. Markos(10:37)  | 11:12 |
| 3. D. Steeb (7:07)   | 11:12 |
| 4. M. Andrews        | 10:53 |
| 5. J. Maret          | 10:45 |
| 6. J. Clem           | 10:39 |
| 7. R. Miller         | 10:20 |
| 8. G. Nolin          | 10:17 |
| 9. W. Henderson      | 10:06 |
| 10. D. Barber        | 9:48  |
| 11. F. Kern          | 9:25  |
| 12. A. D'Alessandro  | 9:15  |
| 13. L. Garber        | 9:06  |
| 14. B. Boehm         | 8:56  |
| 15. L. Leifer        | 8:30  |
| 16. A. Becker        | 8:28  |
| 17. J. Jones         | 8:15  |
| 18. D. Ogren (7:52)  | 8:01  |
| 19. J. Hankes (5:46) | 8:01  |
| 20. J. Voorhees      | 7:44  |
| 21. E. Burke         | 7:39  |
| 22. W. Schlarb       | 7:15  |
| 23. W. Van Gorder    | 7:11  |
| 24. M. Colling       | 6:45  |
| 25. J. Brown         | 2:59  |
| 26. J. McGillivray   | 2:06  |

PENNYPLANE - JR

|                  |      |
|------------------|------|
| 1. D. Slusarczyk | 6:05 |
| 2. R. Smith      | 5:41 |

PENNYPLANE - SR

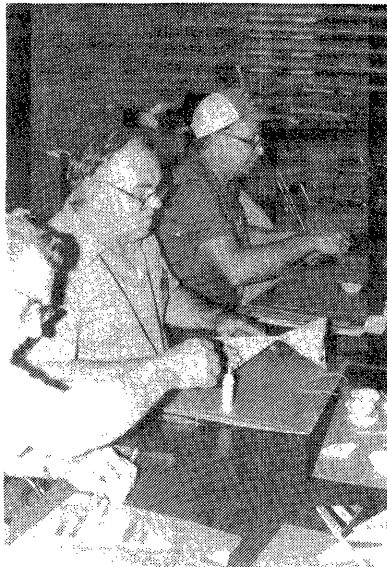
|               |      |
|---------------|------|
| 1. R. Skrjanc | 7:55 |
|---------------|------|

PENNYPLANE - OP

|                      |       |
|----------------------|-------|
| 1. G. Wisniewski     | 13:01 |
| 2. W. Van Gorder     | 11:37 |
| 3. R. Miller         | 11:17 |
| 4. C. Sotich         | 11:02 |
| 5. G. Nolin          | 10:31 |
| 6. D. Belieff        | 10:29 |
| 7. M. Andrews        | 10:23 |
| 8. D. Barber         | 10:22 |
| 9. K. Groves (9:37)  | 10:10 |
| 10. L. Loucka (8:55) | 10:10 |
| 11. J. Clem          | 10:09 |
| 12. C. Slusarczyk    | 10:04 |
| 13. J. Krush         | 9:41  |
| 14. J. Jones         | 8:50  |
| 15. H. Phillips      | 8:19  |
| 16. J. Hankes        | 4:49  |
| 17. J. Voorhees      | :33   |

MANHATTAN CABIN - OP

|                    |      |
|--------------------|------|
| 1. C. Markos       | 8:45 |
| 2. W. Van Gorder   | 8:37 |
| 3. R. Ganser       | 7:56 |
| 4. H. Phillips     | 7:42 |
| 5. L. Loucka       | 7:33 |
| 6. W. Henderson    | 6:54 |
| 7. A. D'Alessandro | 6:40 |
| 8. K. Fulmer       | 6:15 |
| 9. H. LaClair      | 5:55 |
| 10. D. Steeb       | 5:17 |
| 11. J. Miller      | 5:14 |
| 12. D. Erbach      | 4:42 |
| 13. J. Krush       | 4:13 |
| 14. M. Colling     | 2:21 |



Column 1, photo 1: Hal Stewart, Jack Brown, & Ken Groves doing final assembly during AMA Cub session for 200 area school children.

1-2: Larry Loucka, Rich Doig, & Jack McGillivray surrounded by some of the 200 youngsters. Only 2 bottles of Super Glue.

1-3: Larry Loucka with Intermediate Stick.

2-1: Dan Belieff winds AMA Stick model. Higgs, Doig, & Belieff all broke site record.

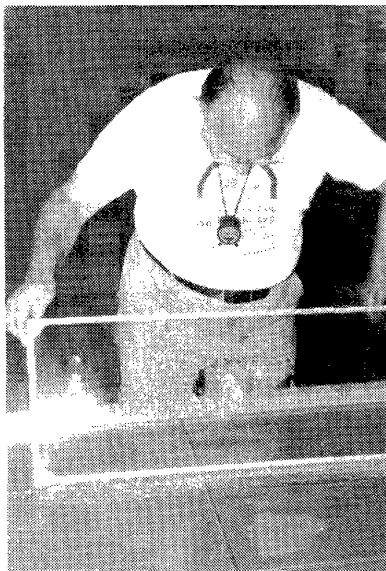
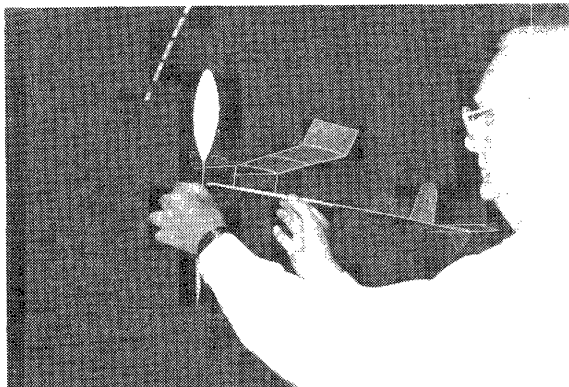
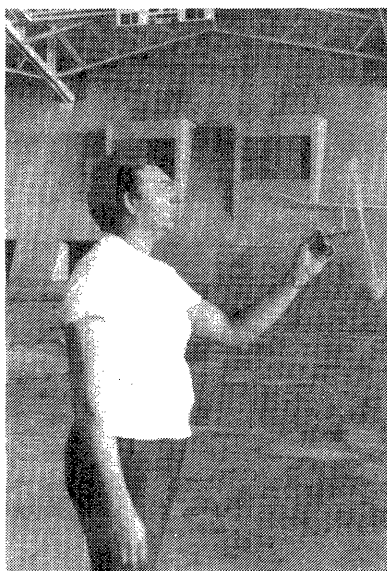
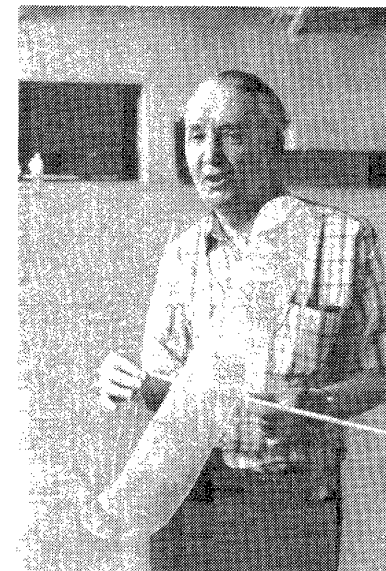
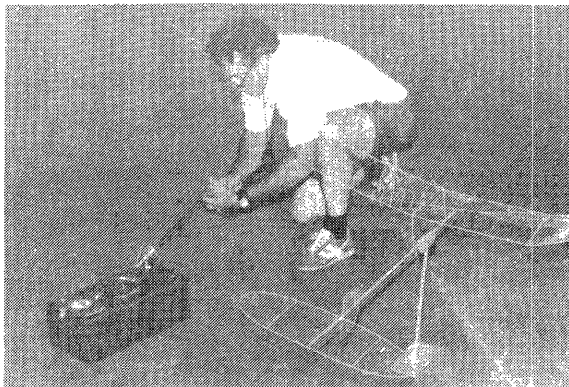
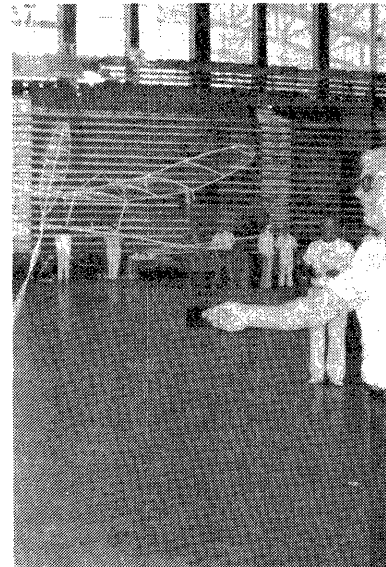
2-2: Gerry Nolin with winning Easy B (record model with new larger prop).

2-3: Rich Doig covering stab during microfilm pouring and covering demonstration.

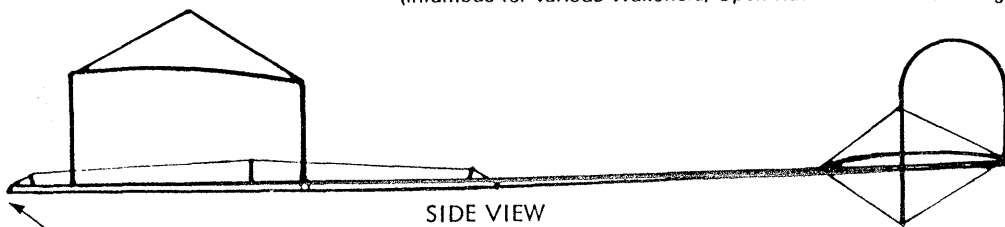
3-1: Ron Ganser's AMA Stick model sported a Variable Pitch Prop similar to Higgs'.

3-2: 1972 World Champion, Pete Andrews with Intermediate Stick model.

3-3: Under Rich Doig's direction John Voorhees lifts his first sheet of microfilm. "Hey, this is easy."



Free spirit holds the World Record for F1D category 1 (ceiling less than eight metres). A novel variable pitch prop is used. This was developed by Ron from original concept by Mike Thomas (infamous for various Wakefield, Open Rudder and Indoor designs).

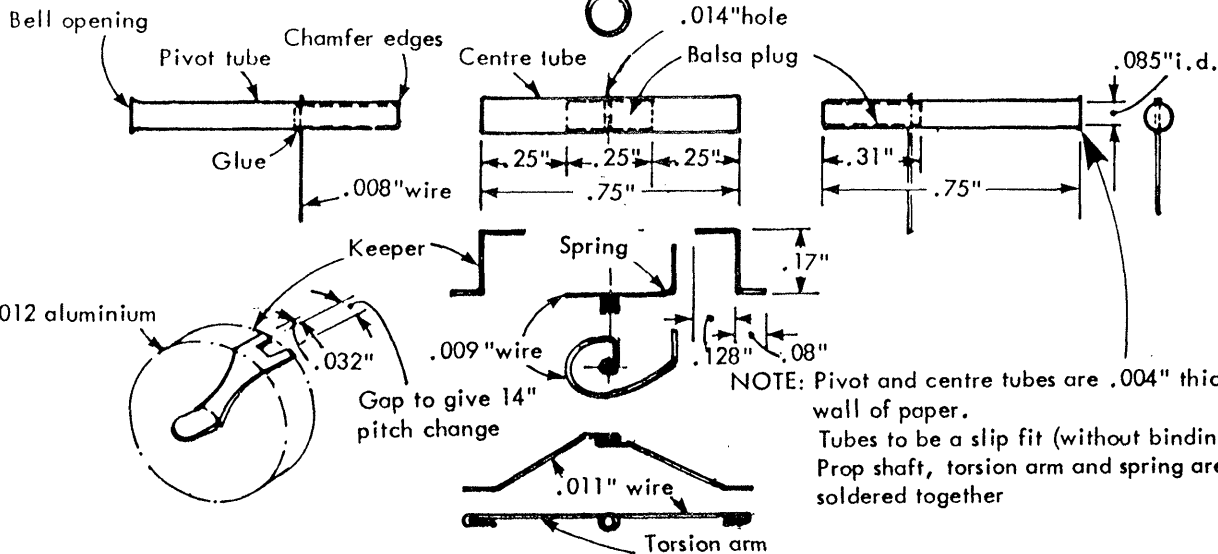
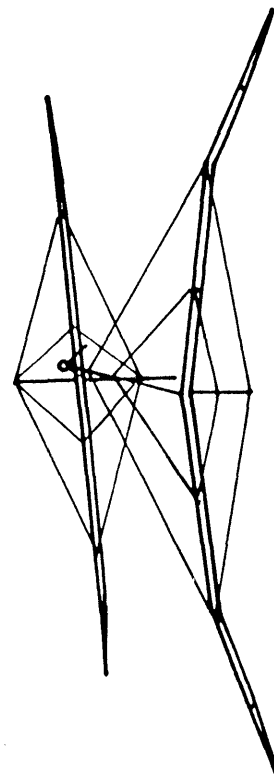
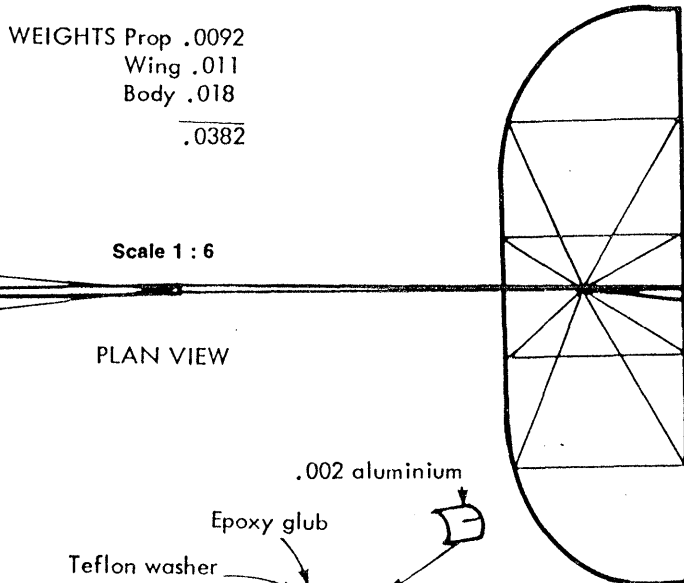
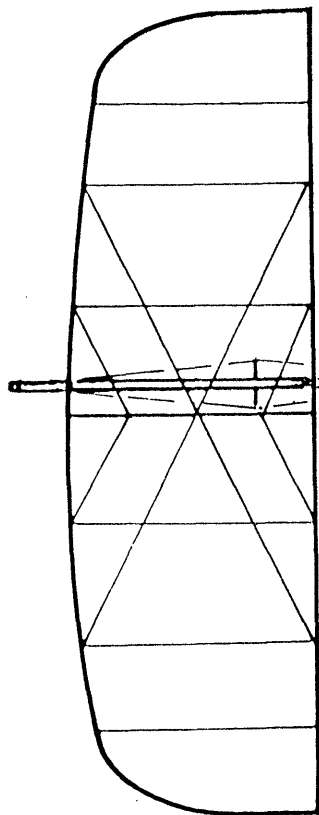


Propeller 22.25" dia., variable pitch  
(see below)

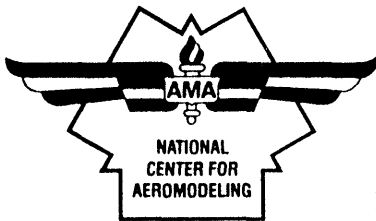
## Free Spirit F1D by Ron Higgs (Canada)

WEIGHTS Prop .0092  
Wing .011  
Body .018  
-----  
.0382

Scale 1 : 6







1810 Samuel Morse Drive  
Reston, Virginia 22090  
703-435-0750

# ACADEMY OF MODEL AERONAUTICS

TO: NATS Indoor Competitors  
FROM: Richard Doig, NATS Indoor CD  
DATE: July 10, 1986  
SUBJECT: NATS Indoor Schedule Revision

Due to a relatively low number of advance entries in Indoor (only 28 as of July 9, 1986) and a high site rental, the Indoor events have been condensed into two days. The events will still be flown at the Lake Charles Civic Center. The events schedule is as follows:

|         | Tuesday, July 29           | Wednesday, July 30 | Thursday, July 31 |
|---------|----------------------------|--------------------|-------------------|
| 8 am    |                            |                    |                   |
| 9 am    |                            | A.M.A. Scale       | Hand Launch       |
| 10 am   |                            |                    | Glider - all      |
| 11 am   |                            | Peanut Scale       | wood only         |
| 12 noon |                            |                    |                   |
| 1 pm    |                            |                    |                   |
| 2 pm    |                            | Easy B             | Novice Pennyplane |
| 3 pm    |                            |                    | Pennyplane        |
| 4 pm    |                            |                    | } enter one only  |
| 5 pm    |                            | Intermediate       |                   |
| 6 pm    | Scale judging at NATS HQ - | Stick              | Manhattan Cabin   |
| 7 pm    | 7 pm turn in deadline      |                    |                   |
| 8 pm    |                            |                    |                   |
| 9 pm    |                            | FAI Indoor (FLD)   | FAI Indoor (FLD)  |
| 10 pm   |                            | Hand Launch        | R.O.G. Cabin      |
| 11 pm   |                            | Stick              |                   |
| 12 pm   |                            |                    |                   |

AMA Scale and Peanut Scale judging is at the same time, Tuesday, July 29 from 5 pm until they are finished (7 pm turn in deadline) only the location is changed to NATS Headquarters - Chenault Air Base gym.

You will note that the only change is moving Hand Launch Glider to Thursday morning and the unofficial events do not have their own time slot now. Unofficial events will be flown with other comparable events, see schedule at indoor site.

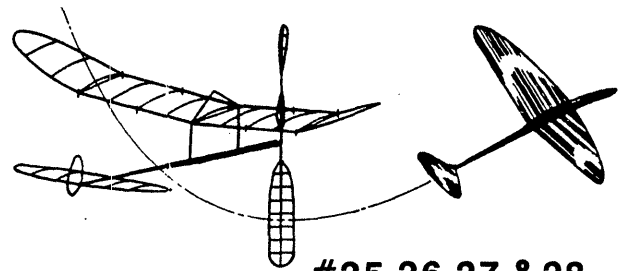
We are sorry for the short notice and inconvenience caused anyone, but the only other alternative was cancelling indoor which we really did not want to do.

This letter was mailed to all advance entrants and Nats workers. The bottom line is this. The change will save AMA about \$1,100 additional rent. Vince Mankowski was almost certain that without the change, the steering committee would turn thumbs down and cancel Indoor. With only 14 advance entries in Hand Launch Glider, this seemed a good compromise.

# INDOOR

## NEWS and VIEWS

Editors: Richard & Melody Doig - 6 Canary Hill Drive, Pontiac, MI 48055 (313) 373-5374



#25,26,27,&28

### RESULTS FROM 1986 INDOOR WORLD CHAMPIONSHIPS

| Contestant              |     | 1     | 2     | 3     | 4     | 5     | 6     | TOTAL<br>(BEST 2) |
|-------------------------|-----|-------|-------|-------|-------|-------|-------|-------------------|
| 1. Jim Richmond         | WCH | 41:05 | 32:15 | 45:54 | 17:51 | 47:44 | -     | 93:38             |
| 2. Cezar Banks          | USA | 41:36 | 13:06 | 41:37 | 45:48 | 3:58  | 1:40  | 87:25             |
| 3. Pentti Nore          | FIN | 30:35 | 41:36 | 44:01 | 7:36  | 8:38  | -     | 85:37             |
| 4. Bob Randolph         | USA | 41:40 | 34:17 | 39:36 | 43:17 | 1:09  | 1:33  | 84:57             |
| 5. Dezső Orsovai        | HUN | 31:20 | 40:36 | 43:37 | -     | 24:04 | -     | 84:13             |
| 6. Dave Pymm            | GB  | 19:02 | 41:57 | 42:03 | 38:00 | -     | 0:53  | 84:00             |
| 7. Thedo André          | NL  | 32:59 | 39:19 | 44:01 | 21:25 | 9:41  | -     | 83:20             |
| 8. Dieter Siebenmann    | CH  | 38:08 | 11:48 | 42:33 | 20:00 | 27:04 | -     | 80:41             |
| 9. Bernard Hunt         | GB  | 17:25 | 13:42 | 41:27 | 37:00 | -     | 8:29  | 78:27             |
| 10. András Ree          | HUN | 35:57 | 8:33  | 42:06 | 28:40 | 14:55 | -     | 78:03             |
| 11. Otto Rodenburg      | NL  | 32:22 | 36:27 | 37:34 | 40:11 | -     | 0:04  | 77:45             |
| 12. Leif Englund        | FIN | 35:27 | 36:58 | 37:56 | 8:51  | 37:39 | 1:45  | 75:35             |
| 13. Rene Butty          | CH  | 32:55 | 42:30 | 31:37 | 15:39 | 14:47 | 12:39 | 75:25             |
| 14. Aurel Popa          | RUM | 37:55 | 30:18 | 36:48 | 10:43 | 4:19  | 3:10  | 74:43             |
| 15. Edmund Liem         | NL  | 36:34 | 37:47 | 36:41 | 26:08 | 6:21  | -     | 74:28             |
| 16. Larry Cailliau      | USA | 34:01 | 19:33 | 39:16 | 11:36 | 3:02  | 0:46  | 73:17             |
| 17. Sylwester Kujawa    | POL | 35:10 | 30:05 | 37:54 | 32:18 | -     | 6:37  | 73:04             |
| 18. Edward Ciapala      | POL | 25:11 | 35:03 | 37:55 | 23:48 | 16:51 | 1:01  | 72:58             |
| 19. Hideyo Enomoto      | JPN | 35:14 | 36:33 | 34:50 | 25:00 | 35:54 | -     | 72:27             |
| 20. Peter Keller        | CH  | 30:50 | 34:54 | 16:00 | 16:53 | 37:06 | 3:47  | 72:00             |
| 21. Bernard Aslett      | GB  | 36:36 | 15:38 | 27:02 | 30:49 | 34:17 | 7:30  | 70:53             |
| 22. Lászlo Ree          | HUN | 35:12 | 35:27 | 28:36 | 33:35 | 28:24 | 2:18  | 70:39             |
| 23. Robert Champion     | FRA | 32:07 | 32:18 | 31:51 | 25:34 | 37:21 | 16:58 | 69:39             |
| 24. Nicu Bezman         | RUM | 33:42 | 33:24 | 34:28 | 22:08 | -     | -     | 68:10             |
| 25. Jørgen Korsgaard    | DEN | 18:39 | 31:40 | 36:19 | -     | 18:05 | 4:14  | 67:59             |
| 26. Iztok Zagar         | YUG | 34:55 | 33:00 | 32:34 | 31:38 | -     | 32:31 | 67:55             |
| 27T. Milan Mastnak      | YUG | 26:14 | 28:55 | 36:36 | 31:08 | 27:25 | 10:28 | 67:44             |
| 27T. Werner Nimptsch    | GER | 26:04 | 24:03 | 38:19 | 29:25 | 17:20 | 0:18  | 67:44             |
| 29. Kazumasa Kihara     | JPN | 25:11 | 29:52 | 37:00 | 15:07 | 16:56 | 1:39  | 66:52             |
| 30. Carlo Cotugno       | ITA | 32:39 | 33:06 | 32:54 | 25:59 | -     | -     | 66:00             |
| 31. Carl Schueler       | CAN | 36:18 | 29:15 | 8:06  | 21:30 | 2:06  | 6:08  | 65:33             |
| 32. Mike Thomas         | CAN | 29:11 | 32:02 | 31:35 | 0:18  | 13:53 | 0:09  | 63:37             |
| 33. Guy Cognet          | FRA | 25:35 | 33:08 | 30:26 | 19:41 | 1:28  | 0:57  | 63:34             |
| 34. Ryszard Czechowski  | POL | 26:45 | 7:27  | 26:01 | 36:19 | 15:19 | 16:08 | 63:04             |
| 35. Ron Higgs           | CAN | 27:04 | -     | 6:29  | 34:26 | 21:56 | 14:57 | 61:30             |
| 36. Eduardo Grippo      | ARG | 29:38 | 26:37 | 30:58 | 14:34 | 16:38 | 0:11  | 60:36             |
| 37. Frank Dahlin        | DEN | 18:48 | 28:22 | 31:43 | 24:22 | 19:22 | 3:49  | 60:05             |
| 38. Jean-Marie Chabot   | FRA | 13:43 | 28:57 | 30:32 | 16:28 | 20:50 | -     | 59:29             |
| 39. Oton Velunsek       | YUG | 28:57 | 26:37 | 30:06 | 13:34 | 9:48  | 0:54  | 59:03             |
| 40. Rainer Lotz         | GER | 35:17 | 20:37 | 19:15 | 22:50 | 8:16  | 8:00  | 58:07             |
| 41. Sven Pontan         | SWE | 28:15 | 27:44 | 14:43 | 21:29 | -     | 11:27 | 55:59             |
| 42. Peter Comet         | SWE | 19:14 | 21:58 | 25:53 | 13:35 | 29:46 | 10:11 | 55:39             |
| 43. Nereo Begiatti      | ARG | 15:19 | 26:28 | 26:56 | 16:50 | 12:50 | 1:30  | 53:24             |
| 44. Aurel Moraru        | RUM | 12:33 | 15:30 | 37:15 | 10:39 | 12:40 | -     | 52:45             |
| 45. Giacomo De Angelini | ITA | 23:30 | -     | -     | 2:39  | 27:25 | -     | 50:55             |
| 46. Bernd-O. Mieke      | GER | 7:04  | 24:52 | 25:25 | 13:33 | 3:22  | -     | 50:17             |
| 47. Hugo Ernst          | DEN | 11:49 | 20:24 | 29:24 | 7:42  | 3:40  | -     | 49:48             |
| 48. Ken'ichi Ohta       | JPN | 17:21 | 20:42 | -     | 28:04 | -     | -     | 48:46             |
| 49. Cycilo Edmundo      | ARG | 26:30 | 15:33 | 22:02 | 8:40  | -     | 0:30  | 48:32             |
| 50. Harro Erofejeff     | FIN | 1:24  | 1:28  | 26:14 | 14:16 | -     | 2:57  | 40:30             |
| 51. Luca Masciullo      | ITA | 12:29 | 25:16 | 13:33 | 13:10 | 4:22  | 0:09  | 38:49             |

### TEAM STANDINGS

|                        |         |                     |         |
|------------------------|---------|---------------------|---------|
| 1. United States (USA) | 4:05:39 | 10. France (FRA)    | 3:12:42 |
| 2. Netherlands (NL)    | 3:55:33 | 11. Canada (CAN)    | 3:10:40 |
| 3. Great Britain (GB)  | 3:53:20 | 12. Japan (JPN)     | 3:08:05 |
| 4. Hungary (HUN)       | 3:52:55 | 13. Denmark (DEN)   | 2:57:52 |
| 5. Switzerland (CH)    | 3:48:06 | 14. Germany (GER)   | 2:56:08 |
| 6. Poland (POL)        | 3:29:06 | 15. Argentina (ARG) | 2:42:32 |
| 7. Finland (FIN)       | 3:21:42 | 16. Italy (ITA)     | 2:35:44 |
| 8. Romania (RUM)       | 3:15:38 | 17. Sweden (SWE)    | 1:51:38 |
| 9. Yugoslavia (YUG)    | 3:14:42 |                     |         |

1986 INDOOR WORLD CHAMPIONSHIPS

The 1986 World Champs were held in Cardington, England, on August 23 & 24. The following report by Cezar Banks is a letter Cezar wrote to Bernard Aslett, for the publication FREE FLIGHT NEWS. Cezar offered it to us for publication as well...

Dear Bernard:

My apologies in not getting this off sooner. Herewith, my observations and comments on the '86 F1D Wch:

COMPARISON TO SANTA ANA: The Cardington sheds are not unlike Santa Ana in volume and height. Opportunities for hang-up at the top are roughly comparable although Cardington's flatter roof allows more side drift leeway. Cardington's floor obstructions are much worse and are second only to Akron in my experience. Drift severity and patterns are tough to compare based on only one weekend and considering the extremes of weather encountered (to put it mildly!). Even so, on practice day and first contest day, the air seemed more stable for a longer part of the day than a typical day at Santa Ana. Here, we often encounter mild to strong side drift and some ground turbulence until maybe 3:00 pm when equilibrium is reached. After that, the air stays really good until past sundown when cooling finally seems to induce fairly strong lengthwise drift. Almost all of Santa Ana's long flights are made during that really good late afternoon period. Rubber sizes, weights and lengths used at the Wch were about the same as Santa Ana which surprised me. Absolute mid range rubber torque showed less on the torquemeter as expected due to the 10-15°F colder temperature at Cardington. What was unexpected was that the models seemed to sustain with this lower torque at cruise. Average RPM of a known prop/model combination was lower at Cardington. Why? I don't know. Perhaps air density, viscosity or even mild thermals were responsible. Remember, I'm talking about the first contest day, not the second.

SECOND CONTEST DAY: The weather? Well, it was raining, windy and cold (it was pretty bad outside too!). Still, the fourth round air wasn't all that bad, spotty perhaps, but rewarding if you caught it just right. Bob Randolph (43:17) and I (45:48) both did for our best flights of the contest. Richmond folded a wing on steer during his fourth round and this set the stage for his fifth round heroics. I guess my biggest claim to fame was doing well enough in the fourth round to force Jim to fly at all the second day. And fly he did! His astonishing fifth round flight of 47:44 will have to go down in the lore of this hobby as one of its' most dramatic events. Collisions with obstacles, updrafts and downdrafts, severe side drift, turbulence, rain avoidance, more than three minutes of steering; this flight had it all. Lucky? Well, maybe, but as Jim has demonstrated so many times now, his models in his hands are superbly capable. Just awesome, and without that capability, it couldn't have happened - so there you have it. Meanwhile, the weather slowly continued to deteriorate until about mid fifth round when the storm really shifted into high gear and essentially wrote "paid" to the contest. When my turn to fly the fifth round came, I launched into a strong side

wind. The model clawed its way up to about 50 feet and then encountered a series of gusts that literally beat it slowly but relentlessly into the ground for a total of 3:58. Definitely not the way to catch Richmond. The sixth round was even worse. Picture team manager Bud Romak with a Kleenex tissue dabbing at half a dozen rain drops that found a home on my stab while I try to figure a launch pattern that will skirt the rain puddles and avoid the worst ground turbulence. All I needed was about 48 minutes to win. Ludicrous - right? And so it was - I fell short by only 46 minutes as the model never got over ten feet high before staggering into the concrete in under two minutes. And that was that. Another way to view the second day weather is to look at the distribution of flights with times over 30 minutes for the two days as shown below. Interesting - what?

| DURATION (MIN)                | 1st CONTEST DAY |      |      | 2nd CONTEST DAY |      |      |
|-------------------------------|-----------------|------|------|-----------------|------|------|
|                               | RND1            | RND2 | RND3 | RND4            | RND5 | RND6 |
| 45 plus                       | 0               | 0    | 1    | 1               | 1    | 0    |
| 40 - 45                       | 3               | 4    | 8    | 2               | 0    | 0    |
| 35 - 40                       | 11              | 7    | 13   | 3               | 4    | 0    |
| 30 - 35                       | 11              | 12   | 12   | 6               | 1    | 1    |
| TOTAL FLIGHTS OVER 30 MINUTES | 25              | 23   | 34   | 12              | 6    | 1    |

CONTEST ORGANIZATION: The Brits get an "A" plus here. Organizer Laurie Barr left nothing to chance that I could see. The cartage and storage of model boxes to and from Heathrow Airport to accommodate God knows what variety of arrival and departure times was especially appreciated. Thanks again, Laurie! Housing and food accommodations were much more than adequate. The serving girls in the dining hall were always smiling and courteous, full of hustle and bustle, competent and efficient. The food was wholesome, plentiful and for the most part tasty considering the variety of palates present. I did see Jim Richmond and Joe Hervat wishing they'd chosen the turkey instead of the beef curry one might, but they survived just fine anyway.

Contest director Butch Hadland and his staff ran a tight ship. With 18 countries and 51 contestants, their hands were full. They kept the processing and timing flow going smoothly and efficiently - no jam ups. Well done to Butch and company.

My only comment on the conduct of the contest is really more of a preference than a criticism. And that is; when only three days are available, I would much rather dispense with a full practice day in favor of two rounds per day for three days. Practice could be from say 9:00 am till noon every contest day. A random poll of this idea seemed to indicate agreement. Something to think about for next time.

GENERAL COMMENTS: This was my third WCh now and they seem to get better and tougher each time. Each presents its own unique set of problems and surprises. Absolute solutions are as elusive as ever and maybe that's what makes the game so fascinating. There was not yet much sentiment expressed for rules changes which tells me our present rules, although they may be arguable, are certainly durable. Conventional planform tractors are still the ships to beat. Tandems, biplanes and canards

# 1986 WORLD CHAMPS

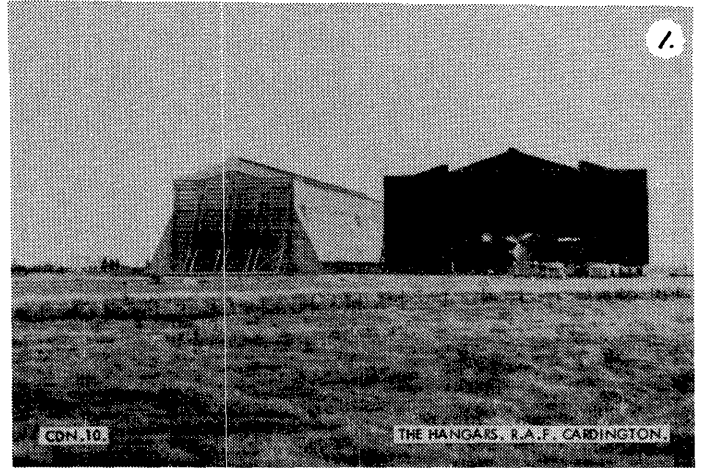
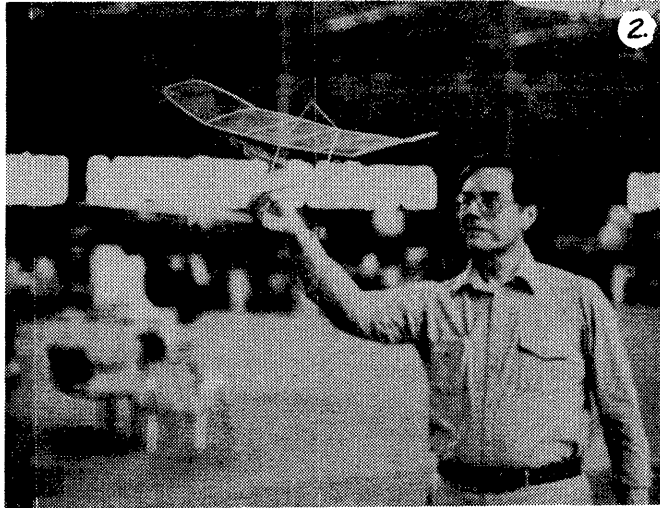
have not yet made the inroads sometimes projected for them although the jury is still out on variable geometry props. I myself, would like to see them outlawed for several reasons: 1) F1D could eventually become like F1A, B & C where incredibly complex and sophisticated gadgetry (almost none of it built by the flyer) is no longer a choice but a requirement; 2) These props tend to make record keeping by height categories meaningless; and 3) I think our hobby is purer art form without them. I realize these thoughts could be construed as "resisting progress" and I recognize the penchant of many modelers to develop "new things". I just think we should look down the road and carefully consider what direction we want our hobby to take. Well, so much for that. Besides, if we really want something to worry about in Indoor, worry about the vanishing supply of decent Pirelli. Now, there's a problem!

Sincerely,

Cezar J. Banks

2. Jim Richmond (USA) four time Indoor World Champion with "Film Flam 1986".

4. Bernard Hunt (GB) looks like he is about to launch Wakefield (F1B). Long motorstick of "Big Square" results in this launch position.

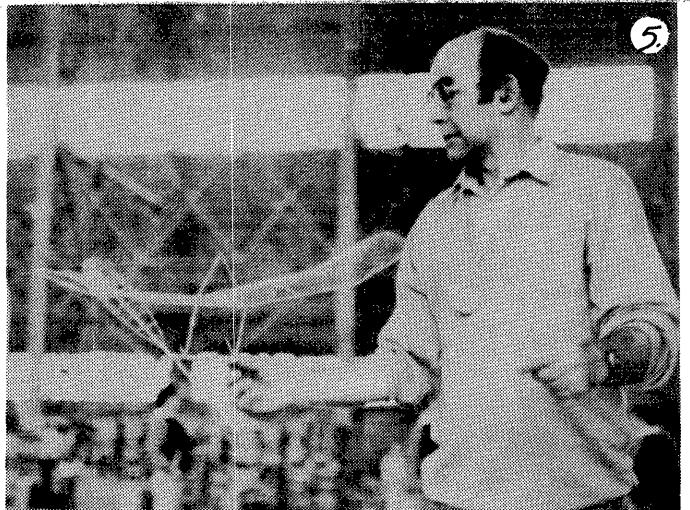


## 1986 WORLD CHAMPS

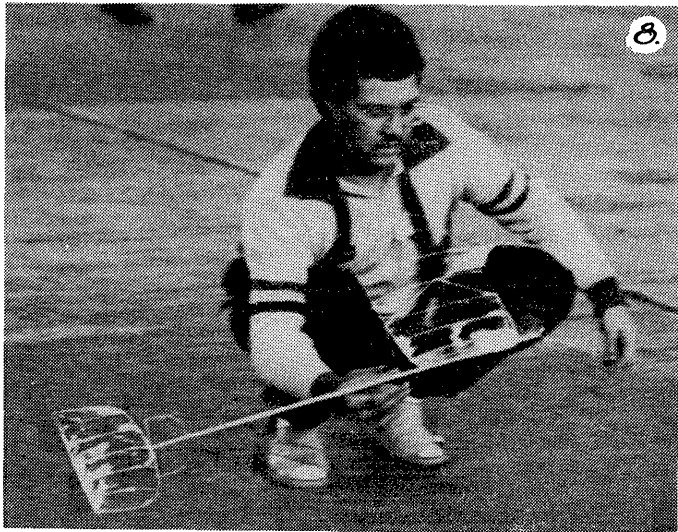
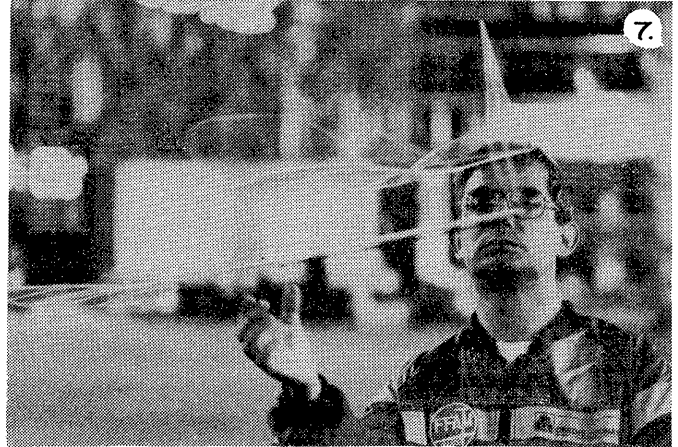
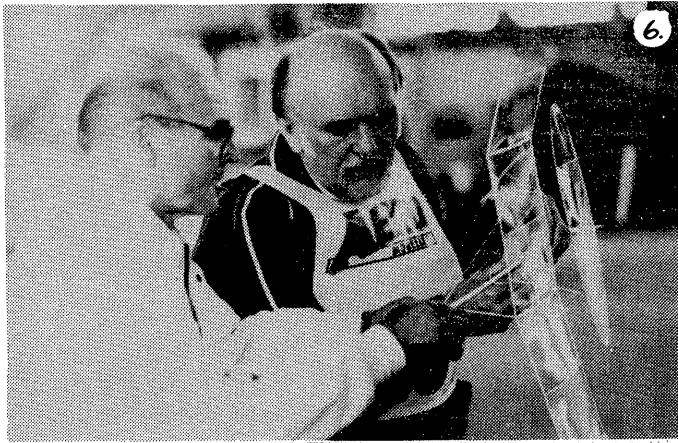
All Indoor World Champs photos are from Warren Williams including #1 which is a postcard he sent from England, of the Cardington airsheds.

3. Edward Ciapala (POL) perennial team member placed 18th.

5. Dave Pymm (GB) with "#20", top British flier placed 5th.



# 1986 WORLD CHAMPS



6. US Team Manager Bud Romak helps Cezar Banks (USA) when Banks' thrust bearing came unglued.

7. Who is this? Wearing French team jacket.

8. Rainer Lotz (GER) his model "Joker" needed all the altitude he could get.

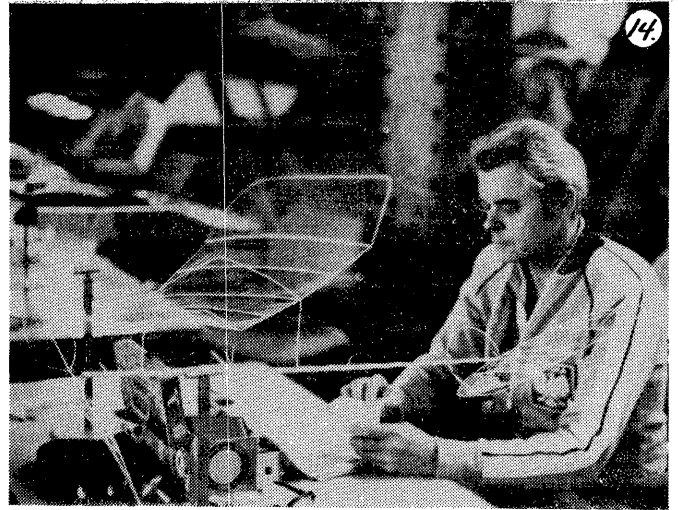
9. Dieter Siebenmann (CH) placed 8th.

10. Mike Thomas (CAN) watches as Edward Ciapala repairs Mike's model "Brutus" which Edward damaged with a steering pole.

11. Ciapala tries a high altitude launch.

12. Mastnak Milan (YUG) with "Sleepless", did the name come from many sleepless nights designing and building it?

# 1986 WORLD CHAMPS



13. Larry Cailliau (USA) concentrates as he launches his model.

14. Sylwester Kujawa (POL) studies his notes between flights.

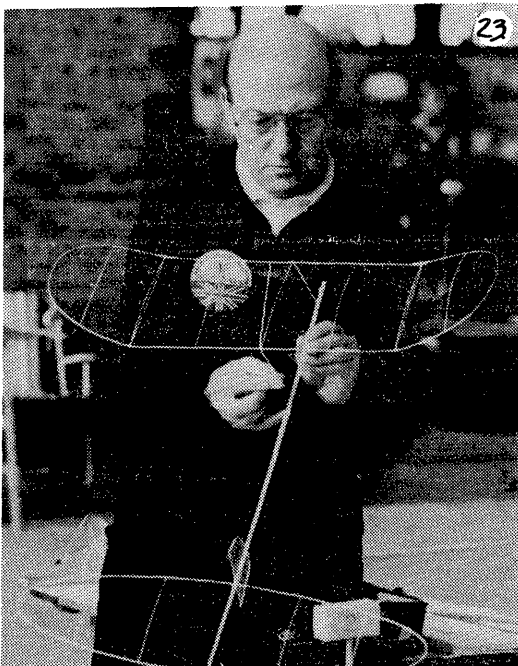
15. Leif Englund (FIN) with model "Joy 25".

16. Jørgen Korsgaard (DEN) with collapsed wing just before he went to launch model.

17. Dezső Orsovai (HUN) looks on as András Ree (HUN) launches "R 65/11" model.

18. Bernard Aslett (GB) finished 21st.

# 1986 WORLD CHAMPS



19. Edmund Liem (NL) selects prop to use on "Festina Lente II" (Make Haste Slowly).

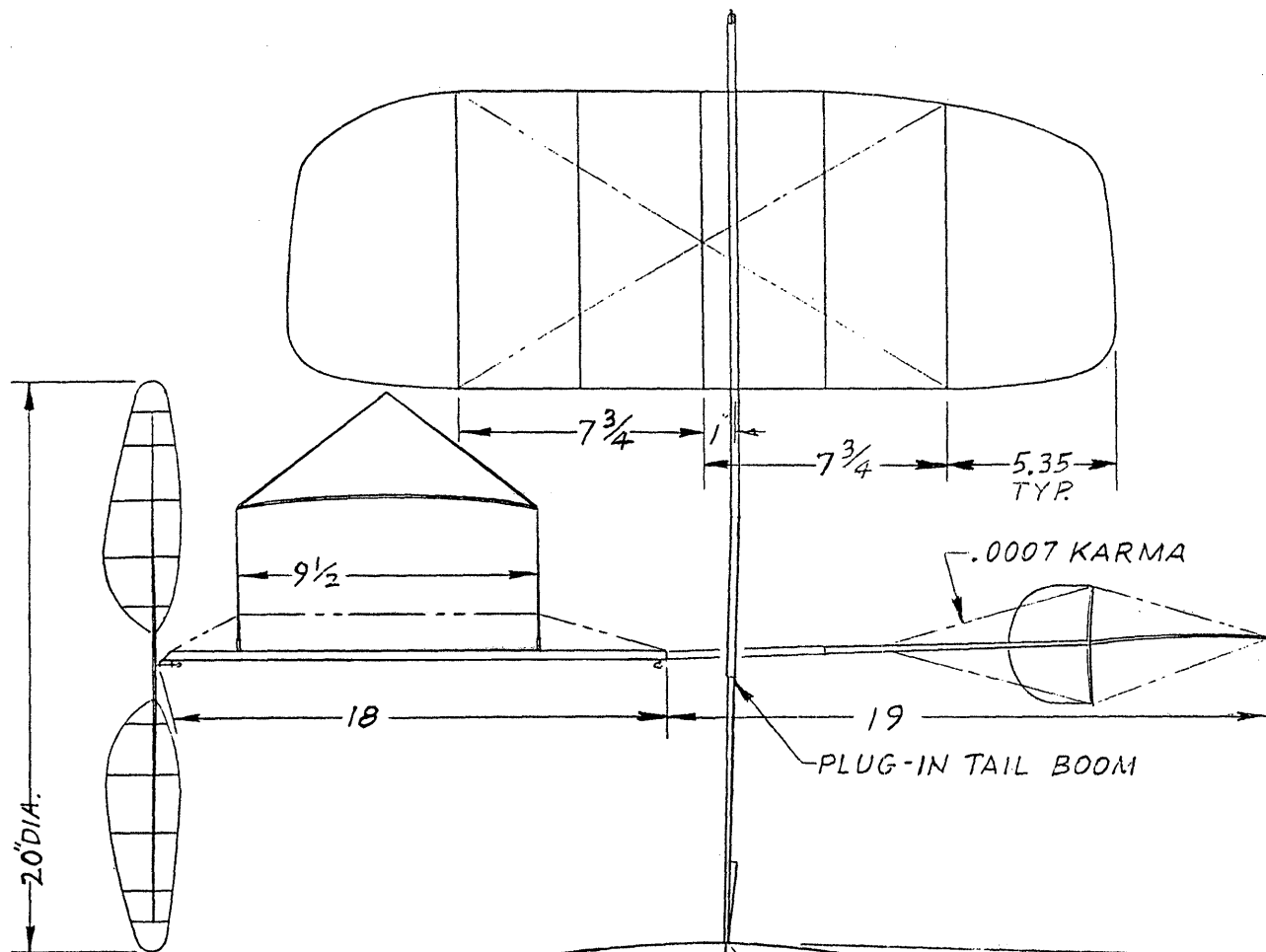
20. Thedo André (NL) adjusts thrust bearing.

21. Bob Randolph (USA) smiles his way to 4th place with current version of "Top Cat".

22. Victorious USA team of Banks, Randolph, Cailliau, & Romak.

23. Bernard Aslett (GB) carefully assembles model.

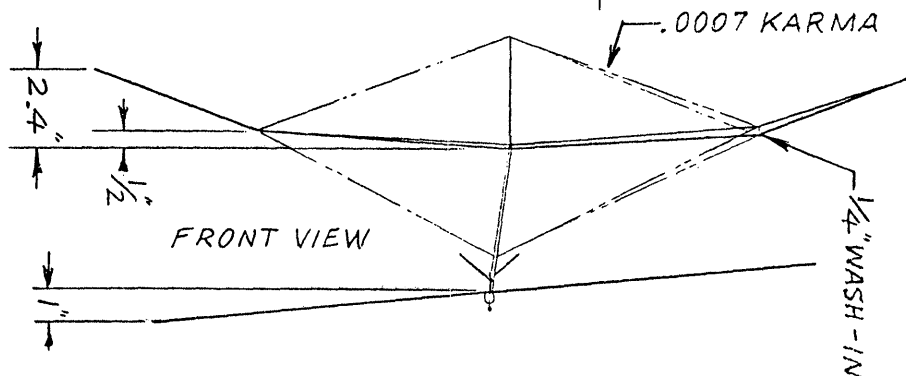
24. This photo of Cezar Banks (USA) is Warren's comment on the weather conditions at Cardington. The umbrella is the result of darkroom trickery. This is the beginning of his 45:48 flight which he had to protect with an umbrella after the flight landed.



|              |                |
|--------------|----------------|
| WING         | .36            |
| STICK        | .28            |
| STAB & BOOM  | .25            |
| PROP         | .14            |
| <b>TOTAL</b> | <b>1.03 GM</b> |

## FILM-FLAM FAI by Jim Richmond

This is the version of "Film Flam" Richmond flew in the 1986 World Championships. It used a 20 in by 36 in pitch conventional prop.



### KORSGAARD 1986 INDOOR WORLD CHAMPS PLAN BOOK

We have received our copy of Jørgen Korsgaard's FAI F1D plans book and as with his other publications it is top notch. It includes the 1986 Indoor World Champs program and the F1D model plans of 40 of the participants. The book costs \$5 U.S. and is well worth the price. Order from:

Jørgen Korsgaard  
Ahornweg 5  
D-2397 Ellund-Handewitt  
West Germany

### CUTTING BORON FILAMENT - SAFETY IDEA

This safety idea comes from "Hot Rod" magazine via Jim Clem. Using side cutters to cut wire, Boron or similar materials causes the cut-off pieces to fly. To prevent the cut pieces from flying: tape the cutter handles together and then fill the well of the cutters with silicone sealer. After it cures, take a single-edge razor blade and split the silicone down the center. Now when you use the cutters the silicone holds the little pieces until the handles are released.



## A SPECTATORS VIEW OF THE 1986 WORLD CHAMPS

There is no better way to see indoor models fly than to attend the 1986 World Indoor Championships in Cardington, England. One day to visit friends and three days of flying. The weather was poor. It was windy, rainy, cold and damp, but the accommodations were excellent.

Seventeen countries participated. That made a total of fifty-one contestants flying three rounds per day for two days. This was a very tight schedule.

Team manager Bud Romak, our team of Cezar Banks, Bob Randolph, Larry Cailliau and our defending Champion Jim Richmond put on a great show by winning all the top prizes. Our team won the first place trophy and Jim took the individual trophy plus the high time trophy, as he retained his World Championship. Jim a true champion under the worst weather conditions and an obstical course that restricted flying to less than half of the hangar. When everyone was being blown away by the erratic winds and rain in the hangar during the fifth round, Jim maneuvers his model with a balloon, like a bow over violin strings. At that time he did 50:27 minus 3:23 for ballooning a new FAI record of 47:44.

The second day was devoted to test flying. Our group had to go up in rubber sizes due to the bad weather conditions in the hangar. On that day the silent ones met with a series of diasters as we were cramped for space. I counted fourteen models flying at the same time. During this time eight models collided and spiraled to the floor.

The third and fourth day was contest time. There were sixteen over forty minute flights during the first three rounds and only four the following day, from round four to six. As you can see, weather was the big factor.

I was amazed to see so many high quality models among all the countries. They are good flyers but lack the experience of flying in high facilities such as Cardington. Mother Nature was at her worst. It could of been anybody's race if the weather had not turned bad.

A fine banquet was held and found in our company, five past World Indoor Champions - Pete Andrews, Jim Richmond, Bud Romak, Irv Rodemsky and Romanian - Arrel Morar.

We thank Laurie Barr and his fine staff for a successful meeting, everything was in order except the weather.

Warren Williams

P.S. Bernard Hunt of the British team has started a new trend in design and building. His latest is a twenty two inch motorstick with a twenty seven inch loop of rubber (3500 winds) and a short low pitch prop. The wing is placed at 135% C.G. with a stab a half inch short of being a tandem. The construction consist of very little balsa and is reinforced with .002 Boron filament, including the ribs.

He uses a "witches brew" of boiling sulfuric and nitrate acid, to eat away .001 of the normal .004 Boron. He even goes further by tapering off the wing and stab spar Boron to .001. It sounds out of this world, but this process is a no-no, as its too dangerous to ever try.

EDITORS NOTE: We agree with W. Williams assessment that B. Hunt's method is a no-no. Unless you are a chemist stay away from boiling sulfuric and nitric acids.

### This issue

This issue is finally off the ground. We warned everyone when we took over this newsletter that contests would always come first, but the last four months have been a marathon. We've attended or run six contests/flying sessions since the NATS. This issue is aimed at the World Champs, the Nats, and the upcoming winter season flying sessions. The best news of all is that we've been busy doing normal (?) stuff and Richard has managed to stay out of the hospital (but not out of trouble!).

### New Layout

This is the first issue we've done on our new computer. We are going to have to experiment a bit to find the right format for this, so be patient for a couple of issues. We've also sometimes included extra sheets in the domestic issues concerning items soley (we thought) of domestic interest (such as rule proposals and USIC entry blanks). Several letters we've received tell us that this is not the case. So from now on, everyone will get everything. (Don't say we didn't warn you!) The format we are trying is based on getting out the largest number of sheets per postage stamp. The real limiting factor is the overseas mailings that have to go in envelopes and get weighed to the nearest half ounce. Did you ever try to fold seven sheets of paper in half, and then into thirds to fit in an airmail envelope? We did, but boy was it hard. So, we are buying some larger envelopes. Please give us your feedback about type styles as well since we have a large variety to choose from (if we can just figure out how to get them out of this machine!).

The original subscription structure of INAV used two sheets of paper, typed on both sides as one issue. Sometimes a third sheet was added with typing or plans on one side only. The numbering system is based on each two or three sheets counting as one issue. This is how we arrive at the issue numbers on the Masthead. Since INAV has now been officially turned over to us, we will be taking a close look at the current setup in the coming months in the hope of establishing a reasonable publication schedule and rates that we can stick to.

## U.S. NATIONALS - 1986 LAKE CHARLES

You may already have read the magazine accounts of Indoor at the Nats. By and large they are pretty accurate. Since Melody and I were the CD's for Indoor it's hard to be objective, but here goes:

We spent our first day in Lake Charles (Monday) meeting with the site manager and his staff to arrange the site preparations. This has been a long neglected area of the Nationals and we intended to see that things were done differently. Since we had flown in the same site in 1974, and 1975, we had a pretty good idea of what to expect. However, when we arrived we found several new additions to the ceiling; two speakers hanging on cables, several deflated balloons and strings, and six missing ceiling tiles. All this in addition to the scoreboard and speaker enclosure that we knew about in advance.

On Tuesday I flew Wakefield, lost my model in a trashmover in round 6, finished fourteenth. At 3:00 pm we headed back to the indoor site to shroud the scoreboard. As we entered the arena I couldn't believe what we saw. They had a fire department ladder truck inside! The speakers were sitting on the floor, most of the balloon strings were gone, and they were fixing the missing tiles while sitting on the end of a 50ft ladder. Yes, it really is true that they used a fire truck to fix the ceiling! Our sincere thanks to Roger Gill of the Civic Center and the Lake Charles Fire Department unit #3-36 for their ingenuity and cooperation! With Mike Clem and Gordy Wisniewski helping, we proceeded to shroud the scoreboard. It was huge, taking a 100ft roll of 10ft wide plastic sheeting to cover the gap between the scoreboard and the ceiling. (This is approximately twice as much plastic as it took to shroud the bandstand/chandelier at West Baden.)

We arrived at 7:00 am Wednesday to get things set up and to assist the Scale CD, Dale Drew, as he was a last minute change from the original plans. As we walked in we were shocked to find the duct tape holding up the shroud had melted and the shroud had slipped down the support cables about 2 feet in the hot air. We had the Civic Center people quickly lower the scoreboard, and we pulled the shroud back up as best we could, since the tape had turned into a gooey mess. This time we secured it with electrical cable ties. On with the contest!

Our part of the NATS started at 1:00 pm with Easy B and Intermediate Stick. By and large the contest went very smoothly. David Brown won both Junior EZB and Intermediate Stick, while Charles Gagliano won the Senior events. Good to see some youngsters flying even though there should be more. Gordy Wisniewski took 2nd in both events; to Tony Becker in EZB (13:39) and Tony Sutter in Intermediate Stick (15:01). The Lake Charles Civic Center is a good flying site, especially when properly prepared.

Wednesday evening was time for the microfilm models of Hand Launch Stick and the first 3 flights of FAI Indoor. Rich stunned everyone with a winning Stick time of 27:07 (300 in<sup>2</sup> model, V/D prop), more than 4 minutes better than any previous flight in that site. Meanwhile in FAI Indoor he also had some good flights, even though he had broken his V/D prop and it didn't fold on any of the 3 FAI flights. Jim Clem and Dick Ganslen were also

having problems. In fact Dick's problems were such that he left early so he could make some major revisions to his models.

Wednesday night was very short as we did not leave the Indoor site until 12:50 am and we were back at the site shortly after 7:00 am so the glider fliers could warm up prior to official flying. Aaron Markos beat everyone in Senior HLG with a time higher than the winning Open time posted by his father, Chuck.

Thursday afternoon was more congested with both Pennyplane events and Manhattan Cabin, also the NFFS Unofficial Events. Aaron Markos once again did some excellent flying, his winning Senior Novice Pennyplane time of 10:07 would have placed 2nd place in Open (Jim Clem 10:23). Gordy Wisniewski's winning Pennyplane time of 13:12 was very good for a 55 ft. site.

Thursday evening was again microfilm time, with ROG Cabin and the last three flights of FAI Indoor. In ROG Cabin all the Juniors and Seniors were flying Manhattan Cabins, Bostonains or scale models which are legal as long as the cross-section and wheel diameter rules are satisfied. In Open ROG Cabin all three contestants flew very traditional models, no disk style. Tony Sutter won ROG Cabin and also the Stout Indoor trophy.

Meanwhile in FAI Indoor, Dick Ganslen solved his problems of the evening before, putting up three nice flights and Jim Clem improved his times. Rich repaired his V/D prop with impressive results; a high time of 29:11 to win the event and the Stout Commercial trophy. The time was 6 minutes more than the site record set in 1975. This was done with his fat F1D model nicknamed "Garfield" after the fat cartoon character, which used a variable diameter propeller, cruising for 10:00 just below the ceiling. This model was named one of the Top 10 Models at the NATS, and will be featured in a future Model Aviation article. We have included its' plans in this issue.

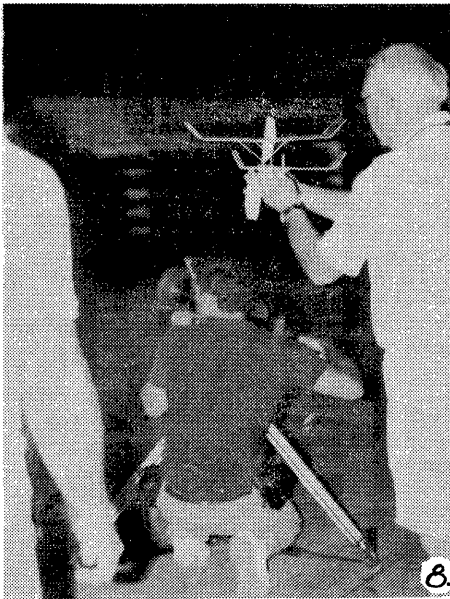
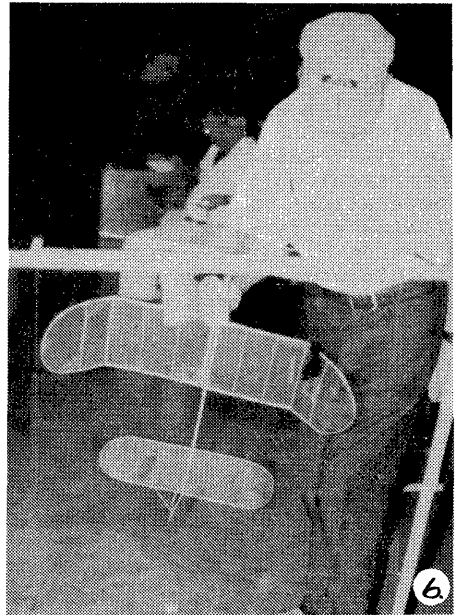
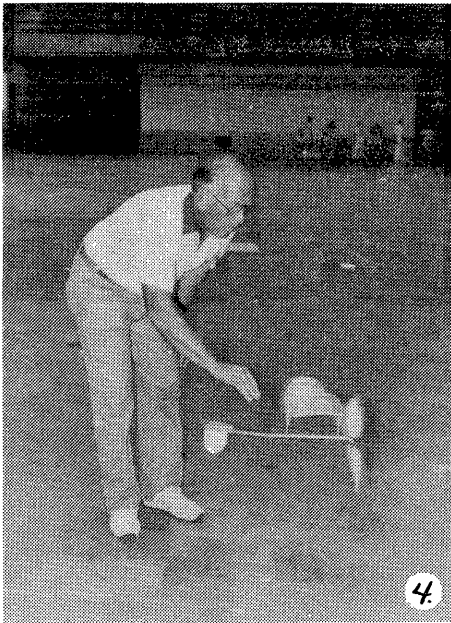
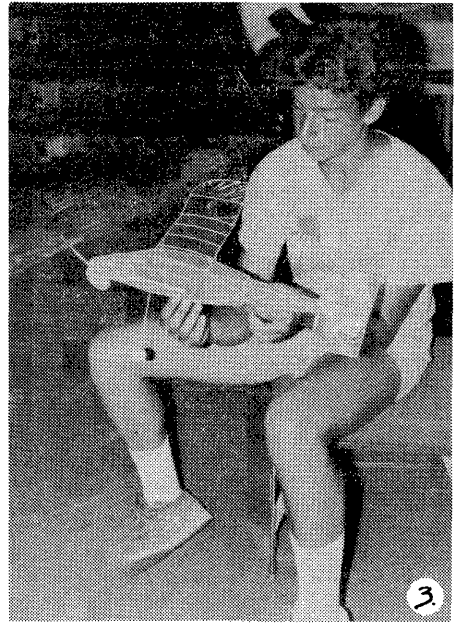
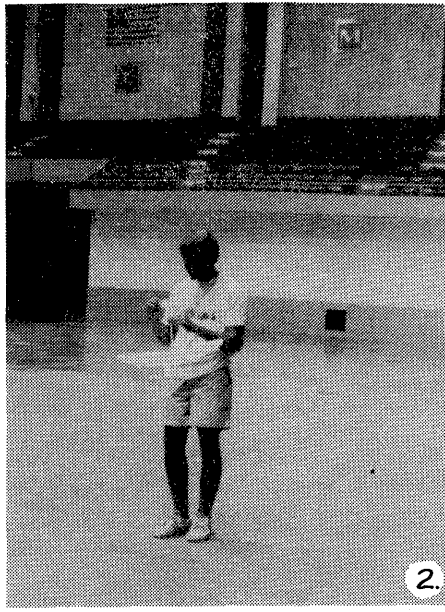
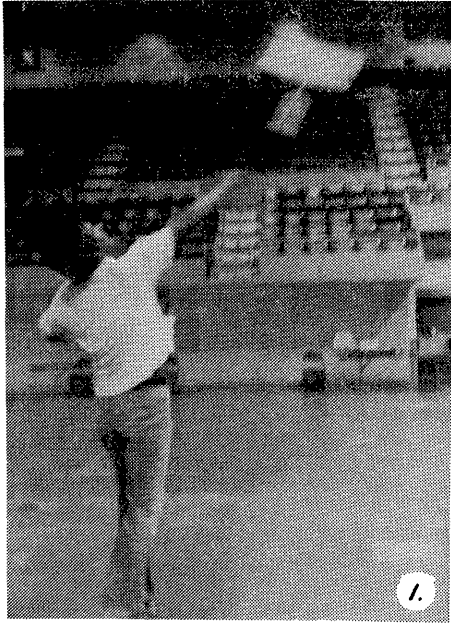
Friday morning we were back at the site to retrieve Marion Knight's Pennyplane which had spent the night stuck to the side of the scoreboard shroud, it was not damaged. Another Indoor NATS was over.

In retrospect, Indoor events being moved in both location and dates contributed to low attendance, but I could not help thinking on Thursday afternoon that we had a nice little contest going on. All in all, I think we did a good job with what we were given. On to 87.

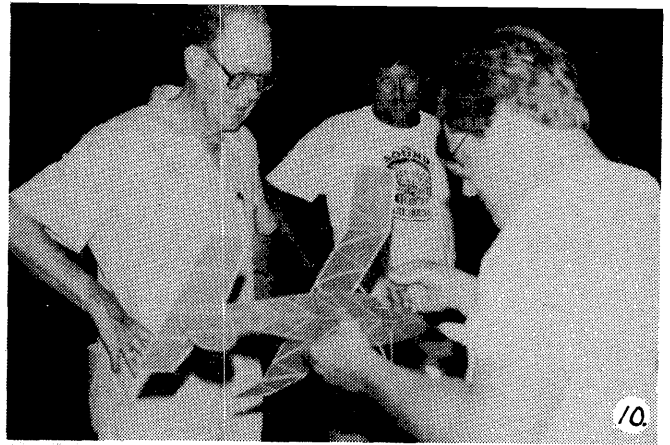
### NATIONAL GEOGRAPHIC

Many of you saw the outstanding article in the July 1986 issue of National Geographic Magazine covering the '85 Nationals. Well, the editors were so pleased that they sent a film crew to Lake Charles from their cable TV show "National Geographic Explorer", to film the Nats for early January showing. However, we understand that the show isn't going on cable, but on Public Broadcasting (PBS) on January 18, 1987 at 8:00 pm EST. Check your local listings to see if this is the correct time for your area. The crew spent a good deal of time filming indoor, since they were the only events slow enough for them to keep up with! The publicity can only help us get more places to fly.

1986 NATIONALS



1. Bob Dunham. 2nd in Hand Launch Glider.
2. Mike Clem re-adjusts HLG stab. Placed 3rd.
3. Charles Gagliano. 1st place Senior Manhattan Cabin.
4. Marion Knight, newcomer to Indoor with Pennyplane. Model spent night stuck to scoreboard - retrieved with no damage.
5. Bob Dunham untangles father's ROG Cabin model from Tony Sutter's after mid-air.
6. Jim Clem processing FAI Indoor model.
7. Moe Whittemore launching Manhattan Cabin.
8. Tony Becker launching NPP for National Geographic film crew. Placed 2nd in NPP.
9. Tony Sutter launches Manhattan. Placed 2nd.



10. Indoor CD Richard Doig processes R.J. Dunham's Manhattan. (Shown measuring side window area.)

Nats photos by Melody & Richard Doig

RESULTS FROM 1986 NATIONALS

Stout Indoor Trophy:  
(High time Indoor Cabin,  
regardless of age):  
Tony Sutter 14:26

Stout Commercial Trophy:  
(High single flight,  
Hand Launch Stick or FAI  
Indoor, regardless of age):  
Richard Doig 29:11

NOVICE PENNYPLANE

Junior

1. Matt Gagliano 7:51

Senior

1. Aaron Markos 10:07  
2. Charles Gagliano 9:17  
3. Dana Wile 5:22

Open

1. Jim Clem 10:23  
2. Tony Becker 9:51  
3. Bob Nichols 9:05  
4. Moe Whittemore 5:27

PENNYPLANE

Junior

1. David Brown 3:24

Senior - No Entries

Open

1. Gordy Wisniewski 13:12  
2. Tony Italiano 9:33  
3. Vito Gagliano 8:50  
4. Marion Knight 8:32  
5. Tony Sutter 8:25  
6. Bob Perkins 7:07  
7. Charlie Sotich 5:36

MANHATTAN CABIN

Junior - No Entries

Senior

1. Charles Gagliano 3:52  
2. Dan Isaacks 2:40

Open

1. Chuck Markos 7:34  
2. Tony Sutter 7:10  
3. R. J. Dunham 5:50  
4. Moe Whittemore 4:44

ROG CABIN

Junior

1. Lance Ferguson 1:08  
2. David Brown 0:49

Senior

1. Dan Isaacks 2:41  
2. Melanie Sanford 1:07

Open

1. Tony Sutter 14:26  
2. R. J. Dunham 13:04  
3. Richard Doig 12:48

HAND LAUNCH STICK

Junior

1. David Brown 6:21

Senior - No Entries

Open

1. Richard Doig 27:07  
2. Jim Clem 13:23  
3. Bob Perkins 10:30  
4. Dick Ganslen 6:58

INTERMEDIATE STICK

Junior

1. David Brown 6:58  
2. Tony Hutchins 2:47

Senior

1. Charles Gagliano 2:20

Open

1. Tony Sutter 15:01  
2. Gordy Wisniewski 14:14  
3. Charlie Sotich 13:17  
4. Jim Clem 13:10

EASY B

Junior

1. David Brown 7:54  
2. Matt Gagliano 1:12

Senior

1. Charles Gagliano 5:25  
2. Dana Wile 0:15

Open

1. Tony Becker 13:39  
2. Gordy Wisniewski 13:04  
3. Jim Clem 11:24  
4. Tony Sutter 11:22  
5. Tony Schott 10:29  
6. Vito Gagliano 9:56  
7. Tony Italiano 8:52  
8. Moe Whittemore 6:23  
9. Dick Ganslen 1:24

FAI INDOOR

| (J-S-O Combined)    | 1     | 2     | Total |
|---------------------|-------|-------|-------|
| 1. Richard Doig (O) | 29:11 | 26:33 | 55:44 |
| 2. Jim Clem (O)     | 15:12 | 14:23 | 29:35 |
| 3. Dick Ganslen (O) | 14:12 | 14:35 | 28:47 |
| 4. David Brown (J)  | 3:31  | 3:42  | 7:13  |

HAND LAUNCH GLIDER (ALL WOOD)

| Junior           | 1    | 2    | Total |
|------------------|------|------|-------|
| 1. David Brown   | 30.6 | 31.2 | 61.8  |
| 2. Tony Hutchins | 32.0 | 28.8 | 60.8  |
| 3. Matt Gagliano | 27.4 | 30.0 | 57.4  |

Senior

|                     |      |      |      |
|---------------------|------|------|------|
| 1. Aaron Markos     | 45.0 | 46.2 | 91.2 |
| 2. Mark Whittmore   | 34.6 | 33.2 | 67.8 |
| 3. Charles Gagliano | 32.0 | 33.8 | 65.8 |
| 4. Dan Isaacks      | 31.2 | 31.8 | 63.0 |

Open

|                  |      |      |      |
|------------------|------|------|------|
| 1. Chuck Markos  | 46.2 | 43.6 | 89.8 |
| 2. Bob Dunham    | 41.2 | 43.6 | 84.8 |
| 3. Mike Clem     | 34.2 | 36.0 | 70.2 |
| 4. Vito Gagliano | 33.4 | 33.8 | 67.2 |
| 5. Moe Whittmore | 27.6 | 31.6 | 59.2 |
| 6. Ed Tolkeikis  | 6.8  | 9.0  | 15.8 |

INDOOR RUBBER SCALE

Junior

|                   |        |
|-------------------|--------|
| 1. Lance Ferguson | 114.47 |
| 2. David Brown    | 106.00 |

Senior

|                |       |
|----------------|-------|
| 1. Dan Isaacks | 84.94 |
|----------------|-------|

Open

|                  |        |
|------------------|--------|
| 1. Larry Kruse   | 140.41 |
| 2. Curt Sanford  | 126.41 |
| 3. George Batiuk | 56.74  |

INDOOR PEANUT SCALE

Junior

|                   |        |
|-------------------|--------|
| 1. David Brown    | 145.48 |
| 2. Lance Ferguson | 128.15 |
| 3. Matt Gagliano  | 126.23 |

Senior

|                |        |
|----------------|--------|
| 1. Dan Isaacks | 107.20 |
|----------------|--------|

Open

|                  |        |
|------------------|--------|
| 1. Curt Sanford  | 146.50 |
| 2. Tony Sutter   | 129.43 |
| 3. Vito Gagliano | 102.42 |
| 4. George Batiuk | 88.60  |
| 5. Ed Tolkeikis  | 58.35  |

1987 Nationals

We attended the Nats managers meeting in Chicago on October 25 & 26 to work out the schedule for next year's Nats (July 11 -19 in Lincoln, Nebraska). We've worked out a 2-day schedule that does NOT overlap outdoor free-flight. The schedule is similar to last year and goes with the hope that the air will stay flyable until very late into the evening. One notable change is the restriction against entering both Pennyplane and Novice Pennyplane has been dropped. I successfully argued that the very fact that National Records were held for NPP made it truly a separate event, and that the restriction just reduced entry.

On November 4, at my request, Walt Erbach and Arsene Fauquet measured Pershing Auditorium. The initial measurements were so close to the break between Cat II and Cat III that Walt arranged to make a special lightweight fabric tape measure that they calibrated under load. The results are that Pershing is Cat II, with an FAI ceiling measure of 49' 1 1/2". That's 1" below the maximum! Walt was so concerned about the accuracy that they measured the building at several places to confirm that they had the highest point. As expected, the roof has a few slopes and dips, but the highest point where you can inscribe the 15 meter diameter circle brings the site into Cat II. The highest single point in the building is 49' 10" (on the centerline) so there is very little curve to the roof since it drops only 8 1/2" over 7 1/2 meters. Many thanks to Walt and Arsene for taking the time to measure the building for us.

The word has just come back to me from Vince Mankowski (Nats Manager) that Pershing Auditorium will be very expensive to rent, something like \$1200 per day!. In view of declining entries in recent years, a large advance entry is MANDATORY or the events probably will be cancelled. I don't have an exact number, but my gut feel is that something like 50 to 60 advance entries will be necessary to insure holding the indoor events at Pershing as planned.

SCHEDULE FOR 1987 INDOOR NATIONALS

Sunday July 12:

8:00 am - 12:00 noon HLG-All Wood only  
 12:00 noon - 7:00 pm PP, NPP, MAN Cabin  
 7:00 pm - 12:00 mid HL Stick, FAI Indoor  
 Scale turn-in deadline 5:00 pm @ Pershing

Monday July 13:

8:00 am - 1:00 pm AMA & Peanut Scale  
 1:00 pm - 7:00 pm EZB, INT Stick  
 7:00 pm - 12:00 mid ROG Cabin, FAI Indoor

FAI Indoor will be flown 3 flights per day, and will count as an at-large Team Selection Regional, providing there are at least 3 team selection entrants.

## Future of Indoor at the Nationals

It is time to sit back and make some rational assessments of Indoor at the Nationals and toss out some rational (and irrational) solutions for dealing with the situation. The question keeps coming up; Why don't people attend the Nationals? We all know of several reasons, and here are some of the most popular:

1. I'm not going to drive 1000 miles just to fly in 50 feet.
2. AMA doesn't know how to run an Indoor contest.
3. The schedule stinks.
4. I got screwed the last time I went to the Nationals, and I'm not going back.
5. I don't have enough vacation time.
6. I can't afford it and the USIC too.
7. I'm not about to go to the hottest part of the country at the height of summer.

etc., etc, etc,

Now let's try and take a rational look at all of this:

Comment #1 reflects the fact that people expect a Nats site to be better than anything they could ever get access to at home. I don't think that's unreasonable, and it's a fact that 50 ft looks really good to someone who doesn't have a site at all, but it looks mediocre to someone who gets to fly in 150 ft once each month. You also have a built-in problem since most of the best flyers do have access to a pretty good site on a regular basis (that's how they got good). So, not only do the numbers drop, but the quality of the competition suffers due to their absence.

Comments #2, #3, & #4 have been dealt with to a great extent when the NFFS was asked to supply someone to run Indoor in 1986. Melody and I volunteered, and we ran what we hoped was perceived as a well run meet in 1986. We have also agreed to run Indoor again in 1987 (except scale events).

Comments #5, #6, & #7 actually reflect dis-satisfaction with the whole set-up. Nobody ever stayed home from West Baden because it was too hot, too far, or out of the way. They also reflect the perception that Indoor is not a high priority at the Nationals. Well, in many respects it isn't, but this is due to sheer lack of numbers and I don't think it really reflects malice on anyone's part.

Assessments: Where do we go from here?

Several ideas have been raised, and I'm not sure how I feel about most of them, but here goes:

1. Drop Indoor from the Nationals and pool the efforts into the United States Indoor Champs. This would primarily involve the two perpetual indoor trophies (the Stout and Stout Commercial trophies) and recognition by the Executive Council. Unfortunately, I doubt that we could talk AMA HQ out of any money towards the meet, but this is a viable

alternative. This reflects a basic difference in philosophy between the Nats and the USIC. The USIC is trying to find the best site we can afford, and then go back to the same place year after year. The Nats on the other hand tries to rotate from region to region, and run all events (Indoor, FF, RC, CL) in a relatively small geographic area. The result is usually less than perfect sites for all of the events, and in many cases, an out-of-the-way location with a site that isn't worth going out-of-your-way to fly in. The other side of the coin is the fact that the Nats is many times the only chance alot of RC and CL flyers ever have to attend an Indoor meet. Many of us feel that the best source of new Indoor flyers will come from other facets of modelling. At Lake Charles we had about 50 to 60 people watching four of us fly HL Stick and FAI Indoor on the first day.

2. Only hold Indoor at the Nats in years when a site can be had for a more reasonable cost, maybe \$500 per day or less. State laws are really different from state to state. In some cities, the Chamber of Commerce has the pull to get buildings FREE if you bring enough business to their city. In other states, this kind of influence is not only non-existent, it's illegal! This is due to something called a bed-and-board tax. Vince Mankowski explained it to me, and I'm not sure I really understand all of the ramifications, but it apparently makes a big difference.

3. Hold the Nationals in a warm part of the country in February when all of us in the snow belts want to get away. This sounds good on the surface, but is wrought with problems (like no dorms being available), but it is an interesting thought.

4. Split Nationals. A separate Indoor Nationals at a different site and date from the rest of the Nats, as was done in 1981. If this looks similar to idea #1, that's because it is. The big difference would be who paid the bills.

5. Forget the whole thing and take up golf.

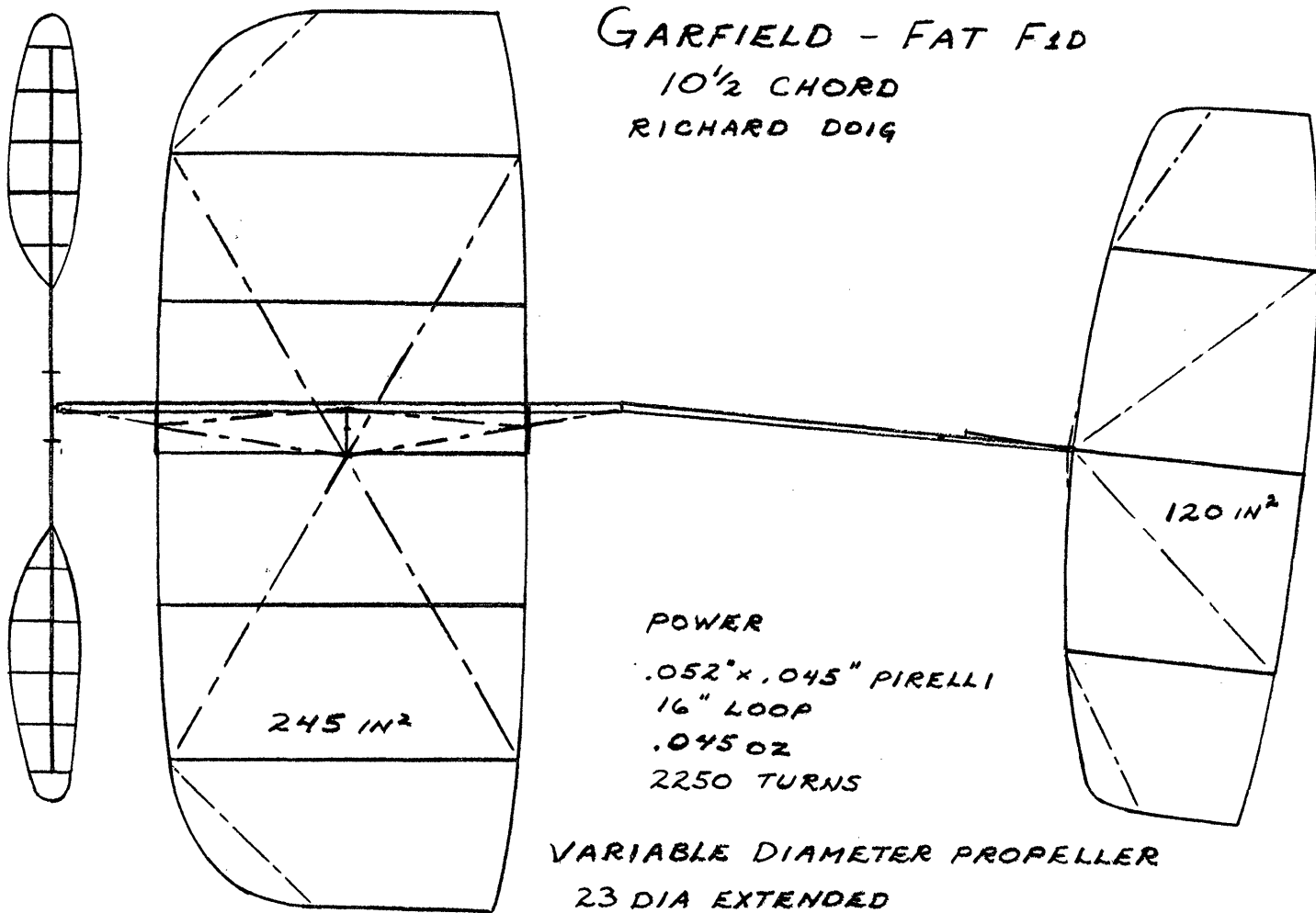
## OBITUARIES

Ron Plotzke's wife, Sue, died in mid-September after a long illness. Our deepest sympathies to Ron and his sons Mike, and Tom.

Bill Hulbert's son, Mike, died shortly after a car accident in late August. Again, our deepest sympathies to Bill and his family.

Although not an indoor flyer, Bruno Markiewicz was like family to my club, the Detroit Balsa Bugs. He loved old timer FF, and suffered a heart attack and died while retrieving a fly-off flight in the last event of this year's SAM champs, in Chicopee, MA. Bruno attended every contest we ever ran, indoor and outdoor alike, and we miss him dearly. He was everything we love about free-flight, all in one package.

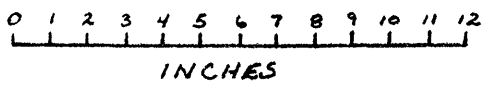
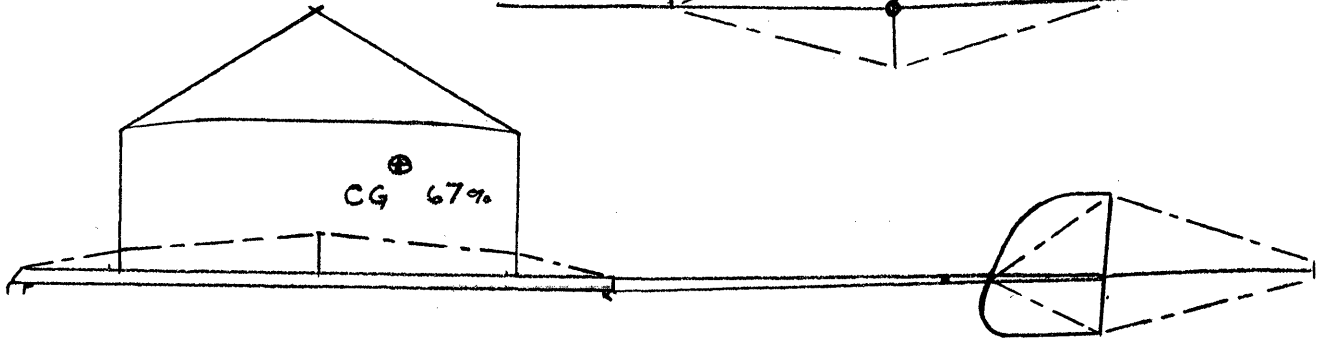
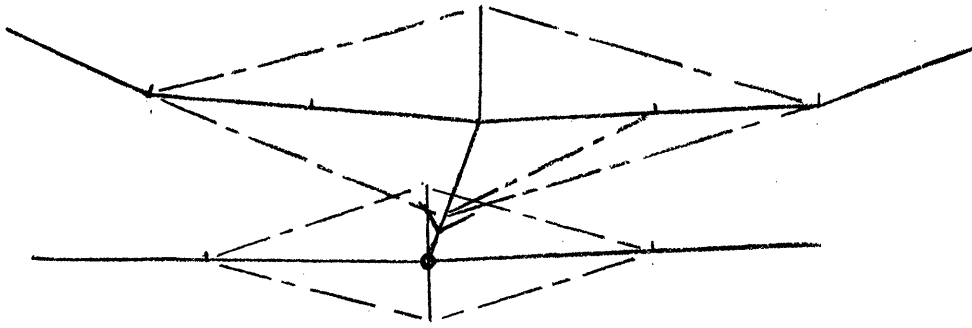
GARFIELD - FAT F1D  
 10 1/2" CHORD  
 RICHARD DOIG



POWER  
 .052" x .045" PIRELLI  
 16" LOOP  
 .045 OZ  
 2250 TURNS

VARIABLE DIAMETER PROPELLER  
 23 DIA EXTENDED  
 19 DIA RETRACTED  
 36 INITIAL PITCH

|              |          |
|--------------|----------|
| WING         | .0160    |
| STICK & BOOM | .0144    |
| TAIL         | .0075    |
| PROP         | .0109    |
| TOTAL        | .0488 OZ |



1ST PLACE 1986 NATIONALS  
 29:11 BEST FLIGHT  
 55 FT. CEILING

It's official! The USIC is moving to a new home in 1987. The dates are June 5, 6, & 7, and the new site is the Memorial Center at East Tennessee State University, in Johnson City, about 2 hours drive east of Knoxville. Tony Italiano found this place while on a business trip last spring.

The site is a domed football stadium which measures 118 ft high by FAI ceiling measure, with a peak of 122 ft. The clear floor area is about 265 ft x 420 ft. The field runs north and south, with grand stands on the east and west sides. There are no stands at the north and south ends. The roof is a shallow parabolic curve with the main arches running north and south, down the length of the field.

The east and west walls are vertical and the building has no windows. There are two speakers which hang down on cables to about 50 ft, one speaker over each set of grand stands. All of the lighting is recessed into the girders, so the entire space above the playing field is completely clear. With the shallow curve, the ceiling is almost identical to Niagara Falls, except that it is 50 ft higher.

Melody and I visited this place on our way home from the Nationals in August, only to find the building closed and locked. (It was Sunday.) Although no-one has flown in the site to date, everything I know about buildings tells me that this place should be spectacular.

The campus is fairly small, with parking, dorms, and cafeteria food nearby, all within walking distance. (The dorm and food arrangements were still being negotiated at press time.) Johnson City is a fairly large town, with a population of about 39,000, and as such there are motels and a number of restaurants within a mile or so of campus.

No site will ever replace West Baden with the on-site food and rooms, and in fact the FAI Finals at West Baden in '83 were a real letdown with having to stay in motels and eat in restaurants. So, we have to move on and recognize a super deal when we find one I think we just may have the ticket in Johnson City, Tennessee.

#### ON THE MEND

Jerry Nolin (Serendipity! EZB) suffered a heart attack in mid October. He is home now, and the doctors feel that he suffered minimal damage. When he started feeling lousy, he had the good sense to go to the Emergency Room at Wright Patterson Air Force Base, and the attack hit him while he was checking in at the desk. The right place, at the right time. I found out about it a week or so after it happened, and I called the hospital just to find out if they allowed flowers in his unit. They never did answer my question, instead, they put me on the phone with him! In Cardiac Care no less. I hope we cheered him up since they wouldn't let him build in bed! Drop him a note if you like:

Jerry Nolin  
663 Woodhill Dr.  
Fairborn, OH 45324

Ah, the rumor mill is cranking away. Two sites have been mentioned for the 1988 World Champs. One site is in Paris, the Centre Nationale des Industrie et Technologie in La Defense, and I know nothing about the details except that the people who came back from Cardington mentioned it as a possible site. The other is the Memorial Center in Johnson City, Tennessee. If this site turns out to be as good as we expect, the same folks who put together the West Baden World Champs plan to put together a similar package for Johnson City. This was the site the U.S. representatives had in mind when they made a tentative bid to the FAI to host the 1988 Indoor World Champs. We really couldn't say anything publicly until all of the details had been worked out for our first meet at the site, the 1987 USIC.

Herb Robbins also reports that at Cardington he asked one of the Romanian flyers when they planned to host the World Champs again. The reply was 1990, presumably at the Salt Mine in Slanic.

#### RULE PROPOSALS

As this issue goes to press, the initial votes are taking place for rules proposals for the 1988 flying season. A complete summary of all the surviving proposals will appear in the next issue. A recurrent theme in this rules cycle has been the need to come up with a better way to handle rules changes.

At the USIC in June, newly appointed indoor board member Doug Barber remarked that the right way to handle the rules was to:

1. Reduce the number of people on the board from the current 11 to something like 5 or 6
2. Arrange to collect all the proposals, including the emergency rulings and act on them at one session, once each year, in late November or early December.
3. Fly the board members to a motel conference room somewhere and lock them inside. When they have the rules done for the following year, then let them out.
4. If a situation arises that currently might justify an emergency proposal, let the guy continue to fly the thing for the rest of the season until the November meeting. Only in a case of safety could immediate enforcement be allowed.

Radical ideas? Maybe, but the more I've thought about it, the more it seems to make sense. It wouldn't require a new rulebook each year, but only a summarized sheet of changes to the existing book. The FAI currently does this with their international Sporting Code.

The unfortunate problem with this kind of system is that it would require a major overhaul of AMA bylaws and maybe it's constitution to accomplish, but no-one ever said it would be easy!

Let us know what you think!



NATIONAL FREE FLIGHT SOCIETY

Subject: "20th ANNIVERSARY OF THE NFFS  
SYMPOSIUM"

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

10 Models of the Year - (1987)

Send to: Jon Zeisloft  
5411 W. October Way  
W. Valley City, Utah 84120

Free Flight Hall of Fame (1987)

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

Also, a call for papers for the 1987 Symposium. Please make your intentions known along with an overall outline to:

Don Lindley  
420 Tupelo  
Naperville, IL 60540  
312-355-9674

Have your information in by February 1, 1987, at the very latest!

Thank you for your assistance.

Anthony J. Italiano  
NFFS President

COMPUSERVE

When we got our computer, we got an accessory device called a modem, which converts computer talk into tones to allow your computer to converse with other computers over the phone lines. This allows us to tap into a national information service called CompuServe. Of interest to us is a group of special interest forums, one of which happens to be the Model Aviation Forum, "Modelnet".

Modelnet is moderated by Doug Pratt of AMA, and part of his job is to keep everything up to date. There are some definite advantages here, like the ability to see the Contest Calendar updates far sooner than you could see them in print (indoor contests are notorious for being scheduled at the last minute). There are also scheduled on-line conferences about every other week, which allow small groups (so far ranging from 6 to 22) to converse in depth on some topic. Last week we got to pick Bob Clemens' brain on shooting good photos of models, for example. December 11, I'm on the hook to talk about indoor.

So far, we've found one new flyer (a CL Aerobatics flyer) for our indoor sessions. He lives about 20 miles from here and he never would have found us without CompuServe. He found out about indoor through a service called the bulletin board, which allows you to leave messages addressed to a particular person, but posted for all to read. I intercepted a message addressed to Doug Pratt when the flyer asked about indoor flying in the Detroit area.

CompuServe has local telephone access numbers throughout the U.S. and parts of Canada, so you pay the price of a local phone call, plus \$6.25 per hour which CompuServe bills to your Mastercharge or Visa. CompuServe also offers electronic mail (for private correspondence), and loads of other services. (It's easy to get addicted!) If you're interested in subscribing, contact Doug Pratt at AMA Headquarters, or ask at your local computer store. The stores have sign up kits available that include a free usage credit of either \$15 or \$25 along with an ID number and password to get you started. In my case, the sign up kit was included with my computer at no extra charge.

If you're on line already, you can leave us messages or mail; my CompuServe ID is:

Richard Doig, 73767,32

CONTEST CALENDAR

CALIFORNIA - BURBANK

Blacksheep indoor flying sessions & contests 2nd Thursday of each month 7:00 pm - 10:00 pm CAT I (peak 34') Luther Burbank Jr. HS-Maple bet Jeffries & Burbank Blvd. Dec. 11 fun-fly light stuff & heavies. Blacksheep Exhibition Squadron flying activities for Juniors - all categories. Tony Naccarato, 2121 N. Hollywood Way, Burbank, CA 91505 or 818-842-5062

CALIFORNIA - LOMITA

Indoor flying sessions - 3rd Saturday of each month 7:00 pm - 10:00 pm. Call Contact for details: Lonnie Cope 213-214-1131

CALIFORNIA - SAN DIEGO

Indoor flying sessions and monthly meetings 2nd Friday-meeting, 4th Friday flying sessions 7:30 pm Colina Del Sol Community Center, 5319 Orange Av. San Diego Orbiteers also flying after meeting - call for schedule: Don Munn, Program Chairman, 13095 Wimberly Sq. #112, San Diego, CA 92128 or 619-276-2040

CALIFORNIA - SAN FRANCISCO

F1D Local Trials & Possible Flying Sessions Dec. 6 & 7, Other dates possible. CAT III Cow Palace. Joe Foster, 3771 Timberline, San Jose, CA 95121 or 408-274-5479

CALIFORNIA - SANTA MONICA

Indoor flying sessions - 2nd Sunday of each month 1:00 pm - 4:30 pm Paul Revere Jr. High School in Santa Monica. Flightmasters Bill Warner, 423-C San Vincente Bl, Santa Monica, CA 90402 or 213-393-2198

CALIFORNIA - TUSTIN

FAI Indoor Team Selection contests, Dec. 6-7, Jan. 3-4, Feb. 1-2. CAT IV. Hangar #1 on Tustin M.C.A.S. (H). FAI Indoor #203 M.C.A.S. (H) Microfilm Flyers. To gain admittance to Base you MUST contact CD Curt Stevens, 25108 Marguerite Pkwy, #B-160 Mission Viejo, CA 92692 or 714-240-8404

COLORADO - DENVER area

Indoor model flying sessions Dec. 5 & 6, and other Friday nights 5:30 pm - 9:30 pm. Balch Fieldhouse, C.U. campus. HLG, PP, Bostonian, Scale & Peanut - check with contact for exact schedule of events. Denver Area Indoor Model Airplane Association. Dec. dates assist in C.U. student project John Berryman, 1866 S. Sedalia Circle, Aurora, CO 80017 or 303-337-2936

FLORIDA - MIAMI

Indoor Fun fly, Sunday, Dec. 7, 9 am - 5 pm CAT II (27') Miami Dade South College, 11011 S.W. 104th St. Miami Indoor Aircraft Model Association (MIAMA) Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363

FLORIDA - TAMPA

King Orange International (AAA) Dec. 27, 28, 29 (Tentative). CAT III. Delta Hanger, Tampa Airport. Int.Stick, Manh. Cabin-EZB-PP-NPP, HLG-all wood, Peanut (JSO), Bostonian, Indoor FAC scale. Also CAT III outdoor FF, FAC, OT, & Nostalgia the following weekend at Melbourne (Jan 2-4). Dick Obarski, 2349 Barcelona Av SE, Fort Myers, FL, 33904 or 813-693-1996

GEORGIA - CUMMINGS (Atlanta)

A Christmas Special, Dec. 14. Forsythe County High School gym. EZB, HLG-all wood J(SO), (PP-NPP), 14g Bostonian, Perryman challenge: Heli, Ornithopter, Autogiro. Thermal Thumbers of Metro Atlanta. C. Purdy CD, 664 Tom Read Dr, Marietta, GA 30062-3357 or 404-428-1390

ILLINOIS - CHICAGO

Winter contest & other flying sessions, Feb. 15. CAT III. Richard L. Jones Armory, 51st & Cottage Grove. IMAC. Charlie Sotich, 3851 W. 62nd Place, Chicago, IL 60629 or 312-735-1353

KANSAS - WICHITA

Indoor flying sessions, 1st Saturday each month. Dec.6, Jan.3, Feb.7, Mar.7. 1 pm - 5 pm. CAT I (about 18' free of obstructions) Open fliers \$3, youngsters \$1, spectators free Jim O'Reilly, 4760 N. Battin, Wichita, KS 67220 or 316-744-0851

OAKLAND CLOUD DUSTERS CELEBRATE 50th YEAR

Postal Contest for R.O.G. Stick in any ceiling Category. Fly between January 1 & June 30, results due by August 20. Send \$5 entry fee with your flight times & ceiling category to:

MASSACHUSETTS - CAMBRIDGE (Boston)

Indoor model flying sessions, Dec.6, Jan.3, Feb.7, Mar.7, Apr.4, May 2. Flying from 6:00 pm to 10:00 pm. CAT I. Dupont gym, Vassar St. & Massachusetts Av. Events flown on basis of interests. MIT Tech Model Aircrafters For info & confirm site availability call CD: Ray Harlan, 15 Happy Hollow Rd, Wayland, MA 01778 or 617-358-4013 or 617-258-1431 (work)

MICHIGAN - STERLING HEIGHTS (north of Detroit)

Indoor flying sessions, 1st and 3rd Fridays of each month. 7:30 pm - 10:30 pm. CAT I. Heritage Jr. HS - Dodge Park Dr. at 16 Mile Detroit Balsa Bugs. You MUST wear tennis shoes or similar. Rich Doig, 6 Canary Hill Dr, Pontiac, MI 48055 or 313-373-5374

MINNESOTA - BURNSVILLE (Minneapolis)

MMAC Indoor Meet (A), Dec. 7. Burnsville H.S. gym, 600 E. Highway 13. EZB, PP, Bostonian, Parlor Mite, HLG-all wood, Walnut & Peanut scale (modified FAC rules). Minneapolis Model Aero Club. D. Braun CD, 1011 Highland Av, S. St. Paul, MN 55075 or 612-457-2264

MINNESOTA - BURNSVILLE (Minneapolis)

MMAC Indoor Meet (A), Jan. 18. Burnsville H.S. gym, 600 E. Highway 13. EZB, PP, HLG-all wood, NoCal Scale, Bostonian, Peanut J(SO) & Walnut scale (modified FAC rules). Minneapolis Model Aero Club. G. Oakins CD, 291 Jay St, Birchwood, MN 55110 or 612-429-3150

MINNESOTA - BURNSVILLE (Minneapolis)

MMAC Indoor Meet (A), Feb. 22. Burnsville H.S. gym, 600 E. Highway 13. EZB, PP, Bostonian, Parlor Mite, HLG-all wood, Peanut J(SO) & Walnut scale (modified FAC rules). Minneapolis Model Aero Club. D. Monson CD, 131 W. Wentworth, W. St. Paul, MN 55118 or 612-457-2321

MINNESOTA - BURNSVILLE

MMAC Indoor Meet (A), April 12. CAT II. Burnsville H.S. gym - 600 E. Highway 13. EZB-PP, No-Cal Scale, HLG-all wood, Bostonian Walnut & Peanut scale (modified FAC rules). Minneapolis Model Aero Club. D. Mendenhall CD, 5100 50th Av. N, Crystal, MN 55429 or 612-535-2976

MISSOURI - ST. LOUIS

St. Louis Indoor Champs (AA), Dec. 7. CAT I. Forest Park Community College. HL Stick & FAI Indoor, INT Stick, Manh. Cabin-EZB-PP, Ornithopter, HLG-all wood, (AMA & Peanut scale). McDonnell F.F. Club. J. Bennett CD, 324 Helfenstein, St. Louis, MO 63119 or 319-962-5271

Bill Vanderbeek, 21199 Oro Grande Pl, Cupertino, CA 95014 (408-973-9687) All participants receive complete results, award certificate & Cloud Duster hat.

NEBRASKA - LINCOLN

NATS (AAAA), July 12 & 13. 8 am - 12 midnight.  
CAT II - 1 inch under maximum for category.  
Pershing Auditorium, 226 Centennial Mall Sq.  
traditional events. AMA. Richard & Melody  
Doig, Indoor CDs, 6 Canary Hill Drive,  
Pontiac, MI 48055 or 313-373-5374

NEW YORK - NEW YORK

Indoor flying sessions and contests. CAT III.  
Columbia University Low Library Rotunda.  
Columbia Indoor Model Airplane Society.  
Ed Whitten, Box 176, Wall Street Station,  
New York, NY 10005 or 212-724-0282

OHIO - AKRON

F1D Team Selection & Record Trials. Tentative  
dates late May & July 4 Weekend. CAT IV.  
Goodyear Airdock at Akron Municipal Airport.  
F1D Local in May, F1D Regional in July.  
Airdock F1D Flyers. Must call Bill Hulbert for  
Security Clearance at least 2 weeks in  
advance. Bill Hulbert, 174 Castle Blvd,  
Akron, OH, 44313 or 216-864-8030

OKLAHOMA - OKLAHOMA CITY

Indoor flying sessions and contests, Dec. 14,  
Jan. 25, Feb. 22, Mar. 22. CAT II. 23rd Street  
Armory. Jim Belson, 4933 NW 29th, Oklahoma  
City, OK 73127 or 405-946-1093

TENNESSEE - JOHNSON CITY

6th United States Indoor Championships (AAAA)  
June 5, 6, & 7. CAT IV (118FT). Memorial  
Center - East Tennessee State University.  
Traditional events. NFFS & NIMAS. Complete  
flyer & entry form in future issue  
Tony Italiano, 1655 Revere Dr, Brookfield, WI  
53005 or 414-782-6256 after 7 pm EST

TEXAS - BEDFORD (Dallas/Ft. Worth)

Indoor flying sessions & contests. CAT I.  
Bedford Boy's Ranch - Forrest Ridge @ Harwood.  
For dates and events contact: Jesse Sheppard,  
2713 Summit View, Bedford, TX 76021 or  
817-282-3770

WISCONSIN - MILWAUKEE Area

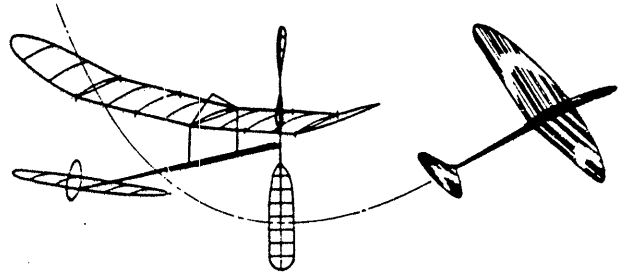
Indoor flying sessions. Bong Eagles.  
Contact John for details on site & schedule  
John Lorbiecki, 1508 Valley View Dr, Hubertus,  
WI 53033 or 414-628-4296

UNKNOWN SITE as of this printing

FAI Indoor Team Selection Finals, Labor Day  
weekend 1987. CAT IV. Tentative site Tustin,  
CA M.C.A.S. (H). Site to be determined by T.S.  
Committee in Spring 87. FAI Indoor (F1D)  
(must qualify @ regionals). AMA. For info on  
how to qualify contact: Richard Doig, F1D T.S.  
Chairman, 6 Canary Hill Drive, Pontiac, MI  
48055 or 313-373-5374

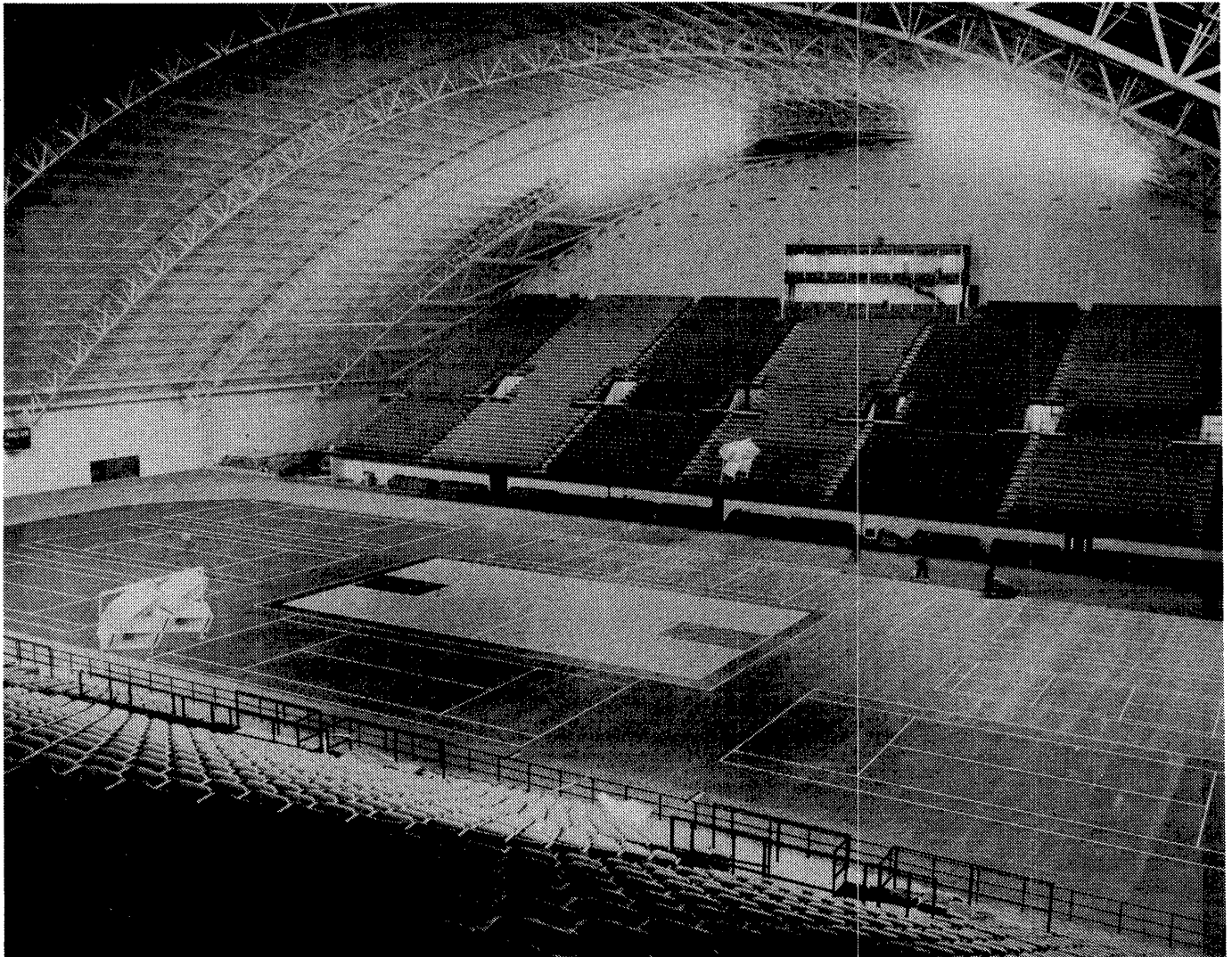
# INDOOR

## NEWS and VIEWS



#29,30,31,&32

Editors: Richard & Melody Doig - 6 Canary Hill Drive, Pontiac, MI 48055 (313) 373-5374



### 1987 UNITED STATES INDOOR CHAMPIONSHIPS

Yes, this is the interior of the "Mini-dome" at East Tennessee State University. As you can see this place is big! The rectangle in the center is a full size basketball court, and the rectangles surrounding it are full size tennis courts. The floor is about 260' x 425'. The two speakers and their cables are visible in this photo, but actually do not hang over the playing field, only over the stands. This looks like a spectacular indoor site.

Enclosed in this issue is the schedule, motel info, and entry blank for the 1987 USIC. It will be held on June 5, 6, & 7 at East Tennessee State University, in Johnson City, about 115 miles east of Knoxville, Tennessee. Many of you will already have received an

entry blank by direct mail; if so, please pass this one on to another modeler. We need everyone's support to make this meet a success, and that means entries!

### CATAPULT GLIDER AT THE USIC

In addition to the events listed in the contest flyer, the Chicago Aeronuts will sponsor Catapult Glider as an unofficial event. It will be flown during HLG on Friday, June 5 (8 am-12 noon) using these rules:

Maximum wing span 12".  
Maximum wing chord 3".  
Maximum launching stick length 6".  
Nine official flights.  
Sum of best 2 flights determines winner.  
\$1.00 event entry fee.

## THIS ISSUE

After a three month marathon with my job (I was promoted to company President as of the first of the year) we finally have the time for another issue. It seems a sensible publication schedule for us will be four times per year, with each issue consisting of nine sheets. This works out to be just under 2 ounces when ready to mail.

This creates a problem in that these thicker issues do not go through the Post Office sorting machinery very well. Several copies of the last issue were returned, torn into pieces. So another change; envelopes for domestic subscribers. Foreign issues have always been in envelopes. However, the Post Office does not play favorites, since my January issue of New York Indoor Times was torn up as well and I only received part of the cover sheet.

The original INAV schedule that Bud Tenny used was a new 2 sheet issue (printed on both sides) every four weeks, or 24 sheets per year. However, postage rates have increased dramatically since then, and we cannot afford the luxury of issues that don't get the most information for a given amount of postage. Plus, my schedule does not allow us to publish as often as we'd like. So, we are going to attempt four 9 page issues this year, and see how it goes.

We will continue with the current subscription rates and numbering system for the time being. If we are able to pull off a third four-in-one issue around July or August, then we will revise the subscription rates accordingly.

Also, many of the foreign subscribers have asked that the overseas rate be an even amount, like \$10.00, since many of them send us the leftover American Dollars from their last trip abroad. We will look into this. It may seem trivial, but fully one fifth of all INAV subscribers live outside of the United States, and the bank charges for international money orders are sometimes more than the amount of the check!

### GARFIELD - The Fat F1D

as built and flown by Richard Doig

Because of the many comments and questions received on the "Garfield" plans in the last issue, we are printing the entire article written for Model Aviation (MA used excerpts for the article "10 Best Designs - 1986 NATS", in the February 1987 issue)

This design got its start after the 1984 United States Indoor Championships, when I destroyed all my models except for a large (300 sq in) Hand Launch Stick body and tail section. With an FAI Local scheduled at Akron in 2 1/2 weeks I needed to build something fast or not be able to fly. After assessing the little time I had, I decided I only had time to build a wing, so why not size it to mate with the "300" stab I had? With the F1D rules limiting the wingspan to 65 cm this would mean an exceptionally wide chord, much larger than anyone had built for this event, in order to balance the extremely large stab

area (120 sq in) of the "300". The combination flew well enough (38:46) that I began to pursue it as a design all its own.

The model shown in the accompanying drawing is the 5th version and is specifically geared to low and medium ceilings. The wide chord gives exceptionally low wing loading in spite of the relatively high weight. (F1D has a minimum weight of 1 gram or 0.0353 ounces.) The second unique feature of this model is the Variable Diameter Propeller. The principle is from the propeller developed by four time World Champion Jim Richmond, but is built using a different hinge arrangement using Teflon washers for bearings instead of wire loops, thereby avoiding all the nifty little bent wire parts used in the Richmond design. This propeller took a mere 5 hours to build from start to finish, in a motel room no less, after its predecessor was destroyed on the first day of a three day contest. The close-up photos show the hinges and parallelogram linkage in the propeller. This type of prop allows flying on very small rubber sizes, while still having enough power for a long cruise after the prop folds. The power for the folding comes from a very tiny rubber band tied into the linkage. This version is very tricky to adjust and I am working on a version using springs in place of the rubber band.

Other state of the art features include:

1. adjustable stab incidence and twist.
2. fully suspended stab with no tail boom under the stab to save weight.
3. motorstick bracing is via the wingposts allowing the elimination of two more pieces of wood.
4. extensive use of Boron and Kevlar filaments to add strength and save weight.
5. plug in tail boom.

Plug on tails are nothing new, but this particular arrangement has been developed by myself over the last 5 years and allows the model to be packed in a very small box.

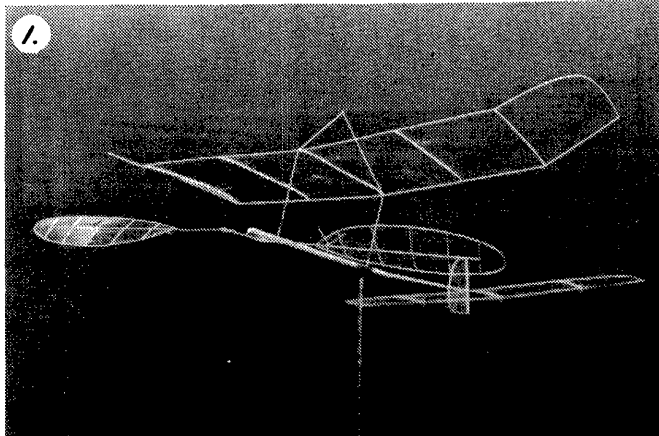
For the Lake Charles Civic Center the prop was set to fold to small diameter at about 7 minutes into the flight. The model took 3 1/2 minutes to climb to the 55' smooth ceiling where it began to tap the ceiling lightly. The prop folded while still gently scraping the ceiling and began it's long cruise at the small diameter. Because of the geometry of the hinge mechanism, reducing the diameter also lowers the pitch providing a terrific cruise. The flight required one steer to avoid the official's table on descent, landing at 29:11, breaking the site record by over 6 minutes. This combined with the number two flight of over 26 minutes gave a best 2 out of 6 flight total of over 55 minutes to easily win the event. This design seems to have tremendous potential and I am looking forward to great times from it in the future.

The preceding article was written last October.

Some additional notes on the design:

1. The CG is too far forward. That particular model required almost 1/2" of "up" elevator to float properly, and would not climb higher than about 90 feet without severe stalling during the climb. I've since moved the wing forward moving the CG to 74%, but I have not had the chance to fly this combination yet.

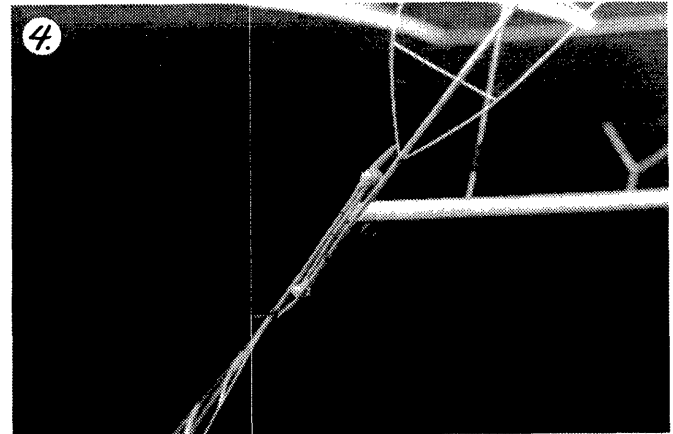
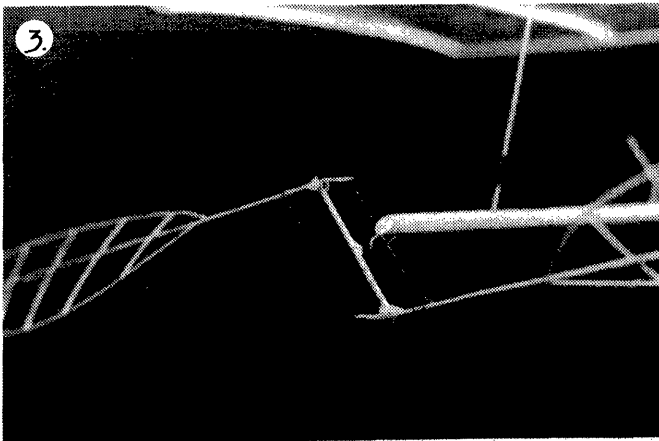
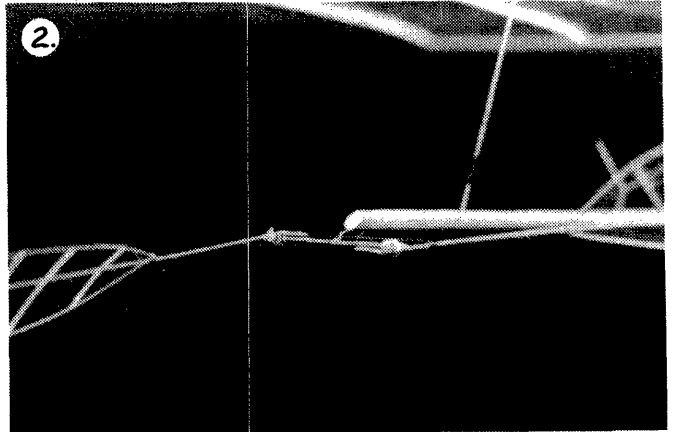
2. I have also built and flown a second version with an 18" motor stick. This model is balanced at 77% and I found the extra motorstick length was needed to get the wing far enough forward while still having adequate clearance between the prop and wing. The previous climb problems look like a thing of the past.



We also supplied some photos to Model Aviation with the article (these were not used, so we are presenting them here).

#### PHOTO CAPTIONS

1. Complete model - propeller fully extended.
2. Close-up of prop mechanism in fully extended position.
3. Close-up of prop mechanism half way through fold. The small rubber band has been removed from its hooks and is visible on the lower prop spar.
4. Close-up of prop hub assembly fully folded.



#### FIRE DESTROYS THE HOBBY COUNTER

The hobby store in Dallas, Texas owned by District 9 AMA Vice President Johnny Clemens, was destroyed by an arson fire on February 19.

The store and its contents were a total loss. The story is that the fire was started to cover the evidence of a burglary. An 18 year old Dallas man has been arrested for this and several other burglaries and is being held in lieu of a \$28,500.00 bond.

Clemens' neighbors and the Hobby Industry Association, which he helped organize 45 years ago, have come to his aid. A benefit concert has raised some cash and hobby suppliers are sending new stock. Clemens plans to reopen next door to the old store in about a month.

We send him our best wishes for a speedy recovery and a successful new Hobby Counter.

#### AMBROID LIVES!

I heard a rumor about four weeks ago that Ambroid had been discontinued. I had a brochure that Pete Waters picked up from the Ambroid booth at the Toledo show about 3 years ago, so I just called the phone number in the flyer. Here's what I found out:

I talked to a gentlemen at a company named Avanti, which is the company now handling the marketing for Ambroid. It seems that Ambroid ran into financial problems of some sort, and stopped shipping tube glue about 1 year ago. Many of the hobby stores told customers that they just couldn't get it anymore. Well, the good news is that Ambroid has had an investor pump in some much needed money, and they are producing tube glue again, and it should be back in the stores very soon. So, no need to panic. Ambroid is back in business!

## USIC PHOTOGRAPHY

You will notice in the USIC flyer that Tony Italiano mentioned sodium arc type lamps, and suggests using appropriate filters. Well, I don't know anything about filters, so I asked Bob Clemens, noted scale flyer, and a staff photographer for Kodak, what he recommended for use with Kodak VR 1000 color print film:

Date: 27-Feb-87 23:49 EST  
From: Bob Clemens [76337,3532]  
Subj: Filters for USIC pix

TO: Richard Doig

I checked with some people at work re. your request for filter information for "sodium arc" lamps. Initial search found references only to "sodium vapor" lights, very heavy in yellow.

My STRONG recommendation is to forget filters, whatever the light, if you're using VR-1000. Shoot it without filters; let the processing lab make the needed color correction when the prints are made. Chances are, whatever filter pack that might be correct would only drop your effective film speed 'way down (because you'd have to open up two, three or more stops or slow down a like number of shutter speed steps to compensate for the light-blocking effect of the filters--sort of like sun glasses), negating the speed advantage of the 1000 film.

Black-and-white film would not need filtration either. Have you considered using flash? Hope this information is of use.

Bob

This letter was sent via EasyPlex electronic mail, over the CompuServe Information Service. Bob was able to give me an answer in about 2 days, in a form ready to use in preparing this newsletter. Those of you with computers should consider subscribing, since there is a lot of good info and services available. Modelnet, AMA's on-line forum on CompuServe, has a semi-regular schedule of computer conferences. The first conference I joined after buying my computer was on photographing models. By late November, we were fairly certain that we were going to Johnson City, so I asked Bob a couple of loaded questions about photographing indoor models:

Transcript of ModelNet Conference, 20 November 1986. The subject was PHOTOGRAPHING MODELS, and the special guest was Bob Clemens, noted Scale modeler and professional photographer for Kodak. (a segment is presented here, the full conference is about 5 pages)

(30, Richard W. Doig) I have two questions for Bob; #1 is about shooting in buildings with no windows and overhead lights. Any tips? #2 is on how to shoot overhead shots in buildings with windows overhead like West Baden. Any insights?

(30, Bob Clemens) Are we shooting color or BW?

(30, Richard W. Doig) Please talk about both.

(30, Bob Clemens) Well, color presents some unique problems if you're shooting indoors by overhead lights. If you're shooting color print film these problems are minimized. Let me explain: The overhead lights have a color of their own which they will impart to the film. Fluorescent lamps, generally, will give a green cast to pictures, even though, to the eye they look "normal". With print film this green cast can usually be filtered out during the printing step so you don't have to worry so long as the lab knows what they're doing. It doesn't hurt to include a note referring to the light source with your exposed film when you send it in. Of course, if you're using flash the overhead lights will not probably be a factor, since the flash is providing the light, and of the proper quality. If you're using transparency film, you'll have to use a filter over the camera lens to cancel out the green cast. Usually, a magenta-colored filter will do the trick. If the lights are tungsten, that is light bulbs, then you must use a tungsten-balanced film to get natural-looking results. Such films as Ektachrome 160 will do the trick. I've rattled on... where were we?

(30, Richard W. Doig) That answers the first one. It was a loaded question since it describes the new site the US Indoor Champs are going to next year. Now, what about windows in the roof?

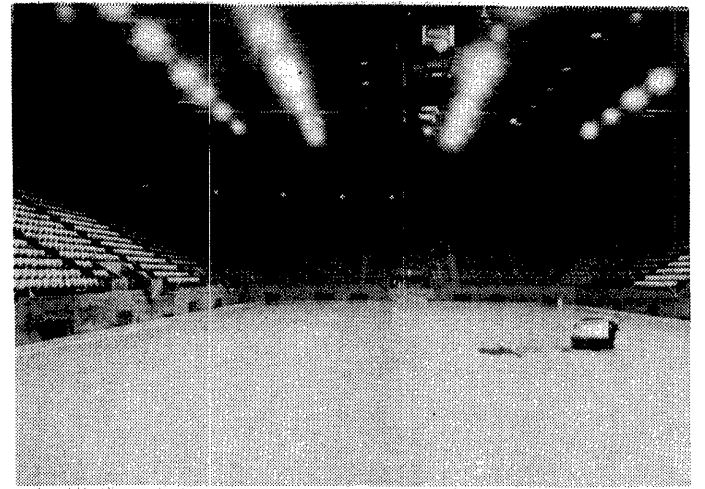
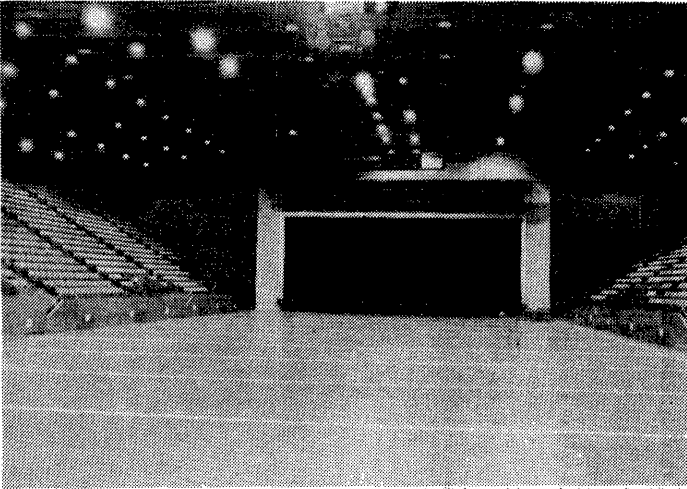
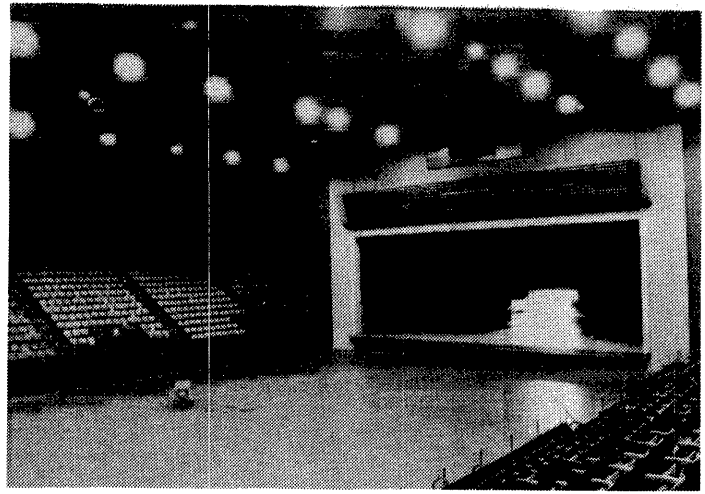
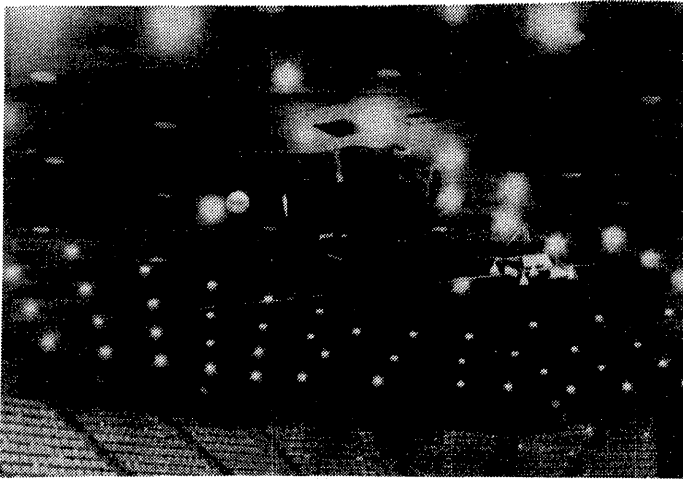
(30, Bob Clemens) Windows in the roof can cause a real problem with exposure determination. They form a bright background which can fool the camera's meter into underexposing the model flying overhead. It's best to take a meter reading in a position where it won't be affected by the windows and set this on the camera. Ignore the readings you get with them in the background. Also you can try, if possible (it was at West Baden) to let the model fly into a background area away from the windows maybe just a wall or some plain surface then shoot. A mike ship against a window isn't going to show up very well, as you well know, Rich.

(30, Richard W. Doig) Bob, is there any standard color reference disk available that you could shoot in the corner of the first photo on the roll to give the lab a color reference?

(30, Bob Clemens) Yes, there is such a reference. It's called the Kodakgray card, and is a standard value that a good lab could use to zero the color balance of photos made under non-standard lighting conditions. You can get a package of these cards at any photo store that caters to pros.

## HUMAN POWERED FLIGHT ENDURANCE RECORD

Long time indoor flyer Mark Drela has moved on to larger subjects. He and his co-workers on Project Daedalus (sponsored by MIT & The Smithsonian) recently broke the time aloft record for human powered flight at a dry lake bed out in California. They flew for something over three hours. The next goal is to build a new plane for the flight from Crete to Greece (about 100 kilometers) as told in the myth of Daedalus & Icarus. We wish them the best of luck!



### 1987 NATIONALS

The 1987 AMA Nationals will be held in Lincoln Nebraska, July 11 through 19. The Indoor events will be at Pershing Auditorium, (the same site used in 1980 and '82), on Sunday and Monday, July 12 & 13. The Outdoor Free Flight events will begin on Tuesday, July 14.

Walt Erbach and Arsene Fauquet made very careful measurements back in November and found the site is Category II, with an FAI ceiling measure of 49ft 1 1/2in, which is just under the Category II limit. Recently I received a letter from one flier questioning whether the thermal expansion of the building in the summer might actually raise the ceiling the 1 inch or so that would move the site into Category III (Walt Erbach's measurements were made in November). My reaction is, "Gee, I hope not, but it is possible." All we can really do is try to get a re-measurement if the opportunity presents itself.

You will notice some hanging obstacles in the photos. Vince Mankowski (Nats General Manager) has assured me that their removal will be included in the rental agreement. The only item that will remain is the scoreboard, which is pretty small, maybe 8 feet square or

so. The ceiling is essentially smooth (corrugated sheet metal), with recessed lighting. Melody and I will be CD's for Indoor again this year, and we plan to meet with Pershing management on Friday morning, to insure that the ceiling really is cleaned off for us, while there is still time to do something about it, if they haven't. We will run all of the Indoor events except for AMA Scale and Peanut Scale, as the Nats is currently set up with all of the scale events, Indoor, R/C, CL, and FF, run by a group of scale contest directors.

Vince Mankowski has assured us that indoor at the Nats will definitely be held this year regardless of the number of advance entries. So, we are on for Lincoln!

If you are an Indoor flier and live within one or two hundred miles of Lincoln, PLEASE consider coming to and flying in the Nats. If you are an Outdoor flier and are coming anyway, and you have a Pennyplane or Scale model, etc. that you fly in the local gym during the winter, PLEASE bring it along and enter it. The more Indoor contestants we have, the better our bargaining position is in the future.



## SOURCES FOR SUPPLIES:

I've been thinking about doing this article for some time now, so here goes. At almost every flying session or contest I attend, I'm asked where I bought some tool, where do I buy my film solution, who built my winder, etc. So, here is a list of sources for many of the items I use in building Indoor models, and how to go about obtaining them yourself. I'm really lazy in some respects, because I will buy anything I can, rather than spending time to build it, even though I have access to a machine shop. These are my personal opinions and as such, are totally biased, but I hope they are of value, especially to those new to indoor.

**WOOD:** This sounds silly, but buy wood whenever you can, from whomever has good stock. My primary source for wood was always Ron Plotzke, but as far as I know, he hasn't cut any wood in five or six years now. I still have some of his wood left. More recently, I've been buying wood from Jerry Skrjanc (pronounced "Scrantz"), of Micro-X. Jerry lives about 40 miles from the Akron Airdock, so I usually make arrangements to see him during a weekend visit to Akron. Jerry charges a premium if you hand pick the wood yourself, or ask for something very special, but the wait can be worth it, and no-one ever tries to return wood that they picked out themselves! I understand that many of the other flyers buy their wood from Lew Gitlow of Indoor Model Supply. That is, many of the flyers that are beating me!

I also have a strange collection of cast off pieces. A piece of 1/16 x 6 x 36 Midwest Balsa, that I use for wing posts, left over from a control line model I built in 1971. A piece of Sig Balsa that I use for rear hook supports, I think it is 1/16 thick. And I built about 15 stabilizers at one point using a piece of 1/32 Midwest Balsa for the outlines. I even have some Jem wood (cut by Walt Erbach, 20 or 30 years ago) that I bought from Phil Klintworth when he retired.

As a rule, the wood that is sawed to thickness will be far stronger than wood that is sanded to thickness. This is because wood is actually a bundle of little tubes, and when you sand the wood, you crush the tubes, weakening the structure. Plotzke, Skrjanc, and Gitlow all saw the wood to thickness. I think that Champion saws their outdoor sizes as well. I'm certain that Sig and Midwest sand their wood. I've never used any wood from Jim Jones or MAL, so I can't comment on their quality.

**PROP SPAR WOOD:** Micro-X saws tapered sheets for prop spars. I don't know if Indoor Model Supply saws tapered sheets or not. Many top flyers (myself included) use rectangular cross-section prop spars, only sanding a slight radius on one corner to glue the ribs on. When sliced with a Harlan stripper, you can tailor the flex to get even flexing with reduced weight, when compared to sanded spars.

**RAZOR BLADES:** I'm still using some blades that I bought from Ron Plotzke back around 1975 or so. I also have some good blades that I bought from Jim Jones. A few years ago Jim came across a large stock of Star brand razor blades. Jim still has some of these blades available and these are the best blades around. They are the traditional double edge blades that break off clean.

**GLUE:** I use good old Ambroid. I use it for all joints in my indoor models except for holding in the prop shafts and attaching covering. Available at your local hobby store. I apply it with a Grumbacher #7703 No.000 sable brush. I thin the glue in a Floquil 1 oz. mixing bottle. The bottles and brushes are available at art stores and hobby stores that specialize in plastic kits.

**GLUE SOLVENT:** Most people don't know it, but Ambroid Glue Solvent is available in one-pint cans. The local hobby wholesaler in Detroit stocks it, because Ford Motor Co. uses Ambroid to attach the dashboards in their cars! Ford normally buys direct from the factory, but every once in a while, the hobby wholesaler gets a panic call from Ford for 40 or 50 gallons of the stuff. What that means is that my local hobby store can order it for me. You can thin Ambroid indefinitely with it since it is the exact solvent mixture that they use to make the glue in the first place. Make sure you thin the glue in a glass bottle. It will dissolve almost anything else. If anyone is interested in getting some, I could probably order it for you.

**PROP SHAFT GLUE:** I attach my prop shafts with Goldberg Instant Jet. This is a thin Cyanoacrylate glue. Hot Stuff, and Zap work just as well. The local hobby stores stock Jet, so that's what I use. Besides, their bottle is a different shape than the other brands, and it's easy to hold onto. The Jet forms a strong waterproof, lubeproof bond.

**COVERING ADHESIVES:** I attach microfilm with water or spit. I attach Ultra-film with Scotch C-77 Spray Adhesive. It's available in this area at the hobby stores. The R/C guys use it to attach balsa planking to foam wing cores. It is also available at some art supply stores. I haven't built any condenser paper models in about four years, and I wasn't happy with the adhesive I used last time, so I think I'll just say that I'm going to try the C-77 next time.

**MICROFILM SOLUTION:** I use the film that Erv Rodemsky mixes up in his garage. I'm not sure what's in it, and I really don't care. It works. Almost all of the top flyers use his film.

**MICROFILM SOLVENT:** I cut my film using Aerogloss Dope Thinner. Honest! I use a Grumbacher #7706 No.1 camel hair brush dipped in the thinner to cut Rodemsky's film. This solvent doesn't shoot through the film the way straight acetone does. I carry one of the little 1 ounce bottles that are available at local hobby stores. The brushes are available at a local art store, and also at a local hobby store that specializes in plastic kits.

**CONDENSER PAPER:** All of the C-paper I have, I bought from Jerry Skrjanc (Micro-X) about 10 years ago. I think I have enough left for about four Easy B's so don't everyone get excited. It's not very much.

**PLASTIC COVERINGS:** The plastic to use is a polyester film sold by Ray Harlan called Ultra-film. This material is great, but tricky to handle. Ray ships a really good set of instructions with each roll, and the C-77 adhesive idea came from his instructions. Ray buys it from an industrial source in some huge quantity, and then repackages it into a usable size for our use.

TISSUE FOR WING SOCKETS: I'm still using some Sig Jap Tissue that I bought at Joe's Hobby Center in 1968. Champion Model Products currently has some pretty good Esaki Plyspan tissue. (I used Esaki to cover a Wakefield last year). One sheet will last a career if you only use it for wing sockets.

OTHER TISSUE: I also use some little pieces of lightweight silkspan in my designs to reinforce the area around the thrust bearing and rear hook. It's sold by K & S (the tubing people) and I buy it at my local hobby store. I use this same weight of silkspan to roll my motor sticks and tail booms. I don't remember the weight, but it's the lightest they sell.

PROP SHAFT & REAR HOOK WIRE: I use stainless steel wire that I buy from a company called Small Parts, Inc. in Miami, Florida. They package it in 25 ft. rolled lengths that are perfect for our purposes. I use .013" diameter for prop shafts and rear hooks for FAI and EZB, and .020" for Pennyplane. I also use their .014" wire for the torsion rod in my torque meter. Small Parts doesn't make anything. What they do is to buy the large industrial size quantities, and then repackage the items into small lots for people like you and me. They sell screws, wire, ball bearing races and all sorts of neat things.

PROP WASHERS: I use the standard size Teflon washer from Micro-X. Their ultra washers probably weigh less, but I can't see them anymore (even with my new glasses), so I use the larger ones. One washer on each prop shaft.

THRUST BEARINGS: I usually use the pigtail bearings from Ray Harlan, but I also have built some bent wire bearings as well. The Harlan bearings are fast and easy. They come in three sizes; one for FAI, one for EZB, and one for Pennyplane.

BRACING WIRE: On wings I'm currently using some .0012 Karma that I got from Ron Plotzke about 10 years ago. The spool must have been something like 500 feet or so, because it still looks full. I also use some Kevlar in the wings. On tails, I use .0006 Karma from Micro-X. I use .001 Tungsten from Micro-X on my motor sticks.

BORON FILAMENT: I use the boron that Ray Harlan sells. I also have a spool of the boron from Curt Stevens (Model Research Labs) but Harlan's seems to cut a little easier. It might be because Ray's boron has a carbon core, while Curt's has a tungsten core. In both cases, they each bought an industrial minimum order, (something like 40 miles or so) and they repackage it into sizes suitable for our use. Curt ships his on a spool, while Ray's is cut into 24" lengths and shipped inside a plastic tube, capped at both ends.

BALSA STRIPPER: I use one of Ray Harlan's micrometer strippers. I modified it by installing a slightly thicker (.020") backup piece. This is the single most important tool I use during building. Techniques with this stripper will be the subject of an upcoming article.

MOTOR STICK FORMS: I make them from K & S telescoping brass tubing. I usually take two 12" lengths, and telescope them onto one 12" length of the next smaller size. You run a bead of Jet down the small piece, and shove the two larger pieces over it. You now have an instant 24" long tube. K & S also makes some sizes in 36" long lengths, but most hobby stores don't stock them. It's great, because K & S makes their tubing in 1/32" increments, so you can make a form for a slightly larger or smaller size stick easily.

TAIL BOOM FORM: Ray Harlan makes a nifty aluminum tail boom form. I bought one from the first batch that he made. I also have an old Micro-Dyne form, but I don't use it any more since I bought the Harlan form. (Micro-Dyne was Lew Gitlow's company in the sixties. He got out of the supply business for a while, and then came back into business as Indoor Model Supply.)

MICROMETER: I use a Fowler Dial Thickness Gage that I bought in 1971. I have the standard spring in it, which is pretty light. It will not crush wood, and gives about .001" compression when measuring rubber. Similar devices are made by Starett, Browne & Sharpe, Mitutoyo, and other manufacturers of precision measuring equipment. Look for a supplier of machine shop tools to locate a dial thickness gage. Most of the places are geared to the industrial market, but will sell to anyone.

SCALE: I use a beam balance from Ray Harlan for building. It's the best scale around short of spending \$1500 for one of the electronic versions. Ray's current version uses a fiberglass beam with very low inertia, so the scale damps out rapidly. I also had one of Ray's earlier versions with the aluminum beam, and the new version is much better. Mine is an English version, from 0 to .0500 ounces, in .0002 ounce increments, and you can easily interpolate to .0001 ounce. It's the best.

OHAUS TRIPLE BEAM BALANCE: I use this to build outdoor models, but I'm constantly asked where I bought it. I bought it from the local Ohaus distributor in Detroit. Contact the Ohaus factory to find the local distributor in your area.

SCALE FOR WEIGHING RUBBER MOTORS: I use a homebuilt version that I made about six years ago, that uses a .011" diameter nickel-steel guitar string. I made about 40 of these which I sold to justify the expense of getting a photo-engraved version for myself. The original had rub-on numbers, which fell off after a couple of years. I had the photo-engraving done by a local company that makes the nameplates we use in our family business. (We build industrial machine control panels).

TORQUEMETER: I'm still using a beat up old torque meter that was built by Dennis Jaecks back around 1971 or so. Dennis built the red torque meters that Ron Plotzke sold during this period. Jim Jones now makes a similar meter. I also have a Kujawa torque meter, but a broken motor shot it about 15 feet across the room, and it has never been the same. I'll fix it one of these days. I have a special clip on the Jaecks meter that allows it to attach to the top of my model box. I machined the clip in the machine shop at our family business.

WINDER: The winder I use is the guts from a Wilder winder, mounted into a different case. I took out the counter gearing to reduce the size, and I machined a new case in the machine shop. Even Bob Wilder himself didn't recognize it. I use the 10:1 ratio version (I converted it from 20:1 about 1982 or so. This involved getting a different gear from Bob, and drilling some new holes in the case. It wasn't easy.)

This winder was the second indoor winder that Bob ever sold. Bill Shailor bought the first one on the same day back in 1974. This winder will last a long time! The counter only works correctly in the 20:1 version. If you get the 10:1 gears, the counter will read twice the amount you actually have in the rubber.

RUBBER STRIPPER: I have two. One was built by Ryzard Czechowski back around 1974. The other is one of Ray Harlan's. I prefer the Harlan stripper, but you must be careful because I've figured out how to cut myself on the blades while stripping. Even though it looks expensive, it's one of the best bargains around.

PRECISION FORCE GAGE FOR STRETCH TESTING  
RUBBER: I use a Trim Series model T5P precision force gage manufactured by Ametek Corporation. This is a 0-5 pound range tension/compression gage with 0.1 pound graduations. It was about \$95 two years ago. Call the factory to find the local distributor in your area.

O-RINGS: I've used o-rings on my motors for many years to ease hookup, but lately I've had some problems with breakage. Anyway, I add the order onto one of the purchase orders at work, and then pay the company for them when they arrive. I use Parker O-rings, 70 durometer Buna-N, in size 002 or 003, depending on the size of the rubber. Part numbers are:

2-002 N 674-7 & 2-003 N 674-7

I've never used any of the other materials around, and more recently I've gone back to no o-rings at all.

RUBBER LUBE: Ah yes, witchcraft. The best lube I've ever used is the batch Ron Plotzke mixed up in 1971. I still have about 1/2 oz. left. Even the next batch that Plotzke made was different somehow. I'm not sure what's in it, but it will wash off completely with water, doesn't attack the rubber, and is light-weight. Jim Jones claims to have duplicated the formula, but Jim's smells different, and feels different. I've also used Micro-X, Indoor Model Supply, Armor-All, and some homebrew from a local outdoor flyer (it looks like Italian Salad Dressing!).

The Armor-All Protectant (sold in auto stores for cleaning vinyl car tops) works very well. The only problem with it is that it penetrates the rubber, and you can't really wash it off. The next session when you go to use the motor, it seems dead. I don't know if the rubber has been attacked, or if the lube worked so well the first time, that I killed the rubber by overwinding. I also found that knots that work fine with conventional lube, may come apart with Armor-All. I think it is because it has more slip than conventional lubes. Also, grapevining seems worse. Maybe more slip isn't better. Also, these observations

are with Pirelli. Armor-All won't penetrate FAI or Champion rubber, but then neither will anything else I've ever tried.

RUBBER: As far as I know, the only people making any kind of decent rubber these days is the factory that makes the rubber for FAI Model Supply and Champion Model Products. I think both of them come from the same factory. All of the rubber that comes in kits, Sleek Streaks, and from Sig is all from the same factory as well. I understand that there is some rubber being produced over in Asia, but I don't have any info on it except for a small skein that Bamba of Japan sent me back in 1980. This sample is too thin to work with my stripper, so I've never really tested it. And there is a guy in Italy who is attempting to reproduce the Pirelli formula, but the latest samples & reports I've seen are not promising. I still have enough Pirelli to last for some time, but I conserve it, and I'm careful about storage. Unfortunately, the good to great Pirelli from 1979 to 1982 is better for indoor than anything else ever produced, so we'll just have to wait and see.

BALLOONS: I use 40" round balloons that I buy from a local novelty store. They might also be available at stores that advertise party supplies or Halloween costumes. Ray Harlan also sells the same size balloon. If they charge more than \$3.00 each, question the price. (I was once told \$6.50 each!)

STEERING TUBE: Ray Harlan sells a 40 ft long plastic tube for putting between the balloon, and the balloon string. Ray inflates his tube, but I prefer mine deflated since the balloon seems easier to maneuver. I put a strip of bright orange grosgrain ribbon inside the tube to increase visibility. I bought the ribbon at a local fabric/sewing store. What I really wanted was the fluorescent ribbon like they use on jogging clothes. Does anyone know where to get a 40 ft length of this stuff?

STEERING POLE: I bought a new telescoping pole from a local sporting goods store just last week. They had two different brands! These are actually fishing poles. I bought a Shakespeare Wonderpole #TP1050B-630. This is one of the fairly large diameter lightweight poles, 21 feet long. I was really surprised, since I hadn't seen one in a store since about 1980. The price was \$19.95. I have no idea where the Shakespeare offices and factories are located.

SUMMARY: As I said at the beginning, this is a biased article since it is strictly my own personal preference, however, I think it is probably of value since I've been able to locate a lot of unusual items over the years. If there is something of importance that I've missed, just drop us a line.

Addresses for Suppliers mentioned in this article:

ABS (Jim Jones)  
36631 Ledgestone Drive  
Mt. Clemens, Michigan 48043  
Phone (313) 791-0651

Send self-addressed stamped envelope or call for catalog sheets & information.

Add \$2.00 shipping & handling for each of the following items:

Torquemeter \$14.00 (specify FAI/EZB or PP); Adjustable balsa stripper \$18.50; Fiberglass helical prop forms \$15.95 (specify 18", 24", 26", 28", 32", or 36" pitch).

Add \$1.50 shipping & handling for each of the following items:

Rubber lube 2 oz bottle \$1.00, 8 oz can \$4.00.

The following items are shipped postpaid:

Double edge razor blades \$10.00/100, limited supply; EZB prop assembly fixture \$8.50; Adjustable rib index for slicing ribs \$20.00; Boron 250 ft spool \$15.00; O-rings \$5.50/100 (specify size 001, 002, 003, or 006).

Also wood - guaranteed light, & lots of other nifty items.

#### AMETEK

Hunter Spring Division  
Hatfield, Pennsylvania  
(215) 822-2971

Trim series #T-5P precision force gage approximately \$100. Call to get name of local distributor in your area.

#### CHAMPION MODEL PRODUCTS

880 Carmen Court  
La Verne, California 91750

Rubber, \$11.95/box (approx 1 lb.) postpaid. Available in 3/32", 1/8", 3/16", & 1/4" widths. 1/4" recommended for stripping. Also Jap Tissue, Wakefield & Coupe kits. Outdoor FF supplies. Send \$1.00 for complete catalog.

#### RICHARD DOIG

6 Canary Hill Drive  
Pontiac, MI 48055

Kevlar bracing material. Free. Send self addressed stamped envelope.

#### FAI MODEL SUPPLY (Ed Dolby)

P.O. 3957  
Torrance, California 90510

Rubber, \$12.00/box (approx 1 lb.). Available in 1/16", 3/32", 1/8", 3/16", & 1/4" widths. 1/4" recommended for stripping. Small box (approx 1/4 lb.) \$4.50. Add \$1.50 shipping and handling to orders under \$15.00. Also outdoor FF kits and supplies. Send \$1.00 for catalog.

#### FRED V. FOWLER CO., INC.

66 Rowe Street  
P.O. Box 48  
Newton, Massachusetts  
(617) 332-7004

Model #52-545-000 pocket thickness gage or #52-550-005 dial thickness gage both approximately \$75.00. Call to get name of local distributor in your area.

#### RAY HARLAN

15 Happy Hollow Road  
Wayland, MA 01778

Send self-addressed stamped envelope for catalog sheet & shipping rates.

Micrometer balsa stripper \$40.00 plus shipping; Indoor beam scale \$60.00 plus shipping (specify ounces or grams). Pigtail thrust bearings \$1.25 each plus postage - 3 or more postpaid - specify size (EZB, FAI, PP).

The following items are postpaid:

Rubber stripper \$88.00; Tailboom form \$12.50; Balloons \$2.50 each; Steering tube \$3.00 each; Ultrafilm - 10 ft \$7.25; O-rings (size 002) \$1.80/dozen \$10.00/100; Boron filament 200 ft cut into 2 ft lengths to ease handling \$10.00; Stick-on yardsticks \$1.00 each.

#### INDOOR MODEL SUPPLY (Lew Gitlow)

Box 39  
Garberville, California 95440

Wood, kits, goodies, complete line. Too many items to list here. Send \$1.50 for complete catalog.

#### K & S ENGINEERING

6917 West 59th Street  
Chicago, Illinois 60638  
(312) 586-8503

Telescoping brass tubing, silkspan, and precision tools. Available at most hobby stores.

#### M-A-L (Model Aircraft Labs)

108 South Lee Street  
Irving, Texas 75060

Wood, scale kits & plans. Send \$.50 for catalog.

#### MICRO-X (Jerry Skrjanc)

P.O. Box 1063  
Lorain, Ohio 44055

Wood, kits, goodies, complete line. Too many items to list here. Send \$1.50 for complete Catalog

#### MODEL RESEARCH LABS (Curt Stevens)

25108 Marguerite Pkwy., B-160  
Mission Viejo, California 92692

Boron filament 1000 ft spool \$25.00 ppd. Also Kevlar cloth, Carbon fiber sheet, all types of composites. Too many items to list here. Microfilm listed in catalog is from Erv Rodemsky. Send for catalog.

#### OHAUS SCALE CORPORATION

29 Hanover Road  
Florham Park, New Jersey 07932  
(201) 377-9000

Triple beam balance model #750-SW approximately \$100. Dust cover extra. Call to get name of local distributor in your area

PARKER HANNIFIN CORPORATION  
O-Seal Division  
10567 Jefferson Blvd.  
Culver City, California 90230  
(213) 837-5101

Industrial O-ring manufacturer. Call to get name of local distributor in your area. Also available from Ray Harlan and Jim Jones.

ERV RODEMSKY  
1600 Rockspring Place  
Walnut Creek, CA 94596

Microfilm solution; 4 ounce bottles.  
1st bottle \$6.50 postpaid  
2 bottles \$12.50 ppd  
3 bottles \$18.00 ppd  
add \$5.50 for each additional bottle.

SMALL PARTS, INC.  
6901 N.E. Third Avenue  
P.O. Box 381736  
Miami, Florida 33238-1736  
Phone (305) 751-0856

Stainless steel wire, all kinds of neat stuff. Send for catalog. I think the catalog is free.

BOB WILDER  
2010 Boston  
Irving, TX 75060

Indoor winder - 20:1 or 10:1 ratio - \$42.50 ea plus \$2.00 postage & handling. Indoor torque meter (attaches to winder) \$22.50 plus \$2.00 postage & handling. Get your name on his list, and when he makes his next run of parts, he'll include yours. Be patient. He also makes a Wakefield winder, wakefield hub assemblies, and the ultimate wakefield stooage.

#### FINAL VOTE ON AMA RULE PROPOSALS

Once again its time for Contest Board members to cast their final vote on this year's round of rule proposals. The ballots must be postmarked by May 1, 1987. If you have not already made your opinion known to your CB representative NOW is the time, or no complaints next year when the new rules go into effect.

To refresh your memory here are the proposals:

GEN-88-2 To clearly state that CD's must check for AMA licenses and where appropriate FAI stamps at all AMA sanctioned activities.

GEN-88-4 To clarify which events and circumstances require an AMA number on the wing of the model. (Indoor models are exempt)

GEN-88-5 To allow event officials to file a valid protest at any AMA sanctioned event.

For the indoor proposals here is the exact wording that will be used in the rulebook should they pass. These are only PROPOSALS. They are not rules at this time!

#### PROPOSED CHANGES: INDOOR RUBBER

IND-88-4 Change section 12 to read:

12. TIMING OF FLIGHTS. Time of flights starts the instant the model is launched by hand or released for take-off, and ends when the model touches the floor of the building, or when the model jettisons any parts. If an obstruction is met which stops the flight, the stopwatch shall be permitted to run for "20" seconds. If within that time the model frees itself, timing is to continue. If the model does not free itself within the "20" seconds allotted, the watch shall be stopped, "20" seconds deducted from the time indicated, and the result recorded. "A balloon, pole, or any other device may not be used to dislodge the model until after the end of the timing period." Situations involving .....

IND-88-6 Change section 8.2.f (Easy B section) to read:

"f. The model shall weigh at least one (1) gram."

IND-88-7 Change section 8.2.a (allow plastic covering in Easy B) to read:

"a. The Easy B model shall be a monoplane covered with any commercially available material sold in sheet form. Microfilm is not allowed."

IND-88-8 Add section 8.2.j as follows:

"j. The structural framework of the Easy B model shall be entirely of wood with adhesive for assembly only. Reinforcement utilizing boron, carbon fiber, kevlar or any other non-wood substance is not allowed. Tissue or thread wrap at the thrust bearing and rear hook is acceptable."

IND-88-11 Add to section 9.2.c.3 (Manhattan Cabin):

"If transparent covering is used on the fuselage, then the windshield and windows must be outlined in a contrasting color."

IND-88-14 Change section 12 to read:

"12. TIMING OF FLIGHTS.  
a. Hand-Launched Events. Time of flights starts the instant the model is launched by hand and ends when the model comes to rest on the floor of the building (This is interpreted to mean "belly down"), or when the model jettisons any parts. Any model equipped with landing gear permitting taxi after touchdown shall not be permitted to enter hand-launched events.  
b. R.O.G. Events. Time of flights starts the instant the model is released for take-off (time includes the take-off roll) and ends when the model touches the floor of the building or when the model jettisons any parts.  
c. If an obstruction is met...."

IND-88-15 Add to section 8.2.1 (Easy B - changes ICB Interpretation to a numbered paragraph):

"It is not acceptable to use any material other than wood for the propeller blades and spars, one (1) wire for the propeller shaft, and adhesive for assembly. No gadgets of any kind (such as variable pitch or variable diameter mechanisms) are permitted as part of the propeller. Propeller hubs which permit blade replacement and manual pitch adjustment are acceptable."

PROPOSED CHANGES: INDOOR HAND-LAUNCHED GLIDER

IND-88-13 Change section 5 (combines All-Wood & High-Tech into a single event, with restrictions to eliminate folders & auto-surfaces. Drops all restrictions on materials) to read:

"5. CONSTRUCTION. All surfaces shall remain fixed except for changes of camber or incidence due to natural flexing of the surfaces. Folding wings and mechanically actuated incidence changes are strictly prohibited."

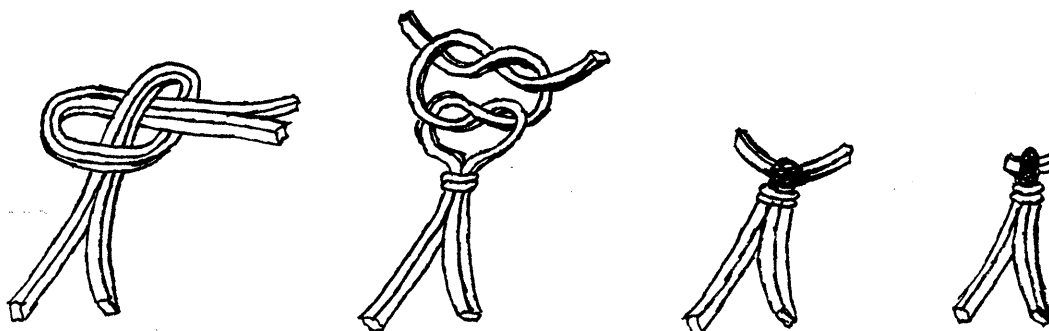
KNOTS

All of us who fly rubber powered models are faced with the same dilemma. Connecting the ends of a strip of rubber into a loop, or, the infamous knot. Here we present three different knots, with some pros & cons of each.

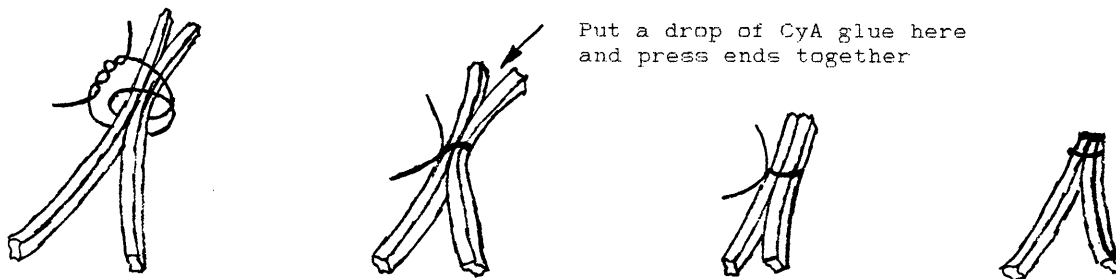
#1. The Classic Knot. This knot has been used for years. It works quite well, except that it tends to come untied, especially with really slippery lubes. Also, it is heavier than any of the other knots presented here. An added problem is that due to it's large size, it can rotate around and punch holes through your motor sticks. Just such an incident caused me to look seriously at other knots.

#2. The Thread knot. In a recent article I referred to this as a "Richmond style" knot. That's because Jim Richmond taught me how to tie this knot in 1982. I don't know who originated this knot, but it has been around for many years. It is favored by many because of it's light weight (.0005 -.0007 ounces). I used it for many years, but I ran into occasional problems with breakage at the knot.

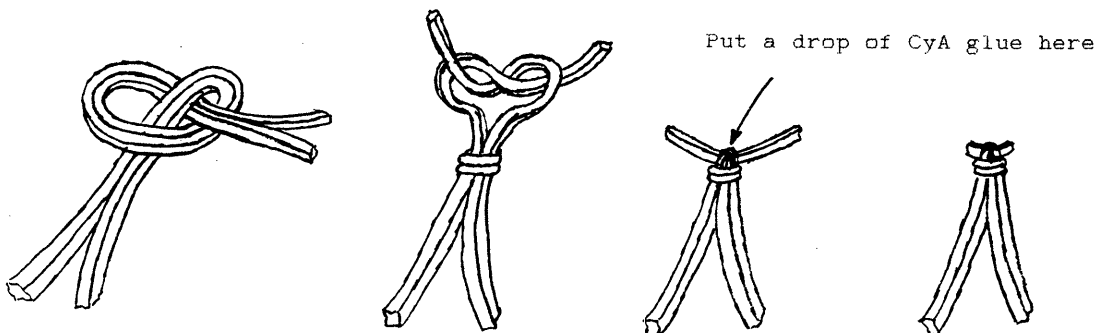
THE CLASSIC KNOT



THE THREAD KNOT



THE MODIFIED CLASSIC KNOT



After some careful observation, I realized that the rubber was actually sliding right through the thread, and when the glued section of the rubber slid through into the working part of the rubber, BANG! The rubber broke. When I began experimenting with alternate lubes, like Armor-All, the problem got worse.

The breakage peaked out when I bought a force gage and began to stretch test rubber. I found that this type of knot consistently came apart at about 3.6 to 3.8 pounds of stretch. Yet the Pierce formulas called for stretch up to about 4.7 pounds to test these particular samples. This is when I watched the knots carefully and discovered the slippage. After some experimenting, I came up with the modified knot as shown in #3.

#3 Modified Classic Knot. The basic problem with the Thread knot, is that the wrap of thread is static, and doesn't tighten up as the rubber is stretched. Both the Classic knot and the Modified knot have a wrap of rubber that stretches and tightens as the motor is stretched. The key to the Modified knot is that the CyA glue secures the backup knot into a shape like a bow-tie, so the backup knot can't slip through the wrap. This knot will take in excess of 5.0 pounds of stretch when tied in the same loops of rubber that broke the thread knots at 3.6 to 3.8 pounds. This knot is definitely stronger. My samples of the Modified Classic knot weighed between .0008 and .0009 ounces, which is a very small weight penalty when compared to the Thread knot.

#### CONTEST CALENDAR

##### CALIFORNIA - BURBANK

Blacksheep indoor flying sessions & contests 2nd Thursday of each month 7:00 pm - 10:00 pm CAT I (peak 34') Luther Burbank Jr. HS, Maple between Jeffries & Burbank Blvd. Blacksheep Exhibition Squadron flying activities for Juniors - all categories. Tony Naccarato, 2121 N. Hollywood Way, Burbank, CA 91505 or 818-842-5062

##### CALIFORNIA - LOMITA

Indoor flying sessions - 3rd Saturday of each month 7:00 pm - 10:00 pm. Call Contact for details: Lonnie Cope 213-214-1131

##### CALIFORNIA - SAN DIEGO

Indoor flying sessions and monthly meetings 2nd Friday meeting, 4th Friday flying sessions 7:30 pm Colina Del Sol Community Center, 5319 Orange Av. San Diego Orbiters. Also flying after meeting - call for schedule: Don Munn, Program Chairman, 13095 Wimberly Sq. #112, San Diego, CA 92128 or 619-276-2040

##### CALIFORNIA - SAN DIEGO area

Indoor flying sessions on 3rd Friday of each month. Mostly Peanuts & west coast Bostonians but any indoor model is welcome. Sponsored by the Scale Staffel Club. For details contact: Tom Arnold, 325 F. Av, Coronado, CA 92118

##### CALIFORNIA - SAN FRANCISCO

Possible F1D Local trials & flying Sessions CAT III Cow Palace. Contact: Joe Foster, 3771 Timberline, San Jose, CA 95121 or 408-274-5479

##### CALIFORNIA - SANTA MONICA

Indoor flying sessions - 2nd Sunday of each month 1:00 pm - 4:30 pm Paul Revere Jr. High School in Santa Monica. Flightmasters Bill Warner, 423-C San Vincente Bl, Santa Monica, CA 90402 or 213-393-2198

##### CALIFORNIA - TAFT

United States Free Flight Championships (AAAA) Indoor events: Saturday, May 23. 6 - 11 pm Taft High School gym. CAT I EZB, NPP, HLG - Hi Tech & All wood combined, Mooney Indoor Peanut Scale. CD: Carlo Godel, 5726 Case Av, North Hollywood, CA 91601 or 818-980-6184

##### CALIFORNIA - TUSTIN

FAI Indoor Team Selection contests: Local & record trials on May 2-3, June 6-7, & Aug 1-2. Regional & record trials on July 3-5. CAT IV. Hangar #1 on Tustin M.C.A.S. (H). FAI Indoor #203 Sponsor: M.C.A.S. (H) Microfilm Flyers. To gain admittance to Base you MUST contact CD at least 3 days in advance. CD: Curt Stevens, 25108 Marguerite Pkwy, #B-160 Mission Viejo, CA 92692 or 714-240-8404

##### CALIFORNIA - TUSTIN

FAI Indoor Team Selection Finals, Labor Day weekend Sept 5-7, 1987. CAT IV. Hangar #1 on Tustin M.C.A.S. (H). FAI Indoor (F1D) You must qualify at a Regional contest to enter. For info on how to qualify contact: Richard Doig, F1D T.S. Chairman, 6 Canary Hill Drive, Pontiac, MI 48055 or 313-373-5374

##### COLORADO - DENVER area

Indoor model flying sessions on scheduled Friday nights 5:30 pm - 9:30 pm. Balch Fieldhouse, C.U. campus. HLG, PP, Bostonian, Scale & Peanut - check with contact for exact schedule of events. Denver Area Indoor Model Airplane Association. Contact: John Berryman, 1866 S. Sedalia Circle, Aurora, CO 80017 or 303-337-2936

##### CONNECTICUT - GLASTONBURY

Sunday fun fly on May 3, 1987 8 am - 12:30 pm in Glastonbury High School gym. Sponsored by the Glastonbury Aeromodelers. For more info contact: George Armstead 203-633-7836

##### FLORIDA - MIAMI

4th Annual World Pistachio Proxy Inter-Gnats May 16-17 at Miami Dade South College, 11011 S.W. 104th St. Miami Indoor Aircraft Model Association (MIAMA) Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363

GEORGIA - CUMMINGS (Atlanta)

Spring Indoor contest, April 26. Forsythe County High School gym in Cummings. CAT II EZB, NPP, PP, HLG-all wood, Perryman challenge, 14g Bostonian, Peanut Scale, AMA Scale, OT Indoor Flying Scale, JR HLG & JR Bostonian. Thermal Thumbers of Metro Atlanta. For info: Norm Purdy, 664 Tom Read Dr NE, Marietta, GA 30062-3357 or 404-428-1390

ILLINOIS - CHICAGO

Chicago Aeronauts Midwest States Indoor Championships. April 25 & 26 8 am - 4 pm CAT III. Richard L. Jones Armory, 51st & Cottage Grove. Sat: F1D, Inter. Stick, EZB. Sun: HLG-All Wood, HLG-Hi Tech, Catapult Glider, NPP, PP, Manhattan, Bostonian (7 gram), Peanut Scale, Kit Plan, No-Cal. CDs: Don Lindley, 420 Tupelo, Naperville, IL 60540 or 312-355-9674 & Del Ogren, 1579 Stratford Rd, Deerfield, IL 60015

MASSACHUSETTS - CAMBRIDGE (Boston)

Indoor model flying session; May 2. Flying from 6:00 pm to 10:00 pm. CAT I. Dupont gym, Vassar St. & Massachusetts Av. Events flown on basis of interests. MIT Tech Model Aircrafters. For info & to confirm site availability call CD: Ray Harlan, 15 Happy Hollow Rd, Wayland, MA 01778 or 617-358-4013 or 617-258-1431 (work)

MICHIGAN - DETROIT

Detroit Balsa Bugs Spring Indoor Contest May 3 8 am - 6 pm CAT III University of Detroit - Calihan Hall, McNichols at Livernois. HLG-All wood, Catapult Glider, Manhattan Cabin, Bostonian (7 grams), AMA Scale, Peanut Scale (1982-3 AMA rules), Blatter "40" (one design beginner event, plans in flyer), Embryo Endurance (FAC rules), EZB, NPP, Inter. Stick CD: Paul Crowley, 32604 Tecla, Warren, MI 48093 or 313-294-1236

MICHIGAN - STERLING HEIGHTS (north of Detroit)

Indoor flying sessions, 1st and 3rd Fridays of each month thru May. 7:30 pm - 10:30 pm. CAT I. Heritage Jr. HS - Dodge Park Dr. at 16 Mile Detroit Balsa Bugs. You MUST wear tennis shoes or similar. Rich Doig, 6 Canary Hill Dr, Pontiac, MI 48055 or 313-373-5374

NEBRASKA - LINCOLN

NATS (AAAA), July 12 & 13. 8 am - 12 midnight. CAT II - 1 inch under maximum for category. Pershing Auditorium, 226 Centennial Mall Sq. Traditional events. Send self addressed stamped business size envelope to AMA HQ for entry form. F1D event counts as Team Selection Regional. Richard & Melody Doig, Indoor CDs, 6 Canary Hill Drive, Pontiac, MI 48055 or 313-373-5374

NEW JERSEY - PALMYRA

Friday night flying sessions in Palmyra High School basketball gym. CAT I For info contact: Al Mkitarian, 2031 Harbour Drive, Palmyra, NJ 08065 or 609-829-6573

NEW JERSEY - PISCATAWAY

Edison Recreation M.A.C. Spring Contest, Saturday, May 9, 9 am - 5 pm. Louis Brown Athletic Center, Rutgers University, Piscataway Campus. Novice Pennyplane, Peanut Scale. Sneakers are REQUIRED footwear! CD: Bill Lindemann, 44 High St, Metuchen, NJ 08840 or 201-494-0993

NEW JERSEY - PISCATAWAY

FAI Local & Regional in conjunction with ERMAC contest, Saturday, May 9, 9 am - 5 pm. Louis Brown Athletic Center, Rutgers University, Piscataway Campus. Sneakers are REQUIRED footwear. ERMAC contest flights have right of way. Warning, there may be problems getting all of the blowers shut off. For info contact Manny Radoff, 61 Springbrook Rd, Livingston, NJ 07039, (201) 992-3307. CD for Team Selection Meet: Steven West, 13 North Terrace, Maplewood, NJ 07040, (201) 763-1024

NEW YORK - NEW YORK

Columbia Indoor Model Airplane Society contest May 3. CAT III. Columbia University Low Library Rotunda. Mooney HL Peanut, FAC No-Cal, Bostonian (7grams) and 10 cent Kit/Plan 1930's/40's Comet & Megow Scale\*. Ed Whitten, Box 176, Wall Street Station, New York, NY 10005 or 212-724-0282 \*Event info: Bob McDow, 305 Carle Rd, Westbury, NY 11590

OHIO - AKRON

F1D Team Selection & Record Trials. Tentative dates: May 16 & 17 and July 3-5. CAT IV. Goodyear Airdock at Akron Municipal Airport. F1D Local in May, F1D Regional in July. Airdock F1D Flyers. Must call Bill Hulbert for Security Clearance at least 2 weeks in advance. Bill Hulbert, 174 Castle Blvd, Akron, OH, 44313 or 216-864-8030

PENNSYLVANIA - PHILADELPHIA

Saturday, May 9 Memorial Hall, Fairmont Park. Contact: Al Mkitarian, 2031 Harbour Dr, Palmyra, NJ 08065 or 609-829-6573

TENNESSEE - JOHNSON CITY

6th United States Indoor Championships (AAAA) June 5, 6, & 7. CAT IV (118FT). Memorial Center - East Tennessee State University. Traditional events. F1D event counts as Team Selection Regional. Sponsored by NFFS & NIMAS. Complete flyer & entry form in this issue Tony Italiano, 1655 Revere Dr, Brookfield, WI 53005 or 414-782-6256 after 7 pm EST

TEXAS - BEDFORD (Dallas/Ft. Worth)

Indoor flying sessions & contests. CAT I. Bedford Boy's Ranch - Forrest Ridge @ Harwood. For dates and events contact: Jesse Sheppard, 2713 Summit View, Bedford, TX 76021 or 817-282-3770



# SIXTH UNITED STATES INDOOR CHAMPIONSHIPS

JUNE 5, 6, 7, 1987  
 EAST TENNESSEE STATE UNIVERSITY  
 "MINI-DOME"  
 JOHNSON CITY, TN



Please Print

Name \_\_\_\_\_ AMA NO. \_\_\_\_\_  
                     Last                    First                    Initial

Street \_\_\_\_\_

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

I hereby certify that I understand all of the rules under which I will compete and will diligently follow the official AMA safety code as well as any that may be established on site as well as apply the use of good accepted common sense in all my flying and affairs at the contest site.

JUNIOR \_\_\_\_\_ SENIOR \_\_\_\_\_ OPEN \_\_\_\_\_

Signature \_\_\_\_\_

|                  |                                  | Includes<br>One Event | Each<br>Additional Event |
|------------------|----------------------------------|-----------------------|--------------------------|
| Open             | NFFS or<br>NIMAS<br>Member       | \$14.00               | \$4.00                   |
|                  | Non NFFS<br>and NIMAS<br>Members | \$30.00               | \$5.00                   |
| Junior<br>Senior |                                  | \$3.00                | \$1.00                   |
|                  |                                  |                       |                          |

### CIRCLE EVENTS ENTERED

1. Hand Launched Glider (All Wood)
2. Paper Stick
3. ROG Cabin
4. FID
5. Easy B
6. Pennyplane
7. Novice Pennyplane
8. Manhattan
9. Bostonian
10. Indoor Stick
11. Peanut Scale
12. AMA Scale
13. Peanut Speed
14. Unlimited Speed (BrokenSpar Event)\*
15. Ornithopter
16. Autogiro
17. AJI OT Event

CASH AWARDS {

- A. Peanut Grand Prix \*\*
- B. Pistachio\*\*

\*\* Indicate interest but enter on site.

\*Sponsored by Hardy Brodersen  
 \$5 per each m.p.h. over 6 m.p.h. to winner only (\$100 max.)

BANQUET- No. of res. @ \$13.00 \_\_\_\_\_

DORMITORY Reservation:

Single            Double            Couple

Check for \$\_\_\_\_\_ is enclosed

In case of emergency please contact:

NAME \_\_\_\_\_ PHONE \_\_\_\_\_

STREET \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Send fees payable to:  
 USIC  
 1655 Revere Drive  
 Brookfield, WI 53005

Contest Sponsors:  
 National Free Flight Society  
 National Indoor Model Airplane Society

Must be postmarked by May 10, 1987.  
 Late entry fee of \$10.00 payable on site.

NOTE: You can join NFFS or NIMAS and  
 AMA on premises.

# SIXTH UNITED STATES INDOOR CHAMPIONSHIPS

JUNE 5, 6, 7, 1987  
 EAST TENNESSEE STATE UNIVERSITY  
 "MINI-DOME"  
 JOHNSON CITY, TN



Category IV

Sanction No. 70094

Sponsored by:  
 National Free Flight Society  
 National Indoor Model Airplane Society

|                    | AM 8 | 9      | 10     | 11   | NOON 12    | 1    | 2    | 3             | 4      | 5          | 6            | 7 | 8   | 9     | 10 PM |         |
|--------------------|------|--------|--------|------|------------|------|------|---------------|--------|------------|--------------|---|-----|-------|-------|---------|
| JUNE 5<br>FRIDAY   |      | HLG    |        |      |            | ORNI | AUTO | SPEED         |        |            |              |   |     |       |       |         |
|                    |      |        |        |      |            |      | O.T. |               |        |            | FLD (3 FLYS) |   | AMA | STICK |       |         |
| JUNE 6<br>SATURDAY |      | EASY B |        |      | INT. STICK |      |      |               |        |            |              |   |     |       |       |         |
|                    |      |        |        |      |            |      |      | BOST          | PEANUT |            | AMA SCALE    |   |     |       |       | BANQUET |
|                    |      |        |        |      |            |      |      |               |        | GRAND PRIX |              |   |     |       |       |         |
| JL<br>SUNDAY       |      |        | PP/NPP | MANH |            |      |      |               |        |            |              |   |     |       |       |         |
|                    |      |        |        |      |            |      |      | SPCL<br>EVENT |        |            |              |   | FLD |       |       |         |
|                    |      |        |        |      |            |      |      |               |        |            |              |   | ROG | CABIN |       |         |

NOTE: OPEN EVENTS WHICH HAVE LESS THAN 4 ENTRIES WILL BE CANCELLED

FLD - NOT IN ROUNDS

All models for scale judging are to be submitted by 2:00 P.M. June 5 or earlier (along with documentation and name of contestant).

(Ceiling- 122', Floor- 208'x420')

All Senior and Open Flyers will be required to time flights and assist as called upon (be happy and VOLUNTEER!) Bring your own stopwatch.

Helium available, bring your own balloons.  
 Note: Helium belongs to all flyers --please lend your balloon to others.

NOTE: For details of the MIAMI PEANUT GRAND PRIX, send a large SASE to: Dr. J Martin, 2180 Tigertail Ave. Miami, FL 33133

BANQUET - SAT. JUNE 6, 1987- 8:00 P.M.  
 \$13.00 Per Person

Banquet Speaker -

All 1986/87 AMA Rules apply. All rule change "proposals" DO NOT apply!

All entrants must be AMA Members or of their countries governing body. (Contestants provide proof).

Contest Directors:

H. Brodersen, A. Italiano  
 D. Lindley, C. Sotich  
 d. Wisniewski

Entries must be postmarked by MAY 10, 1987  
 Late fee \$10.00 payable on site.

Send your entry payable to:

NO FAULT INSURANCE: Check your model before you come to the contest for rule compliance.

USIC  
 1655 Revere Drive  
 Brookfield, WI 53005

DOORS OPEN BY 7:30 A.M. for practice flying.

(414) 782-6256 (after 7 P.M. Milwaukee time)

| AWARDS TO 3rd PLACE |                           | Includes One Event | Each Addl. Ev |
|---------------------|---------------------------|--------------------|---------------|
| OP                  | NFFS AND NIMAS MEMBER     | \$14.00            | \$4.00        |
|                     | NON NFFS AND NIMAS MEMBER | \$30.00            | \$5.00        |
| JR<br>SR            |                           | \$3.00             | \$2.00        |

**USIC GRAND CHAMPION (AJI award)**

... you wish to participate in the Grand Champion Award, you must select a maximum of 7 events for score. Your declaration must be made before you fly any events whatsoever.

EVENTS ELIGIBLE: HLG, FLD, AMA STK, RUB CAB, ORN, AUTO, EZB, INT, STK, P-NUT, AMA SC, FP, NFP, MAN, BOOST.

**AJI OLD TIMER (OT) EVENT (Sponsored by Tony I.)**

**STICK ONLY** (Microfilm covered). Design must have been widely published between 1/1/34 and 12/31/42 (bring proof). Construction must be in accordance with plan (balsa sizes may vary). No hi-tech material will be allowed, nor "new" devices such as variable pitch or diameter propeller. Event will be flown on Friday June 5 between 12 noon and 4 p.m. and on a non-interference basis with ornithopter, et al.

|                 | JR                   | SR | OP |
|-----------------|----------------------|----|----|
| AW HLG          | X                    | X  | X  |
| INT STICK       | JR. & SR. (COMBINED) |    | X  |
| RUB CABIN       |                      |    | X  |
| FLD             |                      |    | X  |
| EASY B          | JR. & SR. (COMBINED) |    | X  |
| PENNY PLANE     | X                    | X  | X  |
| NOVICE FP       | X                    | X  | X  |
| MANBAT.         |                      |    | X  |
| BOSTONIAN       |                      |    | X  |
| INDOOR STICK    | JR. & SR. (COMBINED) |    | X  |
| PEANUT SCALE    | JR. & SR. (COMBINED) |    | X  |
| AMA SCALE       |                      |    | X  |
| PEANUT SPEED    |                      |    | X  |
| UNLIMITED SPEED |                      |    | X  |
| ORNITHOPTER     |                      |    | X  |
| AUTOGIRO        |                      |    | X  |
| AJI OT          |                      |    | X  |

CASH PRIZES ONLY

**A "GATHERING OF BUTTERFLIES" EVENTS**

Let's get some adrenalin flowing- A contest within the contest framework. At the USIC, for a special extra fee of \$10.00, you may enter the "GOB". This entry must be done before your first official flight. Only the USIC 2 highest time flights will be used (2 extra flights are allowed this special event). A separate score chart will be used to follow this event. The GOB event does not affect your USIC event standing. The GOB will be applicable only to EZB and FP but each are separately conducted. A minimum of 6 entries is required for EZB and 6 for FP.

**AWARD SPLIT:** 1st place-35 % of total GOB entry fees

- 2 " 20 % of " " " "
- 3rd " 15 % of " " " "
- 4th " 10 % of " " " "
- 5th " 5 % of " " " "

85 % (remaining 15% is a "tax" by NFFS)

The first 5 flights are for USIC score. If you desire you may fly 2 additional flights, but they can only count towards the GOB event (in addition to the 5). If you desire to count less than 5 flights for USIC, you must declare so and all flights completed at that point close out your USIC scoring. (No inter-mixing allowed).

**NO-CAL PROFILE SCALE (Sunday, June 7, @ 3-4 p.m.)**

1. A recognizable model of a full scale aircraft, with a wingspan not exceeding 16 inches.
2. The weight of the model (excluding the rubber motor) shall be no less than 6.2 grams (two pennies).
3. No fancy gadgets permitted- plastic prop is permitted. Balsa and Jap tissue shall be the main construction materials. Use of hi-tech materials such as carbon fibre, boron, et al is not at all permitted.
4. Model must contain control surface outlines, window outline, and registration markings. Model must have full landing gear, i.e., as the full scale aircraft (no profile gear). Same rubber must be used for all flying and no other part shall be replaced, dropped or removed.
5. This is a fun event so please honor the intent of the rules. Judges decision will be final, as always.
6. Event will be conducted on a mass hand launch basis. Heats will be run with last one down as the winner of each heat. Last heat will be composed only of heat winners.
7. There will be approximately 5 minutes between heats.

**UNLIMITED RUBBER SPEED (Broken Spar Event)**

1. Models must be rubber powered and propeller driven.
2. Models must start from an unassisted ROG launch from a three-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 determined by the two pylons and ends when it crosses the line after completing two laps.
6. Shortest time for two full laps determines winner.
7. No limit to the number of models or launches.

**NOTICE:** Flying schedule may be modified during the contest. The absolute final/official/positively exact schedule will be that which is posted at the officials' table. It is your responsibility to check and know the start/stop times of the events. (It may be advantageous to overlap some events.)

**CAMERAS:** The arena lights are of the sodium arc type- it is suggested that you bring along the appropriate filter.

**TABLES:** If you are driving please do bring along table or two. There will be very limited rented tables available. Share tables, please, and do not hoard from the first day to the third day. Chairs will be available. If you need close-in lighting, it is up to you to bring all equipments, including your own very long extension cord.

**BOSTONIAN RULES:**

1. Maximum projected wingspan(s) 16" and chord(s) 3".
2. Maximum propeller diameter 6", be rubber powered
3. Maximum overall length w/o prop is 14".
4. Minimum weight w/o motor(s) 7 grams (bi-planes - 14 g).
5. Fuselage contains a "box" 1 1/2 x 2 1/2 x 3" (min).
6. Longerons must support the motor(s) and form "box".
7. Fixed landing gear, two or more rotating 3/4" dia. min. wheels - model must ROG.
8. Must have a windshield and a window on each side with min. of 1 sq. in. each.
9. Charisma factor: Judge rates model on appeal to him, construction neatness, scale like details, uniqueness, etc. A 1.0 to 1.2 rating is used.
10. Seven official flights over 20 seconds, total in full seconds of the best two flights multiplied by the charisma factor determines winner basis.

**PEANUT SPEED**

The Unlimited Rubber Speed rules apply except:

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

**LODGING**

**\*BROADWAY MOTEL, INC.** - P.O. Box B-CRS, 37602, 2608 N. Roan St., 615-282-4011, 110 Units, Net rate to tour brokers.

**\*BUFFALO MOUNTAIN RESORT** - Rt. #2, Box 100, Unicoi, TN 37692, 615-928-6531, (B.L.), 69 Units.

**\*CAMARA INN - JOHNSON CITY** - Drawer K-CRS, 37602, 2312 Browns Mill Road, 615-282-2211, (B.C.L.D.), 150 Units, Commission to travel agents, Net rate to tour brokers. 1-800-T Camara / 1-800-9 Camara outside TN.

**CAPRI MOTEL** - P.O. Box 5114, 37605, 3008 W. Market St., 615-926-2952, 8 Units.

**CLEEK MOTEL** - 2700 W. Market St., 37601, 615-926-8145, 44 Units.

**11-E MOTOR COURT** - Rt. #3, P.O. Box 451, 37605, Hwy. 11-E, 615-928-2131, 16 Units.

**FOX MOTEL** - Rt. #3, Hwy. 11-E South, 37601, 615-928-0267, 31 Units with kitchen.

**GARDEN PLAZA HOTEL** - 211 Mockingbird Lane, 37601, 615-282-5550, 188 Units.

**\*HOLIDAY INN - JOHNSON CITY** - 2406 N. Roan St., 37601, 615-282-2161, (B.C.L.D.), 197 Units, Commission to travel agents, Net rate to tour brokers.

**JONESBOROUGH BED & BREAKFAST** - P.O. Box 722, Jonesborough, TN 37659, 615-753-9223, 8 Rooms.

**CONOCO INN** - P.O. Box 629, 37605, 106 W. Millard St., 615-926-4131, (C.L.D.B.), 112 Units, Commission to travel agents, Net rate to tour brokers.

**\*SHERATON PLAZA HOTEL** - 101 W. Springbrook Dr., 615-282-4611, (C.L.D.B.), 205 Units.

**\*SUPER 8 MOTEL** - 108 Wesley Street, 37601, 615-282-8816, 63 Units.

\*Denotes Chamber of Commerce Membership  
C-Cocktails  
L-Live Music  
D-Dancing  
B-Banquet Facilities

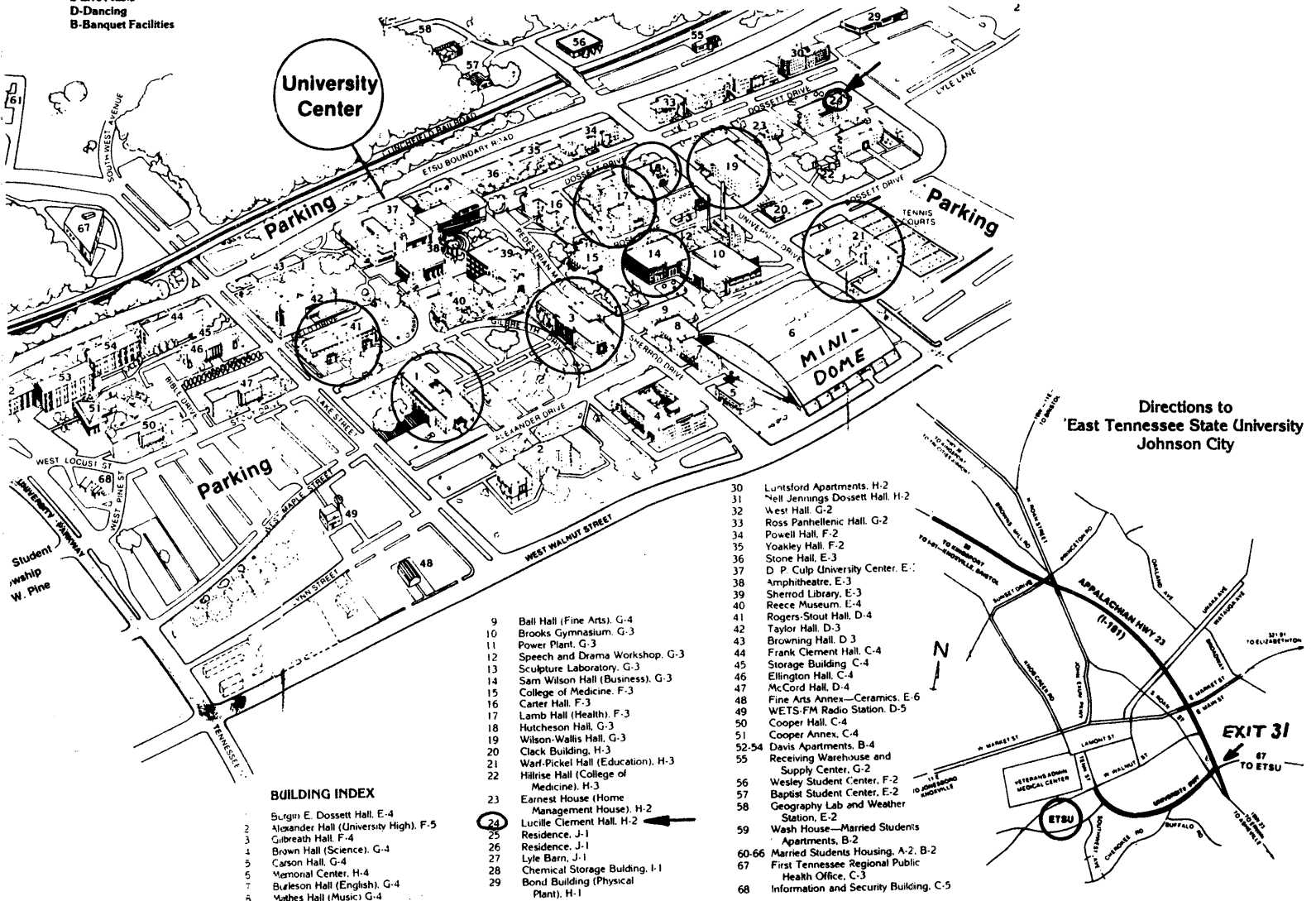
| Name               | Single      | Double  |
|--------------------|-------------|---------|
| Broadway Motel     | \$30.00     | \$35.00 |
| Buffalo Mt. Resort | \$29.77     | \$35.77 |
| Camara Inn         | \$40.00     | \$48.00 |
| Capri Motel        | (no input)  |         |
| Cleek Motel        | \$30.00     | \$35.00 |
| 11-E Motor Ct.     | (no input)  |         |
| Fox Motel          | (no input)  |         |
| Garden Plaza       | \$45.00     | \$45.00 |
| Holiday Inn        | * \$42.00   | \$48.00 |
| Jonesborough B&B   | \$35.00     | \$40.00 |
| Economy Inn        | \$24.95     | \$26.95 |
| Sheraton Plaza     | * * \$51.00 | \$51.00 |
| Super 8            | \$31.00     | \$37.00 |

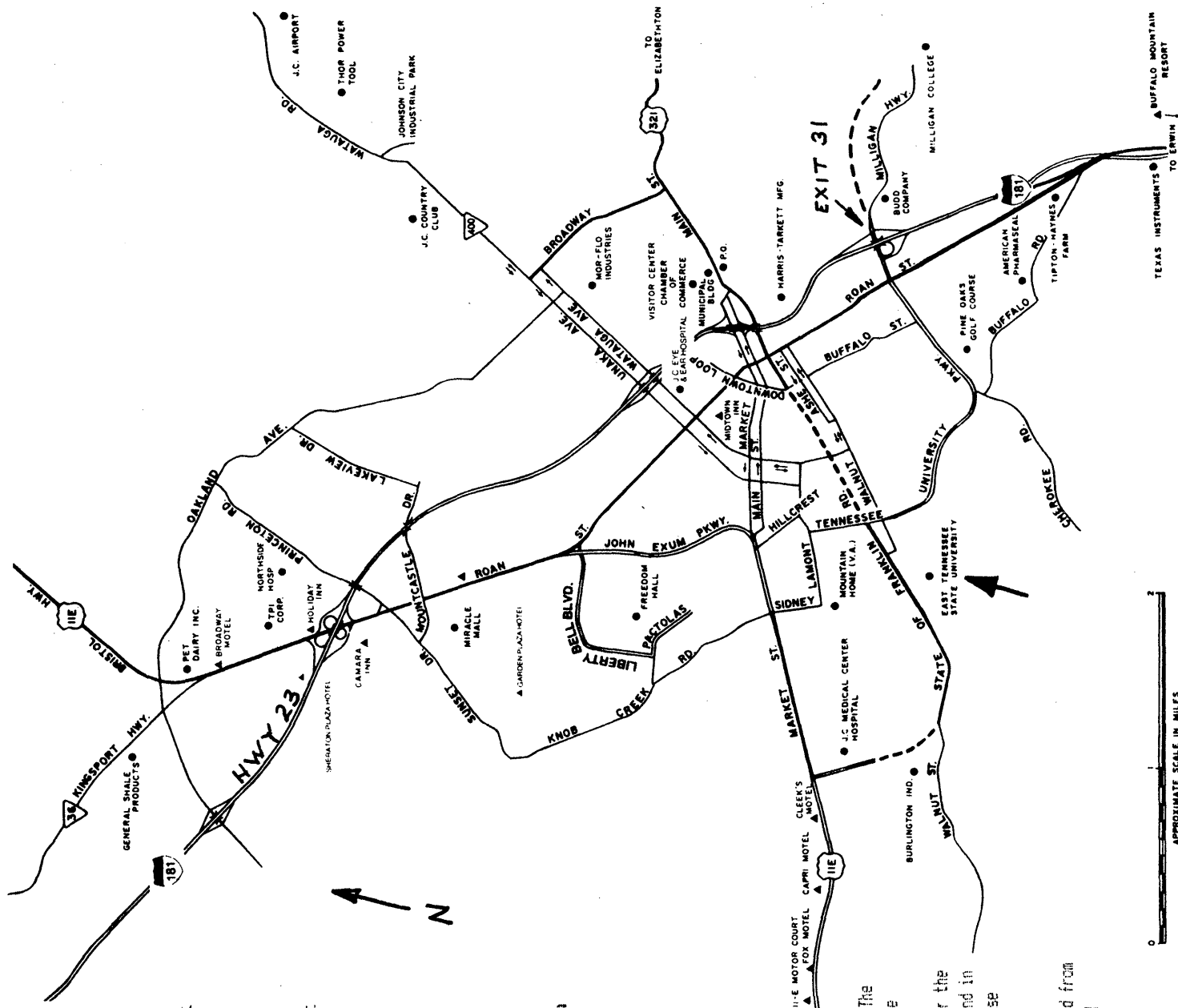
Note: Above prices subject to change. Make your reservations early. All above prices DO NOT include TN room tax of 11-3/4 %.

\* Requires 10 room minimum.  
\*\* \$45.00 \$ or D if min. of 20 rooms per nite.

JOHNSON CITY, TN, Population- 45,000

22 miles from Virginia/36 miles from North Carolina. Average summer temperature--80 F. Av. relative humidity @ 1:00 p.m. - 58 %. Altitude-1700 feet above sea level.





**DORMITORY:** Air-conditioned. Room rate is \$10.00 plus 11-3/4% tax. This is a total of \$11.75 per person (double occupancy). If you want a room for yourself, alone, it is \$20.00 + tax. No linens are furnished. If you desire linens, they can be provided for \$5.00 per person for the period. This includes a set of towels. You must indicate your needs and pay USIC (not ETSU). USIC is being held responsible for the payment, so USIC must be kept informed of all plans and any change of plans.

**NOTE:** If you lose the room key or do not turn it back in, there is a \$25.00 charge! (A key ring might be helpful.)

ETSU will have an admissions person at the dormitory. Lavatory/shower facilities are located on each floor. The Dormitory is named at LUCILLE CLEMENT HALL (located at west end of Dossett Drive.

**The dormitory provides special areas for married couples, so please indicate as needed.**

**ENTRANCE DOOR** to the Mini-Dome will be on the lower level and marked. The door is on the west side of the Dome directly across the street from the parking areas.

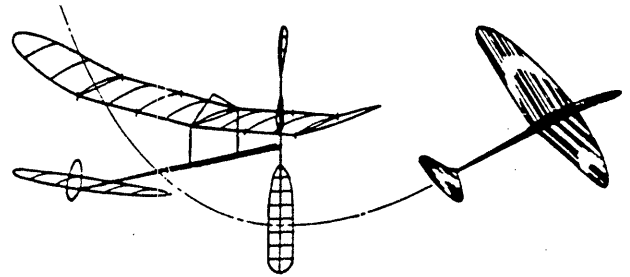
**WE NEED A PUBLIC ADDRESS SYSTEM...** Do you have one that you can bring for the full 3 days? Or know of one that can be rented at a reasonable price and in operating condition and is good enough to use for the arena space? Please contact A.J. Italiano no later than April 15, 1987. (414-782-6256)

**NOTICE:** By law NO liquor or beer is allowed on the campus. **ABSOLUTELY NOT!!** If you break this rule, you will be fully disqualified from all events and forfeit all fees, and also be subject to any State of TN actions!

PLEASE watch for and adhere to posted speed limits on campus.

# INDOOR

## NEWS and VIEWS



#33,34,35,36

Editors: Richard & Melody Doig - 6 Canary Hill Drive, Pontiac, MI 48055 (313) 373-5374

### THIS ISSUE

busy (biz'ē) adjective -ier -iest 1. Actively engaged in some form of work. 2. Crowded with activity.

In response to all of the letters about our whereabouts, we are still here, but we have just finished the busiest summer of our lives. Between all of the contests, my job, setting up a computer system at work in my spare time, a major illness in my family, and getting sick myself in August, time has just slipped away. I can't believe it is November already. We are still behind. Well, enough of that.

This issue contains the complete results from the United States Indoor Championships, the AMA Nationals, and the U.S. Team Selection Finals. Yes, we know most of it is old news. But this is the only place you will get a complete list.

### SUBSCRIPTION INFO

Indoor News & Views is published approximately four times per year. Current rates are:

\$8.00 USA, Canada, & Mexico  
 \$9.00 Overseas Surface Mail  
 \$11.00 Air Mail, Europe & South America  
 \$12.00 Air Mail, Asia, Australia, New Zealand

Please make payment in U.S. Dollars by cash, money order, U.S. Postal money order, or check drawn on a U.S. bank. Make payable to the order of Richard Doig.

The number in the upper right-hand corner of the mailing label is the final issue of the current subscription.

### OBITUARIES

Harold LaClair died suddenly, of an apparent heart attack, on September 20. Many of you met Harold at last year's USIC. Harold was just returning to modeling after a 20 year layoff. He was 71.

### 1988 AMA NATIONALS

There will be indoor at the 1988 Nationals. The events will be held at a place called the Scope Arena, in Norfolk, VA. The NATS are scheduled for July 23 - 31, 1988. We do not have the exact dates or schedule for indoor, since we didn't attend the planning meeting, but we'll pass them along as soon as they are available.

### 1988 INDOOR WORLD CHAMPIONSHIPS

The National Free Flight Society's bid to host the 1988 Indoor World Championships in Johnson City, Tennessee was approved by the AMA Executive Council at their October 25 meeting. This was the last step before presenting the proposal to the FAI at the December meeting in Paris. To my knowledge, this is the only bid for the '88 World Champs since I understand that the other rumored site in Paris has been withdrawn, and is no longer available for model flying. The tentative dates for the World Championships are:

|          |              |                             |
|----------|--------------|-----------------------------|
| Saturday | May 28, 1988 | Arrival                     |
| Sunday   | May 29, 1988 | Testing                     |
| Monday   | May 30, 1988 | Rounds 1, 2, & 3            |
| Tuesday  | May 31, 1988 | Rounds 4, 5, & 6<br>Banquet |

The reason for the early dates is very simple. The site is part of a University, and is only available to us during the break between semesters. So we have our choice of the week between Christmas and New Years, or the first week of June. At the end of summer term, about August 1st, the University closes for one month, until the start of school in September, and the site is unavailable. And since Christmas week in Eastern Tennessee is a good time to bring your snow skis, June is the only realistic choice.

### 1988 UNITED STATES INDOOR CHAMPIONSHIPS

The 1988 USIC will be held back to back with the proposed Indoor World Championships. This will make a one week long indoor bash. All foreign contestants are welcome to enter the USIC. The tentative schedule for the USIC is:

|                   |   |
|-------------------|---|
| Wednesday, June 1 | F1D (FAI Indoor)  |
| Thursday, June 2  | Ornithopter, Autogiro, Helicopter, ROG Stick<br><br>HL Stick, ROG Cabin, Old Timer Stick                              |
| Friday, June 3    | Bostonian, No-Cal Scale, Manhattan Cabin, Speed, Peanut Speed<br><br>Intermediate Stick, Easy B<br>Hand Launch Glider |
| Saturday, June 4  | Novice Pennyplane, Pennyplane<br><br>AMA Scale, Peanut Scale  |

RESULTS FROM SIXTH UNITED STATES INDOOR CHAMPIONSHIPS

June 5, 6, & 7, 1987 - Johnson City, Tennessee

Category IV - 114 1/2 ft Ceiling

**HAND LAUNCH GLIDER - JUNIOR**

|                  |                    |
|------------------|--------------------|
| 1. Jim Buxton    | 45.0 + 44.2 = 89.2 |
| 2. Jeff Plassman | 32.0 + 29.6 = 61.6 |
| 3. Joel Plassman | 27.2 + 29.4 = 56.6 |
| 4. Mark Richmond | 21.0 + 25.0 = 46.0 |

**HAND LAUNCH GLIDER - SENIOR**

|                     |                     |
|---------------------|---------------------|
| 1. Charles Gagliano | 66.6 + 67.2 = 133.8 |
| 2. Paul Loucka      | 56.0 + 58.0 = 114.0 |
| 3. Don Slusarczyk   | 34.4 + 35.4 = 69.8  |

**HAND LAUNCH GLIDER - OPEN**

|                     |                     |
|---------------------|---------------------|
| 1. Bernie Boehm     | 69.0 + 69.6 = 138.6 |
| 2. Paul Shailor     | 66.6 + 66.4 = 133.0 |
| 3. Brian Pardue     | 59.4 + 60.4 = 119.8 |
| 4. Chuck Slusarczyk | 55.8 + 51.0 = 106.8 |
| 5. Moe Whittemore   | 50.2 + 52.8 = 103.0 |
| 6. Bill Schlarb     | 50.8 + 50.2 = 101.0 |
| 7. Chuck Markos     | 50.0 + 47.2 = 97.2  |
| 8. Victor Gagliano  | 43.2 + 44.2 = 87.4  |
| 9. Gerald Plassman  | 43.0 + 42.2 = 85.2  |
| 10. Rex Powell      | 42.2 + 42.2 = 84.4  |
| 11. Jim Richmond    | 42.0 + 41.2 = 83.2  |
| 12. Fred Rash       | 36.8 + 36.0 = 72.8  |
| 13. Joe Nuzer       | 35.6 + 29.0 = 64.6  |
| 14. Larry Mzik      | 24.2 + 34.0 = 58.2  |
| 15. Jim Thornbery   | 27.2 + 30.2 = 57.4  |
| Dan Belieff         |                     |
| George Jensen       |                     |

**BOSTONIAN - JUNIOR/SENIOR/OPEN**

|                           |                     |
|---------------------------|---------------------|
| 1. Jack McGillivray       | 368 x 1.2 = 441     |
| 2. John Marett            | 374 x 1.15 = 430    |
| 3. Les Garber             | 328 x 1.2 = 393     |
| 4. Hewitt Phillips        | 326 x 1.1 = 358     |
| 5. Ron Ganser             | 277 x 1.2 = 332.4   |
| 6. Chuck Markos           | 289 x 1.15 = 332.35 |
| 7. John Blair             | 305 x 1.05 = 320    |
| 8. Del Ogren              | 260 x 1.2 = 312     |
| 9. Keith Fulmer           | 265 x 1.15 = 304    |
| 10. Bill Henderson        | 229 x 1.15 = 263    |
| 11. Ed Konefes            | 233 x 1.10 = 256    |
| 12. Dave Erbach           | 228 x 1.1 = 250     |
| Joe Macay                 | 228 x 1.1 = 250     |
| 14. Ken Groves            | 199 x 1.2 = 238     |
| 15. Victor Gagliano       | 212 x 1.1 = 233     |
| 16. Tony Sutter           | 181 x 1.15 = 208    |
| 17. Richard Smith (Jr)    | 187 x 1.1 = 205     |
| 18. George Batiuk         | 174 x 1.15 = 200    |
| 19. Vance Gilbert         | 146 x 1.20 = 175    |
| 20. Richard Miller        | 149 x 1.05 = 156    |
| 21. John Voorhees         | 113 x 1.1 = 124     |
| 22. Bill Franklin         | 96 x 1.05 = 100     |
| 23. Dick Obariski         | 74 x 1.15 = 85      |
| 24. Charles Gagliano (Sr) | 49 x 1.1 = 53       |
| 25. Mike Arak             | 42 x 1.2 = 50       |
| Doug Barber               |                     |
| Richard Ennis             |                     |
| Jeff Plassman             |                     |
| Joel Plassman             |                     |
| Ralph Knight              |                     |
| Don Lindley               |                     |
| Rex Powell                |                     |
| Charles Slater            |                     |
| Moe Whittemore            |                     |

**FAI INDOOR (F1D) - JUNIOR/SENIOR/OPEN**

|                        |                       |
|------------------------|-----------------------|
| 1. Rich Doig           | 38:19 + 34:44 = 73:03 |
| 2. Jim Richmond        | 36:14 + 34:43 = 70:57 |
| 3. Bud Romak           | 30:35 + 33:41 = 64:16 |
| 4. Don Slusarczyk (Sr) | 28:23 + 29:35 = 57:58 |
| 5. Larry Mzik          | 27:28 + 28:57 = 56:25 |
| 6. Don Godfrey         | 29:44 + 25:56 = 55:40 |
| 7. Walt Van Gorder     | 27:28 + 27:16 = 54:44 |
| 8. Dan Belieff         | 26:45 + 26:44 = 53:29 |
| 9. Jesse Shepherd      | 1:10 + :00 = 1:10     |
| Robert Butsch          |                       |
| Bill Franklin          |                       |
| Juergen Kortenbach     |                       |
| Joe Krush              |                       |
| Larry Loucka           |                       |
| Robert Woody           |                       |
| Chester Wrzos          |                       |

**A.M.A. RUBBER SCALE - JUNIOR/SENIOR/OPEN**

|                         | Flight points | Scale points | Total  |
|-------------------------|---------------|--------------|--------|
| 1. Ken Groves           | 90.0 +        | 96.5 =       | 186.5  |
| 2. Jack McGillivray     | 83.0 +        | 93.0 =       | 176.0  |
| 3. John Martin          | 85.5 +        | 83.0 =       | 168.5  |
| 3. Les Garber           | 86.5 +        | 75.5 =       | 162.0  |
| 4. John Schlagetter     | 90.0 +        | 69.5 =       | 159.5  |
| 5. Jim Miller (Bleriot) | 64.4 +        | 93.0 =       | 157.4  |
| 6. Vance Gilbert        | 76.5 +        | 64.0 =       | 140.5  |
| 7. John Blair (Stinson) | 74.0 +        | 61.0 =       | 135    |
| 8. George Batiuk        | 46.3 +        | 62.0 =       | 108.3  |
| 9. Kevin Smith          | 18.45 +       | 84.5 =       | 102.95 |
| 10. Bill Franklin       | 23.5 +        | 34.0 =       | 57.5   |
| Jim Miller (Santos)     |               | 94.5         |        |
| Juergen Kortenbach      |               | 83.0         |        |
| Joel Plassman           |               | 69.0         |        |
| John Blair (Puss Moth)  |               | 63.5         |        |
| Dave Erbach             |               |              |        |
| Otto Klein              |               |              |        |
| Joe Krush               |               |              |        |

**PEANUT SCALE - JUNIOR/SENIOR**

|                  |                     |
|------------------|---------------------|
| 1. Jim Buxton    | 38 + 96.75 = 134.75 |
| 2. Jeff Plassman | 13.3 + 59.5 = 72.8  |
| Charles Gagliano |                     |
| Don Slusarczyk   |                     |

**PEANUT SCALE - OPEN**

|                         |                         |
|-------------------------|-------------------------|
| 1. Jim Miller (Voisin)  | 88.5 + 130.0 = 218.5    |
| 2. Bill Henderson       | 106.45 + 107.5 = 213.95 |
| 3. Ken Groves (Fike)    | 103.65 + 107.3 = 210.95 |
| 4. J McGillivray (Fury) | 83.0 + 109.25 = 192.25  |
| 5. Chuck Markos         | 90.2 + 99.0 = 189.2     |
| 6. Les Garber (DH6)     | 94.5 + 94.5 = 188.5     |
| 7. Keith Fulmer         | 76.25 + 107.5 = 183.75  |
| 8. John Blair           | 69.5 + 92.5 = 162.0     |
| 9. Jim Miller           | 31.4 + 120.0 = 151.4    |
| 10. George Batiuk       | 65.95 + 83.25 = 149.2   |
| 11. Mike Arak           | 47.0 + 90.0 = 137       |
| 12. Doug Barber         | 53.0 + 83.25 = 136.25   |
| 13. Nancy Beitz (Waco)  | 63.2 + 72.0 = 135.2     |
| 14. Vance Gilbert       | 41.0 + 90.0 = 131.0     |
| 15. Tony Sutter         | 23.5 + 94.5 = 118       |
| 16. Patti Smith         | 37.85 + 70.0 = 107.85   |
| 17. Nancy Beitz (Scout) | 30.5 + 76.0 = 106.5     |
| John Martin (Twin)      | 104.0                   |
| Victor Gagliano         | 63.0                    |
| Dave Linstrum           | 52.5                    |
| Charles Slater          | 51.1                    |
| Otto Klein (Fokker)     | 45.0                    |
| Terry Hreno             |                         |
| Juergen Kortenbach      |                         |
| Ralph Knight            |                         |
| Gerald Plassman         |                         |

**AUTOGIRO - JUNIOR/SENIOR/OPEN**

|                 |      |
|-----------------|------|
| 1. Larry Loucka | 8:28 |
| 2. Otto Klein   | :19  |
| Don Slusarczyk  |      |
| John Martin     |      |

**INDOOR STICK - JUNIOR/SENIOR**

|                   |       |
|-------------------|-------|
| 1. Don Slusarczyk | 27:04 |
| 2. Mark Richmond  | 10:46 |
| 3. Jim Buxton     | 6:02  |
| 4. Paul Loucka    | 5:36  |

**INDOOR STICK - OPEN**

|                    |       |
|--------------------|-------|
| 1. Jim Richmond    | 41:36 |
| 2. Bud Romak       | 39:18 |
| 3. Dan Belieff     | 35:13 |
| 4. Rich Doig       | 34:25 |
| 5. Larry Loucka    | 32:35 |
| 6. Larry Mzik      | 28:42 |
| 7. Ron Ganser      | 26:53 |
| 8. Walt Van Gorder | 24:20 |
| 9. Joe Nuszer      | 23:32 |
| 10. Gil Graunke    | 22:44 |
| 11. John Marett    | 18:53 |
| 12. John Voorhees  | 12:43 |
| 13. Bill Franklin  | 12:26 |
| 14. Robert Woody   | att   |
| Tony D'Alessandro  |       |
| Dave Erbach        |       |
| Don Godfrey        |       |
| Wally Mumper       |       |
| Chester Wrzos      |       |

**INTERMEDIATE STICK - JUNIOR/SENIOR**

|                   |       |
|-------------------|-------|
| 1. Don Slusarczyk | 16:29 |
| 2. Mark Richmond  | 11:19 |
| 3. Paul Loucka    | 10:29 |
| 4. Richard Smith  | 8:05  |

**INTERMEDIATE STICK - OPEN**

|                       |       |
|-----------------------|-------|
| 1. Ron Ganser         | 25:11 |
| 2. Jack McGillivray   | 24:57 |
| 3. Dan Belieff        | 24:27 |
| 4. Larry Loucka       | 24:20 |
| 5. Dick Obarski       | 23:17 |
| 6. Harold LaClair     | 22:57 |
| 7. Tony D'Alessandro  | 21:04 |
| 8. Doug Barber        | 18:31 |
| 9. Les Garber         | 18:08 |
| 10. Tony Sutter       | 17:44 |
| 11. John Marett       | 17:36 |
| 12. Walt Van Gorder   | 17:07 |
| Joe Nuszer            | 17:07 |
| 14. Joe Krush         | 17:02 |
| 15. Rex Powell        | 15:35 |
| 16. Jim Richmond      | 15:26 |
| 17. Carl Fries        | 14:52 |
| 18. John Voorhees     | 14:27 |
| 19. Gil Graunke       | 14:09 |
| 20. Bud Romak         | 13:52 |
| 21. Gary Underwood    | 13:06 |
| 22. Gordon Wisniewski | 11:35 |
| 23. Wally Simmers     | 11:15 |
| 24. Ed Burke          | 10:24 |
| 25. Bill Franklin     | 10:15 |
| 26. Bill Henderson    | 8:33  |
| 27. Hewitt Phillips   | 5:19  |
| George Jensen         |       |
| Wally Mumper          |       |
| Del Ogren             |       |
| Chuck Slusarczyk      |       |
| Bob Woody             |       |
| Chester Wrzos         |       |

**AJI OLD TIMER MICROFILM - JUNIOR/SENIOR/OPEN**

|                 |       |
|-----------------|-------|
| 1. Ron Ganser   | 19:49 |
| 2. Jerry Nolin  | 18:31 |
| 3. Joe Nuzer    | 15:30 |
| 4. Gil Graunke  | 13:21 |
| 5. Larry Loucka | 3:59  |
| Dan Belieff     |       |
| Don Slusarczyk  |       |
| Tony Sutter     |       |

**EASY B - JUNIOR/SENIOR**

|                     |       |
|---------------------|-------|
| 1. Don Slusarczyk   | 15:40 |
| 2. Charles Gagliano | 14:15 |
| 3. Paul Loucka      | 14:10 |
| 4. Mark Richmond    | 11:09 |
| 5. Richard Smith    | 8:59  |
| 6. Jim Buxton       | 6:33  |
| 7. Jeff Plassman    | 4:21  |
| Joel Plassman       |       |

**EASY B - OPEN**

|                       |       |
|-----------------------|-------|
| 1. Jerry Nolin        | 18:40 |
| 2. Walt Van Gorder    | 18:32 |
| 3. Dick Obarski       | 18:21 |
| 4. Chuck Markos       | 18:11 |
| 5. Les Garber         | 17:50 |
| 6. Gordy Wisniewski   | 17:28 |
| 7. Wally Simmers      | 16:38 |
| 8. Ken Groves         | 16:09 |
| 9. Jesse Shepherd     | 16:06 |
| 10. Larry Loucka      | 15:59 |
| 11. Tony Becker       | 15:08 |
| 12. Jim Richmond      | 15:03 |
| 13. Jim Clem          | 14:55 |
| 14. Jack McGillivray  | 14:44 |
| 15. Richard Miller    | 14:27 |
| 16. Tony D'Alessandro | 14:23 |
| 17. Gary Underwood    | 14:16 |
| 18. Doug Barber       | 14:15 |
| 19. Rich Doig         | 13:41 |
| 20. Dave Erbach       | 13:37 |
| 21. Chuck Slusarczyk  | 13:06 |
| 22. Charles Slater    | 12:47 |
| 23. George Jensen     | 12:39 |
| 24. John Marett       | 12:33 |
| 25. Joe Krush         | 12:14 |
| 26. Larry Mzik        | 12:03 |
| 27. Bill Franklin     | 11:46 |
| 28. Joe Nuszer        | 11:28 |
| 29. Carl Fries        | 10:54 |
| 30. Phillip Hartman   | 10:36 |
| 31. John Barker       | 10:18 |
| 32. John Voorhees     | 10:17 |
| 33. Victor Gagliano   | 10:10 |
| 34. Hewitt Phillips   | 10:04 |
| 35. Bill Henderson    | 9:41  |
| 36. Gil Graunke       | 9:30  |
| 37. Ed Konefes        | 8:48  |
| 38. Richard Ennis     | 8:42  |
| 39. Tony Sutter       | 8:28  |
| 40. Gerald Plassman   | 8:20  |
| 41. Avner Mandelman   | 7:20  |
| 42. Terry Hreno       | 6:38  |
| 43. Chester Wrzos     | 5:45  |
| 44. Moe Whittemore    | 5:14  |
| 45. Ed Berton         | :48   |
| George Batiuk         |       |
| Dave Erbach           |       |
| Jim Jones             |       |
| Otto Klein            |       |
| Don Krupp             |       |
| Rex Powell            |       |
| Steve Robbins         |       |
| Peter Staehling       |       |
| Bob Woody             |       |



**R.O.G. CABIN - JUNIOR/SENIOR/OPEN**

|    |                   |       |
|----|-------------------|-------|
| 1. | Larry Loucka      | 20:25 |
| 2. | Ron Ganser        | 17:20 |
| 3. | Don Slusarczyk    | 15:27 |
| 4. | Tony D'Alessandro | 8:38  |
|    | Dan Belieff       | Att   |
|    | Rich Doig         |       |
|    | Bill Franklin     |       |
|    | Joe Krush         |       |
|    | Tony Sutter       |       |

**NOVICE PENNYPLANE - JUNIOR**

|    |               |      |
|----|---------------|------|
| 1. | Richard Smith | 9:49 |
| 2. | Mark Richmond | 7:34 |
| 3. | Joel Plassman | 4:49 |
| 4. | Jeff Plassman | 4:26 |

**NOVICE PENNYPLANE - SENIOR**

|    |                |      |
|----|----------------|------|
| 1. | Paul Loucka    | 9:22 |
| 2. | Don Slusarczyk | 8:28 |

**NOVICE PENNYPLANE - OPEN**

|     |                   |       |
|-----|-------------------|-------|
| 1.  | Jim Clem          | 12:44 |
| 2.  | Joe Macay         | 12:30 |
|     | Charles Slater    | 12:30 |
| 4.  | Chuck Markos      | 12:19 |
|     | Jack McGillivray  | 12:19 |
| 6.  | Ken Groves        | 11:59 |
| 7.  | Jim Richmond      | 11:58 |
| 8.  | Les Garber        | 11:56 |
| 9.  | Richard Miller    | 11:42 |
| 10. | Doug Barber       | 11:41 |
| 11. | Bud Romak         | 11:25 |
| 12. | Ed Konefes        | 11:10 |
| 13. | Del Ogren         | 11:09 |
| 14. | Harold LaClair    | 11:05 |
| 15. | Vance Gilbert     | 10:55 |
| 16. | Jim Thornbery     | 10:53 |
| 17. | Keith Fulmer      | 10:47 |
| 18. | Phil Hartman      | 10:44 |
| 19. | Wally Simmers     | 10:43 |
| 20. | Otto Curth        | 10:28 |
| 21. | John Marett       | 10:27 |
| 22. | Tony D'Alessandro | 10:18 |
|     | Bill Henderson    | 10:18 |
| 24. | John Barker       | 10:12 |
| 25. | Tony Becker       | 10:05 |
| 26. | Walt Van Gorder   | 10:04 |
| 27. | Ed Berton         | 9:56  |
| 28. | Joe Nuszer        | 9:42  |
| 29. | Rich Doig         | 9:39  |
| 30. | Tony Sutter       | 9:28  |
| 31. | Gary Underwood    | 9:18  |
| 32. | Bill Franklin     | 9:10  |
| 33. | Jerry Nolin       | 9:00  |
| 34. | George Jensen     | 8:55  |
| 35. | John Blair        | 8:35  |
| 36. | John Voorhees     | 8:28  |
| 37. | Jim Jones         | 8:12  |
| 38. | Mike Arak         | 8:02  |
| 39. | Carl Fries        | 7:51  |
| 40. | Carl Butsch       | 7:49  |
| 41. | Ron Ganser        | 7:36  |
| 42. | Moe Whittemore    | 6:58  |
| 43. | Robert Butsch     | 5:31  |
| 44. | Fred Rash         | 2:07  |
|     | Ron Buffman       |       |
|     | Carl Carlson      |       |
|     | Gil Graunke       |       |
|     | Otto Klein        |       |
|     | Larry Loucka      |       |
|     | Chuck Slusarczyk  |       |
|     | Pete Staehling    |       |
|     | Gordy Wisniewski  |       |
|     | Chester Wrzos     |       |

**MANHATTAN CABIN - JUNIOR/SENIOR/OPEN**

|     |                     |       |
|-----|---------------------|-------|
| 1.  | Walt Van Gorder     | 10:50 |
| 2.  | Chuck Slusarczyk    | 10:12 |
| 3.  | Don Slusarczyk (Sr) | 9:51  |
| 4.  | Chuck Markos        | 9:26  |
| 5.  | Hewitt Phillips     | 9:17  |
| 6.  | Plenny Bates        | 9:08  |
| 7.  | Ken Groves          | 8:56  |
| 8.  | John Marett         | 8:21  |
| 9.  | Ron Ganser          | 7:42  |
| 10. | Joe Krush           | 6:41  |
| 11. | Joe Macay           | 6:39  |
| 12. | Tony Sutter         | 5:42  |
| 13. | George Jensen       | 5:27  |
| 14. | Jim Buxton (Jr)     | 4:31  |
| 15. | Moe Whittemore      | 2:26  |
|     | Ed Burke            |       |
|     | Tony D'Alessandro   |       |
|     | Keith Fulmer        |       |
|     | Bill Henderson      |       |
|     | Harold LaClair      |       |
|     | Larry Loucka        |       |
|     | Gerald Plassman     |       |
|     | John Schlagetter    |       |
|     | Chester Wrzos       |       |

**PENNYPLANE - JUNIOR**

|    |               |      |
|----|---------------|------|
| 1. | Richard Smith | 9:24 |
| 2. | Mark Richmond | 7:55 |
| 3. | Jim Buxton    | 4:30 |

**PENNYPLANE - SENIOR**

|    |                |      |
|----|----------------|------|
| 1. | Paul Loucka    | 8:59 |
| 2. | Don Slusarczyk | 2:54 |

**PENNYPLANE - OPEN**

|     |                   |       |
|-----|-------------------|-------|
| 1.  | Gordon Wisniewski | 15:11 |
| 2.  | Larry Loucka      | 14:32 |
| 3.  | John Voorhees     | 13:45 |
| 4.  | Joe Nuszer        | 13:36 |
| 5.  | Walt Van Gorder   | 13:21 |
| 6.  | Doug Barber       | 12:42 |
| 7.  | Joe Krush         | 12:23 |
| 8.  | Ken Groves        | 12:08 |
| 9.  | Jim Richmond      | 12:02 |
| 10. | Jack McGillivray  | 12:00 |
| 11. | Jim Clem          | 11:16 |
| 12. | Ron Ganser        | 11:13 |
| 13. | Chuck Markos      | 11:03 |
| 14. | Peter Staehling   | 10:46 |
| 15. | Rex Powell        | 10:06 |
| 16. | John Marett       | 9:59  |
| 17. | Bill Franklin     | 9:43  |
| 18. | George Jensen     | 8:49  |
| 19. | Tony Sutter       | 7:58  |
| 20. | Ed Burke          | 6:50  |
| 21. | Terry Hreno       | 6:22  |
| 22. | Carl Fries        | 5:45  |
|     | George Batiuk     |       |
|     | Richard Ennis     |       |
|     | Les Garber        |       |
|     | Vance Gilbert     |       |
|     | Jim Jones         |       |
|     | Hewitt Phillips   |       |
|     | Chuck Slusarczyk  |       |
|     | Charlie Sotich    |       |
|     | Chester Wrzos     |       |

**NO CAL - MASS LAUNCH - JUNIOR/SENIOR/OPEN**

|    |                  |
|----|------------------|
| 1. | John Marett      |
| 2. | Del Ogren        |
| 3. | Chuck Slusarczyk |

**ORNITHOPTER - JUNIOR/SENIOR/OPEN**

|                      |         |
|----------------------|---------|
| 1. Frank Kieser      | 10:33 * |
| 2. Les Garber        | 7:02    |
| 3. Juergen Kortebach | 6:44    |
| 4. Rex Powell        | 5:55    |
| 5. Joe Krush         | 5:11    |
| 6. Doug Barber       | 3:18    |
| 7. Terry Hreno       | 2:33    |
| 8. Hewitt Phillips   | 2:26    |
| 9. Peter Staehling   | 1:36    |

**UNLIMITED RUBBER SPEED - JUNIOR/SENIOR/OPEN**

|                   | seconds | mph   |
|-------------------|---------|-------|
| 1. Jim Thornbery  | 5.92    | 14.47 |
| 2. Chuck Markos   | 6.58    | 13.01 |
| 3. John Voorhees  | 7.60    | 11.27 |
| 4. John Martin    | 8.40    | 10.19 |
| 5. Richard Ennis  | 8.71    | 9.83  |
| 6. Bill Henderson | 8.88    | 9.64  |
| 7. John Marett    | 18.42   | 4.65  |
| Doug Barber       |         |       |
| John Blair        |         |       |
| Victor Gagliano   |         |       |
| Charlie Sotich    |         |       |
| Gary Underwood    |         |       |

**PEANUT SPEED - JUNIOR/SENIOR/OPEN**

|                       | seconds | mph  |
|-----------------------|---------|------|
| 1. Bill Henderson     | 8.72    | 9.82 |
| 2. John Blair         | 13.57   | 6.27 |
| 3. Jeff Plassman (Jr) | 16.11   | 5.32 |
| John Martin           |         |      |

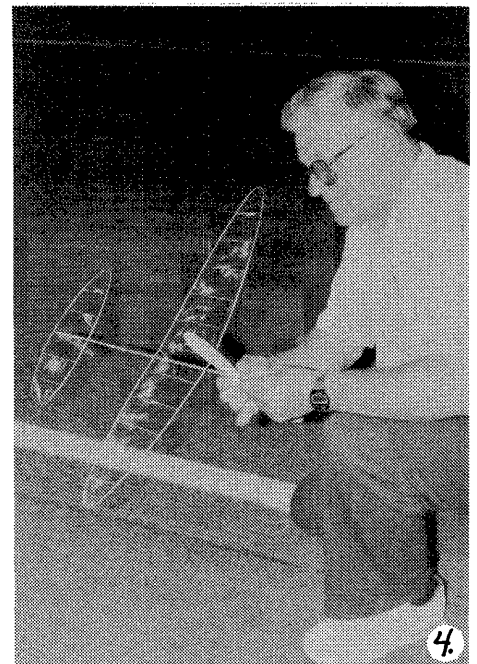
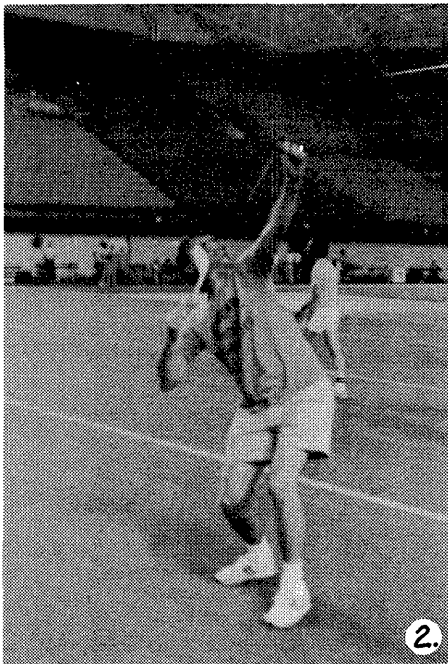
**U.S.I.C. GRAND CHAMPION SCORING**

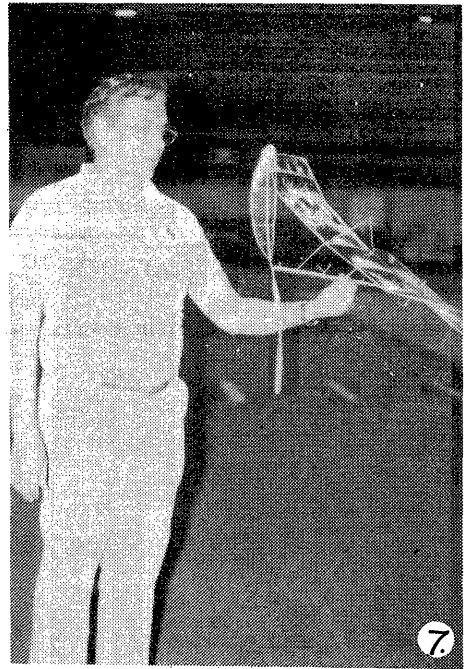
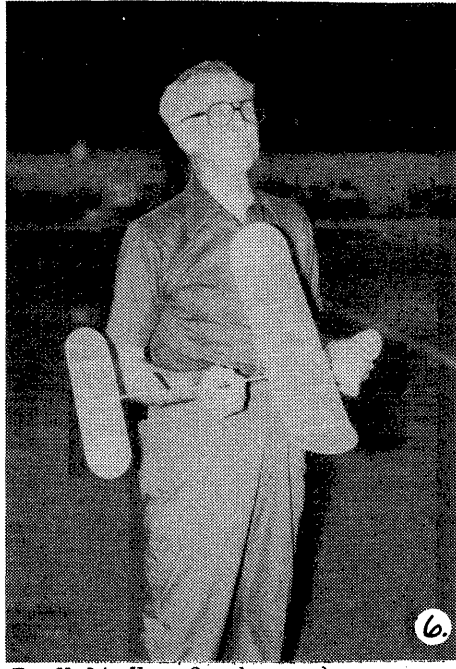
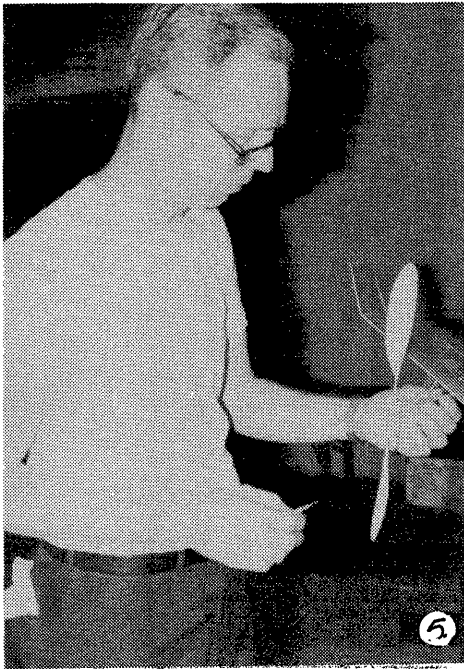
| event            | #1   | #2    | #3    | #4   | #5   | #6   | #7   | Total |
|------------------|------|-------|-------|------|------|------|------|-------|
| 1. Ken Groves    | 86.5 | 53.8  | 100.0 | 96.1 | 94.1 | 79.9 | 82.5 | 592.5 |
| 2. Chuck Markos  | 70.0 | 97.5  | 74.7  | 86.9 | 71.7 | 96.7 | 87.1 | 584.6 |
| 3. John Marett   | 67.3 | 45.5  | 97.0  | 70.0 | 82.1 | 65.8 | 77.1 | 504.8 |
| 4. Les Garber    | 66.5 | 95.6  | 88.7  | 86.9 | 86.8 | 72.3 | 0.0  | 496.8 |
| 5. Jim Richmond  | 60.0 | 100.0 | 80.5  | 61.5 | 79.3 | 94.0 | 0.0  | 475.3 |
| 6. Larry Loucka  | 85.8 | 78.3  | 100.0 | 96.7 | 95.7 | 0.0  | 0.0  | 456.5 |
| 7. Bill Franklin | 31.5 | 63.2  | 22.5  | 30.6 | 41.0 | 64.0 | 72.0 | 324.8 |

\* Denotes National Record

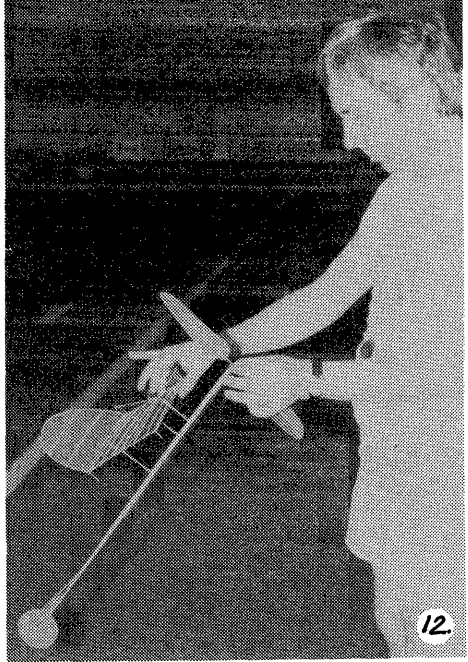
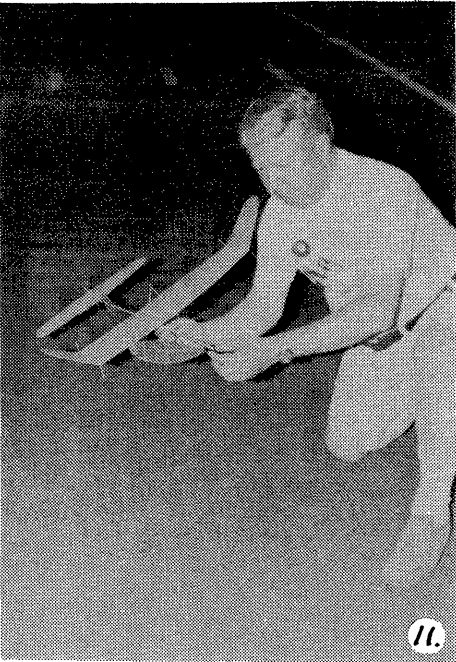
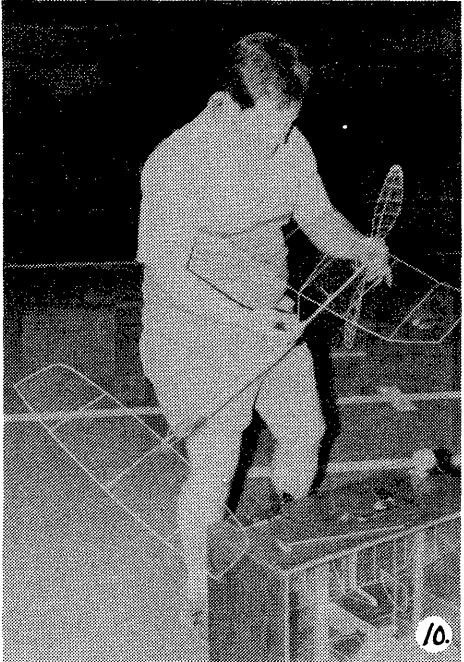
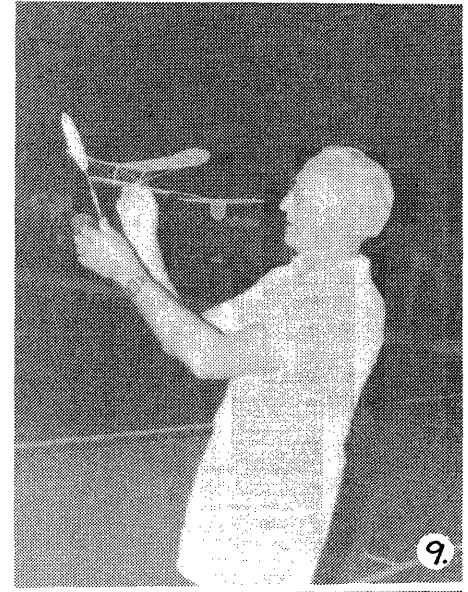
**USIC PHOTOS**

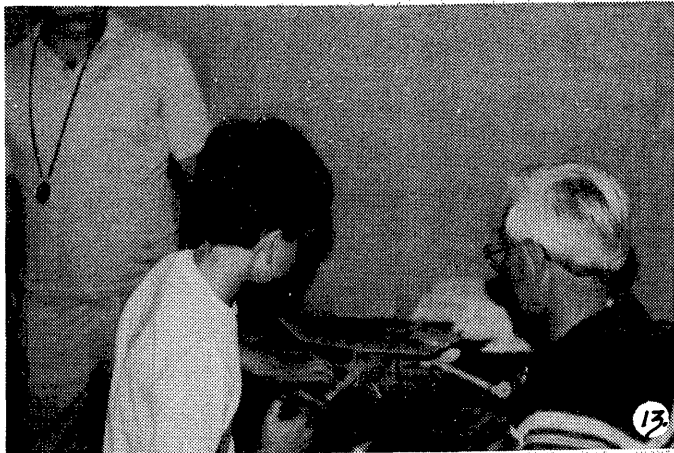
1. Hand launch glider winners compare models. Bill Schlarb (6th) with back to camera, Bernie Boehm (1st), & Paul Shailor (2nd).
2. Jim Thornbery shows his catapult glider launch form.
3. John Voorhees launches Unlimited Speed model to 3rd place finish.
4. Ron Ganser with winning Oldtimer Microfilm model, a Walt Erbach design.





- 5. Walt Van Gorder makes an adjustment to his Easy B.
- 6. NFFS co-founder, Carl Fries made it to this years' USIC after missing several.
- 7. World Champion Jim Richmond with F1D model. Placed 2nd!
- 8. Jack McGillivray flies events other than scale as shown by this Easy B.
- 9. John Barker with Easy B at his first USIC.
- 10. Rich Doig with F1D winner "Garfield" - 10 1/2" chord.
- 11. Gil Graunke with Intermediate Stick model.
- 12. Dave Erbach adjusts Intermediate Stick model.





13. Richard Smith winds his Bostonian while his father & grandfather (r) look on.

14. Ed Berton looking over his Novice Pennyplane .

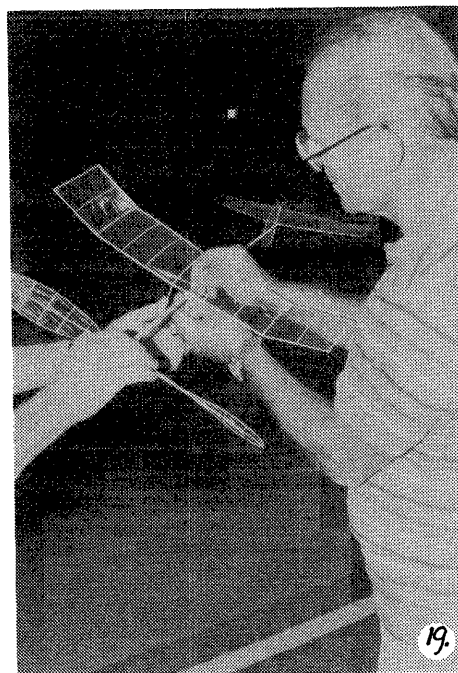
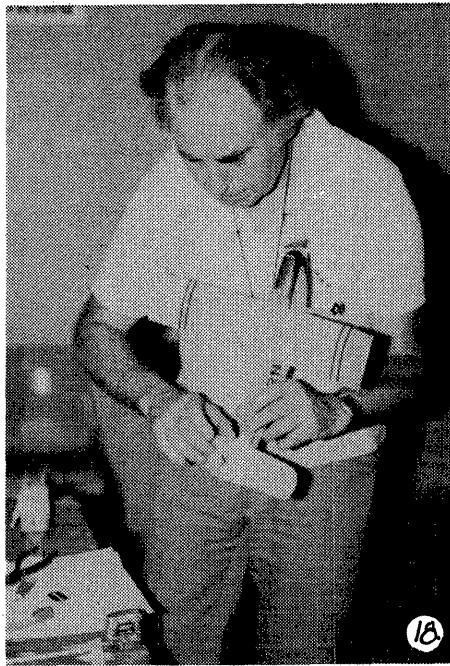
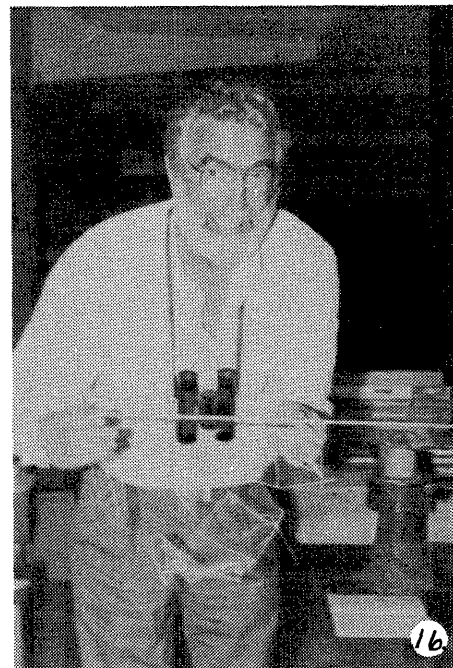
15. Charles Slater readies to launch Novice Pennyplane which placed 2nd.

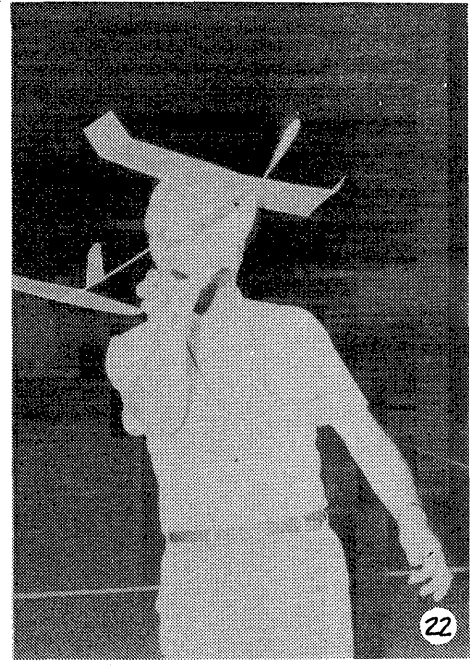
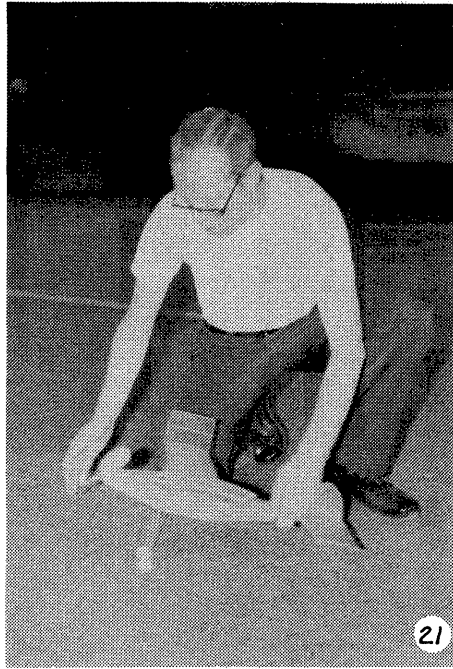
16. EGADS HARDY! What are you doing to that unidentified Intermediate Stick model? NFFS Exec. Hardy Brodersen

17. Scale judges Ray LeFrancois and George Leffler were kept busy with 15 AMA & 25 Peanut scale models.

18. John Marett makes an adjustments to his 2nd place Bostonian.

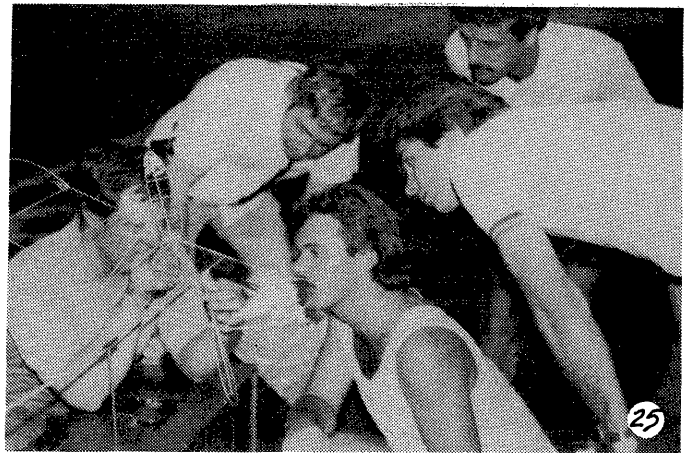
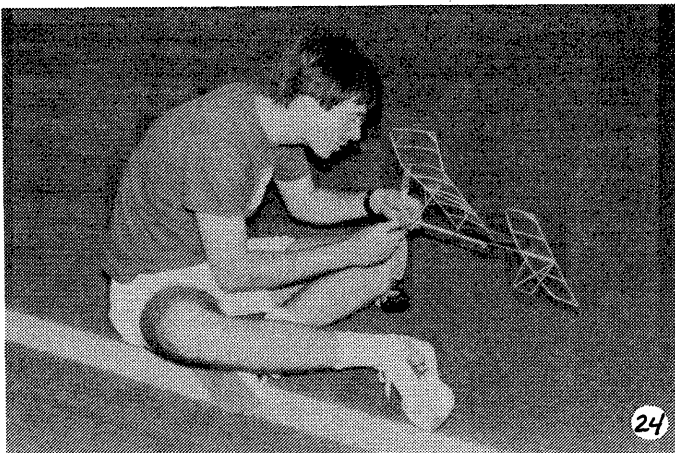
19. Bud Romak brought more than microfilm models as shown by this Intermediate Stick.





20. Tony Becker with Easy B model.
21. Walt Van Gorder launches Manhattan Cabin "Manhattan Pieces" on its way to 1st place.
22. Jerry Nolin launches Easy B "Serendipity" on its way to winning the event. Construction article appears in Jan. 1988 issue of Model Aviation magazine.
23. Del Ogren shows his launch form with his Novice Pennyplane - note unusual winglets.
24. Jim Thornbery found the Astro-Turf a comfortable seat to adjust his Novice Pennyplane.
25. Rich Doig explains how his Variable Diameter prop works to a interested crowd of Dave Erbach, Charles Slater, Juergen Kortebach, & Dennis Strege.

USIC photos by Melody & Richard Doig



## 1987 UNITED STATES INDOOR CHAMPIONSHIPS

I never thought I would fly in a site that was better than West Baden, but I think the Memorial Center is better. Careful measurement of the site yielded an FAI measurement of 114 1/2 feet, or 34.9 meters. Rather than a blow by blow account, I'd rather just share some thoughts and observations about the contest and the site.

The contest was well organized, well run, and a joy to fly in. At one point during Easy B, there were 43 airplanes airborne at one time. There were only a few mid-air, and minimal hangups. The speakers proved to be no problem at all, since they were raised up to the ceiling. The flags were a problem, and Tony Italiano is arranging to have them removed next year, if possible.

I flew four events, 21 official flights, and did not steer once. There was very little drift, and the models seemed to center. It was warm, with temperatures in the high 80's (31 degrees C).

The lighting turned out to be fine for color photos without special filters, but lighting around the sides was a problem since the stands overhang the field (floor?) about four feet, and most people set up their tables under the overhang, in the shadows. (Bring lights, power strips, and extension cords next year)

The Astro-Turf was marvelous. It was soft, quiet, and easy on the feet and knees. Many hand-launch gliders survived diving in without breaking. The micro-film flyers had some problem, since if a model landed on the turf, the bracing could snag, making it difficult to pick up the model.

I have flown in many sites, but never have we had so much room. There seemed to be an inversion layer at the roof. My own 38 minute flight in F1D didn't touch the girders, even though it spent almost 15 minutes within 5 feet of the roof. Richmond did 41 minutes flying a beautiful new record attempt model, with a 36 inch span 9 1/2 inch chord wing, and a large high aspect ratio stab. (He did 51:35 in Akron with the same model in July).

The contest drew 96 contestants, and all of us are looking forward to returning next year.

### LOST & FOUND

Found at NATS: One scale tape measure.  
Found at USIC: One balloon steering setup.

Contact us to claim them.

### CATEGORY I WORLD RECORD

Theo Andre' of The Netherlands has broken the Category I (up to 8 meters or approximately 26 ft 3in) World Record with a flight of 28:54 at the International Butterfly Meeting in the Goffertal, Nijmegen, The Netherlands, on June 6 & 7, 1987. Theo has supplied us with a beautiful set of plans and an article which we'll include in the next issue.

## DIFFERENCE BETWEEN USIC & NATS

One of the questions we get asked most often, is "What is the difference between the United States Indoor Champs, and the Nationals?" Here is the answer.

The AMA Nationals, or NATS, is an event run by the Headquarters Staff of the Academy of Model Aeronautics, along with a group of volunteers. The NATS attempts to run control-line, radio control, free flight, and indoor events, all during a one-week long contest in a relatively small geographic area. They like to limit the radius so all of the events are within a one-hour drive of each other. The net result is that indoor & outdoor free flight usually get moderate sites, but seldom anything spectacular. The NATS is moved to a different part of the country each year.

The United States Indoor Championships is run by the National Free Flight Society, which really means Tony Italiano and some dedicated volunteers. The USIC is indoor only, and is held in the very best site we can get for a reasonable cost, since there is no budget to support it like the NATS has. In the six USIC's held to date, we have had four different sites, with the worst building still producing flights over 30 minutes. The USIC was originally started at West Baden in 1982. When we lost West Baden in 1984, we searched to find a suitable replacement site, while still running a meet each year to keep the contest alive. We think we've found it at Johnson City.

### 1987 AMA NATIONALS

It's amazing what a difference a good site makes to attendance at an AMA NATS. Final count was 69 contestants. Pershing Auditorium really is Category II. A roller skating floor covered the concrete floor, so the site actually measured out at 48 1/2 feet.

Vince Mankowski from AMA had arranged to have the scoreboard removed and we managed to get the ceiling almost completely clean (three strings were missed). The result was a completely smooth and clean ceiling. Also, it was hot, about 95 degrees in the site, and the times reflect the temperature, resulting in new national records in 13 classes.

There were always spectators in the stands, and as many as 75 or 80 people came to watch in the evenings. And they got to see quite a show. Next year we will try to convince HQ to provide a portable booth and more literature at the indoor site. We did have copies of INAV #29 with the sources article and gave away something like 125 copies. I'm convinced that people who stroll in to watch, especially R/C and C/L fliers, are our best source of new indoor fliers. We must do a better job of promoting ourselves.

This is the first site we have had at a NATS in a long time that I thought was really worth the rent (about \$1200 per day). The only down side was parking space (there wasn't any), and the incomplete scale results (we didn't run scale). In light of the awful winds (43 mph during outdoor HLG), and poor outdoor free flight site (30 foot deep ravines), indoor turned out to be the shining star of the whole Nationals.

**RESULTS A.M.A. NATIONALS - LINCOLN, NEBRASKA**

JULY 12 & 13, 1987 CAT II (48 1/2')

**HAND LAUNCH GLIDER (ALL WOOD) - JUNIOR**

- |                 |                    |
|-----------------|--------------------|
| 1. James Buxton | 37.8 + 35.4 = 73.2 |
| 2. Don DeLoach  | 27.0 + 31.0 = 58.0 |

**HAND LAUNCH GLIDER (ALL WOOD) - SENIOR**

- |                     |                    |
|---------------------|--------------------|
| 1. Charles Gagliano | 38.2 + 36.0 = 74.2 |
| 2. Don Slusarczyk   | 35.4 + 36.8 = 72.2 |
| 3. David Brown      | 25.6 + 26.0 = 51.6 |
| 4. Matthew Gagliano | 24.6 + 18.6 = 43.2 |

**HAND LAUNCH GLIDER (ALL WOOD) - OPEN**

- |                     |                    |
|---------------------|--------------------|
| 1. Paul Shailor     | 46.8 + 48.0 = 94.8 |
| 2. Chuck Markos     | 46.2 + 44.6 = 90.8 |
| 3. Chuck Slusarczyk | 45.6 + 44.4 = 90.0 |
| 4. Bill Schlarb     | 42.2 + 42.2 = 84.4 |
| 5. Vic Cunningham   | 41.6 + 39.0 = 80.6 |
| 6. Victor Gagliano  | 38.8 + 39.2 = 78.0 |
| 7. Kevin Henderson  | 38.0 + 39.8 = 77.8 |
| 8. Jerry Dubaka     | 39.0 + 38.4 = 77.4 |
| 9. Bob Nichols      | 37.4 + 38.6 = 76.0 |
| 10. Victor Nippert  | 35.6 + 36.2 = 71.8 |
| 11. Hank Sperzel    | 25.4 + 19.8 = 45.2 |
| 12. Bob Brown       | 21.8 + 22.2 = 44.0 |
| Steven Bard         |                    |
| Bruce Kimball       |                    |
| Larry Kruse         |                    |
| Tony Vaughan        |                    |

**FAI INDOOR (F1D) - JUNIOR/SENIOR/OPEN**

- |                        |                       |
|------------------------|-----------------------|
| 1. Stan Chilton        | 30:23 + 29:46 = 60:09 |
| 2. Rich Doig           | 25:18 + 26:31 = 51:49 |
| 3. Don Slusarczyk (Sr) | 21:09 + 20:53 = 42:02 |
| 4. Jim Clem            | 15:04 + 16:35 = 31:39 |
| 5. Jim Grant           | 10:40 + 20:36 = 31:16 |
| 6. Walt Van Gorder     | 5:57 + 12:58 = 18:55  |
| 7. David Brown (Jr)    | 3:25 + 0:00 = 3:25    |

**A.M.A. SCALE - JUNIOR**      scale + flight = total  
points                      points

- |                    |                        |
|--------------------|------------------------|
| 1. Don DeLoach     | 50.00 + 53.39 = 103.39 |
| 2. Summer Ferguson | 25.00 + 52.04 = 77.04  |
| 3. Lance Ferguson  | 36.00 + 39.11 = 75.11  |
| 4. James Buxton    | 58.00 + 8.93 = 66.93   |

**A.M.A. SCALE - SENIOR**      scale + flight = total  
points                      points

- |                    |                       |
|--------------------|-----------------------|
| 1. Melaine Sanford | 32.00 + 65.56 = 97.56 |
| 2. David Brown     | 49.00 + 45.87 = 94.87 |

**A.M.A. SCALE - OPEN**      scale + flight = total  
points                      points

- |                      |                        |
|----------------------|------------------------|
| 1. Jack McGillivray  | 86.00 + 90.00 = 176.00 |
| 2. Ken Groves        | 82.50 + 90.00 = 172.50 |
| 3. James Miller      | 89.50 + 76.40 = 165.90 |
| 4. Larry Kruse       | 73.50 + 78.99 = 152.49 |
| 5. Tom Norell        | 77.00 + 55.58 = 132.58 |
| 6. Bob Willey        | 75.00 + 42.22 = 117.22 |
| 7. John "Doc" Martin | 66.00 + 48.00 = 114.00 |
| 8. Curtis Sanford    | 35.00 + 64.48 = 99.48  |
| 9. Ed DeLoach        | 45.50 + 48.41 = 93.91  |
| 10. Clyde Norell     | 16.50 + 50.54 = 67.04  |
| Michael Welshans     | 45.50                  |
| Richard Becks        |                        |
| David Erbach         |                        |

**PEANUT SCALE - JUNIOR**      scale + flight = total  
points                      points

- |                    |                        |
|--------------------|------------------------|
| 1. Lance Ferguson  | 60.20 + 59.40 = 119.60 |
| 2. Don DeLoach     | 50.40 + 50.40 = 100.80 |
| 3. James Buxton    | 71.10 + 27.30 = 98.40  |
| 4. Summer Ferguson | 42.88 + 42.88 = 85.76  |

**PEANUT SCALE - SENIOR**      scale + flight = total  
points                      points

- |                     |                        |
|---------------------|------------------------|
| 1. Melaine Sanford  | 65.54 + 65.54 = 131.08 |
| 2. Don Slusarczyk   | 60.50 + 60.50 = 121.00 |
| 3. David Brown      | 52.70 + 52.70 = 105.40 |
| 4. Kevin Fruehwirth | 42.00 + 42.00 = 84.00  |
| 5. Matthew Gagliano | 62.19 + 19.60 = 81.79  |
| Charles Gagliano    |                        |

**PEANUT SCALE - OPEN**      scale + flight = total  
points                      points

- |                       |                          |
|-----------------------|--------------------------|
| 1. Ken Groves         | 100.08 + 100.08 = 200.16 |
| 2. James Miller       | 114.45 + 77.25 = 191.70  |
| 3. Jack McGillivray   | 99.04 + 88.85 = 187.89   |
| 4. Keith Fulmer       | 84.57 + 84.57 = 169.14   |
| 5. Tom Norell         | 93.35 + 68.10 = 161.45   |
| 6. Curtis Sanford     | 70.12 + 70.12 = 140.24   |
| 7. Bob Willey         | 85.50 + 53.15 = 138.65   |
| 8. Ed DeLoach         | 71.60 + 65.80 = 137.40   |
| 9. Michael Welshans   | 87.30 + 37.65 = 124.95   |
| 10. Clyde Norell      | 80.76 + 40.60 = 121.36   |
| 11. John "Doc" Martin | 65.10 + 50.50 = 115.60   |
| 12. Louis Sutter      | ? + ? = 106.44           |
| 13. Victor Gagliano   | 51.63 + 51.63 = 103.26   |
| 14. Clarence Nelson   | 33.95 + 33.95 = 67.90    |
| Ed Toleikis           | 72.49                    |
| Fred Anderson         |                          |
| Richard Becks         |                          |
| Arsene Fauquet        |                          |
| Carl Raichle          |                          |
| Brent Saulsbury       |                          |
| Curt Smith            |                          |
| Jorge Triana          |                          |
| Robert Wilkosz        |                          |

**PENNYPLANE - JUNIOR**

- |               |      |
|---------------|------|
| 1. Jim Buxton | 1:33 |
|---------------|------|

**PENNYPLANE - SENIOR**

- |                     |      |
|---------------------|------|
| 1. Don Slusarczyk   | 8:42 |
| 2. Matthew Gagliano | 7:36 |
| 3. David Brown      | 7:32 |

**PENNYPLANE - OPEN**

- |                      |        |
|----------------------|--------|
| 1. Gordon Wisniewski | 12:39* |
| 2. Walt Van Gorder   | 11:24  |
| 3. Jim Clem          | 9:30   |
| 4. Chuck Slusarczyk  | 9:21   |
| 5. Ken Groves        | 9:11   |
| 6. Tom Norell        | 9:03   |
| 7. James Grant       | 8:52   |
| 8. Charlie Sotich    | 8:26   |
| 9. Tony Italiano     | 8:00   |
| 10. Victor Gagliano  | 7:44   |
| 11. Carl Fries       | 7:33   |
| 12. Tony Sutter      | 6:25   |
| Bob Nichols          |        |
| Bob Perkins          |        |

**EASY B - JUNIOR**

|                |      |
|----------------|------|
| 1. Don DeLoach | 8:16 |
| 2. Jim Buxton  | 5:18 |

**EASY B - SENIOR**

|                     |        |
|---------------------|--------|
| 1. Don Slusarczyk   | 12:29* |
| 2. Charles Gagliano | 10:27  |
| 3. Matthew Gagliano | 9:34   |
| 4. David Brown      | 7:57   |
| David Thompson      |        |

**EASY B - OPEN**

|                     |        |
|---------------------|--------|
| 1. Charles Markos   | 16:30* |
| 2. Jack McGillivray | 15:34  |
| 3. Walt Van Gorder  | 15:21  |
| 4. Gordy Wisniewski | 15:10  |
| 5. Jim Clem         | 13:20  |
| 6. Ken Groves       | 13:16  |
| 7. Stan Chilton     | 12:58  |
| 8. Chuck Slusarczyk | 12:53  |
| 9. Victor Gagliano  | 11:06  |
| 10. Tom Norell      | 10:47  |
| 11. James Grant     | 9:58   |
| 12. Tony Sutter     | 9:41   |
| 13. Tony Italiano   | 7:49   |
| 14. Carl Fries      | 5:53   |
| 15. Richard Hawes   | 4:36   |
| 16. Hank Sperzel    | 4:28   |
| Ed Berton           |        |
| Dave Erbach         |        |
| Walt Erbach         |        |
| Arsene Fauquet      |        |
| Richard Miller      |        |
| Joe Parrish         |        |
| Bob Perkins         |        |
| Curt Smith          |        |
| Jorge Triana        |        |
| Bob Willey          |        |

**INTERMEDIATE STICK - JUNIOR**

|               |      |
|---------------|------|
| 1. Jim Buxton | 2:17 |
|---------------|------|

**INTERMEDIATE STICK - SENIOR**

|                   |        |
|-------------------|--------|
| 1. Don Slusarczyk | 21:04* |
| 2. Dave Brown     | 6:20   |

**INTERMEDIATE STICK - OPEN**

|                     |        |
|---------------------|--------|
| 1. Jack McGillivray | 21:32  |
| 2. Stan Chilton     | 21:28* |
| 3. John Marett      | 17:35  |
| 4. James Grant      | 17:31  |
| 5. Gordy Wisniewski | 15:06  |
| 6. Walt Van Gorder  | 14:37  |
| 7. Tony Sutter      | 14:14  |
| 8. Charlie Sotich   | 13:25  |
| 9. Carl Fries       | 11:01  |
| 10. Jim Clem        | 10:24  |
| Chuck Slusarczyk    |        |

**UNOFFICIAL EVENTS**

**AUTOGIRO** - Bill Hannan  
George Perryman

**ORNITHOPTER** - Frank Kieser 10:00 \*  
Roy White 7:50

**NOVICE PENNYPLANE - JUNIOR**

|                |      |
|----------------|------|
| 1. Jim Buxton  | 5:09 |
| 2. Don DeLoach | 5:01 |

**NOVICE PENNYPLANE - SENIOR**

|                     |      |
|---------------------|------|
| 1. Matthew Gagliano | 7:49 |
| 2. Charles Gagliano | 5:24 |
| 3. David Brown      | 2:03 |

**NOVICE PENNYPLANE - OPEN**

|                      |        |
|----------------------|--------|
| 1. Walt Van Gorder   | 10:38* |
| 2. Richard Miller    | 10:28  |
| 3. Gordon Wisniewski | 10:24  |
| 4. Chuck Markos      | 10:14  |
| 5. Ken Groves        | 10:02  |
| 6. Jim Clem          | 9:33   |
| 7. John Marett       | 9:25   |
| 8. Jack McGillivray  | 9:04   |
| 9. Keith Fulmer      | 8:31   |
| 10. Tony Sutter      | 8:27   |
| 11. Chuck Slusarczyk | 8:12   |
| 12. Carl Fries       | 8:11   |
| 13. Ed Mate          | 7:25   |
| 14. Bob Nichols      | 7:16   |
| 15. Tony Italiano    | 6:52   |
| 16. Clyde Norell     | 5:57   |
| 17. Arsene Fauquet   | 4:57   |
| 18. Bob Willey       | 4:52   |
| Steven Bard          |        |
| Carl Carlson         |        |
| Victor Gagliano      |        |
| Curt Smith           |        |

**MANHATTAN CABIN - JUNIOR**

|                |      |
|----------------|------|
| 1. Don DeLoach | 2:35 |
| 2. Jim Buxton  | :26  |

**MANHATTAN CABIN - SENIOR**

|                     |       |
|---------------------|-------|
| 1. Don Slusarczyk   | 6:48* |
| 2. Charles Gagliano | 6:01* |
| 3. David Brown      | 0:26  |

**MANHATTAN CABIN - OPEN**

|                     |       |
|---------------------|-------|
| 1. Walt Van Gorder  | 9:32* |
| 2. John Marett      | 9:01  |
| 3. Keith Fulmer     | 8:16  |
| 4. Chuck Slusarczyk | 8:10  |
| 5. Bob Nichols      | 7:21  |
| 6. Ken Groves       | 6:55  |
| 7. Tony Sutter      | 6:34  |
| 8. James Grant      | 5:13  |
| Dave Erbach         |       |
| Ed Toleikis         |       |

**HELICOPTER** - Charlie Sotich 185 sec  
George Perryman 112 "  
"Doc" Martin 41 "  
Bill Hannan 33 "  
Larry Kruse 32 "

\* Denotes National Record



**R.O.G. CABIN - JUNIOR**

- 1. Summer Ferguson 0:55
- 2. Lance Ferguson 0:50

**R.O.G. CABIN - SENIOR**

- 1. Don Slusarczyk 17:37\*
- 2. Melaine Sanford 0:59
- 3. Dave Brown 0:55

**R.O.G. CABIN - OPEN**

- 1. Bill Shailor 21:57\*
- 2. James Grant 17:15
- 3. Rich Doig 15:14
- 4. Tony Sutter 11:13
- 5. Walt Erbach 9:37
- 6. Dave Erbach 2:43

**HAND LAUNCH STICK - JUNIOR**

- 1. Jim Buxton 3:58

**HAND LAUNCH STICK - SENIOR**

- 1. Don Slusarczyk 23:16\*
- 2. Dave Brown 4:14

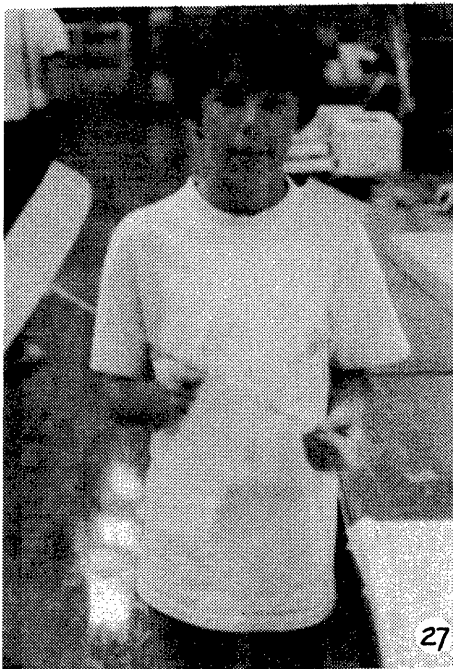
**HAND LAUNCH STICK - OPEN**

- 1. Rich Doig 29:41
- 2. Stan Chilton 26:50
- 3. Jim Clem 18:35
- 4. Walt Van Gorder 18:15
- 5. Walt Erbach 15:18
- 6. Dave Erbach 14:32
- 7. James Grant 11:11

Nats photos by Melody & Richard Doig



26



27

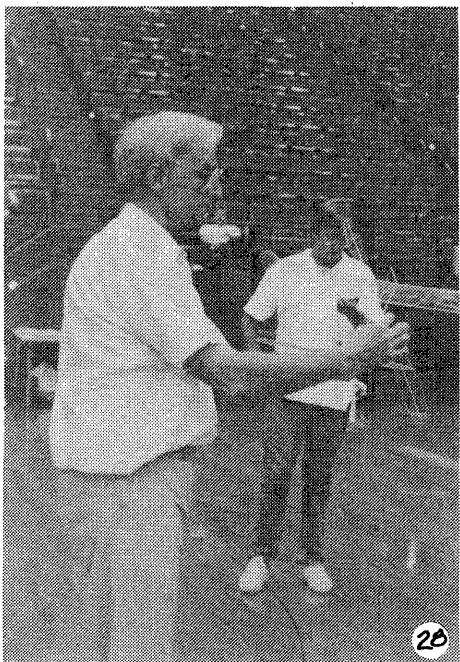
26. Senior Don Slusarczyk holds his record setting Intermediate Stick model.

27. Junior Jim Buxton held still just long enough to get this photo. He flew 9 indoor events plus Outdoor Free Flight & CL Speed.

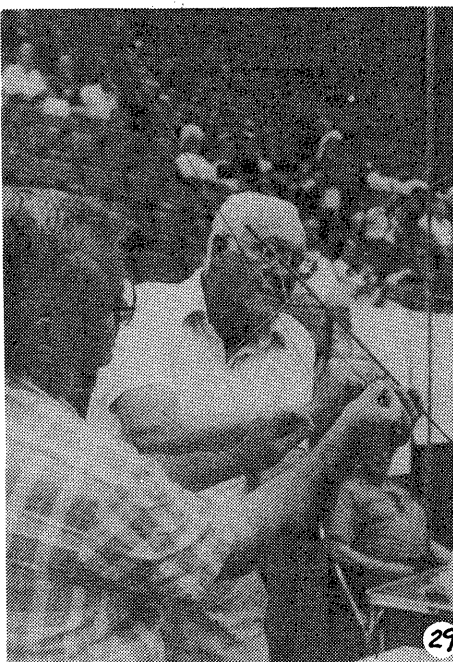
28. Stan Chilton with winning F1D model. Timer Bill Shailor checks the stopwatch.

29. James Grant, back into Indoor after many years, gets a helping hand with his microfilm model.

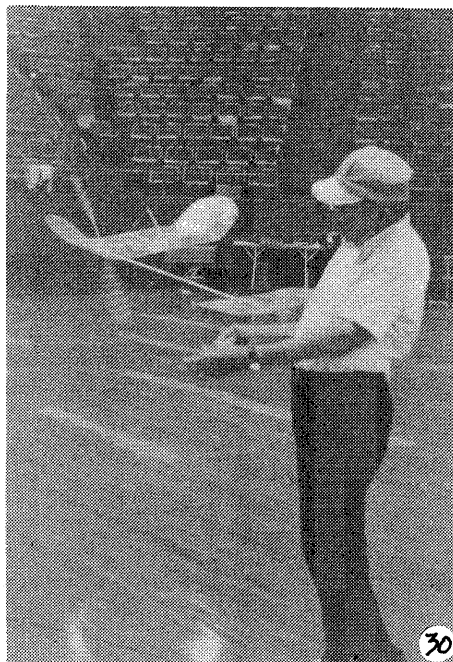
30. Jim Clem launches F1D. Jim had some bad luck with mid-air, more than a dozen, this meet.



28



29



30



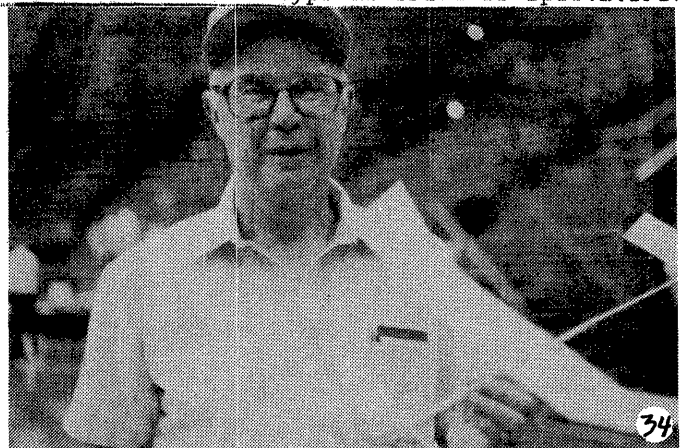
31  
 Chuck Slusarczyk shows the form that placed him 3rd in Hand Launch glider.



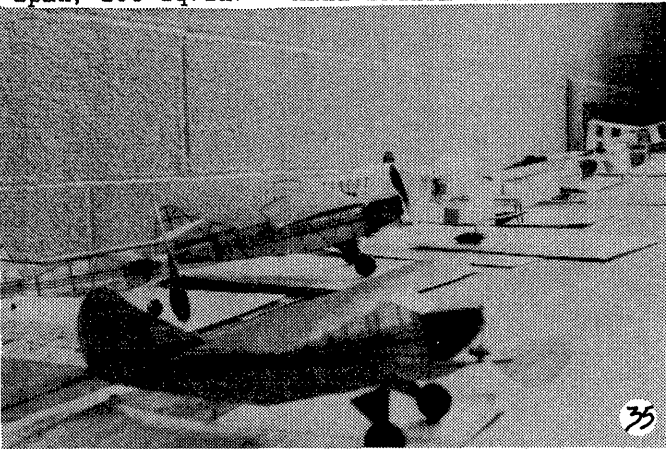
32  
 Overview of Pershing Auditorium showing 1/3 of the contestants & typical crowd of spectators.



33  
 Rich Doig with monstrous - 5 wing ribs in 36" span, 296 sq.in. - Hand Launch Stick model.



34  
 Richard Hawes with Easy B, at his first NATS.



35  
 Indoor scale models lined up for judging.



36  
 Roy White explaining how his Ornithopter flies to a group of interested spectators.



37  
 Indoor scale judges Ron Sears and Cliff Tacie (on right) hard at work.



38  
 Tony Sutter uses a winding stodge to wind and hold the parts while he assembles ROG Cabin.

**COMPLETE RESULTS FROM 1987 INDOOR FINALS: USA Team for 1988 is Cezar Banks, Bud Romak, & Steve Brown. Bob Randolph is Team Manager, placing 4th.**

| CONTESTANT | ROUND 1      | ROUND 2      | ROUND 3      | ROUND 4      | ROUND 5      | ROUND 6      | ROUND 7      | ROUND 8      | ROUND 9      | TOTAL BEST 2 | FINALS POINTS | PRIOR POINTS | TOTAL POINTS | PLACE |
|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|-------|
| Banks      | <u>44:25</u> | <u>44:55</u> | 10:51        | -            | 42:25        | 38:53        | -            | 22:53        | -            | 89:20        | 1000.00       | 110.00       | 1110.00      | 1     |
| Romak      | 38:22        | <u>43:35</u> | <u>44:15</u> | <u>43:23</u> | <u>44:23</u> | 38:18        | 36:01        | ATT          | 1:55         | 88:38        | 992.16        | 97.50        | 1089.66      | 2     |
| Brown      | 7:16         | 15:09        | <u>40:22</u> | <u>38:42</u> | <u>12:08</u> | <u>41:18</u> | <u>39:03</u> | <u>39:58</u> | <u>45:25</u> | 86:43        | 970.71        | 110.00       | 1080.71      | 3     |
| Randolph   | 14:01        | <u>43:04</u> | <u>43:09</u> | <u>38:08</u> | <u>39:32</u> | 10:43        | <u>42:35</u> | -            | 13:31        | 86:13        | 965.11        | 108.21       | 1073.32      | 4     |
| Foster     | <u>39:21</u> | <u>41:42</u> | <u>39:27</u> | <u>35:23</u> | <u>38:15</u> | <u>37:36</u> | <u>42:44</u> | <u>29:12</u> | <u>40:02</u> | 84:26        | 945.15        | 99.42        | 1044.57      | 5     |
| Cailliau   | 13:48        | <u>38:26</u> | <u>24:43</u> | <u>39:31</u> | <u>40:18</u> | <u>40:01</u> | <u>12:59</u> | <u>36:30</u> | <u>36:34</u> | 80:19        | 899.07        | 109.58       | 1008.65      | 6     |
| Gitlow     | ATT          | <u>40:15</u> | <u>29:38</u> | <u>32:30</u> | <u>39:18</u> | 9:10         | <u>18:56</u> | <u>25:45</u> | -            | 79:33        | 890.49        | 99.61        | 990.10       | 7     |
| Loucka     | <u>35:47</u> | <u>34:44</u> | <u>38:21</u> | <u>12:04</u> | <u>37:31</u> | -            | <u>35:06</u> | <u>39:10</u> | <u>35:03</u> | 77:31        | 867.72        | 110.00       | 977.72       | 8     |
| Hoffman    | 9:46         | <u>4:00</u>  | <u>37:23</u> | -            | 6:18         | <u>21:21</u> | -            | <u>37:18</u> | <u>38:19</u> | 75:42        | 847.39        | 106.60       | 953.99       | 9     |
| D. Stevens | <u>30:13</u> | <u>34:48</u> | <u>40:35</u> | <u>8:31</u>  | <u>17:19</u> | -            | -            | -            | -            | 75:23        | 843.84        | 101.57       | 945.41       | 10    |
| Tagliafico | 5:27         | 19:58        | <u>26:33</u> | <u>33:17</u> | <u>32:22</u> | <u>31:35</u> | <u>34:54</u> | <u>37:04</u> | <u>30:10</u> | 71:58        | 805.60        | 110.00       | 915.60       | 11    |
| Harlan     | <u>33:12</u> | <u>31:24</u> | <u>10:39</u> | <u>29:03</u> | <u>35:01</u> | ATT          | -            | <u>33:08</u> | <u>6:05</u>  | 68:13        | 763.62        | 110.00       | 873.62       | 12    |
| Doig       | ATT          | <u>32:45</u> | ATT          | ATT          | <u>33:32</u> | ATT          | ATT          | -            | -            | 66:17        | 741.98        | 110.00       | 851.98       | 13    |
| Slusarczyk | 24:47        | <u>27:20</u> | -            | -            | <u>31:45</u> | <u>25:04</u> | <u>34:34</u> | <u>30:26</u> | <u>15:42</u> | 66:19        | 742.35        | 87.14        | 829.49       | 14    |
| Mather     | <u>25:07</u> | -            | <u>38:47</u> | <u>19:24</u> | -            | <u>24:30</u> | -            | -            | -            | 63:54        | 715.30        | 103.13       | 818.43       | 15    |
| Mzik       | <u>20:23</u> | <u>27:00</u> | <u>28:47</u> | -            | <u>30:29</u> | <u>24:07</u> | <u>29:38</u> | <u>26:16</u> | <u>32:18</u> | 62:47        | 702.80        | 103.19       | 805.99       | 16    |
| Belieff    | <u>25:58</u> | -            | <u>31:30</u> | <u>1:40</u>  | <u>22:23</u> | <u>30:34</u> | <u>22:59</u> | -            | <u>31:43</u> | 63:13        | 707.65        | 96.54        | 804.19       | 17    |
| Godfrey    | <u>31:36</u> | <u>26:23</u> | <u>11:54</u> | <u>17:23</u> | <u>20:04</u> | <u>24:43</u> | <u>4:01</u>  | <u>22:00</u> | <u>21:35</u> | 57:59        | 649.07        | 86.65        | 735.72       | 18    |
| Ganslen    | <u>16:14</u> | <u>15:54</u> | <u>12:58</u> | <u>5:48</u>  | <u>20:01</u> | <u>13:37</u> | <u>16:09</u> | <u>27:43</u> | <u>27:35</u> | 55:18        | 619.03        | 100.00       | 719.03       | 19    |
| Radoff     | ATT          | -            | <u>26:32</u> | -            | <u>26:42</u> | <u>28:51</u> | <u>20:32</u> | <u>4:53</u>  | <u>2:02</u>  | 55:33        | 621.83        | 89.33        | 711.16       | 20    |

## INDOOR TEAM SELECTION FINALS

We wrote the following article for Model Aviation Magazine. We are reprinting it here for the benefit of our foreign subscribers.

Twenty of the best indoor flyers in the country gathered in Tustin, California over the Labor Day weekend to choose the three man team for the 1988 Indoor World Championships. The giant 156 foot high airdocks at the Tustin Marine Corp Air Station (Helicopters), near Los Angeles, were host to some of the finest F1D flying ever witnessed. With temperatures in the low 80's and sunny skies, conditions were perfect. The team will join defending World Champion Jim Richmond at the Indoor World Championships next year. The location and dates for the World Championships will be decided at the CIAM meetings in December.

Day one began with contestants and workers arriving early, renewing old friendships with out-of-town contestants, and the ever present task of getting the large hanger doors closed. The three rounds per day, best two of nine flights format left little time for test flying since the site was not available the day before the contest. At the 11:00 am contestant meeting Contest Director Andy Faykun, Assistant CD Erv Rodemsky, and Program Chairman Rich Doig laid out all of the ground rules, including an accuracy check on all stopwatches used in the meet. The first three-hour round would start at noon.

Round 1 started off with a bang when Lew Gitlow was first off, but the motor stick collapsed just as he was releasing it, destroying the model. Earl Hoffman was next off, but he hung up high in the girders at 9:46. Randolph and Cailliau also hung up. Cezar Banks left no doubt that he was the man to beat with a spectacular flight of 44:25, for the only forty minute flight of the round.

Round 2 overlapped round 1, starting at 2:00 pm. Many of the flyers got their act together with 7 contestants putting up one of their two best flights in this round. Cezar Banks proved that round 1 was no fluke as he moved to the south end of the hanger for another spectacular flight, 44:55. But Banks had company as Randolph put up 43:04, Foster 41:42, Romak 43:35, and Gitlow 40:15. It seemed that spectacular had become order of the day.

Round 3 began at 5:00 pm, and the spectacular flights continued. Darryl Stevens put up 40:35, Steve Brown 40:22, Romak 44:15, and Randolph 43:09. So at the end of Day 1, there had been 10 flights over forty minutes, and it looked as though Banks, Romak, and Randolph had the three team slots locked up. But the best was yet to come.

Day 2 dawned with the smog rolling south from Los Angeles, but by noon the smog had lifted, and the weather was identical to Day 1, with temperature in the low 80's.

Round 4 is when the destruction really began as Doig began blowing up his models. But he was not alone as most flyers except for Banks demolished at least one model. There was only one forty minute flight in this round, with Romak putting up 43:23 to lead the way.

Round 5 saw three more forty minute flights with Romak at 44:23, Banks at 42:25, and Cailliau at 40:18. Banks lead doesn't seem nearly as secure as it did after Day 1. Doig and Harlan, two flyers who were expected to be near the top were having all kinds of problems, and ultimately neither really got a handle on this site. Both finished well down in the standings.

Round 6 saw only two forty minute flights, with Cailliau at 40:01, and Brown at 41:18. At this point nobody suspected how important Brown's flight would become. Rich Doig, Clarence Mather, and Darryl Stevens finished. Destroying their last models in this round. Rich Doig sat up all night piecing one model together out of the wreckage. Standings were still Banks, Romak, and Randolph.

Day 3 dawned bright and sunny. Typical weather for southern California, I'm told. We understand that Darryl Stevens went sailing, and Clarence Mather went fishing. The rest of us returned to the site for three more rounds.

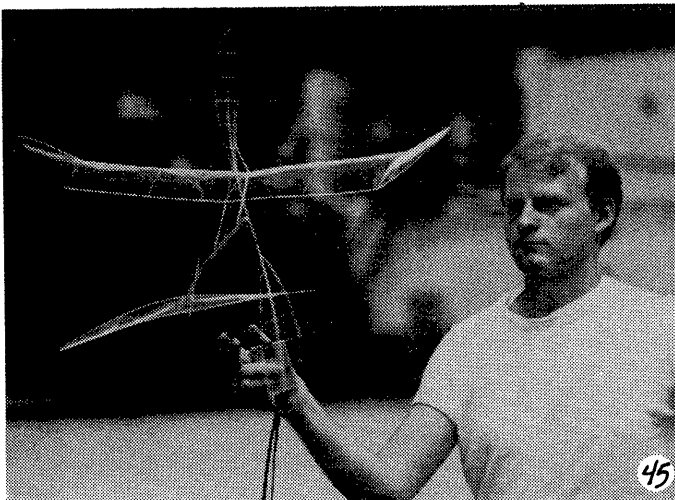
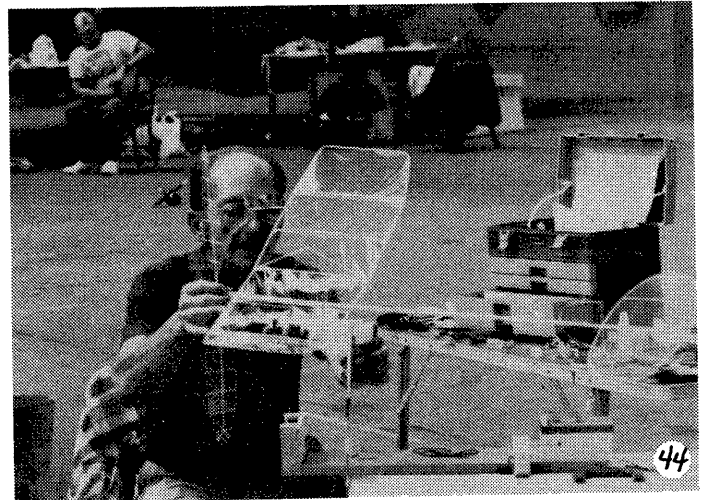
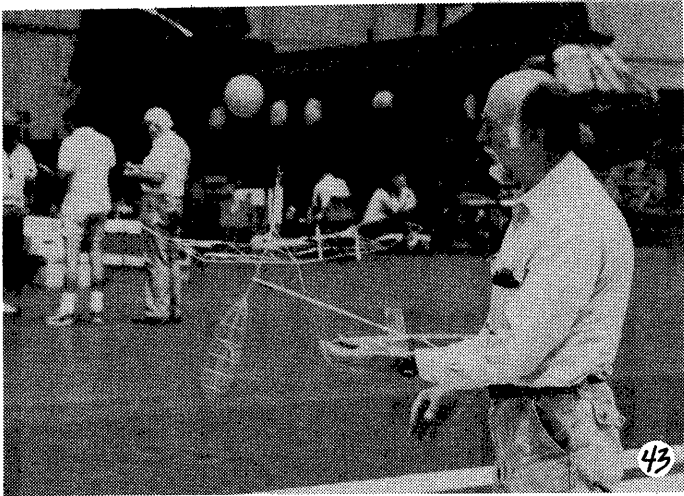
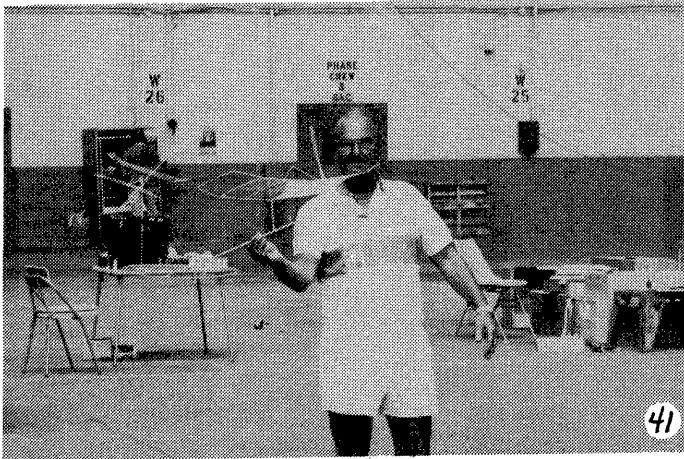
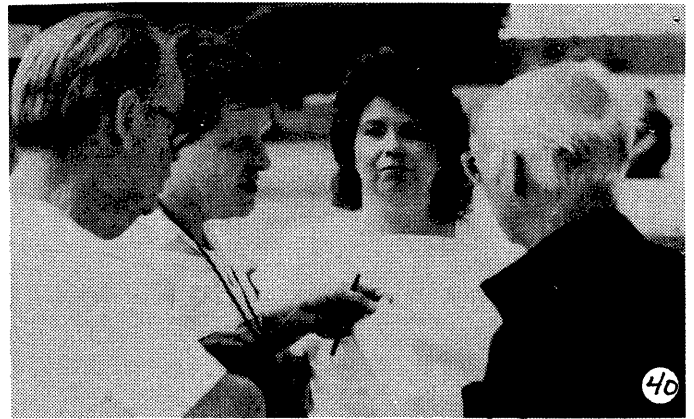
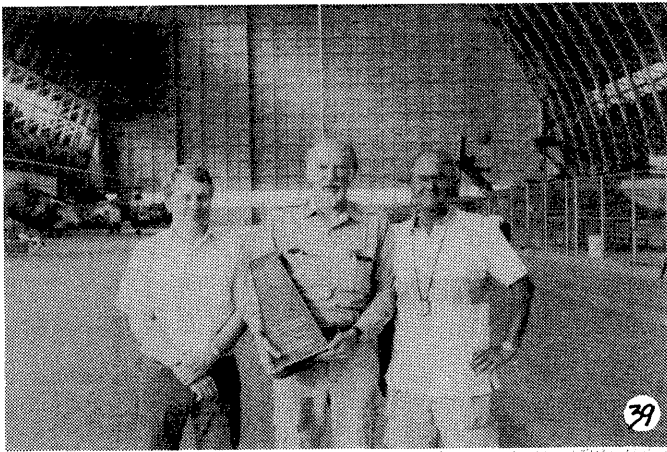
Round 7 started at 10:30. This was necessary because the Marines were expected to return to duty around 6:00 pm. The early start didn't seem to bother anyone with Randolph at 42:35 and Foster at 42:44, his highest time of the meet. Doig blew up the rebuilt model to end his contest.

Round 8 saw no forty minute flights, however Steve Brown did a respectable 39:58 to lead the round. The air seemed to be getting slightly better. This set the stage for round 9.

Round 9 saw only two forty minute flights. Foster put up 40:02. Then came THE FLIGHT. Steve Brown, a young protege of Bob Randolph, proved that he has learned his lessons well. After a shaky start, almost colliding with a helicopter, his model began it's long climb to the roof. The next time most of us looked up, Steve's model was descending slowly, still forty feet up, when it passed forty minutes. At the end of the flight, the model was heading into a fence, and Steve botched the steer, knocking the model into the fence, and falling down, barely missing the model. The watches read 45:25. Steve's two-flight total moved him ahead of Randolph into third place. But Randolph had not yet flown in Round 9.

Bob Randolph wound carefully, knowing that he needed a flight of 43:44 or better to move back into third place. The launch and climb were normal, but the model began to drift off center as it approached the roof. Bob steered the model out to the center, apparently successful. But it quickly became apparent that something was very wrong. It turned out that the left wing tip had been knocked out of alignment, and the bracing had snagged, causing the model to spiral down. That was it. Randolph finished fourth, and Steve Brown made the team in his first Indoor Finals. An incredible accomplishment.

The USA Indoor Team for the 1988 Indoor World Championships is Cezar Banks, Bud Romak, and Steve Brown. By placing fourth, Bob Randolph has been named as Team Manager, pending approval by the Team Selection Committee. Our many thanks to Curt Stevens, the site contact, and all of the other members of the Base Model Airplane Club that made this meet a success. On to the World Champs!



F1D Team Finals photos by Warren Williams, Melody & Richard Doig

89 1988 US F1D team. Steve Brown (left), Cezar Banks (holding Merrill C. Hamburg trophy) & Bud Romak (right).

40 Erv Rodemsky, Rich Doig, Melody Doig, & Andy Faykun talk over the meet's rules.

41 1976 World Champion Bud Romak made the team for the 4th time.

42 Former Wakefield World Champion Joe Foster, placed 5th just missing the team.

43 Cezar Banks seems to be always testing on 1/2 & 1/4 motors. But it works!

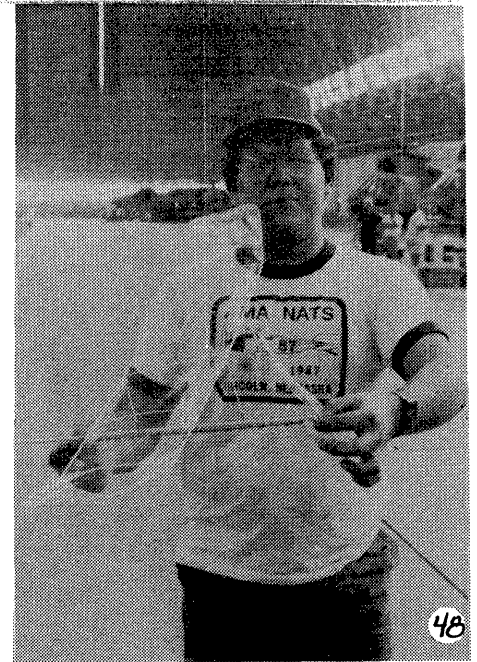
44 Lew Gitlow (Indoor Model Supply) placed 7th again.

45 Darryl Stevens launches his model. This photo makes a good argument for braced stabs.

46 Earl Hoffman had nicely built models - placed 9th.



47 Bob Randolph lost his team place in the last round. Bob will be team manager.



48 Youngest competitor, 15 year old Don Slusarczyk made a very good showing with only his 2nd & 3rd F1D models.

#### CONTEST CALENDAR

##### CALIFORNIA - BELLFLOWER (L.A. area)

Indoor flying sessions at Bellflower High School gym. CAT II (35' some obstructions) Tennis shoes required. Wed. Dec. 16 7 - 10 pm. Contact Barnaby Wainfan, 2503 Hardwick, Lakewood, CA 90712 or 213-630-4686

##### CALIFORNIA - BURBANK

Blacksheep indoor flying sessions & contests 2nd Thursday of each month 7 - 10 pm CAT I (peak 34') Luther Burbank Jr. HS, Maple between Jeffries & Burbank Blvd. Contact: Tony Naccarato, 2121 N. Hollywood Way, Burbank, CA 91505 or 818-842-5062

##### CALIFORNIA - SAN DIEGO

San Diego Orbiteers indoor flying sessions and monthly meetings: 2nd Friday meeting, 4th Friday flying sessions 7:30 pm Colina Del Sol Community Center, 5319 Orange Av. Also flying after meeting - call for schedule: Don Bartick Program Chairman, 13349 Via Stephen, Poway, CA 92064 or 619-748-8275

##### CALIFORNIA - SAN FRANCISCO

Possible F1D Local trials & flying sessions CAT III Cow Palace. Contact: Joe Foster, 3771 Timberline, San Jose, CA 95121 or 408-274-5479

##### CALIFORNIA - SANTA MONICA

Flightmasters indoor flying sessions - 2nd Sunday of each month 1:00 pm - 4:30 pm Paul Revere Jr. High School in Santa Monica. Contact: Bill Warner, 423-C San Vicente Bl, Santa Monica, CA 90402 or 213-393-2198

##### CALIFORNIA - TUSTIN

FAI Indoor Team Selection and Record Trials for CAT IV. First weekend each month. Hangar #1 on Tustin M.C.A.S. (H). Sponsor: M.C.A.S. (H) Microfilm Flyers. To gain admittance to Base you MUST contact CD at least 3 days in advance. CD: Curt Stevens, 25108 Marguerite Pkwy, #B-160 Mission Viejo, CA 92691 or 714-240-8404

##### COLORADO - BOULDER

Denver Area Indoor Model Airplane Association indoor flying sessions at Balch Fieldhouse, University of Colorado, Boulder. 8 - 11 pm. DAIMAA gets this site in return for teaching indoor modeling skills to Freshman Aerospace Engineering Science students. Schedule: Nov. 22, 1987: Student contest. Dec. 4 & 18: DAIMAA fun fly. 1988 dates: Jan. 8 & 22, Feb. 12 & 26, March 11 & 25, April 8 & 22, May 6 & 20. Give your activity suggestions to Les Shaw, 995 McIntire St, Boulder, CO 80303 or 303-499-0946 or John Berryman, 1866 S. Sedalia Circle, Aurora, CO 80017 or 303-337-2936

##### CONNECTICUT - GLASTONBURY

For info on Glastonbury Aeromodelers flying sessions contact: George Armstead, 89 Harvest Ln, Glastonbury, CT 06037 or 203-633-7836.

##### FLORIDA - MIAMI

Miami Indoor Aircraft Model Association (MIAMA) fun fly on Nov. 28 at Youth Fair, 109th Av. & Coral Way. CAT I (smooth ceiling) You must confirm by calling Kevin Smith 305-251-7814 the night before the meet. Fun Fly on Dec. 6 at Miami Dade South College 9am-5 pm. Mass Launches: Pistachio, Peanut, and Federation Also Jan. 23 & March 19 fun fly or CAT I Record Trials, May 21 & 22 Pistachio Intergnats at Miami Dade South. Contact: Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363

FLORIDA - TAMPA

Indoor King Orange & MIAMA meet #2: a two day meet at two different sites. Jan.1 - practice & fun fly in Hangar 5 at MacDill AFB. Jan.2 - Contest at MacDill 9 am - 5 pm. Jan.3 - Contest in Delta maintenance hangar at Tampa Airport. Jan.4 - fun fly Delta Hangar. All events both Sat. & Sun., both sites. AMA, Peanut, & FAC Scale. Bostonian (7 grams), Indoor Embryo (10 grams), Pennyplane, EZB, Glider, Federation ROG (3.1 grams). Mass Launches: Sat. 4pm Golden Age, Sat. 5pm Federation, Sun. 4pm WWII. CD: Dick Obarski 2112 N. Halycon Dr, Sun City Center, FL 33570 or 813-634-8683 Also, at MacDill Feb.13 & 14 MIAMA meet #3, April 16 & 17 MIAMA meet #4, June 25 & 26 MIAMA meet #6

GEORGIA - CUMMINGS (Atlanta)

The Thermal Thumbers of Metro Atlanta's Dec. 13, 1987 contest at Forsyth County High School gym is cancelled because the site has been lost. They need your ideas to find another indoor site. Contact Clarence Purdy 404-445-7521

INDIANA - CARMEL (Indianapolis)

Indianapolis Free Flight Fellowship contest Dec. 6, 12 - 6pm, at Carmel Jr. High School gym, 300 S. Guilford Av. CAT I (25' to girders) Events: Hand launch glider, Easy B, Novice Pennyplane & Pennyplane combined, Manhattan Cabin, Profile Scale, Peanut Scale. Tennis shoes only on gym floor. Contact: Jim Richmond, 12112 Windsor Dr, Carmel, IN 46032 or 317-848-5312

MASSACHUSETTS - CAMBRIDGE (Boston)

MIT Tech Model Aircrafters indoor model flying sessions 1st Saturday of each month thru May in Dupont gym, CAT I, Vassar St. & Massachusetts Av. 6 10 pm. For info call Ray Harlan, 15 Happy Hollow Rd, Wayland, MA 01778 or 617-358-4013 or 617-258-1431 (work)

MICHIGAN - COLUMBIAVILLE (NE of Flint)

Flint Balsa Termites flying sessions 1st & 3rd Tuesday of each month in Columbiaville Elementary School gym. Contact Dan Miles 9447 E. Coldwater Rd, Davison, MI 48423 or 313-653-2535

MICHIGAN - OTISVILLE (NE of Flint)

Contest Dec.6, 9am - 4pm, in Lakeville Middle School gym. CAT I. Events: Bostonian, Blatter "40", AMA & Peanut Scale, Hand launch glider, Easy B, Novice Pennyplane. Contact: Dan Miles 9447 E. Coldwater Rd, Davison, MI 48423 or 313-653-2535

MICHIGAN - STERLING HEIGHTS (north of Detroit)

Indoor flying sessions, 1st, 2nd & 3rd Fridays of each month thru May. 7 - 10:30 pm. CAT I. Contests: Dec.18 under 40 sq.in. rubber power, Feb. 5 Novice Pennyplane, March 11 Bostonian (7 gram). Heritage Jr. HS - Dodge Park Dr. at 16 Mile Detroit Balsa Bugs. You MUST wear tennis shoes or similar. Contact: Rich Doig, 6 Canary Hill Dr, Pontiac, MI 48055 or 313-373-5374

NEW JERSEY - GLASSBORO

Philadelphia Sky Pirates indoor contest April 24, 1988 Activities Center Ballroom, Glassboro State College CAT I-23' Contact Doug Barber 146 Stratton House, Maple Shade, NJ 08052 or 609-235-5318

NEW YORK - NEW YORK

Columbia Indoor Model Airplane Society contest CAT III in Columbia University Low Library Rotunda. Dec. 6, 1987 9 am - 5 pm "Heavy" models only. Events: 1. Peanut (Mooney rules) 2. Bostonian (usual 7 g US rules) 3. ISL-30 a new event by Ron Williams: Max wingspan 30", Max weight 20 g, full fuselages required (NO profiles), single surfaces ok, all hand launch (landing gear may retract), Mooney judging, Peanuts may be flown if not also entered in Peanut event. All events unlimited officials. Contact Ed Whitten, Box 176, Wall Street Station, New York, NY 10005 or 212-724-0282 or Ron Williams 212-722-5262

OKLAHOMA - OKLAHOMA CITY

Indoor flying sessions at Oklahoma City 23rd Street National Guard Armory. CAT II. Nov.29, Dec.20, Jan.17, Feb. ?, March ? contest. Contact: Jim Belson, 4933 NW 29th, Oklahoma City, OK 73127 or 405-946-1093

OREGON - ALBANY

Indoor flying on Jan. 10 & 31, 1988. For details contact Bob Stalick, 5066 NW Picadilly, Albany, OR 97321 or 503-928-8108

PENNSYLVANIA - PHILADELPHIA

For info on flying activities in Memorial Hall, Fairmont Park. Contact: Joe Krush, 409 Warner Rd, Wayne, PA 19087 or 215-688-3927

TEXAS - BEDFORD (Dallas/Ft. Worth)

Indoor flying sessions & contests. CAT I. Bedford Boy's Ranch - Forrest Ridge @ Harwood. For info contact: Jesse Sheppard, 2713 Summit View, Bedford, TX 76021 or 817-282-3770

UTAH - SALT LAKE CITY

Bi-monthly flying sessions. Contact Franklin Anderson, 6137 Dee Park Dr, Salt Lake City, UT 84118

WASHINGTON - SEATTLE

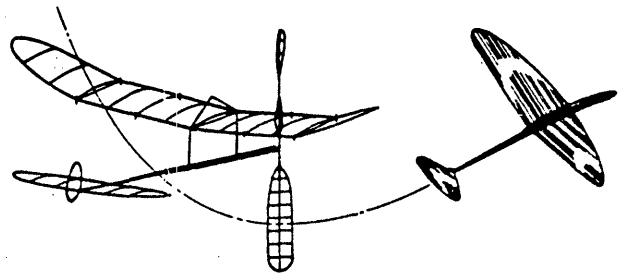
Indoor flying sessions and monthly contests. Jan.16, Feb.13 & 23, March 5 & 22, April 16 & 26, 1988. For details contact Kevin Collins, 2320 Sahalee Dr. E, Redmond, WA 98023 or 206-868-8273

WISCONSIN - MILWAUKEE Area

Bong Eagles indoor flying sessions every Tuesday (usually) at Hamilton High School, 2nd floor auditorium, 69th and Forest Home Av. 7 - 9 pm For info contact: Gordy Wisniewski, 4790 Stratford Dr, Greendale, WI 53129 Also, meetings 2nd Monday of every month in lower level, Wauwatosa Savings & Loan, 7500 W. State St. Contact Pete Baker 414-744-03773

# INDOOR

## NEWS and VIEWS



#37,38,39,40,41,42

Editors: Richard & Melody Doig - 6 Canary Hill Drive, Pontiac, MI 48055 (313) 373-5374

### THIS ISSUE

In early January, Melody and I both came down with mononucleosis, a blood disease that leaves you feeling completely exhausted for as long as six months to one year after having the infection. The major symptom is that you sleep - almost all of the time. We are just coming back to life now. It's as though I went to sleep in January and woke up in the middle of May. The Doctor's have told us that it is very rare for someone over thirty to get this disease, but we always have been a bit unusual.

I've also had some surgery to remove some common warts from my right hand. The surgery was supposed to be minor, but the warts had gone completely through the skin, and in the process of removing them, a tendon in one finger has been seriously damaged. I may need a major operation on my finger, but we are waiting to see how well it can heal on it's own. The result of all of this is that I can't write very well, (but I can type) so I won't be making any construction tip drawings for a while.

This issue contains material concerning the upcoming Indoor World Championships, corrections to the rulebook, and a potpourri of other items we've collected over the last year.

### SUBSCRIPTION INFO

Indoor News & Views is published approximately four times per year. Current rates are:

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\$11.00 Air Mail, Europe & South America  
\$12.00 Air Mail, Asia, Australia, New Zealand

Please make payment in U.S. Dollars by cash, money order, U.S. Postal money order, or check drawn on a U.S. bank. Make payable to the order of Richard Doig. Partial payments OK.

The number in the upper right-hand corner of the mailing label is the final issue of the current subscription.

### 1988 INDOOR WORLD CHAMPIONSHIPS

On December 4, the CIAM approved the USA bid to host the Indoor World Championships at Johnson City, Tennessee on **May 28, 29, & 30, 1988**. The original schedule called for one day of practice followed by two days of official flying. (The practice day is a requirement in the FAI rules.) Within a few days many requests had come in to modify the schedule, and the FAI Technical Committee has approved the change.

The final schedule calls for practice flying each day in the morning followed by two official flights per contestant in the afternoon and evening. We also have obtained the site for limited World Champs test flying on May 27, from 2 to 9 pm. This is only limited because we will be setting up the site during this period, and conditions may not be ideal.

We will not be using rounds, but instead a system where each team will be assigned a pair of timekeepers for the duration of the contest. Each team will be limited to one model airborne at a time.

This is the same arrangement we used at West Baden in 1980, and most flyers were pleased with it, as it allows a lot of flexibility. Unlike West Baden, this site is large enough that 11 or 12 models airborne at one time does not appear to be a problem.

As of this writing, the following teams have entered:

Argentina  
Canada  
Czechoslovakia  
Finland  
France  
Great Britain  
Hungary  
Japan  
Netherlands  
Romania  
Switzerland  
United States  
Jim Richmond (defending Champion)



1988 INDOOR WEEK SCHEDULE

WORLD CHAMPIONSHIPS

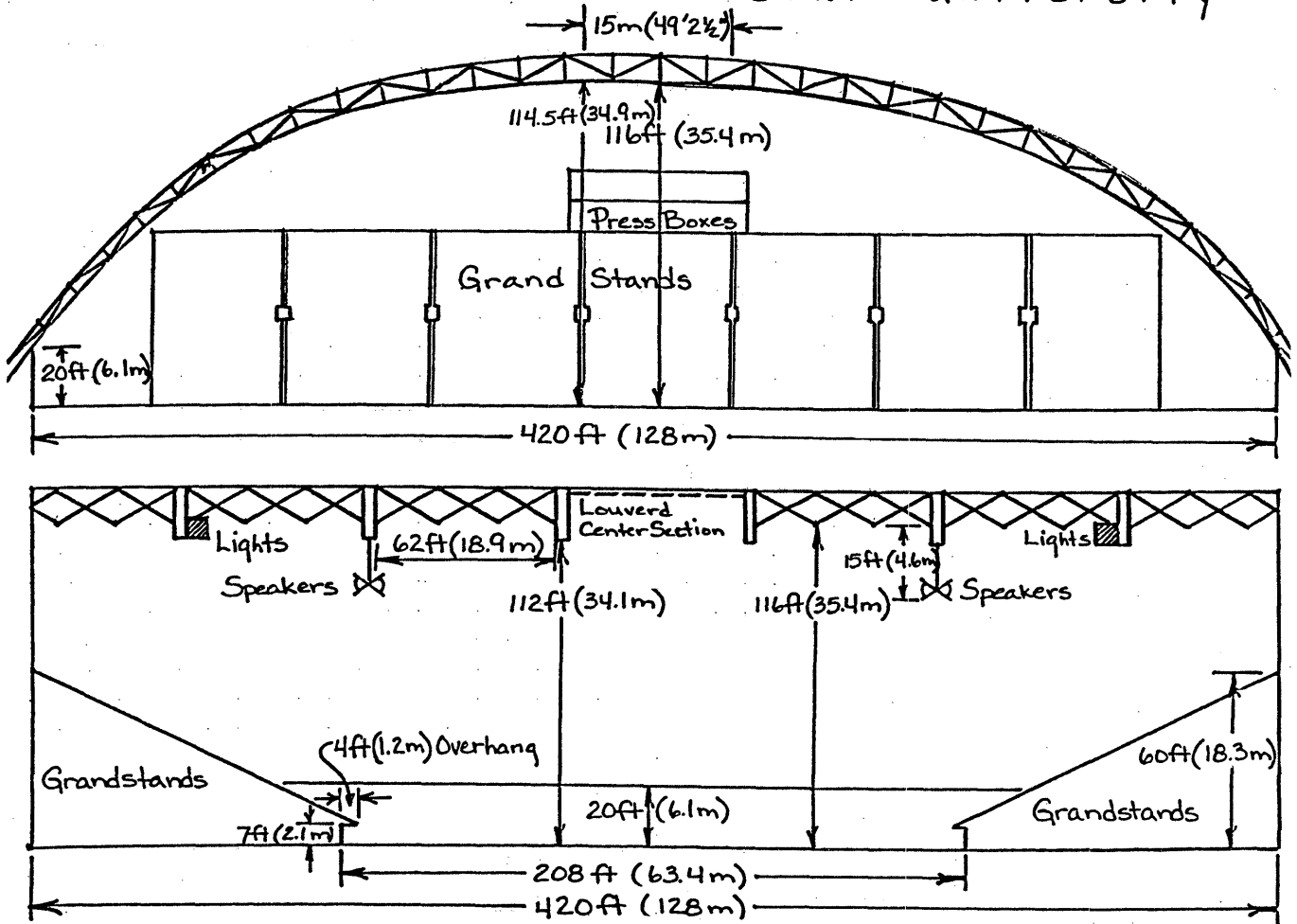
|          | FRIDAY, MAY 27             | SATURDAY, MAY 28 | SUNDAY, MAY 29  | MONDAY, MAY 30            |          |
|----------|----------------------------|------------------|-----------------|---------------------------|----------|
| 6:30 am  |                            | minidome opens   | minidome opens  | minidome opens            | 6:30 am  |
| 7:00 am  |                            |                  |                 |                           | 7:00 am  |
| 8:00 am  |                            | Official F1D     | Official F1D    | Official F1D              | 8:00 am  |
| 9:00 am  |                            |                  |                 | practice                  | 9:00 am  |
| 10:00 am | Arrival                    | practice         | practice        |                           | 10:00 am |
| 11:00 am |                            |                  |                 |                           | 11:00 am |
| 12 noon  |                            |                  |                 |                           | 12:00 pm |
| 1:00 pm  |                            | Opening Ceremony |                 | 2 Competition             | 1:00 pm  |
| 1:30 pm  |                            |                  |                 |                           | 1:30 pm  |
| 2:00 pm  |                            |                  |                 |                           | 2:00 pm  |
| 3:00 pm  | World Championships Set up | 2 Competition    | 2 Competition   | flights                   | 3:00 pm  |
| 4:00 pm  | Competitors Check in       |                  |                 | (no rounds)               | 4:00 pm  |
| 5:00 pm  |                            | flights          | flights         |                           | 5:00 pm  |
| 6:00 pm  | Informal F1D practice      | (no rounds)      | (no rounds)     | minidome closes           | 6:00 pm  |
| 7:00 pm  |                            |                  |                 |                           | 7:00 pm  |
| 7:30 pm  |                            |                  |                 |                           | 7:30 pm  |
| 8:00 pm  |                            |                  |                 |                           | 8:00 pm  |
| 9:00 pm  |                            |                  |                 | Banquet at Sheraton Hotel | 9:00 pm  |
| 9:30 pm  |                            | minidome closes  | minidome closes |                           | 9:30 pm  |

F1D OPEN INTERNATIONAL

7TH UNITED STATES INDOOR CHAMPIONSHIPS

|          | TUES, MAY 31              | WED, JUNE 1             | THURS, JUNE 2             | FRI, JUNE 3                         | SAT, JUNE 4               |          |
|----------|---------------------------|-------------------------|---------------------------|-------------------------------------|---------------------------|----------|
| 6:30 am  | minidome opens @ 6:30 am  |                         | minidome opens @ 7:00 am  | minidome opens @ 7:30 am            | minidome opens @ 7:00 am  | 6:30 am  |
| 7:00 am  | F1D                       |                         |                           |                                     |                           | 7:00 am  |
| 7:30 am  | Practice                  |                         |                           |                                     |                           | 7:30 am  |
| 8:00 am  |                           |                         | Easy B                    | Manhattan Cabin<br>Bostonian        | Novice Pennyplane         | 8:00 am  |
| 9:00 am  |                           |                         | International Easy B      | Speed Events:<br>Peanut & Unlimited | Pennyplane                | 9:00 am  |
| 10:00 am | R<br>o<br>u<br>n<br>d     | R<br>o<br>u<br>n<br>d   | Intermediate Stick        | Ornithopter                         |                           | 10:00 am |
| 11:00 am |                           |                         | Peanut Scale              | Helicopter                          |                           | 11:00 am |
| 12 noon  | 1 R<br>o<br>u<br>n<br>d   | 4 R<br>o<br>u<br>n<br>d | A.M.A. Scale              | Autogiro<br>No-Cal Scale            | H.L. Stick                | 12 noon  |
| 1:00 pm  |                           |                         | Grand Prix                |                                     | AJJ<br>Oldtimer           | 1:00 pm  |
| 2:00 pm  | 2 R<br>o<br>u<br>n<br>d   | 5 R<br>o<br>u<br>n<br>d | Pistachio                 | minidome closes @ 6:00 pm           | ROG Stick                 | 2:00 pm  |
| 3:00 pm  |                           |                         | Hand Launch Glider        |                                     |                           | 3:00 pm  |
| 4:00 pm  |                           |                         | Catapult Glider           | Banquet at Garden Plaza Hotel       |                           | 4:00 pm  |
| 4:30 pm  |                           |                         |                           |                                     | minidome closes @ 9:00 pm | 4:30 pm  |
| 5:00 pm  |                           |                         |                           |                                     |                           | 5:00 pm  |
| 6:00 pm  |                           |                         |                           |                                     |                           | 6:00 pm  |
| 7:00 pm  |                           |                         |                           |                                     |                           | 7:00 pm  |
| 8:00 pm  |                           |                         |                           |                                     |                           | 8:00 pm  |
| 8:30 pm  | minidome closes @ 8:30 pm |                         | minidome closes @ 9:30 pm |                                     |                           | 8:30 pm  |
| 9:00 pm  |                           |                         |                           |                                     |                           | 9:00 pm  |
| 9:30 pm  |                           |                         |                           |                                     |                           | 9:30 pm  |

# "MINIDOME" East Tennessee State University



## WORLD CHAMPS VOLUNTEERS

We still have a need for a number of qualified timers to time for all three days. The schedule will require you to arrive by 9:00 am on Saturday, May 28, as there will be an extensive briefing including stopwatch calibration and approval. We will need a large number of watches as well, as each timekeeper needs to have a primary watch, a backup watch, and a third watch for prop stop time. We prefer not to use wristwatch / stopwatch combinations. Please make sure your name is on any stop watch that you bring. (The contest management has some stop watches, but not enough.) If you speak a foreign language, that is a plus.

There may also still be some other jobs available for those wishing to contribute. Any volunteers selected to work will receive meals for all three days, as well as not having to pay the supporters fee for access to the main floor.

All volunteers for timing should contact:

Ed Stoll  
30471 Manse  
Mount Clemens, MI 48045  
(313) 463-5588

Volunteers wishing to work in other capacities should contact:

Tony Italiano  
1655 Revere Drive  
Brookfield, WI 53005  
(414) 782-6256 after 7 pm Central time

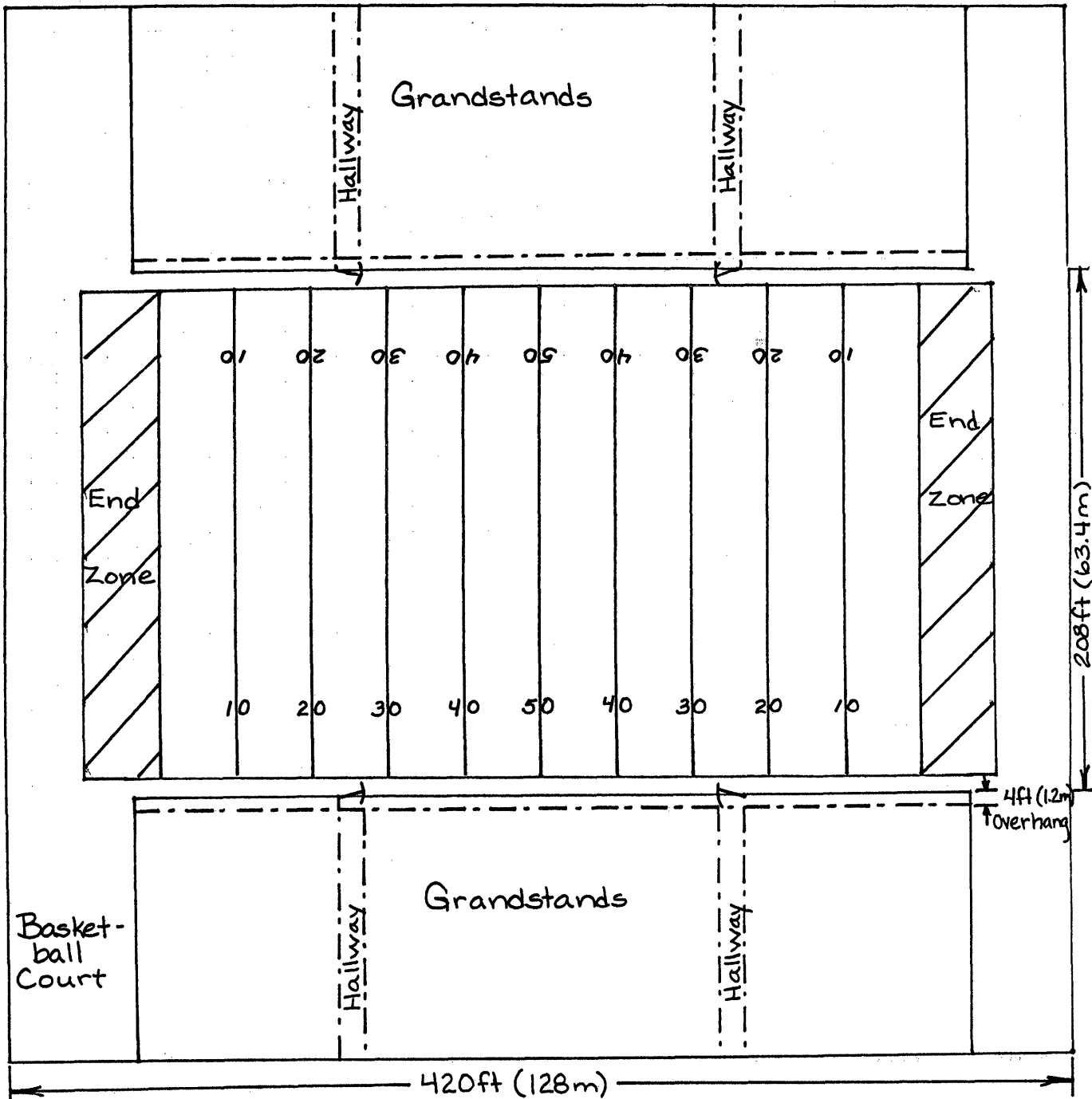
Tony will direct you to the correct department head for the job you request.

## MORE LOST AND FOUND FROM THE 1987 U.S. I.C.

One stopwatch and one electrical extension cord were left at last year's U.S. I.C. If they belong to you contact Tony Italiano, 1655 Revere Dr, Brookfield, WI 53003 and describe the item in detail.

The cheap reel and balloon that were also found last year have been thrown out. (Notice was in last issue of INAV.) You're too late!

# "MINIDOME" East Tennessee State University



## 1988 United States Indoor Championships

The 1988 USIC will begin the day after the World Championships with a two day open F1D International contest, and continue through the week with most of the traditional events. Several events have been added, and one event has been dropped (ROG Cabin).

The entry forms are included in this issue for those of you who have not received them by direct mailing. This promises to be the most outstanding contest in recent memory.

We also have a need for workers and qualified CD's to assist in running the USIC portion. Especially during Pennyplane & Easy B. Any volunteer's should contact Tony Italiano.

## KEVLAR

We have more Kevlar available. Don Lindley arranged to give us 1/2 of the huge spool that he has. I'm not sure, but it's something like 10 or 20 miles of individual filament. For a spindle of tow about 15 feet long, send a self-addressed stamped envelope to Richard Doig, at the address on the masthead. Free to INAV subscribers.

We will bring the spool to Johnson City, so anyone who wants some can spool their own as this is extremely difficult for me to do at this time (it gets caught on the spint!).

## INTERNATIONAL EASY B

One of the events at this year's USIC will be a second EZB event. We will have the traditional EZB event flown by current AMA rules with entry open to any flyer, from any country.

The International EZB event is for models built to alternate EZB rules. The idea is that the overseas contestants who come over for the World Champs, should also bring the EZB they normally fly, and a copy of their rules. The event will be scored using an index of performance, by comparing a model's performance to the highest time ever achieved under those rules.

The tentative plans are that U.S. and Canadian flyers may also enter this event by paying the appropriate entry fee, but flying to the American rules. Whether this will mean flying 5 flights for each EZB event or flying 5 flights which are counted in both events is yet to be decided.

There has been a lot of debate over the years about whether the British rules, or the American rules, or some other rules are better. This is a rare opportunity to fly all of the various types of EZB's in the same site, on the same day, and see if there is any significant difference in the performance, handling, and ease of building under the various formats.

Since many flyers would like to see EZB as an international event, unified rules would be a necessity. This is a rare opportunity to try this out.

## UNOFFICIAL EVENT - KIT/PLAN SCALE

Sponsored by the Chicago Aeronuts

\$1.00 per entry. Turn in plan & plane by 4 pm Wednesday, June 1. Fly Thursday, June 2, 2 to 6 pm. Trophies to third place.

Rules:

1. Models must be built from published plans or kits.
2. Size of plans may be reduced if wood sizes are in proportion.
3. All surfaces must be covered both sides, or be solid material.
4. Models must take off unassisted for official flights.
5. Any flight in which the model is airborne for more than ten seconds is official.
6. Two attempts may be used for each of five official flights.
7. Timing starts at release of the model and terminates when the model next touches the floor or comes to rest after take off. The ten second hang-up rule will be used.
8. No flight score (no. of sec.) will exceed the total of Craft and fidelity points.
9. Up to 60 points will be awarded for fidelity of the model to the plans and instructions from which it was built.
10. Up to 40 points will be awarded for Craft, based on workmanship and finish.
11. Nose block and rear rubber post may be altered without penalty.
12. Tissue type and color are optional, but control outlines and registration numbers (even if made up) must be used.
13. Propeller may be altered from plan without penalty.
14. Final score is sum of best two flights plus Craft and Fidelity.

## U.S. I. C. UNOFFICIAL EVENT - FEDERATION R.O.G.

The great state of Florida and its indoor model builders (most of whom belong to M.I.A.M.A.) challenges modelers from other great states to a team event at Johnson City, TN on Fri. June 3, 1988 from 2 pm to 4:30 pm.

This will be a team event; an unlimited number of contestants from each state can enter. The two highest times of five attempts will count for each contestant. The two highest totals from each state will count. All flights will be timed from the M.I.A.M.A. official table. All models must be registered and processed before flying and flights over 4 minutes will be weighed after the flight. Entry fee \$1.00 per model.

For more info: Tony Becker  
2108 Haringay St.  
Sun City Center, FL 33570  
813-634-8572

Delaware Valley Federation R.O.G. rules - see Model Aviation, May 1987, page 69

1. The model must be rubber-powered.
2. All flights must rise-off-ground.
3. The assembled model without rubber must weigh 3.1 grams (.109 oz.) or more.
4. The propeller must be one-piece molded plastic. Diameter 6 inches or less. You can add a bushing to the prop shaft hole and lighten the prop by scraping or sanding. You cannot cut out and recover any part of the prop.
5. Projected wing area must be 30 square inches or less.
6. Projected stab area must be 50% or less of the projected wing area.
7. Landing gear must have 2 wheels and support the model in a normal position when at rest. The wheels must be 1/2 inch diameter or more and turn freely. Gear and wheel tests must be met before flight and after landing without repairs or adjustments; otherwise, the flight is disqualified.
8. Except as noted above, there are no restrictions on covering, dimensions, or construction.
9. All ballast for weight or balance must be permanent affixed.

## M.F.F.S. SOLICITING DONATIONS FOR U.S. I. C.

The National Free Flight Society is soliciting donations in the way of merchandise or money to help offset the costs of running the upcoming indoor extravaganza at Johnson City, Tennessee. The merchandise would be used for two raffles, in which tickets would be sold and prizes distributed by random selection. The cash will be used to offset the operating expenses. We are in need of merchandise, not gift certificates because of the many international contestants participating. Of course, the names of the donators will be prominently displayed, showing the support of all who contribute.

This is a perfect time to show our nation's support to the rest of the world. If you need additional information or wish to contribute please contact:

John Lorbiecki  
1508 Valley View Dr.  
Hubertus, WI 53033  
(414) 628-4296 home  
(414) 646-3877 work

## NATIONAL FREE FLIGHT SOCIETY

In announcing the 1988 Free Flight Hall of Fame recipients and the Top Ten Models of the year, many indoor modelers are being honored.

Frank Cummings, 1964 US Indoor Team member, and Walter Erbach, indoor pioneer and ornithopter enthusiast, are being inducted into the Hall of Fame. Top Ten Models awards go Walter Van Gorder for his Manhattan Pieces design and Robert Wilder is being given the special award for his contribution of winders, torque meters, etc. for both indoor and outdoor.

These awards will be given at the NFFS Symposium on Thursday evening July 28, 1988 during the 1988 Virginia Nationals. Also available that evening is Sympo 88, the technical yearbook of NFFS, which includes a flying and strategy article written by Jim Richmond, 1968, 1978, 1984, & 1986 Indoor World Champion.

## PROJECT DAEDALUS SUCCEEDS

On April 23, 1988, the pink-and-silver Daedalus 88 flew across the 74 mile stretch from Crete, to Santorini, Greece, setting a new world record for human powered flight of 3 hours 54 minutes. Unfortunately, the turbulence near the beach broke the tailboom, and the plane crash landed into the surf about 30 feet offshore. The pilot, Greek cycling champion Kanellos Kanelopoulos, was not injured. (In mythology, didn't Daedalus crash into the surf just offshore too?)

Long time Indoor modeler Mark Drela was part of team that designed and built Daedalus. Foreign competitors may remember Mark as one of the processing team members at the 1980 World Championships in West Baden. I have to believe that Mark's experience with micro-film models played a key role in the project's success.

Congratulations to Mark and the rest of the team on this incredible accomplishment.

## CATEGORY I WORLD RECORD

Thedo Andre' of the Netherlands broke the Category I world record last June setting a new mark of 28:54. He has supplied us with the following article and plans for his record setting model.

His article points out one of the many vague sections of the steering rules, that of steering from the side with a pole. However, since the record has been homologated by the FAI, must we add this to the list of "acceptable" steering practices? This brings up an important point. Who has the final say in questions like this with the FAI?

## WORLD RECORD FOR INDOOR MODELS CATEGORY I.

The record flight was made with a standard F1D microfilm indoor model, i.e. maximum wing span 650 mm and minimum airframe weight 1 gram. The model was a derivation of the model I used at the 1986 World Championships in Cardington. The motorstick length was increased to 450 mm. This made it possible to shift the centre of gravity more aft, thereby increasing the lifting force of the stabilizer. The camber of the stabilizer section was increased to 5% in order to retain sufficient stability margin. The long motorstick necessitated the use of thinner rubber motors and smaller propellers in an attempt to limit an increase in total rubber weight.

The very first test flight of the model necessitated a slight decrease in stabilizer incidence. The second flight was an immediate improvement of my personal record, which stood at 22:42. Apart from a pair of flights with damage the following flights were improvements also. On every flight however about 400 turns of the motor stayed unused. This normally indicates that the cross section of the motor used is too thin. The let down phase of the flights however showed such an efficiency that it was decided to shorten the motor from 40 cm to 38 cm. This resulted in a flight time of 25:46. Despite this there were still about 400 turns left. The motor was shortened by another 3 cm and the maximum winding torque as well as the launch torque were increased. When flying in low ceiling halls it is normal use to let the model fly against the ceiling, provided that the ceiling is flat and free of obstructions. On this flight the model reached the ceiling in about 1 minute. It stayed there for about 16 minutes, about 3 minutes longer than on the previous flights. The model had to be steered twice. This was done by changing its direction by touching the tailboom from the side with a fishing pole. A few moments after the model lost contact with the ceiling it flew into strands of a cobweb which caused a loss in height of at least half a meter. The descent phase however proved to be at least as good as on the last flight and finally the model landed at 28 minutes and 54 seconds. Exactly an improvement by 60 seconds of the existing world record by Ron Higgs of Canada.

The flight was made at the International Butterfly Meeting in the Goffertal in Nijmegen, the Netherlands. This hall has a free flying height of 7.81 meter. The weather conditions outside were bad, with a hard wind and rain. Inside however the air was fairly calm. There was mainly some drift near the ceiling.

Thedo Andre  
Venusstraat 49  
7557WP Hengelo (O)  
Holland

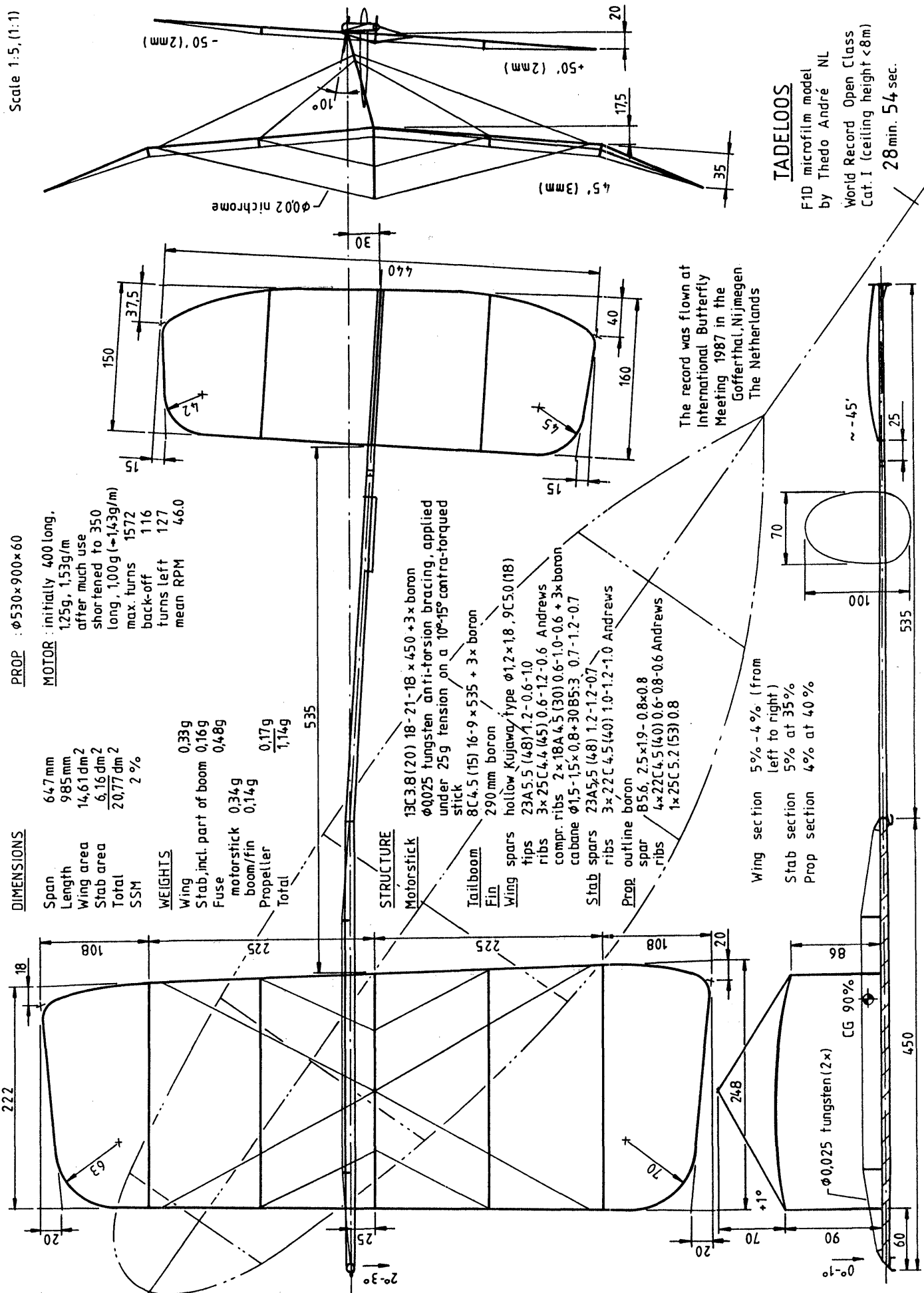
Scale 1:5, (1:1)

PROP  $\phi 530 \times 900 \times 60$

**MOTOR** : initially 400 long, 125g, 1.53g/m after much use shortened to 350 long, 100g ( $\rightarrow 1.43g/m$ )  
 max. turns 1572  
 back-off 116  
 turns left 127  
 mean RPM 460

**DIMENSIONS**  
 Span 647 mm  
 Length 985 mm  
 Wing area 14,61 dm<sup>2</sup>  
 Stab area 6,16 dm<sup>2</sup>  
 Total 20,77 dm<sup>2</sup>  
 SSM 2 %

**WEIGHTS**  
 Wing 0,33g  
 Stab, incl. part of boom 0,16g  
 Fuse 0,48g  
 motorstick 0,34g  
 boom/fin 0,14g  
 Propeller 0,17g  
 Total 1,14g

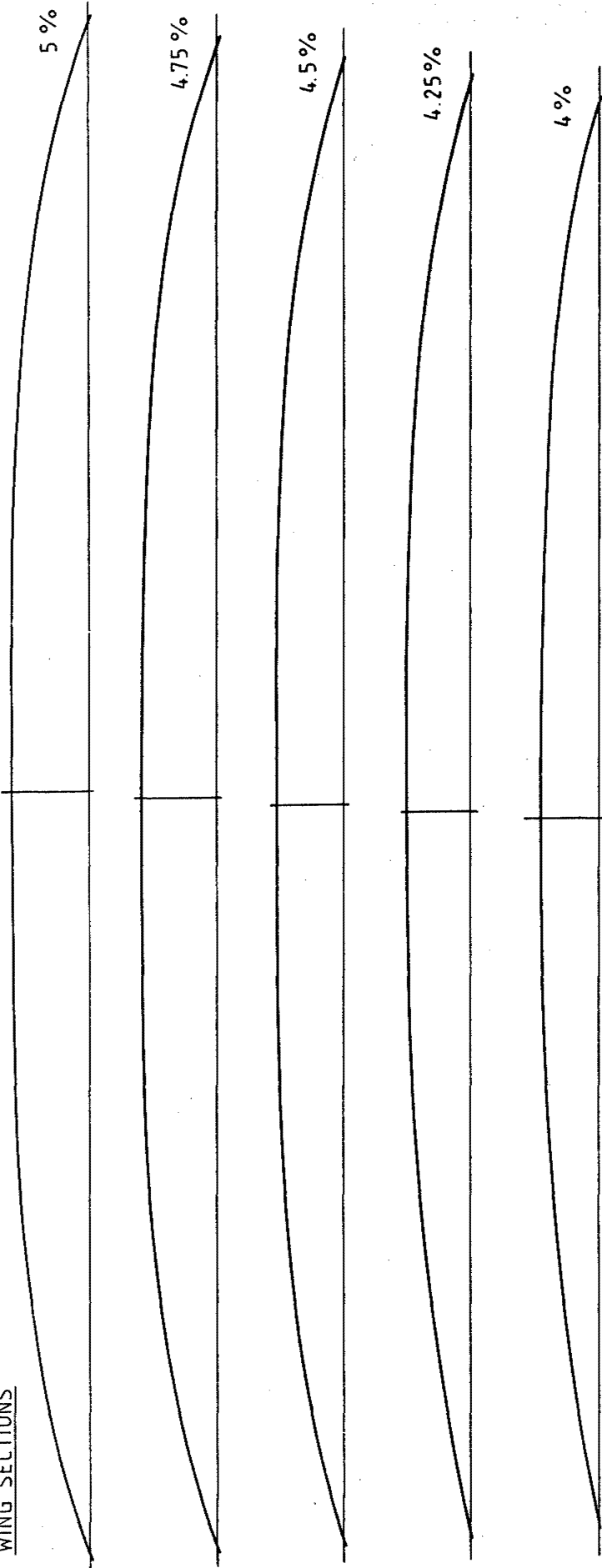


The record was flown at International Butterfly Meeting 1987 in the Goffertthal, Nijmegen, The Netherlands

**TADELOOS**

F1D microfilm model  
 by Thedo André NL  
 World Record Open Class  
 Cat. I (ceiling height < 8m)  
 28 min. 54 sec.

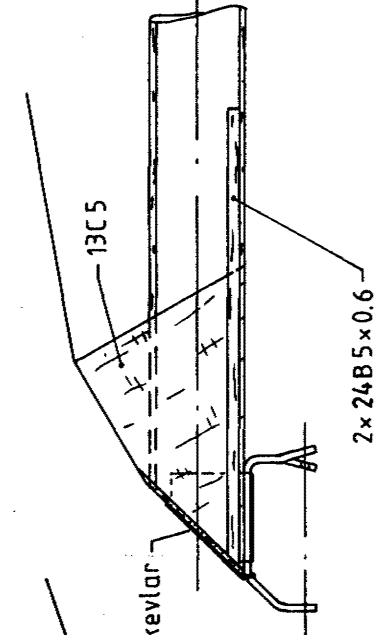
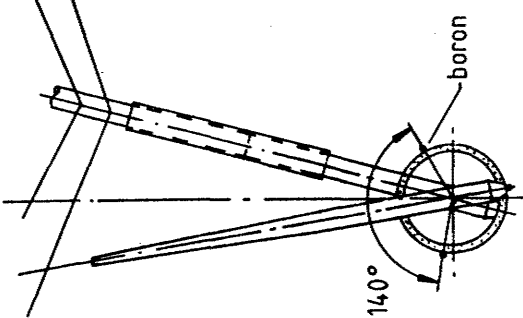
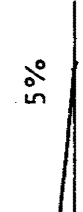
WING SECTIONS



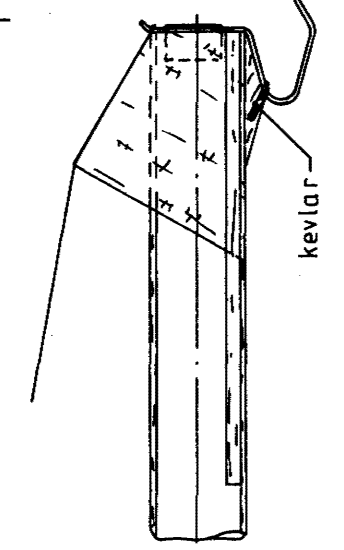
TAIL SECTION



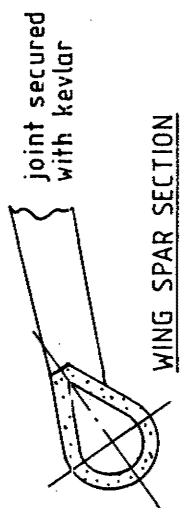
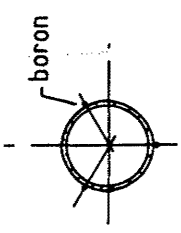
PROP SECTION



MOTORSTICK DETAILS



TAILBOOM SECTION



WING SPAR SECTION

TADELOOS DETAILS

Scale 1:1, 2:1, 10:1

## STEERING

We've received letters and comments from several sources over the past few months concerning the steering rules and what constitutes a legal steer. I threw in my two cents worth about steering on the Modelnet bulletin board on CompuServe (a nationwide computer service) and it popped up in Indoor News, Jorgen Korsgaard's fine newsletter from West Germany. The entire exchange between Del Ogren, Bob Clemens and myself ran out to about 14 pages, but the guidelines section is pretty useful.

We're reprinting it here just so everyone can see how muddled up the situation can get. After all, the rules say "all steering shall be done from the front end of the model and never from behind." Taken literally, that means the leading edge of the prop. Now, while some of us occasionally have steered from the leading edge of the prop, nobody does it on purpose because it wrecks models!

So, here is a cross-section of thoughts from some well known flyers:

### EUROPEAN WORLD CHAMPIONSHIPS: CLOSING COMMENTS

By Thedo Andre

Something completely different now in rules changes. At the team managers meeting an explicit question was posed about allowing steering of the model from the side (e.g. at the tailboom). This was said to be against the rules but during the contest several people were seen doing it. Nobody made a protest and in a talk to the jury they said they were allowing it because the flying height was not influenced this way. This is right and I think we should change the steering rule into something general which states that by steering the flying height may not be influenced intentionally omitting reference to the front of the wing.

Kujawa was using a device similar to the prop protector which was not allowed at the 1978 world championships to ease disentangling the line from the model. However he placed it so far forward on the fuselage that the steering line would inevitably stop the propeller. This "clips" the model to the line preventing a height increase and it should thus be allowed.

With regard to steering it should be pointed out that steering is only allowed to avert collision with the hall structure or with other models. Several people were seen to steer during the climb to prevent power-stalling.

A point raised by Andras Ree is the definition of end of flight. When do you press the button: when the prop touches or when the model completely comes to rest? There can be seconds of difference. It may be better to define the moment the fuselage comes to rest on the ground as the end of flight.

Another thing is the commitment to forward an FAI model specification certificate for indoor models. As all relevant dimensions are checked before every flight there is little reason for this certificate.

I heard nobody talk about changes to the model specifications. I suppose we are content with them as they are.

Please express your views on the above. We can discuss it publicly through INAV and Indoor News and then try to make a rules change proposal by the end of 1988.

### MORE STEERING COMMENTS

from Andras Ree, HUN:

We have spoken about two items during the competition (European Champs):

1. Termination of flight in normal landings. The rule says: "the model comes to rest on the floor...". It is not a well defined moment even for experienced timekeepers. Sometimes the wing tilts down quicker, sometimes very slow, sometimes not at all! It would be better with: "the fuselage of the model contacts the floor of the building".

2. Steering from the side (from the boom or the rounding of stabilizer). Some countries tried to use it (Holland, Yugoslavia, Hungary, etc.) in local contests and the opinion is that it is a very useful and safe way to TURN the model in the horizontal plane.

The first item doesn't need more comment, or maybe one: What happens when the model stalls at the start and the end of the fuselage contacts the floor for a moment??

The second needs some more trials and clarification. What is YOUR opinion to these subjects??

### MORE STEERING COMMENTS

From Leif Englund, Finland:

About the steering business:

At the European Champs in Poland I think there were too much steering. Steering was used not only to save the model from collision with the building and other models - as the rule book says - but also to place the model in better air - I call this tactical steering and should not be used - and to help the model to handle high torque at launch - and this is **NOT** foreseen in the rule book, too. In MY opinion the contest directors should take more serious actions against these "steering ACROBATS". In Romania in 1982 it was not allowed to steer a bad launch.

Well, let me hear what other people say about this subject.



Date: 28-Feb-87  
Subject: Steering Ugh...  
From: Del Ogren  
To: Rich Doig

Rich, got a call the other night from Don Lindley. He was all fired up about the steering rules. Was bothered by what he thought were violations of the rules at the IMAC meet. We are co-cd'ing the Midwest Champs and Lindley wanted to talk about how we were gonna enforce the rules.

So, I decided to re-read the steering rules, since it looks like I'm gonna have to play cop. Looks grim... As far as I can tell the rules are so much of a judgement call that they are unenforceable.

The intent seems to be to allow steering to save the model from a collision. That means any steer is legal as long as the contestant THINKS that the model is in trouble. And there is nothing that says that moving a model from down to up air is illegal. And, worse, it seems that the only violation that will result in stopping the clock is REPEATED altitude changes during a steer (the number is not specified).

This is awful...

Date: 01-Mar-87  
Subject: Indoor steering fiasco  
From: Bob Clemens  
To: Richard Doig

I'd like to add my personal opinion to Del Ogren's indoor steering inquiry. Steering of indoor models is without doubt the most abused privilege in that area of our hobby.

Easy B's, Penny Planes, Manhattans, as well as mike models are many times steered by some of our foremost "experts" STRICTLY FOR POSITIONAL ADVANTAGE without penalty. Most timers at most meets have no knowledge of, or desire to enforce, the applicable regulations regarding steering of models. Most of the fliers involved in this abuse DO know the rules, but choose to ignore it because they have an almost fanatic urge to win above all else.

It's unfortunate no one submitted a new steering rule this cycle. I must say that I believe ALL steering should be disallowed with the exception of FAI, indoor stick, and ROG cabin. Other models could be steered to avoid loss or damage, but the flight would be terminated at the moment of steering contact.

Severe? You bet, but it would surely bring steering abuse to a quick halt. Not too many years ago, steering was virtually unknown, yet somehow the good fliers still won meets and everyone was happy. The current steering rule is an open invitation to cheating that is all too often readily accepted.

Please pass these thoughts along to your fellow Indoor Contest Board members, some of whom can readily identify with this problem.

Date: March 1, 1987  
To: Del Ogren (with a copy to Bob Clemens)  
From: Richard W. Doig

Del, the key gray area in the rules is to define "imminent danger". Steering to avoid collision with another model is really not a problem, since it is usually pretty obvious to all involved. My own guidelines on when it is OK to steer are as follows:

STEERING GUIDELINES (per Rick Doig)  
March 1, 1987

1. If the model's circle is entirely over the floor, and is not overlapping the stands, you don't have the right to steer. If the model is more than one diameter away from the wall, you don't have the right to steer. "Diameter" is the diameter of the model's turning circle.

2. If there are obstructions on the floor, and the model will hit the obstruction during the next one or two circles, then it is OK to steer. If the model is drifting over the obstructions toward the wall or stands, and the edge of the floor is blocked off, like by a row of trucks, then consider the edge of the obstructions as the edge of the floor, and it is OK to steer when the circle begins to overlap the edge of the obstructions.

3. Obstructions on the ceiling, i.e. lights, basketball hoops, flags, cables, scoreboards, etc. These are all items defined as obstructions for steering purposes, since they are not part of the building's primary structure. It's OK to steer away from them, but only if the model is drifting sideways and is going to hit one of them on the next 1 or 2 circles. Steering any sooner than this should not be allowed.

4. Girders. This is tricky, especially in a building with a parabolic roof. Essentially, if the model is touching the girders on the outside of the circle (that is, away from the centerline of the building), and moving the model horizontally towards the centerline will stop the bouncing, it's OK to steer. In the Jones armory, this is really only kosher within about 25 feet of the edge of the floor, since the roof is pretty flat over most of the floor. If the model is banging away against the girders in the center of the building, tough! No steering to avoid the girders, only to avoid the lights. Avoiding the girders would be altitude control, and is not allowed.

5. Descent. During the descent, it is OK to steer if the model is coming down over an obstruction, or the stands, and will land on the obstruction if not steered. When you can steer in this situation is dependent on the nature of the obstruction, since once the model is actually over the obstruction, it is usually too late to steer.

6. Altitude change. During climb, if the prop keeps turning, don't worry about altitude change. If you straighten out the turn during climb, the model may look like it is going straight up, when in fact it isn't climbing any faster, it's just not circling.

During cruise and decent, again don't worry about altitude change if the prop keeps turning. If a guy knocks his model down three or four feet, that's his mistake.

If the prop stops, that's when the trouble begins. The model must not slide up or down any appreciable amount. This is paramount to controlling altitude. It must be watched at all times. Also make certain that the prop-stop time is deducted. Steering time is not deducted, only prop-stop.

7. Special situations. The Jones armory has one special situation where I think steering is OK in the middle of the floor. The ventilators. If your model will be sucked out onto Cottage Grove Avenue on the next circle, then I think it is proper to steer away from the vent.

8. The thing to keep in mind is that the point of steering is to avoid having to climb to retrieve your model. You should do just enough to get the model to land on the floor, and no more. This is not a kite flying contest!

9. Steering to avoid collision with another model. This is easy to enforce. Courtesy dictates that the competitor who has been up the longest has the right to the airspace, and the other competitor has the obligation to steer.

10. In all cases you must declare your intent to steer, and the reason to your timer. Example: "I'm getting awfully close to the scoreboard, I'm going to steer it on the next circle." The timer then has the responsibility to say "OK" or "you aren't in any danger, don't steer."

Del, why don't you print out the steering guidelines, and post them at the meet. Have a contestant's meeting at the beginning of each event and read them the law!

I voted against the rule proposal to go back to the old 15 second three steers rule, because it was even more unenforceable than the current one.

Let me know what you decide, as I think the guidelines I've written here could be the basis for a rules interpretation for all AMA events as it has become obvious that we need a set of uniform guidelines to minimize the abuses.

#### SOURCE OF STEERING BALLOONS

Steve Brown says that a good source of steering balloons is:

G.S.P. Products  
2238 Rogueriver Dr.  
Sacramento, CA 95826

They sell a variety of Japanese made meteorological balloons, the best for indoor is the "30 gram" size at \$4.40 each. He says they are well made, and last up to a year.

#### PAPERWORK BLUES

Here we go again. AMA Headquarters seems to have a real problem issuing peripherals along with licenses. It has come to our attention that many of the people who paid for their FAI stamps when they renewed their licenses, never received the stamps.

I paid for mine back in October, and only received it by pestering the people in the AMA booth at the Toledo show in April. I was in the computer as having paid, but they never mailed me the stamp. Walt Van Gorder had to make three phone calls to get his. I've talked to 5 other flyers about this, and only one received his stamp properly. Don Godfrey is still waiting for his 1987 stamp!

I spoke to Micheline Madison at Headquarters about this, and she is pulling her hair out because it is the membership department's responsibility to issue the stamps, but her phone rings when it doesn't happen. She has been assured that things will be done differently next year.

What this means is that, if you paid for an FAI stamp, and haven't received it, call Micheline at Headquarters and let her know. She will try and get your stamp mailed. Meanwhile, dig out the canceled check, and make a copy to carry in your wallet.

If we're lucky, all of this will get straightened out by the USIC.

#### 1988 AMA NATIONALS

The Indoor events at the 1988 AMA Nationals will be held Sunday, July 24th, and Monday, July 25th at the "Scope", in downtown Norfolk, Virginia. The schedule will be the same as last year. There is a mistake in the published schedule, however, as the people laying out the form failed to drop the "all wood" from Hand-Launched Glider. We will be flying glider as called out in the current rules. Melody and I will again be the CD's.

The site is a cylindrical building topped by a geodesic dome. The dome covers an arena and grandstands. The floor is 227 ft by 113 ft. The ceiling is advertised as 110 ft BUT there is a circular catwalk, a so-called "light ring", that hangs down to 65 ft. The light ring appears to be about 125 ft in diameter and there is a scoreboard in the center. We do not know if the scoreboard can be raised higher than 65 ft or not. There also appears to be an American Flag, and a speaker hanging from the roof. The scoreboard hangs on a single cable, which makes it impractical to shroud. The parking facilities are underground at the site, and the parking concession will be active.

We will be arriving on Friday to meet with the managers and clean up the ceiling as much as we can, however, do not expect to be able to use the altitude above the light ring. This building looks as though it would be spectacular without the "light ring". It may be pretty good if the scoreboard can be raised high enough. Unfortunately, we really won't know what we have until we arrive.

## 1988 NATS PLANNING

I sent the following letter to the Executive Council for use in their meeting last October, when the final decision was made to go to the Tidewater area of VA with indoor events at the Scope Arena in Norfolk, VA, for 1988. I thought the contents of this letter might give some insight into the amount of planning involved in a project of this size, and the difficulty making this kind of decision.

October 19, 1987

From: Richard W. Doig, 1987 NATS Indoor CD  
6 Canary Hill Drive  
Pontiac, MI 48055

To: AMA Executive Council,  
and Vince Mankowski

Subject: Indoor at the 1988 NATS

Gentlemen:

Much has been said over the past few years about the future of Indoor flying as part of the NATS. It seems that everyone has an opinion. But by and large these are not the people who have to make the final decision (or do the work!). So, I am presenting some additional information here, in the hopes that it will help the Executive Council make an informed, rational decision.

Background: For the benefit of those who don't know me, I have been flying various types of models for over 20 years, ranging from Control Line Carrier, to Outdoor Free Flight, to Indoor Micro-film models, my greatest love. I am current Chairman of the Indoor Team Selection Committee, District 7 Indoor Contest Board Representative, and my wife Melody and I publish the newsletter Indoor News & Views, when we can find the time. Melody & I together ran Indoor (except Scale) at the last two NATS, and Melody ran the FAI & Indoor Stick events so I could fly as well. I placed first in Stick both years, and first in FAI in 1986 & 2nd in '87. The point is that I have seen the NATS and other major meets from both sides of the official's table, and recently enough to be current.

Assessment of Indoor at Lincoln: Last year's Indoor NATS was a marvelous contest. There were 65 contestants in attendance, including Scale. There are several reasons for the improved attendance, but I can narrow it down to four key factors:

1. Record quality site: In fact, this was really somewhat of an accident, since previous reports indicated the ceiling height was about 52 feet. Fortunately, I didn't believe it, and with Vince's help, we arranged for a local flyer to measure the building accurately, the previous November, well in advance of the meet. It turned out to be 49 feet, and at the upper end of Record Category II (26 through 49 feet), not the lower end of Category III (50 through 98 feet) as previously thought.
2. Accurate publicity: We published photos & descriptions of the site in our newsletter, Indoor News & Views (current

mailing approximately 425). The information spread through the indoor community that the place looked good, and looked like a great place to set Category II Records. The point here is that the contestants didn't get any surprises, and the site was exactly as advertised.

3. Proper Site Preparation: The drift in an indoor site can be tailored by adjusting lighting patterns, plugging leaks with plastic, arranging entry ways to prevent the outside entrances from blowing directly into the site, and so forth. All of this is in addition to shrouding or removal of scoreboards, strings, and other obstructions. All of this takes time, and experience, along with a little bit of magic. Melody & I have a reputation for taking the time to get the most out of a site, and since I usually arrange to fly one or two events myself, I have a vested interest in getting things right. The key point here is that for many years the indoor flyers & indoor management at the NATS were viewed as us verses them. With a well known active flyer running the meet, this gap is eliminated, and the contestants are certain that the site will be as well prepared as possible.
4. Contest Management: Indoor events run by indoor flyers is a good way to run a contest. It is an unreasonable work load to run both indoor and outdoor at a NATS. For example, in Lincoln, we met for two hours with the site managers on Friday afternoon, followed by about four more hours of work picking up plastic sheeting, duct tape, arranging the helium delivery, etc. Saturday afternoon we spent another two hours at the site adjusting the lighting with the building engineer, putting up signs, and so forth. We ran the events on Sunday & Monday (8 am to midnight!), and spent Tuesday reviewing and recording the scores for the Headquarters staff. This followed by about an hour with Doug Pratt going over the whole thing for the NATS News. So, it took about 5 days to run a two day contest. Since Indoor was our only responsibility, we were able to take the time to do a better job. Contestants know and appreciate this.

The upshot of all of this is really quite simple. Three of the four factors I've mentioned can be had with hard work and the right people. The hooker is the site itself. In my opinion the site has more to do with attendance than any other single factor. If the site will be comfortable with a ceiling forgiving to models, people will come; especially if there is a reasonable chance to set records, or if the site is around 90 feet or higher. In my opinion, the real difference between the attendance in Lake Charles (55 feet, lower end of record category III) and the attendance in Lincoln (49 feet, upper end of record category II), is that Lincoln offered a chance to set records, and Lake Charles did not. Even though the two buildings were virtually identical so far as smooth ceiling, preparation, and drift. I really believe that the chance for records tipped the scales for about 20 contestants to attend the Lincoln NATS.

We must remember that it is primarily the SITE that draws the contestants. And high ceilings (over 90 feet) draw better than medium ceilings, unless the site has some other outstanding feature.

Now on to '88: There are several aspects about the '88 NATS that concern me. The first is the cost of the proposed site. I recall that all of indoor at Lincoln, cost about \$3000. That's \$1200 per day rent, about \$425 travel & lodging for Rick & Melody, and scorecards, and so on. The \$2000 per day for the Scope Arena scares me. It scares me a lot. Suppose we don't get 65 contestants. Suppose we get 42 as in Lake Charles. What then?

The other major concern is this. The National Free Flight Society is making a bid to host the 1988 Indoor World Championships in conjunction with the US Indoor Champs in Johnson City, TN, the first week of June. If things go the same way they did at the last US Indoor World Champs in 1980, we'll see about 135 to 150 contestants at the open part of this meet. People practically come back from the grave to watch a World Champs. The US Indoor Champs had 96 contestants last year without a World Champs to increase the draw. So, how many people will be interested in attending the World Champs/USIC and the NATS, since they are in the same geographical area (about 450 miles apart), and only six weeks apart? Would it be financially more prudent to support the one week bash at Johnson City, than to rent an expensive site in Norfolk?

Tony Italiano's proposal to combine the USIC & NATS Indoor into a single meet has been brought up in light of the World Champs proposal and the high rental in Norfolk. In fact, attendance in Norfolk might suffer from a successful USIC. But, it might also flourish, since a large number of flyers would have two major meets in their backyard. A number of flyers who attended the meet in Johnson City, couldn't wait to fly again, so they came to Lincoln. We just don't know.

So, what do we do? If the Council decides to go with the Scope Arena, Melody & I will run Indoor if desired. I think my main concern is the indoor flyers at large getting blamed if the turnout is lower than hoped for, in light of the expense for the site.

On the other hand, splitting the NATS apart is probably not in the long term best interest of Indoor, since I feel that our best source of new Indoor flyers, are people who already participate in some other facet of the hobby. (I used to fly C/L, for example) The chance to watch other events, especially since we run Indoor into the evening, is probably important to Indoor's long range survival, and to the traditional flavor of the NATS.

I talked at length last night with Dan Belieff (a Micro-film flyer from Sterling, VA) about the proposed site. The way he described it to me from the photos he had, it sounded reasonably good. Not a record quality clean ceiling, but better than a lot of places I've flown. So, if you (the Council) think the budget can stand the price, let's do it. If not, that's your decision too. But let's make the decision based on your best assessment of all of the factor's involved.

## CONTEST CALENDAR

### CALIFORNIA - BURBANK

Blacksheep indoor flying session/contest June 9 (last session til October) 7 - 10 pm CAT I (peak 34') Luther Burbank Jr. HS, Maple between Jeffries & Burbank Blvd. Contact: Tony Naccarato, 2121 N. Hollywood Way, Burbank, CA 91505 or 818-842-5062

### CALIFORNIA - SAN DIEGO

San Diego Orbiteers indoor flying sessions and monthly meetings: 2nd Friday meeting, 4th Friday flying sessions 7:30 pm Colina Del Sol Community Center, 5319 Orange Av. Also flying after meeting - call Program Chairman for schedule: John Hutchison 619-465-7698

### CALIFORNIA - SAN FRANCISCO

Possible F1D Local trials & flying sessions CAT III Cow Palace. Contact: Joe Foster, 3771 Timberline, San Jose, CA 95121 or 408-274-5479

### CALIFORNIA - SANTA MONICA

Flightmasters Low Ceiling Peanut Champs June 12 Paul Revere Jr. High School in Santa Monica. 1 - 4:30 pm Contact: Bill Warner, 423-C San Vincente Bl, Santa Monica, CA 90402 or 213-393-2198

### CALIFORNIA - TUSTIN

There is **NO** flying in Hangar #1 for the near future as the doors are broken in the open position. To check on flying status contact Curt Stevens, 25108 Marguerite Pkwy, #B-160 Mission Viejo, CA 92691 or 714-240-8404

### COLORADO - BOULDER

Denver Area Indoor Model Airplane Association indoor flying sessions at Balch Fieldhouse, University of Colorado, Boulder. Last date this Spring is May 20. Contact: Les Shaw, 995 McIntire St, Boulder, CO 80303 303-499-0946

### FLORIDA - MIAMI

Miami Indoor Aircraft Model Association (MIAMA) May 21 & 22 World Proxy Pistachio Inter-Gnats at Miami Dade South. Tentative - July 16 F.A.R.T. II MIAMA Indoor Cat I Trials Contact: Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363

### FLORIDA - TAMPA

Final Father's Day MIAMA Indoor meet June 18 & 19 in Hangar 5 at MacDill AFB. Contact: Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363

### MICHIGAN - STERLING HEIGHTS (north of Detroit)

Last Indoor flying session of year May 20 at Heritage Jr. HS. Contact: Rich Doig, 6 Canary Hill Dr, Pontiac, MI 48055 or 313-373-5374

### NEVADA - RENO

Academy of Model Aeronautics National Fun Fly and Convention on June 24 - 26. There will be indoor flying on Friday & Saturday nights from dusk until dawn in the Reno Convention Center. For more info contact AMA HQ 703-435-0750.

## CONTEST CALENDAR - continued

### OHIO - AKRON

F1D Team Selection & Record Trials. July 4th and Labor Day weekends. CAT IV. Loral Airdock at Akron Municipal Airport. Airdock F1D Flyers. Must call Bill Hulbert for Security Clearance at least 2 weeks in advance. Bill Hulbert, 174 Castle Blvd, Akron, OH, 44313 or 216-864-8030

### ONTARIO - BRANTFORD

CANADIAN NATIONALS '88 is having Indoor events on Saturday, August 6 in the Brantford Civic Center. CAT II - 32 ft. to the girders. Events will include: EZB, Novice Pennyplane, AMA Scale, No-Cal WWII Combat, Indoor Rubber Scale (combined sizes), & FAC Embryo/Bostonian plus Record Trials. For info & rules contact: John Marett 5 Vicora Linkway, Don Mills, ONT M3C-1A5 or 416-429-0815

### A. M. A. AND INSURANCE

The following excerpt came from the Okie Free Flight Flyer issue #27 1/1/88.

One more angry outburst: I really do not think the AMA insurance/dues are too high in this sense: I pay more each year for insurance on my motorcycle. But it does infuriate me that someone who wants to fly an EZB or a peanut indoors has to pay the same rate as you know who. How many people have been killed by peanuts? AMA now is going to be self insured. They know how many claims have been paid for damage/injury by various categories of models. They could sell several levels of protection based on that experience. It is a fundamental tenet of the insurance industry that "the lower the risk, the lower the premium". I care about this issue because I think many folks just can't bring themselves to pay the present fee to enter their first contest. One reason I got out of the responsibility of the Oklahoma City indoor meets was the distress of telling people they couldn't fly without paying what to them seemed an exorbitant fee. The OFFF has never endorsed any candidate for any political office in AMA, but now we will support those who run on the platform of this sort of insurance reform.

Bill Baker

About one year ago we asked Carl Maroney, AMA insurance department, if there had ever been any insurance claims against indoor. He checked his records and there has never been any claims made for or against an indoor contest/flyer. However it has been our personal experience in renting indoor sites that the building manager or owner will not rent to anyone or any group that does not have one million dollar insurance coverage.

Bill asks if anyone has ever been hurt by an indoor model? Hurt by a model, no. But hurt at an indoor meet, yes. While the models themselves are reasonably safe, some of the buildings we fly in are not. Here are some of the close calls and injuries we know about:

In 1971 a light and its cable fell from the roof of the Jones Armory in Washington Park, Chicago, barely missing Ron Ganser, Jr. The maintenance people were attempting to lower the light to retrieve a hung-up model, when the cable broke.

In 1980 a section of the fancy plaster scrollwork of the West Baden Atrium fell several floors barely missing Jim Richmond.

Stan Chilton broke his ankle while steering a model out of the stands in Lake Charles, LA in either 1974 or 1975.

Bob Randolph broke his ankle while carrying his boxes into a site in 1984.

Mike Clem had a piece of a shattered torquemeter penetrate his arm requiring medical attention one year at West Baden.

Indoor has not been without some injuries. And it would be very short sighted of us to think that we are immune, simply because the models themselves are not dangerous.

However, since some aspects of aeromodelling are safer than others a lower insurance rate makes alot of sense. However, there is also the problem of the flier who flies many different events.

(I'm a good example of this since I'm primarily an indoor flyer, but I demolished my right ankle flying outdoor Hand Launch Glider several years ago, requiring reconstructive surgery to repair.)

Bill does present a interesting solution to the high cost of AMA membership dues because of the high cost of insurance, since it is a fact that the incidence of serious injuries is much lower with indoor. It is food for thought.

### RULES, RULES, RULES

Well gang, here we go again. The new rulebook looked good, but a large number of various mistakes, omissions and typo's got into the indoor section (about 30 or so). Melody and I proof-read the new book and typed up a long list of corrections (typed on a Radio Shack model 100 portable computer at my in-laws on Christmas Day!), which was printed in the May 1988 issue of Model Aviation magazine.

However, since it would be a lot easier if it were all put together, we've done just that. Corrections are shown in ***bold-italics***, and we've moved the FAI section completely outside of the AMA rules, only leaving the selected sections that actually apply to AMA events. We've also included the English equivalents for many of the metric dimensions. **THESE ARE NOT CHANGES - THESE ARE CORRECTIONS.**

Indoor is not alone, however, as the Peanut Scale scoresheet was goofed up as well, and the July 1988 Model Aviation has the 2nd corrected version of the scoresheet.

Hopefully, we got all of them this time.

# SEVENTH UNITED STATES INDOOR CHAMPIONSHIPS

May 31 June 1, 2, 3, 4, 1988  
 East Tennessee State University  
 "Mini-Dome"  
 Johnson City, TN



CATEGORY IV  
 Sanction No. 371

Sponsored by:  
 National Free Flight Society  
 National Indoor Model Airplane Society

## F1D OPEN INTERNATIONAL

|                     | 7 am     | 8 | 9 | 10      | 11 | 12 | 1 | 2       | 3 | 4 | 5       | 6 | 7 | 8 | 9 pm | DOME HOURS             |
|---------------------|----------|---|---|---------|----|----|---|---------|---|---|---------|---|---|---|------|------------------------|
| <b>Tues. May 31</b> | PRACTICE |   |   | ROUND 1 |    |    |   | ROUND 2 |   |   | ROUND 3 |   |   |   |      | 6:30 a.m.<br>8:30 p.m. |
| <b>Wed. June 1</b>  | PRACTICE |   |   | ROUND 4 |    |    |   | ROUND 5 |   |   | ROUND 6 |   |   |   |      | 6:30 a.m.<br>8:30 p.m. |

## USIC

|                     |  |                                 |  |  |                  |                     |  |  |               |     |                        |                        |
|---------------------|--|---------------------------------|--|--|------------------|---------------------|--|--|---------------|-----|------------------------|------------------------|
| <b>Thur. June 2</b> |  | EZB                             |  |  |                  | PEANUT SCALE        |  |  |               | HLG |                        | 7:00 a.m.<br>9:30 p.m. |
|                     |  | EZB (INT'L), INTERMEDIATE STICK |  |  |                  | AMA SCALE PISTACHIO |  |  | GLIDER-CATAP. |     |                        |                        |
| <b>Fri. June 3</b>  |  | MAN/BOST                        |  |  | ORNITH., HELICOP |                     |  |  | BANQUET       |     | 7:30 a.m.<br>6:00 p.m. |                        |
|                     |  | P-NUT SPD, UNL. SPD.            |  |  | AUTOG., NO-CAL   |                     |  |  |               |     |                        |                        |
| <b>Sat. June 4</b>  |  | NOVICE PP                       |  |  | AMA STK          |                     |  |  |               |     | 7:00 a.m.<br>9:00 p.m. |                        |
|                     |  | RENNYPLANE                      |  |  | AJI OT, ROG STK  |                     |  |  |               |     |                        |                        |

## F1D OPEN INTERNATIONAL

- Entrants must have FAI sporting stamp
- Entry fee is \$35.00
- Access to arena floor by specators is \$5.00/day.
- Competition rules in accordance with latest FAI sporting code.
- Dome door hours: 6:30 a.m. to 8:30 p.m.
- Non AMA members must obtain an AMA affiliate license required for insurance coverage at \$10.00.

**NOTE:** Open events which have **less than 4** entries will be cancelled

All models for scale judging are to be submitted between 1 and 7 p.m. at the very latest on June 1 (along with documentation and name of contestant). Models can not be flown without first being judged.

**NOTE:** For details of the MIAMI PISTACHIO GRAND PRIX, send a large SASE to: Dr. J Martin, 2180 Tigertail Ave., Miami, FL 33133

All Senior and Open Flyers will be required to time flights and assist as called upon (be happy and VOLUNTEER!) **Bring your own stopwatch.**

All 1988/89 AMA Rules apply. All rule change "proposals" DO NOT apply!

Contest Directors:

H. Brodersen, A. Italiano  
 D. Lindley, C. Sotich  
 J. Lorbiecki  
 E. Rodemsky, R. Doig

(Ceiling- 116', Floor- 208' x 420')

Helium available, bring your own balloons.

Note: Helium belongs to all flyers—please lend your balloon to others.

All entrants must be AMA Members or of their countries' governing body. (Contestants provide proof).

Entries must be postmarked by **MAY 10, 1988**

Late fee **\$10.00 payable on site.**

**BANQUET at Garden Plaza Hotel**

Friday, June 3, 1988

7:00 p.m.

\$15.00 per person

Send your entry payable to:

USIC

1655 Revere Drive

Brookfield, WI 53005

(414) 782-6256 (after 7 p.m. Milwaukee time)

|       | Awards to 3rd Place       | Includes One Event | Each Addl. Event |
|-------|---------------------------|--------------------|------------------|
| OP    | NFFS and NIMAS MEMBER     | \$15.00            | \$5.00           |
|       | NON NFFS and NIMAS MEMBER | \$30.00            | \$6.00           |
| JR/SR |                           | \$3.00             | \$2.00           |

## USIC GRAND CHAMPION (AJI award)

If you wish to participate in the Grand Champion Award, you must select a maximum of 7 events for score. Your declaration must be made before you fly any events whatsoever.

EVENTS ELIGIBLE; HLG, FID, AMA STK, ROG STK, ORN, AUTO, EZB, INT, STK, P-NUT, AMA SC, PP, NPP, MAN, HEL

## AJI OLD TIMER (OT) (Sponsored by AJI)

STICK ONLY (Microfilm covered). Design must have been widely published between 1/1/34 and 12/31/42 (bring proof). Construction must be in accordance with plan (balsa sizes may vary). No hi-tech material will be allowed. nor "new" devices such as variable pitch or diameter propeller. Can formed propeller is permitted.

| EVENT        | JR       | SR | OP |
|--------------|----------|----|----|
| AJI OT       |          |    | X  |
| AUTOG.       |          |    | X  |
| BOST.        |          |    | X  |
| EZB          | Combined |    | X  |
| EZB INT'L    |          |    | X  |
| FID OP INT'L |          |    | X  |
| GLI HL       | X        | X  | X  |
| GLI CAT      | X        | X  | X  |
| HELI         |          |    | X  |
| INTER. STK   | Combined |    | X  |
| MANH         |          |    | X  |
| NPP          | X        | X  | X  |
| PP           | X        | X  | X  |
| ORNI         |          |    | X  |
| ROG STK      |          |    | X  |
| SCALE AMA    |          |    | X  |
| P-NUT SCALE  | Combined |    | X  |
| NO-CAL       |          |    | X  |
| SPEED P-NUT  |          |    | X  |
| SPEED UNL.   |          |    | X  |
| HL STK       | Combined |    | X  |

**NOTICE:** Flying schedule may be modified during the contest. The absolute final/official/positively exact schedule will be that which is posted at the official's table. It is your responsibility to check and know the start/stop times of the events. (It may be advantageous to overlap some events.)

**TABLES:** If you are driving please do bring along a table or two. There will be very limited rented tables available. Share tables, please, and do not hoard from the first day to the third day. Chairs will be available. If you need close-in lighting, it is up to you to bring all equipment, including your own very long extension cord.

### BOSTONIAN RULES:

- Maximum projected wingspan(s) 16" and chord(s) 3".
- Maximum propeller diameter 6" be rubber powered
- Maximum overall length w/o prop is 14".
- Minimum weight w/o motor(s) 7 grams (bi-planes-14 g).
- Fuselage contains a "box" 1 1/2 x 2 1/2 x 3" (min.).
- Longerons must support the motor(s) and form "box".
- Fixed landing gear, two or more rotating 3/4" dia. min. wheels-model must ROG.
- Must have a windshield and a window on each side with min. of 1 sq. in. each.
- Charisma factor: Judge rates model on appeal to him, construction neatness, scale like details, uniqueness, etc. A 1.0 to 1.2 rating is used.
- Seven official flights over 20 seconds, total in full seconds of the best two flights multiplied by the charisma factor determines winner basis.

**MANHATTAN:** Win based on best of 5 flights

### PEANUT SPEED:

The Unlimited Rubber Speed rules apply except:

- The models are limited to Peanut Scale models.
- The models' scores will be the time in seconds for the model to fly two laps.
- The lowest time will determine the winner.
- Winner only receives cash award.

### CATAPULT GLIDER:

- Maximum wing span 12".
- Maximum wing chord 3".
- Maximum launching stick length 6".
- 9 official flights.
- Sum of best 2 flights determines winner.

### "INTERNATIONAL EASY-B"

- This event will allow EZB's from any country to fly against each other.
- If the contest director decides that a model should be checked, it will be done using the rules for EZB of the modeling organization, (recognized by the FAI) in the country of origin.
- Flying will be against a target time set for each model by the contest personnel.
  - Highest percentage of target time wins.
  - Best 1 of 5 flights counts.
  - Awards will be given to the first 5 places.
- PLEASE SEND TO THE ADDRESS BELOW, IN ADVANCE....
  - The best time an EZB has done under your rules, at a ceiling height as close to 34.9 meters as possible.
  - A copy of your rules
  - We are requesting the above even if you are not going to enter. It will help us set up the event.

SEND THIS INFORMATION TO.... Doug Barber, 146 Stratton House, Maple Shade, NJ 08052 USA

### NO-CAL PROFILE SCALE

- A recognizable model of a full scale aircraft, with a wingspan not exceeding 16 inches.
- The weight of the model (excluding the rubber motor) shall be no less than 6.2 grams (two pennies).
- No fancy gadgets permitted-plastic prop is permitted. Balsa and Jap tissue shall be the main construction materials. Use of hi-tech materials such as carbon fibre, boron, et al is not at all permitted.
- Model must contain control surface outlines, window outline, and registration markings. Model must have full landing gear, i.e., as the full scale aircraft (no prop-ile gear). **Same rubber must be used for all flying and no other part shall be replaced, dropped or removed.**
- This is a fun event so please honor the intent of the rules. Judges decision will be final, as always.
- Event will be conducted on a mass hand launch basis. Heats will be run with last one down as the winner of each heat. Last heat will be composed only of heat winners. (5 minutes between heats)

### UNLIMITED RUBBER SPEED (BrokenSpar Event)

- Models must be rubber powered and propeller driven.
- Models must start from an unassisted ROG launch from a three-point sitting position.
- Model to be timed for two complete laps around two pylons set 20 feet apart.
- Flights will be disqualified if the model touches the pylon or ground after crossing the starting line.
- 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 crosses the line after completing two laps.
- Shortest time for two full laps determines winner.
- No limit to the number of models or launches.
- Winner only receives cash award.

# 1988 USIC

**DORMITORY:** Air-conditioned. Room rate is \$10.00 per person (double occupancy). If you want a room for yourself, alone, it is \$20.00. No linens are furnished. If you desire linens, they can be provided for \$5.00 per person for the period. This includes a set of towels (no blankets). You must indicate your needs and pay USIC (not ETSU). USIC is being held responsible for the payment, so USIC must be kept informed of all plans and any change of plans. **NOTE:** If you lose the room key or do not turn it back in, there is a \$25.00 charge! (A key ring might be helpful). It is your responsibility to find a room mate. ETSU will have an admissions person at the dormitory. Lavatory/shower facilities are located on each floor. The Dormitory is named LUCILLE CLEMENT HALL (located at west end of Dossett Drive.).

The dormitory provides special areas for married couples, so please indicate as needed.

## CAFETERIA SERVING HOURS:

|               | MAY 28        | 29            | 30            | 31            | JUNE 1        | 2             | 3             |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>BRFST</b>  | 6:30 to 7:30  | 6:30 to 7:30  | 6:30 to 7:30  | 6:30 to 7:30  | 6:30 to 7:00  | 6:30 to 7:30  | 7:00 to 8:00  |
| <b>LUNCH</b>  | 11:30 to 1:00 | 11:30 to 1:00 | 11:30 to 1:00 | 11:30 to 1:00 | 11:30 to 1:00 | 11:30 to 1:00 | 12:00 to 1:30 |
| <b>SUPPER</b> | 5:30 to 7:00  | 5:30 to 7:00  | 5:30 to 7:00  | 5:30 to 7:00  | 5:30 to 7:00  | 5:30 to 7:00  | 5:30 to 7:00  |

\*See meals on Dormitory reservation. Rate is \$12.00/Day for 3 meals

## DORMITORY CHECK-IN HOURS:

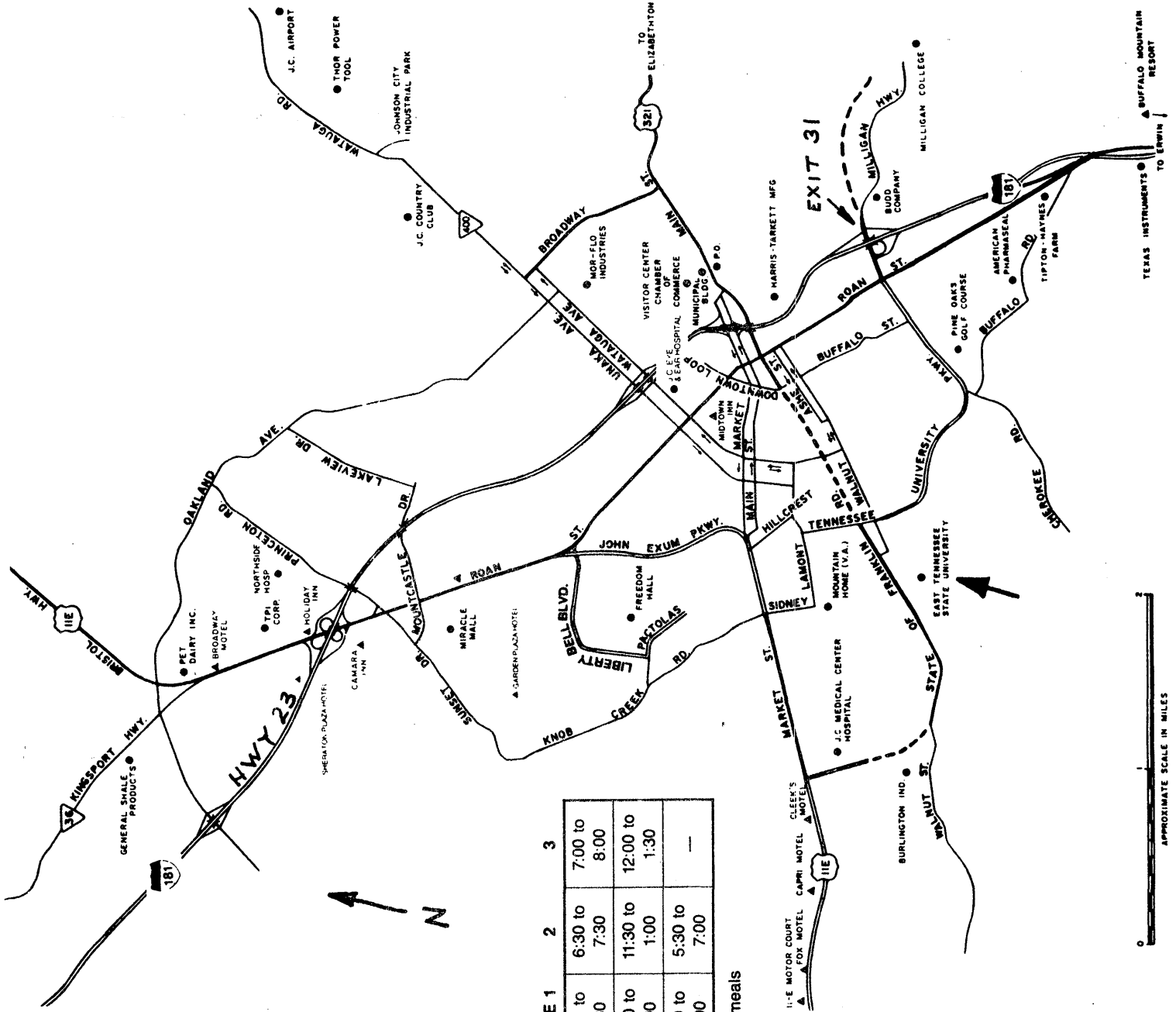
May 26 - 5 to 7 p.m. and 8 to 11 p.m.  
27 - 1 to 7 p.m. and 8 to 11 p.m.  
28 thru June 3 - 5 to 7 p.m. and 8 to 11 p.m.

## CHECKOUT:

Turn key into Dormitory manager or slip under managers door along with slip containing your name and checkout time.

**ENTRANCE DOOR** to the Mini-Dome will be on the lower level and marked. The door is on the west side of the Dome directly across the street from the parking areas.

**NOTICE, NOTICE:** By law **NO** liquor or beer is allowed on the campus. **ABSOLUTELY NOT!!** If you break this rule, you will be fully disqualified from **all** events and forfeit all fees, and also be subject to any State of TN actions! **PLEASE** watch for and adhere to posted speed limits on campus.





# LODGING

**BROADWAY MOTEL, INC.** P.O. Box B-CRS, 37602, 2608 N. Roan Street, 615-282-4011. 110 Units

**CAMARA INN-JOHNSON CITY** Drawer K-CRS, 37602, 2312 Browns Mill Road, 615-282-2211. (C-D-L), 150 Units.

**CAPRI MOTEL** P.O. Box 5114, 37605, 3008 W. Market Street, 615-926-2952. 8 Units.

**CLEEK MOTEL** 2700 W. Market Street, 37601, 615-926-8145. 44 Units.

**ECONOMY INN** 106 W. Millard Street, 37601, 615-926-4131. (C-D-L), 112 Units.

**11-E MOTOR COURT** Route 3, P.O. Box 451, 37605, Highway 11-E, 615-928-2131. 16 Units.

**FAMILY INNS OF AMERICA** At Buffalo Mountain Resort, Route 2, Box 100, Unicoi, TN 37692, 615-928-6531. (C-L), 69 Units.

**FOX MOTEL** Route 3, Highway 11-E South, 37601, 615-928-0267. 31 Units with kitchen.

**\*GARDEN PLAZA HOTEL** 211 Mockingbird Lane, 37601, 615-929-2000. 188 Rooms (C-D).

**HOLIDAY INN-JOHNSON CITY** 2406 N. Roan Street, 37601, 615-282-2161. (C-D-L), 158 Units.

**SHERATON HOTEL** 101 W. Springbrook Drive, 37604, 615-282-4611. 204 Units. (C-D) Video Lounge.

**SUPER 8 MOTEL** 108 Wesley Street, 37601, 615-282-8818. 63 Units.

## NAME

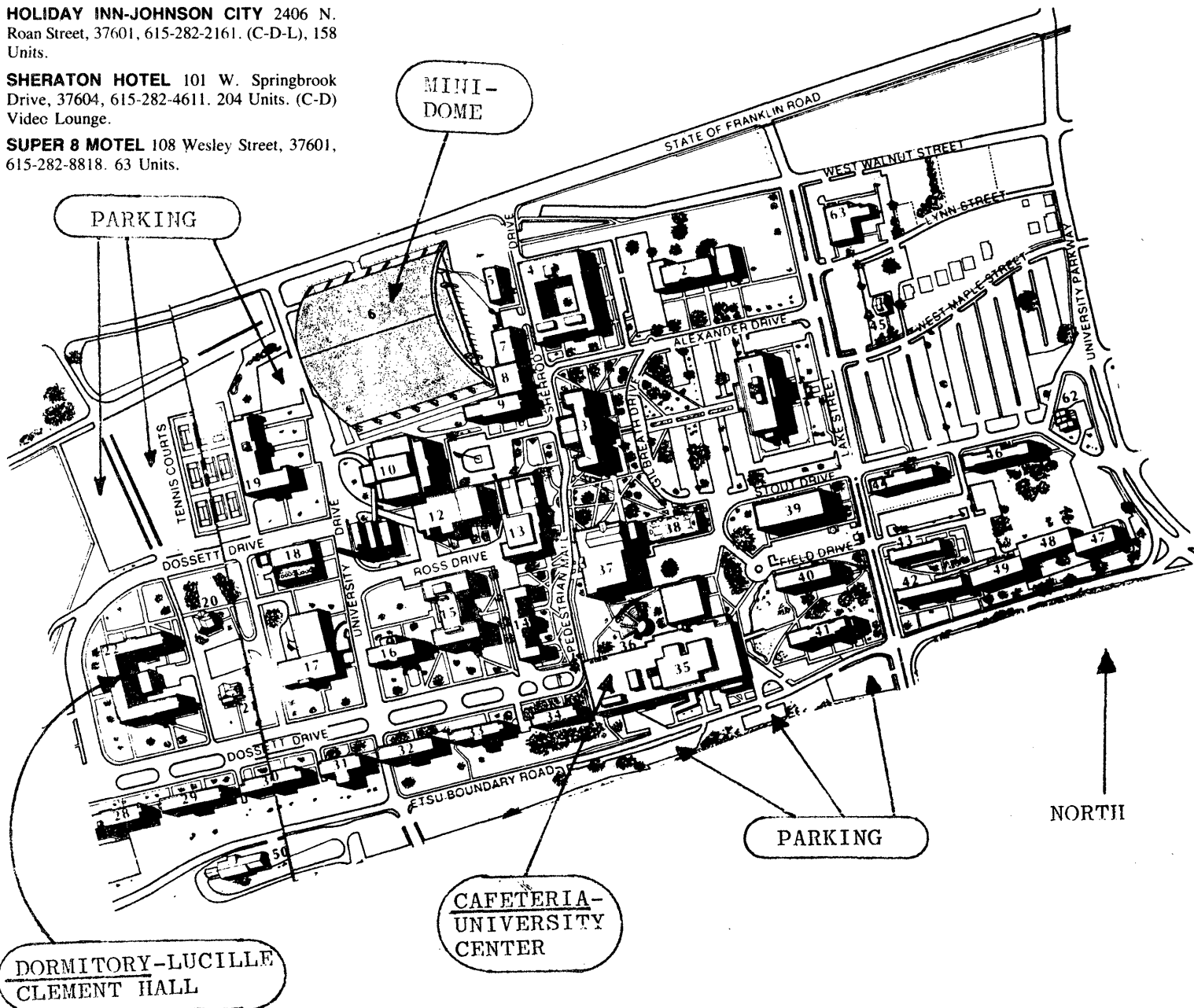
## SINGLE

## DOUBLE

|                         |         |         |
|-------------------------|---------|---------|
| Broadway Motel, Inc.    | \$35.99 | \$40.00 |
| Camara Inn-Johnson City | \$36.00 | \$40.00 |
| Capri Motel             | \$20.00 | \$22.00 |
| Cleek Motel             | \$22.00 | \$26.00 |
| Economy Inn             | \$25.00 | \$27.00 |
| 11-E Motor Court        | \$22.00 | \$25.00 |
| Family Inns of America  | \$22.00 | \$27.00 |
| Fox Motel               | \$30.00 | \$41.00 |
| Garden Plaza            | *       | *       |
| Holiday Inn             | \$48.00 | \$48.00 |
| Sheraton Hotel          | \$62.00 | \$72.00 |
| Super 8 Motel           | \$32.00 | \$38.00 |

When calling for reservations state you are part of World Champs and/or USIC for special rate. All rates are plus tax.

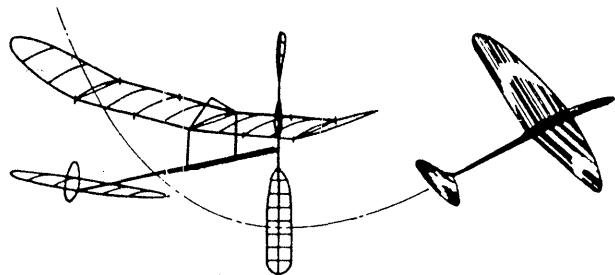
\*Garden Plaza Hotel is the host hotel for World Champs. and USIC. Special rate is \$49.00 plus tax for a very attractive room. State you are part of World Champs and/or USIC.





# INDOOR

## NEWS and VIEWS



#43,44,45,46

Editors: Richard & Melody Doig - 6 Canary Hill Drive, Pontiac, MI 48055 (313) 373-5374

USIC - JUNE 1-4 - JOHNSON CITY, TN - 114 FEET

NATS/F1D FINALS - JULY 21-23 - MOSCOW, ID - 146 FEET

### THIS ISSUE

Where has the time gone? Has it really been an entire year since the last issue? The circumstances of my job, health, several other commitments, and general burnout since the World Champs all combined to put my modelling activities on hold. When people say, "What are you building?", I have to say, "I'm not!"

Melody and I have tried to make some changes to reduce our commitments and limit our modelling activities to where we feel we can make the greatest contribution. Those are running the NATS Indoor events and producing INAV. Let's keep our fingers crossed.

Even though last year's USIC, NATS, and World Champs are all old news by now, we have gotten several requests for complete results. We'll print them over the next couple of issues in reduced size print, just to get them out while still leaving room for more current topics.

This issue covers the upcoming major contests of the season, which include two spectacular high ceiling sites. Let's start building!

### SUBSCRIPTION INFO

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The number in the upper right-hand corner of the mailing label is the final issue of the current subscription.

### EIGHTH UNITED STATES INDOOR CHAMPS

The USIC will be held once again in the Minidome at East Tennessee State University, in Johnson City, TN on June 1-4. The events have been scheduled over four days, in order to provide adequate time for the expected large turnout. This is truly one of the finest sites we have ever flown in. Please see the enclosed entry blanks for details.

### AMA NATIONALS & FAI TEAM SELECTION FINALS

The AMA Nationals and the U.S. Indoor Team Selection Finals will be held jointly on July 21, 22, & 23, 1989, at the Kibbie Dome in Moscow, Idaho. Moscow is located about 90 miles south-south-east of Spokane, Washington and about 325 miles from Seattle. The site is located on the campus of the University of Idaho. Moscow is a city of 17,500 people, but with the University, has many amenities.

SCHEDULE: The attached schedule was worked out with Andy Tagliafico, and approved by the Free Flight and Scale Category Managers and the FAI Team Selection participants. Please note that it is completely different than the printed NATS entry form, and it has a minor change from the proposed schedule that was circulated to the Team Selection participants. (ROG Cabin and HL Stick are both one hour longer.) There is one new official event (Ornithopter), and we are open to possibly adding one or two unofficial events like Bostonian if there is interest. Also note that the printed NATS entry form did not include Ornithopter in the event list, but it will be held.

Scale judging might be a problem for some. The judging will be in Pasco, WA on Wednesday for both Indoor and Outdoor Rubber Scale and Peanut Scale. A proxy may present scale models for judging. The outdoor scale events are on Thursday, in the Tri-Cities, then the indoor events are on Friday, in Moscow, ID. Since (hopefully) a large percentage of indoor scale flyers will also fly outdoor scale, this should not present too much dislocation.

**THE SITE:** The Kibbie Dome is a domed full-sized football field surrounded by a 440 yard track, with seats for 18,000 spectators, all under a parabolic roof. The arches run across the field, so the full height (144 feet) is available down the entire length of the building. There is a speaker cluster in the center that normally hangs down to about 90 feet, but we will see if it can be raised and shrouded. The other speakers visible in the photos are over the edges of the stands and do not come into play.

There are two nets (approximately 20 feet high) that run across the field and are hauled up to the ceiling for storage. They divide the ceiling roughly into thirds, and hang much like curtains. The net at the east end hangs down to about 110 feet and the net at the west end hangs down to about 125 feet. We will also see that the nets are pulled up as tightly as possible. These have not proven to be serious hazards, since there is still a large area available.

The ceiling is suspended acoustical tiles with gaps along the edges. It is possible to get a model up above the tiles, but the only model that ever did popped back out. Banging around on the ceiling could prove to be a hazard.

The astro-turf floor will probably be down. The entire building is posted No-smoking and is a no-alcohol area. At 2574 feet above sea level, the altitude may make some difference in the way the models fly. The building is very well insulated. The plus is that there is very little variation over the course of the day. The down side is that there is not much buoyancy in this site. It has been described as being "honest". Every session has produced flights over 30 minutes. All in all, it looks really good.

**HOW TO GET THERE:** Seattle and Spokane are the major airline airports in the region. Spokane is served by United, Northwest, Delta, and Continental, along with regional airlines. Seattle is served by American, Braniff, Continental, Delta, Eastern (?), Northwest, TWA, and United, along with regional airlines. There is a small commuter airport between Pullman, WA and Moscow. Check with your local travel agent. My recommendation for anyone east of the Rockies is to fly, and rent a car.

Bob Stalick's son attends the University of Moscow, and Bob recommends that the best route between the Tri-Cities and Moscow is to drive through Kahlotus, Washtunca, and Colfax. It's between 120 and 160 miles depending on which map you look at (and how often you get lost!).

With outdoor Free Flight running through Thursday afternoon, there should be enough time to travel to Moscow for the next day's events.

**HOUSING:** The University dorms will not be available in Moscow. Moscow has plenty of restaurants and motels:

|                       |         |                |
|-----------------------|---------|----------------|
| The University Inn    | \$48-75 | 1-800-528-1234 |
| Cavanaugh's Motor Inn | \$36-50 | 1-800-the-inns |
| Super 8 Motel         | \$25-37 | 1-800-843-1991 |
| Hillcrest Motel       | \$25-30 | 208-882-7579   |
| Mark IV Motor Inn     | \$35-60 | 208-882-7557   |

## **F1D TEAM FINALS AT THE NATS**

The last time the F1D Finals were held at the Nationals, was in 1969 at Lakehurst, NJ. Finally, after 20 years, we again have the good fortune of having one of the toughest F1D contests (other than the World Champs) as part of the NATS. But this creates some potential problems.

Once again the F1D Team Selection participants have voted for a best 2 of 9 flights format, rather than the best two of six flights called for in the FAI Sporting Code.

The way we will run F1D is as follows:

The nine round Team Finals will count as the NATS F1D event, with the National's trophies being awarded based on this one contest. Anyone who enters F1D as a NATS event, will be allowed to fly towards the trophies, regardless of whether they are qualified for the Finals or not. Only qualified F1D Finalists will have their scores count toward the team spots.

**All F1D, ROG Cabin, and HL Stick contestants will be required to attend the contestant meeting on Friday at 2 pm**, along with anyone who intends to time these events. During this meeting the contest management & participants will decide whether any special restrictions will be placed on the non-Finalists flying in the meet. We will also review the rules at this meeting. At this time, we intend to enforce a time-one-fly-one format for the Team Finalists. The main goal is to prevent mid-air, and insure a smoothly run meet.

## **CALL FOR NATS WORKERS**

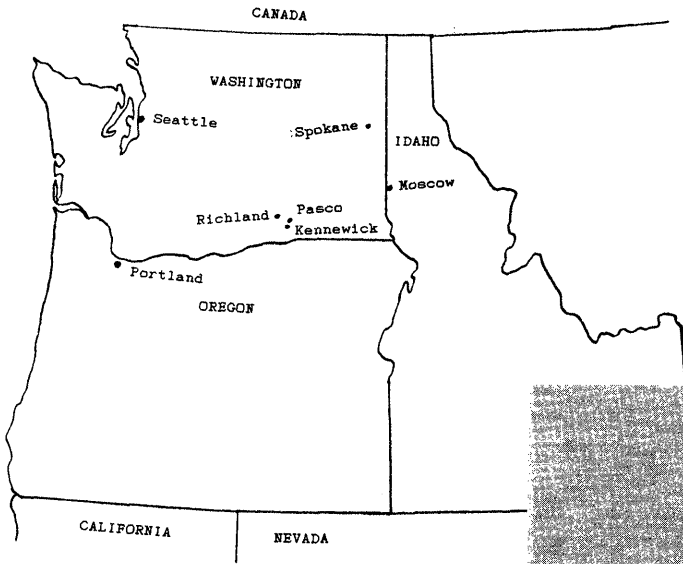
When we first recommended the Kibbie Dome, we estimated 75 contestants. Since approval, based on the phone calls we've received, we think that we might get many more than that. Consequently, **we need workers!**

We would like 3 additional CDs, one for each morning time slot, other than Melody and I to assist in processing models. We had more entries in Virginia than we expected, and processing got backed up. I don't want that to happen again. The F1D Finals portion will have it's own Contest Director & assistants.

We also need timers, paperwork processors to hand out timecards, double check scores, etc. and "go-fors" to run errands, especially to bring us dinner each day. In past years, we've had dinner at 2:00 am because we didn't have a go-for! We are also arranging for an AMA portable booth, and would like people to man it as well. This would involve handing out info and explaining what AMA and Indoor is all about. Let's start promoting ourselves.

Unfortunately, most of the budget has been spent on the rent, so all we can offer is the normal NATS workers credit towards next year's AMA license. Workers can work any portion or all 3 days, you just can not work and fly at the same time. Contact Melody and Rich Doig directly if you're interested in helping out.

**WHERE IS MOSCOW, IDAHO?**

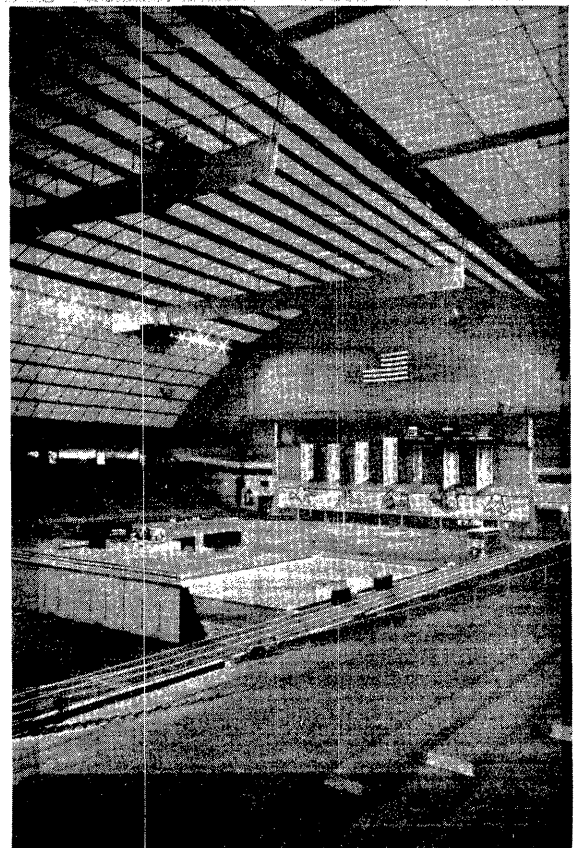
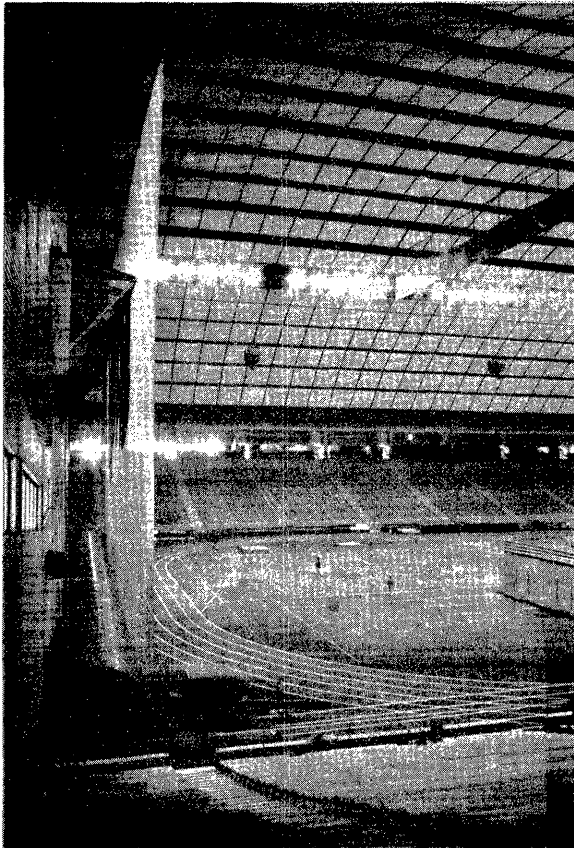
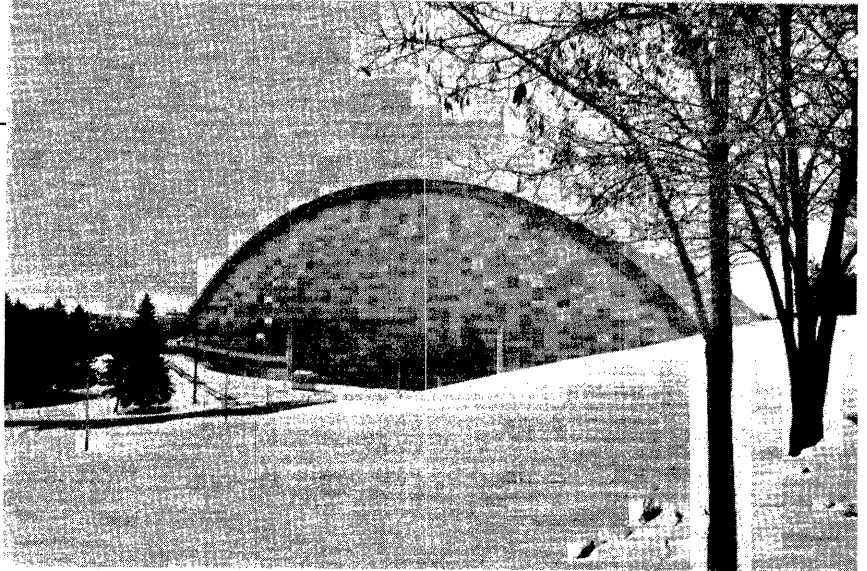


**PHOTO CAPTIONS**

Top: Exterior of Kibbie Dome in February, snow covered landscape. Lower third of building is below ground level. Entrances to building are at the top of the grandstands, see below.

Bottom: Interior of Kibbie Dome. Floor area approximately 330 feet x 500 feet, 146 feet high. Center speaker cluster (at level of lights) will be shrouded and raised. The six other speakers are over stands. Note that curtains will be raised as high as they will go. The floor will be clear and the astro-turf will probably be down.

Photos taken by Tom Stalick.





## AMA NATIONALS: HOW DID THIS HAPPEN?

Last Autumn, we received word that the NATS Planning Committee had selected the Tri-Cities area of Kennewick/Pasco/Richland, Washington for 1989. This was approximately three weeks before an on-site meeting of the committee to preview the recommended sites. We immediately began sending letters and making phone calls recommending that the Kibbie Dome in Moscow, Idaho (about 160 miles away) be used for the indoor events. Andy Tagliafico contacted the Moscow manager and reserved the dates. All of this prior to the planning meeting.

Unfortunately, Sandy Frank (NATS Free Flight Manager) was the only one at the meeting pushing for Moscow, and the rest of the committee out voted him, electing to use a brand new 42 foot high hockey arena in the Tri-Cities. (We are not on the committee.)

Andy Tagliafico visited the hockey arena in early December and reported that it was the worst site he had ever seen, primarily because of the ceiling, which has approximately 40 suspended loudspeakers. In fact, the speakers were all added between the time the planning committee toured the site in November, and when Andy saw it in December. We continued to write letters.

In mid-January, we learned that there was one last chance to get Moscow, since the Executive Council has the final say in the matter, and they had a meeting the following weekend where the NATS package was to be approved. Numerous phone calls were made to get everyone we could to call their District VP about the matter. Our choice was simple. The hockey arena looked so bad, none of us were interested in attending (including me, the CD!). Moscow looked so good, we would do almost anything to get there.

The result of the meeting was that they still wanted indoor in the Tri-Cities, but would approve \$1000 towards renting Moscow the day after the rest of indoor. Andy Tagliafico and I felt that for one day, just for a fun fly, it wasn't worth the bother.

We continued to complain.

Then in mid-February Andy called me with the news. Something had changed, and we could have indoor at Moscow for two days. VICTORY! But, Andy had an even better idea.

Why not combine the FAI Indoor Team Finals with the NATS over three days? Because we were having difficulty scheduling the Team Finals with the loss of Santa Ana, and recent changes to the Airdock in Akron, we had been looking seriously at Moscow for the Team Finals, and Andy had procured two possible weekends; July 21-23 and August 5-7.

Andy proposed that rather than come back to Moscow two weeks after the NATS, that we somehow combine the NATS and the Team Finals. The vote has been circulated, and the F1D Team participants voted to combine the Finals with the NATS. The Team Fund will pay half of the rent for the third day and half of the miscellaneous expenses. The remaining rent for day three is to come from an AMA contingency fund (I don't know the details).

One of my letters to the Executive Council said that this site is what we've been asking for all along. The ball is now in our court, and this is our chance to provide a big turn out, and show the NATS Planning Committee and the Executive Council what a great site does for attendance.

ON TO MOSCOW!

## F1D TEAM SELECTION PROGRAM

For 1988-89, the F1D Team Selection participants have approved the same program as used during 1986-87, with the following revisions:

1. Locals have been dropped from this program.
2. The At-Large Regional at the 1989 NATS has been dropped in favor of holding the Finals in conjunction with the NATS.

There is still time to qualify for the Finals. The requirement is that you score at least 75% of the winning time in a Regional meet.

The following Regionals will be held prior to the Finals:

- |            |   |
|------------|---|
| June 3 & 4 | At-Large Regional<br>F1D event at theUSIC*<br>Mindome, Johnson City, TN<br>Entry blank in this issue                          |
| June 11    | West Regional<br>Cow Palace, San Francisco, CA<br>Contact: Bud Romak<br>85 Sullivan Drive<br>Moraga, CA 94556<br>415-376-4624 |
| July 1-4   | Midwest Regional<br>Loral Airdock, Akron, OH<br>Contact: Bill Hulbert<br>174 Castle Blvd.<br>Akron, OH 44313<br>216-864-8030  |

These dates are tentative, and availability must be confirmed with the site contact prior to the meet.

\*At theUSIC, the \$10.00 Regional fee will be collected by Melody Daig, if you wish yourUSIC times to also count as Regional times. You must enter theUSIC and the F1D event in order to compete in the At-Large Regional.

## FLYING AIRLINES WITH MODELS

Carrying indoor models when flying airlines can be your worst nightmare, but it doesn't have to be. I have flown airlines three times with F1D models, with no significant damage. Here are several approaches to getting to the contest with intact models.

BY CAR: The first is obvious. Find out if another modeler is driving, and have him take your models. Even if you have to drive five hours to deliver them, it might be worth it. But this is a rare situation so let us concentrate on packaging.

AIRLINES: The standard airline rule for carry-on items is length + width + height must equal 45 inches or less. Some airlines break it down to:

|                |     |
|----------------|-----|
| Maximum length | 23" |
| Maximum width  | 13" |
| Maximum height | 9"  |

In fact, this size box will fit in most overhead compartments and will be allowed with no problems. The problem occurs when you need to take something larger.

American Airlines Customer Service people in Detroit have been very cooperative with me over the years, allowing me to go on board several aircraft during cleaning to measure the overhead compartments. Other airlines may not have the identical compartments, even in the same model of airliner, but you have to start somewhere.

The main thing you notice is that the compartments are considerably longer than the 23" maximum length. This is important since a 9" high x 13" wide box can accommodate (2) Intermediate Stick or (1) F1D if the length is increased to about 28" to 30". Most of the F1D flyers arrange to hand carry one model this way, along with their best props, and send the rest through baggage, arranging for special handling.

CARRY ON MODEL BOX: An overhead compartment box must be light weight. I built mine from a material called foam-core, available at art stores. It is a 3/16" thick layer of dense plastic foam, with a layer of clay coated paper on either side, making a 1/4" thick sandwich. The material can be scored, v-notched, and folded into shape. You just glue with white glue or hot glue gun, using 1/4" balsa reinforcing strips, and tape the joints using 2" wide white duct tape. I also use duct tape for the hinge, and duct tape as the latches. I cut the box open at the site, and re-tape it for travel. This produces a package with nothing sticking out, and a maximum of room inside. I also made a 4" x 6" cutout in the lid, and taped a piece of flat transparent canopy stock over the hole to make a window that is only 1/16" thick.

This box carries one Garfield F1D model, with a 10 1/2" chord wing, in a package only 8 1/2" x 12" x 28", and fits nicely into the overhead on American Airlines DC 10's and two versions of 727's. It will fit under the seat as well if necessary, but it's really cramped. (No room for my feet!) It weighs just over 2 pounds, so there is no concern about having it overhead.

Most airlines are now very strict about a maximum of two carry-on items per person (other than purses and cameras). Don Godfrey has made a novel carry-on box for two F1D models, where each model is in its own box, and the two boxes hook together with velcro into one piece, but split apart to fit through the opening into the compartment. The handle is also removable. This arrangement may allow you to get additional models through carry-on since many overhead compartments will hold a larger box than will fit through the door into the compartment.

Since the airlines will not allow boxes to be packed in the containers used for garment bags, you build a foam-core box inside a garment bag. This method works well with models like Easy B or Scale, and works with braced models if you use folding wing posts. With folding wing posts, even the largest microfilm model will fit in a 4 1/2" thick box, and into a six inch thick garment bag. You attach the hanger to the end of the box and put it into the bag and maybe even put your suit in the bag too. Make sure that you build some vertical support posts inside the box near the center, so if someone jams another garment bag into yours, they don't crush the sides of the box into the models.

TOOLBOXES: Finally, carry your tool box with you, and disguise it. My toolbox is a small 8" x 8" x 16" plastic tackle box. I put the toolbox inside a locker bag, stuff my skeins of rubber around it, and hand carry this bag. I put it under the seat. If it looks like a toolbox, it will get searched. If it looks like a locker bag, and nothing suspicious shows on the X-ray, it will zip right thru.

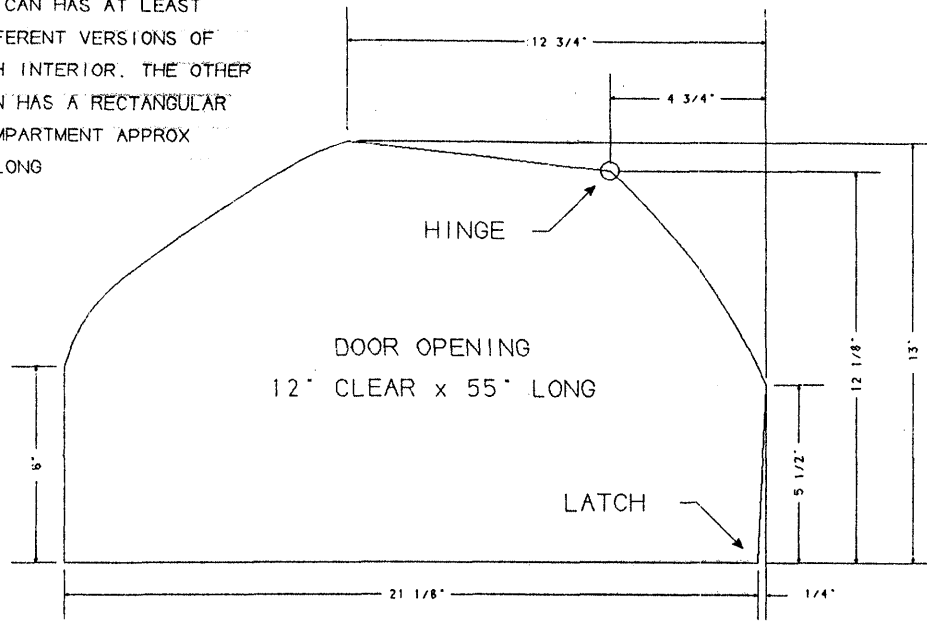
Security people are very concerned about flammable liquids and will not allow them as carry on. If they search the box, glues, solvents, film solution, and CyA glues will have to come out. I wrap these in plastic wrap, aluminum foil, and paper towels inside a sealed box in my luggage. This is the only way to insure that you won't end up having to throw them out at the security checkpoints, and find yourself with no glue or solvents. But this seems to vary widely from airport to airport.

Also, carry a small pair of scissors, and small X-acto knife, so these cannot be argued to be weapons. If you are unsure, take your toolbox down to the airport, stop at security, and tell them that you will be flying in a couple of months, and ask them to search your box for anything that might be a problem. You'll probably find them to be very cooperative since you are taking the trouble to contact them in advance. Any item that makes them nervous, replace or pack in your luggage.

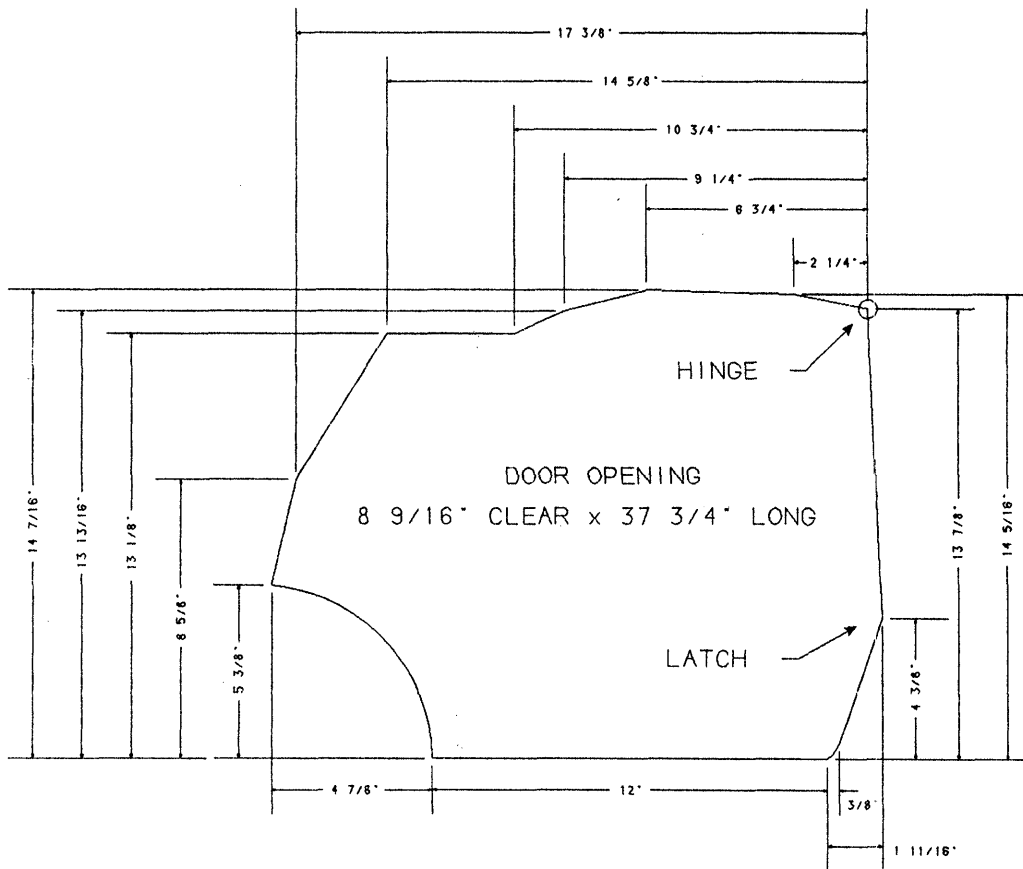
BAGGAGE SERVICE: If you must send a box through baggage, American Airlines offers Escort Service, where the box is hand carried from the gate, and delivered to the gate at the destination. Manny Radoff & Sal Cannizzo have successfully used a similar service from United Airlines. Don Godfrey has had bad luck with Northwest baggage, where they destroyed one of his boxes.



IMPORTANT: AMERICAN HAS AT LEAST  
 2 COMPLETELY DIFFERENT VERSIONS OF  
 THEIR 727 STRETCH INTERIOR. THE OTHER  
 VERSION I'VE SEEN HAS A RECTANGULAR  
 CROSS-SECTION COMPARTMENT APPROX  
 10' x 20' x 56" LONG



CROSS-SECTION OF OVERHEAD COMPARTMENT  
 AMERICAN AIRLINES 727 STRETCH VERSION



CROSS-SECTION OF OVERHEAD COMPARTMENT  
 AMERICAN AIRLINES DC-10 (OVER WINDOWS)

American charged \$25.00 per plane change the last time I used the service, and requires advance arrangements through the American Customer Service office at your departure airport. Tell them you have an escort bag with very fragile contents. Ask them to notify the agent on duty for your flight, as well as the agent on duty at the destination airport. Be sure to get the phone number of the Customer Service office at the destination as well. Always ask for names. Contact them about three weeks before your flight, and then again one or two days before. Arrive early, and have your credit card ready as they write the bill at the gate, not at the normal baggage check counter. If you have to change planes, you must go through this routine at the changeover airport as well, collecting the box at the exit of the first flight, and going through the routine again at the next flight.

When you get the box back at the gate, do not let them tear the escort tag off of the box. If you do, and then go to collect your other luggage, you may not be able to get the escort bag out of the airport. Save the check tags.

The box must be small and light enough to easily carry up and down a flight of stairs. It also helps if it looks like a professional carrying case with something expensive in it. A plexiglass panel is a must, so the box can be inspected without opening it, and on my box you can see the panel if you slide the box out of it's Naugahyde (vinyl coated fabric) cover. The sides are marked with the phrase "DELICATE INSTRUMENTS", with the phrase "DO NOT DROP" on the top, next to the handle. I also have "up" arrows on all four sides. The box rides inside a 3/4" thick layer of spongy styrofoam, inside the fabric cover. It's 21 1/2" x 12" x 28 1/2" with the cover, and weighs 11 1/2 pounds. The box bolts shut with 8 nylon screws, so no-one can open it without a lot of effort. It carries three F1D models using plug on tails and one wing with folding posts.

MODEL MOUNTINGS: No matter what kind of box, the mountings for the model parts are very important as well. Wings will stay put better if they are mounted in wing sockets, rather than just plugged into holes in blocks of wood. With microfilm models, arrange the parts so if the film flexes wildly, the outlines bump into the bracing wires on the adjacent parts, rather than the film covering hitting anything. Allow for the covering to flex as much as 1 1/2". This is how far one wing flexed when I flew airline in 1986, and the microfilm hit a wing socket and punched a hole in the film.

Following these tips should increase the odds that your models will arrive intact at the contest.

#### BOSTONIAN AT THE NATS

Pending approval of the Scale CD, Bostonian will be held at the NATS on Friday morning, from 8:00 am to 1:00 pm, during the same time slot as Peanut Scale and AMA Scale. The event will be sponsored and run by Dave Linstrum and Model Builder Magazine.

There will be two separate classes. The first class will be for 7 gram models, built more or less to Ed Whitten rules. The second class will be for 14 gram models, built more or less to Walt Mooney rules. The "more or less" means that Dave wants you to bring whatever Bostonian you have, single covered, double covered, or whatever, and you will be allowed to fly it in one of the classes, regardless of which rules it was originally built to fit.

Entry fee is \$5.00 per model per class. Contestants will be allowed to enter more than one model in either or both classes, providing they pay the appropriate fees. For more info contact: Dave Linstrum 4057 San Luis Drive, Sarasota, FL 34235 or 813-351-1828.

#### FEDERATION AERONAUTIQUE INTERNATIONALE NEWS

The following news from the CIAM Bureau meeting in December 1988 was taken from the December issue of Free Flight News:

INDOOR BUILDER OF MODEL. After the builder of the model rule was scrapped for free flight models at this year's Plenary meeting, there was some confusion about whether or not it applied to indoor. The FF Subcommittee discussed it and a majority decided to advise that the **builder of model rule be retained for indoor models**. The CIAM Bureau accepted this and confirms the status in the new Sporting Code.

And this news from the 1989 Plenary meeting from the April issue of Free Flight News:

Another proposal from West Germany was that there should be no limit on the length of steering rods for indoor models (currently rods must be between 2m and 8m long). This was passed unanimously, effective from 1993.

The proposal from Romania to hold the 1989 Indoor European Champs has not been accepted because Romania has not paid outstanding fees to the FAI and has it's membership suspended.

Romania also submitted an offer to host the 1990 Indoor World Champs at Slanic on September 25 - 30, 1990. This offer has been accepted, subject to the FAI status of Romania being satisfactorily resolved. This proposal also includes a Junior World Champs and an Open International contest for both seniors and juniors being held at the same time.

From this year's first issue of Indoor News the 1992 Indoor World Champs at Hala Ludowa, Wroclaw, Poland.

**RESULTS FROM 1988 UNITED STATES INDOOR CHAMPIONSHIPS**

| INTERMEDIATE STICK JUNIOR/SENIOR |          |   | EASY B OPEN      |       |    | MANHATTAN CABIN COMBINED |       |    | MANHATTAN CABIN COMBINED |       |    |
|----------------------------------|----------|---|------------------|-------|----|--------------------------|-------|----|--------------------------|-------|----|
| Best Flight                      | Place    |   | Best Flight      | Place |    | Best Flight              | Place |    | Best Flight              | Place |    |
| DON SLUSARCZYK                   | 00:25:21 | 1 | E. HOFFMAN       | 21:21 | 1  | R. HARLAN                | 10:51 | 1  | T. IACOBELLIS            | 06:12 | 15 |
| JIM BUXTON                       | 00:14:37 | 2 | C. MARKOS        | 20:02 | 2  | R. GANSER                | 10:08 | 2  | J. MARETT                | 05:56 | 16 |
| MARK RICHMOND                    | 00:11:00 | 3 | G. NOLIN         | 20:01 | 3  | C. MARKOS                | 09:31 | 3  | H. PHILLIPS              | 05:30 | 17 |
| RICHARD SMITH                    | 00:05:35 | 4 | G. WISNIEWSKI    | 19:25 | 4  | W. VAN GORDER            | 09:24 | 4  | D. GAROFALOW             | ***** | 18 |
| JASON PADDLE                     | 00:02:53 | 5 | L. GARBER        | 19:10 | 5  | J. KRUSH                 | 09:18 | 5  | C. SLUSARCZYK            | ***** | 19 |
|                                  |          |   | A. TAGLIAFICO    | 19:06 | 6  | K. FULMER                | 09:05 | 6  | J. PLASSMAN              | ***** | 20 |
|                                  |          |   | R. HARLAN        | 18:44 | 7  | C. GAGLIANO              | 09:01 | 7  | R. PETERSON              | ***** | 21 |
|                                  |          |   | J. RICHMOND      | 18:19 | 8  | W. HENDERSON             | 08:53 | 8  | R. OPPEGARD              | ***** | 22 |
|                                  |          |   | W. VAN GORDER    | 18:07 | 9  | K. GROVES                | 08:50 | 9  | L. LOUCKA                | ***** | 23 |
|                                  |          |   | J. BARKER        | 17:56 | 10 | J. TRIOLO                | 08:03 | 10 | G. JENSEN                | ***** | 24 |
|                                  |          |   | G. UNDERWOOD     | 17:51 | 11 | J. GRANT                 | 07:15 | 11 | A. D'ALESSANDRO          | ***** | 25 |
|                                  |          |   | R. OBARSKI       | 17:19 | 12 | T. SUTTER                | 07:15 | 12 | M. COLLING               | ***** | 26 |
|                                  |          |   | L. GITLOW        | 16:50 | 13 | D. SLUSARCZYK            | 07:10 | 13 | E. BURKE                 | ***** | 27 |
|                                  |          |   | A. D'ALESSANDRO  | 16:19 | 14 | S. CANNIZZO              | 06:42 | 14 | P. BATES                 | ***** | 28 |
|                                  |          |   | J. MARETT        | 15:55 | 15 |                          |       |    |                          |       |    |
|                                  |          |   | J. NUSZER        | 15:50 | 16 |                          |       |    |                          |       |    |
|                                  |          |   | K. GROVES        | 15:39 | 17 |                          |       |    |                          |       |    |
|                                  |          |   | A. BECKER        | 15:08 | 18 |                          |       |    |                          |       |    |
|                                  |          |   | T. VALLEE        | 15:04 | 19 |                          |       |    |                          |       |    |
|                                  |          |   | C. SLUSARCZYK    | 14:55 | 20 |                          |       |    |                          |       |    |
|                                  |          |   | R. GANSER        | 14:55 | 21 |                          |       |    |                          |       |    |
|                                  |          |   | H. PHILLIPS      | 14:37 | 22 |                          |       |    |                          |       |    |
|                                  |          |   | L. MZIK          | 14:08 | 23 |                          |       |    |                          |       |    |
|                                  |          |   | R. MILLER        | 13:55 | 24 |                          |       |    |                          |       |    |
|                                  |          |   | J. MCGILLIVRAY   | 13:52 | 25 |                          |       |    |                          |       |    |
|                                  |          |   | E. KONEFES       | 13:41 | 26 |                          |       |    |                          |       |    |
|                                  |          |   | M. RADOFF        | 13:35 | 27 |                          |       |    |                          |       |    |
|                                  |          |   | J. VALERY        | 13:29 | 28 |                          |       |    |                          |       |    |
|                                  |          |   | J. GRANT         | 13:27 | 29 |                          |       |    |                          |       |    |
|                                  |          |   | D. BARBER        | 13:13 | 30 |                          |       |    |                          |       |    |
|                                  |          |   | J. SHEPHERD, SR. | 13:10 | 31 |                          |       |    |                          |       |    |
|                                  |          |   | V. GAGLIANO      | 12:41 | 32 |                          |       |    |                          |       |    |
|                                  |          |   | J. CLEM          | 12:15 | 33 |                          |       |    |                          |       |    |
|                                  |          |   | S. FINK          | 12:02 | 34 |                          |       |    |                          |       |    |
|                                  |          |   | L. LEIFER        | 12:02 | 35 |                          |       |    |                          |       |    |
|                                  |          |   | P. STAHLING      | 11:52 | 36 |                          |       |    |                          |       |    |
|                                  |          |   | K. VON BUEREN    | 11:50 | 37 |                          |       |    |                          |       |    |
|                                  |          |   | G. GRAUNKE       | 11:36 | 38 |                          |       |    |                          |       |    |
|                                  |          |   | R. MACENTEE      | 11:19 | 39 |                          |       |    |                          |       |    |
|                                  |          |   | C. SLATER        | 11:19 | 40 |                          |       |    |                          |       |    |
|                                  |          |   | W. WILLIAMS      | 11:17 | 41 |                          |       |    |                          |       |    |
|                                  |          |   | D. ERBACH        | 11:14 | 42 |                          |       |    |                          |       |    |
|                                  |          |   | J. KRUSH         | 11:07 | 43 |                          |       |    |                          |       |    |
|                                  |          |   | S. BENNETT       | 10:21 | 44 |                          |       |    |                          |       |    |
|                                  |          |   | P. KLEINERT      | 10:01 | 45 |                          |       |    |                          |       |    |
|                                  |          |   | C. WRZOS         | 09:19 | 46 |                          |       |    |                          |       |    |
|                                  |          |   | J. PULLEY        | 08:51 | 47 |                          |       |    |                          |       |    |
|                                  |          |   | R. WARMANN       | 08:14 | 48 |                          |       |    |                          |       |    |
|                                  |          |   | R. PIVITT        | 08:06 | 49 |                          |       |    |                          |       |    |
|                                  |          |   | D. KRUPP         | 07:54 | 50 |                          |       |    |                          |       |    |
|                                  |          |   | T. SUTTER        | 07:51 | 51 |                          |       |    |                          |       |    |
|                                  |          |   | J. BLAIR         | 07:36 | 52 |                          |       |    |                          |       |    |
|                                  |          |   | E. KNIGHT        | 03:34 | 53 |                          |       |    |                          |       |    |
|                                  |          |   | J. PLASSMAN      | 01:05 | 54 |                          |       |    |                          |       |    |
|                                  |          |   | E. MOLFINO       | ***** | 55 |                          |       |    |                          |       |    |
|                                  |          |   | V. VILARDO       | ***** | 56 |                          |       |    |                          |       |    |
|                                  |          |   | V. THAXTON       | ***** | 57 |                          |       |    |                          |       |    |
|                                  |          |   | B. TRACHEZ       | ***** | 58 |                          |       |    |                          |       |    |
|                                  |          |   | F. RASH          | ***** | 59 |                          |       |    |                          |       |    |
|                                  |          |   | R. PUTNAM        | ***** | 60 |                          |       |    |                          |       |    |
|                                  |          |   | R. POWELL        | ***** | 61 |                          |       |    |                          |       |    |
|                                  |          |   | R. OPPEGARD      | ***** | 62 |                          |       |    |                          |       |    |
|                                  |          |   | L. LOUCKA        | ***** | 63 |                          |       |    |                          |       |    |
|                                  |          |   | F. KIESER        | ***** | 64 |                          |       |    |                          |       |    |
|                                  |          |   | J. JONES         | ***** | 65 |                          |       |    |                          |       |    |
|                                  |          |   | G. JENSEN        | ***** | 66 |                          |       |    |                          |       |    |
|                                  |          |   | G. HONDA         | ***** | 67 |                          |       |    |                          |       |    |
|                                  |          |   | W. HENDERSON     | ***** | 68 |                          |       |    |                          |       |    |
|                                  |          |   | R. HARTMAN       | ***** | 69 |                          |       |    |                          |       |    |
|                                  |          |   | R. ENNIS         | ***** | 70 |                          |       |    |                          |       |    |
|                                  |          |   | R. DOIG          | ***** | 71 |                          |       |    |                          |       |    |
|                                  |          |   | M. COPPOTELLI    | ***** | 72 |                          |       |    |                          |       |    |
|                                  |          |   | S. CANNIZZO      | ***** | 73 |                          |       |    |                          |       |    |
|                                  |          |   | D. BELIEFF       | ***** | 74 |                          |       |    |                          |       |    |
|                                  |          |   | L. BARR          | ***** | 75 |                          |       |    |                          |       |    |

| BOSTONIAN COMBINED |     |     | TOTAL BEST 2 | CHARISMA FACTOR | TOTAL POINTS | PLACE |
|--------------------|-----|-----|--------------|-----------------|--------------|-------|
| R. MILLER          | 196 | 196 | 392          | 1.09            | 427.28       | 1     |
| R. MACENTEE        | 204 | 201 | 405          | 1.05            | 425.25       | 2     |
| J. MCGILLIVRAY     | 186 | 177 | 363          | 1.16            | 421.08       | 3     |
| J. MARETT          | 193 | 180 | 373          | 1.12            | 417.76       | 4     |
| R. OBARSKI         | 214 | 141 | 355          | 1.13            | 401.15       | 5     |
| D. LINDLEY         | 176 | 175 | 351          | 1.12            | 393.12       | 6     |
| H. PHILLIPS        | 180 | 156 | 336          | 1.13            | 379.68       | 7     |
| J. GRANT           | 159 | 152 | 311          | 1.14            | 354.54       | 8     |
| L. GARBER          | 148 | 142 | 290          | 1.20            | 348.00       | 9     |
| W. HENDERSON       | 150 | 139 | 289          | 1.11            | 320.79       | 10    |
| K. FULMER          | 141 | 125 | 266          | 1.18            | 313.88       | 11    |
| J. MILLER          | 139 | 136 | 275          | 1.12            | 308.00       | 12    |
| R. BATTERSON       | 142 | 138 | 280          | 1.08            | 302.40       | 13    |
| S. BENNETT         | 139 | 131 | 270          | 1.11            | 299.70       | 14    |
| E. KONEFES         | 129 | 120 | 249          | 1.10            | 273.90       | 15    |
| J. BLAIR           | 116 | 114 | 230          | 1.07            | 246.10       | 16    |
| V. GAGLIANO        | 104 | 86  | 190          | 1.06            | 201.40       | 17    |
| R. PIVITT          | 98  | 94  | 192          | 1.04            | 199.68       | 18    |
| P. KLEINERT        | 86  | 82  | 168          | 1.06            | 178.08       | 19    |
| J. BARKER          | 80  | 77  | 157          | 1.07            | 167.99       | 20    |
| J. KONEFES         | 78  | 56  | 134          | 1.07            | 143.38       | 21    |
| K. GROVES          | 120 | 0   | 120          | 1.19            | 142.80       | 22    |
| O. KLEIN           | 62  | 60  | 122          | 1.11            | 135.42       | 23    |
| T. SUTTER          | 90  | 26  | 116          | 1.11            | 128.76       | 24    |
| J. TRIOLO          | 118 | 0   | 118          | 1.05            | 123.90       | 25    |
| C. SLUSARCZYK      | 94  | 0   | 94           | 1.08            | 101.52       | 26    |
| J. PLASSMAN        | 10  | 6   | 16           | 1.09            | 17.44        | 27    |
| J. CLEM            |     |     |              |                 |              | 28    |
| R. GANSER          |     |     |              |                 |              | 29    |
| C. FUSON           |     |     |              |                 |              | 30    |
| J. SCHLAGETTER     |     |     |              |                 |              | 31    |
| P. HARTMAN         |     |     |              |                 |              | 32    |
| S. FINK            |     |     |              |                 |              | 33    |
| R. PUTNAM          |     |     |              |                 |              | 34    |
| C. MARKOS          |     |     |              |                 |              | 35    |
| C. SLATER          |     |     |              |                 |              | 36    |
| J. BUXTON          |     |     |              |                 |              | 37    |
| D. SLUSARCZYK      |     |     |              |                 |              | 38    |
| R. SMITH           |     |     |              |                 |              | 39    |
| R. WARMANN         |     |     |              |                 |              | 40    |
| D. BARBER          |     |     |              |                 |              | 41    |

| CATAPULT GLIDER JUNIOR |      |      | TOTAL BEST 2 PLACE |  |   |
|------------------------|------|------|--------------------|--|---|
| RICHARD SMITH          | 32.0 | 30.6 | 62.6               |  | 1 |
| JASON PADDLE           | 15.4 | 16.4 | 31.8               |  | 2 |
| JEFF PLASSMAN          | 12.8 | 11.8 | 24.6               |  | 3 |
| MARK RICHMOND          | 6.8  | 5.8  | 12.6               |  | 4 |

| CATAPULT GLIDER SENIOR |      |      | TOTAL BEST 2 PLACE |  |   |
|------------------------|------|------|--------------------|--|---|
| JIM BUXTON             | 46.2 | 44.0 | 90.2               |  | 1 |
| JOEL PLASSMAN          |      |      |                    |  | 2 |

| CATAPULT GLIDER OPEN |      |              |       | CATAPULT GLIDER OPEN |                  |              |       | HAND LAUNCH GLIDER OPEN |    |                  |       |      |       |    |
|----------------------|------|--------------|-------|----------------------|------------------|--------------|-------|-------------------------|----|------------------|-------|------|-------|----|
|                      |      | TOTAL BEST 2 | PLACE |                      |                  | TOTAL BEST 2 | PLACE |                         |    | TOTAL BEST 2     | PLACE |      |       |    |
| R. WARMANN           | 75.0 | 73.4         | 148.4 | 1                    | B. ROMAK         | 0.0          | 0.0   | 0.0                     | 27 | B. BOEHM         | 66.2  | 66.1 | 132.3 | 1  |
| C. MARKOS            | 68.4 | 66.6         | 135.0 | 2                    | R. PUTNAM        | 0.0          | 0.0   | 0.0                     | 28 | P. SHALLOR       | 63.0  | 62.0 | 125.0 | 2  |
| K. FULMER            | 64.0 | 61.4         | 125.4 | 3                    | H. PHILLIPS      | 0.0          | 0.0   | 0.0                     | 29 | T. ANDRE         | 57.8  | 53.4 | 111.2 | 3  |
| W. SCHLARB           | 62.8 | 62.2         | 125.0 | 4                    | R. HIGGS         | 0.0          | 0.0   | 0.0                     | 30 | B. SCHLARB       | 56.4  | 53.0 | 109.4 | 4  |
| G. WISNIEWSKI        | 61.8 | 59.0         | 120.8 | 5                    | J. GREENE        | 0.0          | 0.0   | 0.0                     | 31 | P. KLEINERT      | 54.4  | 53.8 | 108.2 | 5  |
| R. PETERSON          | 59.6 | 58.4         | 118.0 | 6                    | C. FUSON         | 0.0          | 0.0   | 0.0                     | 32 | R. HIGGS         | 56.8  | 46.4 | 103.2 | 6  |
| J. KONEFES           | 55.6 | 55.6         | 111.2 | 7                    | O. CURTH         | 0.0          | 0.0   | 0.0                     | 33 | R. PIVITT        | 51.8  | 51.4 | 103.2 | 7  |
| K. VON BUEREN        | 54.0 | 53.2         | 107.2 | 8                    | R. BUTSCH        | 0.0          | 0.0   | 0.0                     | 34 | V. GAGLIANO      | 48.1  | 48.0 | 96.1  | 8  |
| J. RICHMOND          | 48.6 | 47.6         | 96.2  | 9                    | B. BOEHM         | 0.0          | 0.0   | 0.0                     | 35 | J. SHEPHERD, JR. | 47.8  | 46.8 | 94.6  | 9  |
| M. ARAK              | 50.1 | 45.2         | 95.3  | 10                   | D. BELIEFF       | 0.0          | 0.0   | 0.0                     | 36 | J. NUSZER        | 47.0  | 44.6 | 91.6  | 10 |
| J. PLASSMAN          | 47.8 | 46.6         | 94.4  | 11                   | D. BARBER        | 0.0          | 0.0   | 0.0                     | 37 | C. SLUSARCZYK    | 47.0  | 44.4 | 91.4  | 11 |
| R. ENNIS             | 46.6 | 44.8         | 91.4  | 12                   |                  |              |       |                         |    | K. VON BUEREN    | 43.8  | 43.6 | 87.4  | 12 |
| C. SLUSARCZYK        | 44.6 | 41.8         | 86.4  | 13                   |                  |              |       |                         |    | P. HARTMAN       | 44.0  | 43.0 | 87.0  | 13 |
| A. D'ALESSANDRO      | 44.0 | 41.2         | 85.2  | 14                   |                  |              |       |                         |    | R. PETERSON      | 40.2  | 37.8 | 78.0  | 14 |
| J. SHEPHERD, JR.     | 41.6 | 38.2         | 79.8  | 15                   |                  |              |       |                         |    | E. LIEM          | 39.6  | 38.0 | 77.6  | 15 |
| E. BURKE             | 39.0 | 38.0         | 77.0  | 16                   |                  |              |       |                         |    | F. RASH          | 37.2  | 36.6 | 73.8  | 16 |
| S. BENNETT           | 39.8 | 34.4         | 74.2  | 17                   | JEFF PLASSMAN    | 26.2         | 24.2  | 50.8                    | 1  | N. BEITZ         | 33.0  | 32.0 | 65.0  | 17 |
| F. RASH              | 38.0 | 35.0         | 73.0  | 18                   | MARK RICHMOND    | 23.0         | 22.4  | 45.4                    | 2  | C. SLATER        | 33.0  | 31.6 | 64.6  | 18 |
| R. PIVITT            | 36.4 | 36.0         | 72.4  | 19                   |                  |              |       |                         |    | J. PLASSMAN      | 31.8  | 31.4 | 63.2  | 19 |
| J. SHEPHERD, SR.     | 42.0 | 26.6         | 68.6  | 20                   |                  |              |       |                         |    | B. PARDUE        | 46.4  | 6.6  | 53.0  | 20 |
| M. COLLING           | 24.0 | 23.4         | 47.4  | 21                   |                  |              |       |                         |    | R. WARMANN       | 27.0  | 20.0 | 47.0  | 21 |
| P. HARTMAN           | 26.0 | 18.0         | 44.0  | 22                   |                  |              |       |                         |    | V. VILARDO       | 0.0   | 0.0  | 0.0   | 22 |
| W. HENDERSON         | 21.8 | 18.6         | 40.4  | 23                   | CHARLES GAGLIANO | 59.0         | 58.2  | 117.2                   | 1  | R. PUTNAM        | 0.0   | 0.0  | 0.0   | 23 |
| D. GAROFALOW         | 0.0  | 0.0          | 0.0   | 24                   | JIM BUXTON       | 52.6         | 51.8  | 104.4                   | 2  | R. POWELL        | 0.0   | 0.0  | 0.0   | 24 |
| D. YATES             | 0.0  | 0.0          | 0.0   | 25                   | DON SLUSARCZYK   | 45.0         | 44.6  | 89.6                    | 3  | G. HONDA         | 0.0   | 0.0  | 0.0   | 25 |
| J. VOORHEES          | 0.0  | 0.0          | 0.0   | 26                   | JOEL PLASSMAN    |              |       |                         |    |                  |       |      |       |    |

#### USIC UNOFFICIAL EVENT - KIT/PLAN SCALE

Sponsored by the Chicago Aeronauts

\$1.00 per entry. Turn in plan & plane by 8 am Thursday, June 1. Fly Thursday, June 1, 1 to 6 pm. Trophies to third place.

#### Rules:

- Models must be built from published plans or kits.
- Size of plans may be reduced if wood sizes are in proportion.
- All surfaces must be covered both sides, or be solid material.
- Models must take off unassisted for official flights.
- Any flight in which the model is airborne for more than ten seconds is official.
- Two attempts may be used for each of five official flights.
- Timing starts at release of the model and terminates when the model next touches the floor or comes to rest after take off. The ten second hang-up rule will be used.
- No flight score (no. of sec.) will exceed the total of Craft and fidelity points.
- Up to 60 points will be awarded for fidelity of the model to the plans and instructions from which it was built.
- Up to 40 points will be awarded for Craft, based on workmanship and finish.
- Nose block and rear rubber post may be altered without penalty.
- Tissue type and color are optional, but control outlines and registration numbers (even if made up) must be used.
- Propeller may be altered from plan without penalty.
- Final score is sum of best two flights plus Craft and Fidelity.

#### THE TORQUE BURNER FOR EASY B

Where would we be without controversy? Dead, that's where. Innovation in any activity usually breeds controversy, and the use of the "torque burner" in EZB is no exception. Since the recent publication of Dick Obarski's article in Free Flight Digest, the questions about this device have come up again. We are not passing judgement on the legality of this device in EZB at this time.

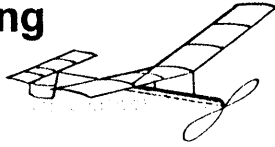
Some have complained that this helps "brace" the motorstick, however I doubt this since the device is mounted off center. I am concerned as to whether it is a 2nd rear hook, and therefore a problem, since rule 8.2.j. says "Tissue or thread wrap at the thrust bearing and rear hook is acceptable." But whether it is hook or hooks seems petty. The plain fact is that rules are a reflection of the past, and not the future. The legality of any device also does not really address whether it is a good idea or easy to build as part of the criteria. As rules makers, we need to take a serious look at these questions.

We have all had a flight where the rubber bunched up, and a knot stuck against the side of the stick. The model cruised around for a while, and then the knot broke away from the stick, and the model started to climb. The idea behind the Torque Burner is to do this on purpose, and produce a flight profile similar to variable props, but without the mechanism.

Some have complained of the lack of availability of the plastic bushing used by Dick Obarski, but that is really not at issue since the brass end of an electric guitar string is just about exactly the same dimensions, although slightly heavier.

The Indoor Contest Board will probably be asked to rule on this, so if you have an opinion about the use of the torque burner in EZB, please let your ICB representative know your feelings.

# Indoor Modeling



## THE TORQUE BURNER by Dick Obarski

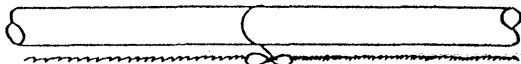
The earliest concept of this device that I can recall, attributed to Louis Garami, was shown in the February 1977 issue of Indoor news and views, at that time published by Bud Tenny:

### A LOOK AT YESTERYEAR

Back in 1936, there used to be a magazine called MODEL AIRCRAFT BUILDER. In one of these, Louis Garami suggested a gadget which was intended to help control model altitude in low ceilings. The device consisted of an S-hook and a wire pin. Two motors, shorter than the usual single motor, are hooked to the S-hook and to the prop and rear hook, so the S-hook is in between the motors. The pin mounts to the motor stick and prevents the S-hook from turning for a while. The sketch below shows (top) both motors wound and the pin engaged in the S-hook. The second sketch shows the rig as the front motor is mostly unwound; the S-hook has moved back almost enough to disengage the pin. The intent is for the model to climb on the power of the front motor, then drop down as the second motor rewinds the front motor enough for a second climb (but not as high). He also suggested that the pin location (and relative motor lengths) can be adjusted to tailor the climb pattern. Now - has anyone tried this idea? If so, how about some comments on the results?



BOTH MOTORS WOUND



FRONT MOTOR UNWOUND

I tried it with disappointing results since the motor always got snagged in the wire pin and the rear portion of the motor did not unwind.

After a great deal of frustration and experimenting, the device finally evolved into the following:

Looking at the front of the model on the left side of the motor stick (with a right hand propeller) about one-third back from the prop shaft to the rear hook an offset wire hangar extends downward.

A small bushing, approximately one-third back from the front of the wound motor is then attached to the hangar yielding the same results Garami proposed, but for the most part, successfully released without getting snagged.

The accompanying sketches will clarify the written explanation.

To date, the best flight obtained\* has been 19 minutes 06 seconds in a 65 ft. ceiling with a few bumps on the lights and no touch ballooning at the December 31, 1988 and January 1, 1989 Miama contest at the Delta Maintenance Hangar in Tampa, Florida. The model climbed to about 55 feet, descended to 35 feet, climbed to 65 feet and

slowly descended to the floor.

This type of device was approved\* for use by the contest directors at the 1987 USIC indoor championships held in Johnson City, Tennessee.

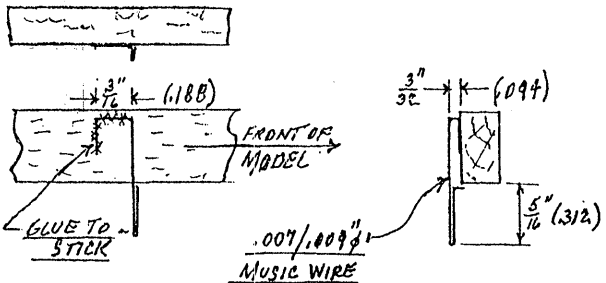
The spool can be made by any competent machinist and the fine wire (.007/.009 inch dia.) can be obtained at any music store that carries banjo or guitar strings. The thread used to tie the rubber motor to the spool can be obtained at any sewing center (.005/.006 inch dia.)

This device is easy to make as compared to a variable pitch or variable diameter propeller, neither of which are allowed under the current EZB rules and should afford a great deal of enjoyment and longer flights for most indoor enthusiasts who do not have an unlimited category IV ceiling to fly in.

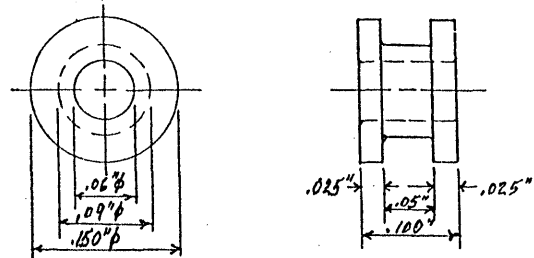
There are some side effects to be overcome such as the tendency for the motor stick to bend when the spool is attached to the offset hangar with a wound motor. The hangar must be offset in

Continued

\*All of the above applies to Easy-B models, but Obarski suggests that the principle could be applied to other model classes. The shock that occurs when the spool releases might be too much for microfilm coverings, ultra-light structures, and thin-walled-tubular motor sticks.

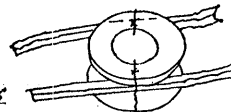


MOTOR STICK & WIRE HANGAR



BUSHING (MATERIAL: NYLON OR PLASTIC)

THREAD TIES THRU BUSHING HOLE & AROUND FLANGE & OVER RUBBER. SECURE KNOT ENDS WITH FLIDBOND.



TORQUE BURNER, continued from preceeding page

order to keep the motor from snagging on the hangar when it releases.

The whole idea, of course, which I am sure is already apparent to most of you indoor types, is to utilize the high energy near the breaking point of the rubber motor where the foot-pounds per turn are the greatest. By way of explanation, at present most good indoor mid- and low-ceiling

flights are made by overwinding and then backing off on the turns to keep the model from going too high and getting snagged in the overhead beams and lights.

I hope that some of you indoor modellers will be interested in further development of this simple concept to a greater degree of reliability. At present, it works successfully about 80% of the time and the flight pattern is a joy to behold when all goes well.

## CONTEST CALENDAR

### CALIFORNIA - BURBANK

Blacksheep Indoor Record Trials & EZB & Pennyplane for Cat I (peak 34') on June 8, 7 - 10 pm at Luther Burbank Jr. High School, Maple between Jeffries & Burbank Blvd.  
Contact: A. Naccarato, 3512 W. Victory Blvd, Burbank, CA 91505 or 818-842-5062.

### CALIFORNIA - SAN DIEGO

San Diego Orbiters indoor flying sessions and monthly meetings: 2nd Friday meeting, 4th Friday flying sessions 7:30 pm Colina Del Sol Community Center, 5319 Orange Av. Contact program chairman: John Hutchison 619-669-0146.

### CALIFORNIA - SAN FRANCISCO

F1D practice & flying session on June 4 and F1D West Regional on June 11. Cow Palace. CAT III. Contact: Bud Romak 85 Sullivan Dr. Moraga, CA 94556 or 415-376-4624.

### CALIFORNIA - TAFT

19th United States Free Flight Championships Indoor events at Taft High School 6 - 11 pm. North gym: 6-7 pm HLG practice, 7-11 pm HLG & Jr. HLG. South gym: 6-7pm practice, 7-9pm Peanut Scale & Boston Cabin West, 9-11 pm Novice Pennyplane. Due to poor attendance in past, this may be the last year for indoor. Only soft soled shoes or stocking feet allowed on gym floor. Entry blank in February issue Free Flight Digest. CD: Bill Booth P.O. Box 4203, Carlsbad, CA 92008 or 619-940-1069.

### CALIFORNIA - TUSTIN

Flying in Hangar #1 for the near future is questionable. The hangar doors were open at the March session and could not be closed. These dates have been reserved: May 6-7, July 1-4, Sept. 2-4. To check on flying status and get on the security list contact Curt Stevens, 25108 Marguerite Pkwy. #B-160, Mission Viejo, CA 92691 or 714-240-8404.

### FLORIDA - TAMPA

Final M.I.A.M.A. Indoor meet is tentatively scheduled for May 13 & 14 in Hanger 5 at MacDill AFB. Contact: Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363.

### IDAHO - MOSCOW

AMA National Model Airplane Championships Indoor events on July 21 - 23 in Kibbie Dome at University of Idaho. See article in this issue. For entry blank send SASE to AMA HQ 1810 Samuel Morse Dr, Reston, VA 22090.

### INDIANA - INDIANAPOLIS

KAT I Contest on May 7 at Ben Davis High School gym. 10 am - 6 pm. CAT I (25'9") EZB, PP, NPP, HLG, Peanut Scale Mooney rules, No-Cal Scale (6.2 g min weight). CD: Jim Richmond 12112 Windsor Dr, Carmel, IN 46203 or 317-848-5312.

### MARYLAND - GREENBELT

Indoor Record Trials for Cat I on June 24, July 1, July 29, Aug 26 in NASA Auditorium. All Indoor events except HLG. Meet is limited to members of Goddard M.A.C. and their guests for security reasons. Must be U.S. citizen. Must contact CD the night before the contest to get on guest list and to confirm that meet has not been cancelled. Meets can be cancelled on short notice by NASA. Contact Tom Vallee 444 Henryton S, Laurel, MD 20707 or 301-498-0790 or Pete Staehling 8632 Rock Oak Rd, Baltimore, MD 21238 or 301-882-2686.

### MICHIGAN - DETROIT

Balsa Bugs Spring Indoor Contest on May 21 in Calihan Hall (CAT III) University of Detroit. 8 am - 6 pm. HLG, Catapult, Peanut, No-Cal, Coconut Scale, Bostonian, Blatter "40", EZB, NPP & Int. Stick. Contact: Rich Doig 6 Canary Hill, Pontiac, MI or 313-373-5374.

### MICHIGAN - STERLING HEIGHTS (north of Detroit)

HLG & 6 inch HLG contest on May 12, 8 pm and last Indoor flying session of year is June 2 at Heritage Jr. HS. Dodge Park at 16 Mile Road. Contact: Rich Doig, 6 Canary Hill Dr, Pontiac, MI 48055 or 313-373-5374.

### PENNSYLVANIA - BYRN ATHYN

Flying demonstration for boy scouts & Record Trials on May 16 at Academy of the New Church fieldhouse. CAT I (25'9") 7 - 11pm Contact: Walt Eggert 215-947-4387.

### PENNSYLVANIA - PHILADELPHIA

Flying on May 13 in Memorial Hall. Contact: Joe Krush 215-688-3927.

### TENNESSEE - JOHNSON CITY

Eighth United States Indoor Championships in Minidome at East Tennessee State University on June 1-4. Info and entry blank in this issue.

### OHIO - AKRON

F1D practice & Record Trials on May 13 & 14. F1D Midwest Regional July 1-4. CAT IV. Loral Airdock at Akron Municipal Airport. Must call Bill Hulbert for Security Clearance at least 2 weeks in advance. Bill Hulbert, 174 Castle Blvd, Akron, OH, 44313 or 216-864-8030.

### ONTARIO - CENTRALIA (HURON PARK)

CANADIAN NATIONALS '89 will have Indoor events at a site yet to be determined. Schedule is July 3: HLG, FAC scale, FAC Peanut, Bostonian, WW II No-Cal Combat & July 4: EZB, NPP, PP, Manhattan, Int. Stick. For info & rules contact: John Marett 5 Vicora Linkway Don Mills, ONT M3C-1A5 or 416-429-0815.

# EIGHTH UNITED STATES INDOOR CHAMPIONSHIPS

June 1, 2, 3, 4, 1989  
 East Tennessee State University  
 "Mini-Dome"  
 Johnson City, TN



**CATEGORY IV**  
**Sanction No. 138**

Sponsored by:  
 National Free Flight Society  
 National Indoor Model Airplane Society

|                     | 7 am     | 8        | 9 | 10  | 11 | 12 | 1 | 2  | 3                  | 4                 | 5 | 6 | 7 | 8 | 9 pm    | DOME HOURS             |
|---------------------|----------|----------|---|---|----|----|---|--|--------------------|-------------------|---|---|---|---|---------|------------------------|
| <b>Thur. June 1</b> | PRACTICE |          |   | HLG   |    |    |   |  | ORNITH/HELICOP     |                   |   |   |   |   | BANQUET | 7:00 a.m.<br>6:30 p.m. |
| <b>Fri. June 2</b>  | PRACTICE |          |   | CATAPULT GLIDER                                 |    |    |   | AMA SC./UNL SPD/P-NUT SPD<br>(UNOFF.-KIT/PLAN SCALE) |                    |                   |   |   |   |   |         | 7:00 a.m.<br>9:30 p.m. |
| <b>Sat. June 3</b>  |          | PRACTICE |   | PEANUT SCALE                                    |    |    |   |  |                    | EZB               |   |   |   |   |         | 7:00 a.m.<br>9:30 p.m. |
| <b>Sun. June 4</b>  |          |          |   | PISTACHIO GRAND PRIX<br>(UNOFF.-FEDERATION ROG) |    |    |   |  | INTERMEDIATE STICK |                   |   |   |   |   |         | 7:00 a.m.<br>9:30 p.m. |
|                     |          |          |   | MAHN/BOST                                       |    |    |   |  |                    | F1D (3 FLIGHTS)   |   |   |   |   |         | 7:00 a.m.<br>9:30 p.m. |
|                     |          |          |   | NO-CAL  |    |    |   |  |                    | ROG CABIN A-ROG   |   |   |   |   |         | 7:00 a.m.<br>9:30 p.m. |
|                     |          |          |   | NOVICE PP                                       |    |    |   |  |                    | F1D (3 FLIGHTS)   |   |   |   |   |         | 7:00 a.m.<br>9:30 p.m. |
|                     |          |          |   | PENNYPLANE                                      |    |    |   |  |                    | AMA STICK/AJ O.T. |   |   |   |   |         |                        |

**NOTE:** Be aware that detailed steering rules will be posted and enforced.

**NOTE:** Open events which have 4 or less entries will be cancelled

**SCALE JUDGING:** Models must be submitted with documentation and contestants name: AMA scale - By 8 a.m. on Thursday June 1.

Peanut Scale - By 1 pm on Thursday June 1.

**NOTE:** For details of the MIAMI PISTACHIO GRAND PRIX, send a large SASE to: Dr. J Martin, 2180 Tigertail Ave., Miami, FL 33133

All Senior and Open Flyers will be required to time flights and assist as called upon (be happy and VOLUNTEER!) **Bring your own stopwatch.**

All 1988/89 AMA Rules apply. All rule change "proposals" DO NOT apply!

**PRACTICE:** During official events, practice is permitted in 2 basketball courts on north end of dome. (at your risk)

(Ceiling- 116', Floor- 208' x 420')

Astro-turf may not be on floor.

Helium available, bring your own balloons.

**Note:** Helium belongs to all flyers—please lend your balloon to others.

All entrants must be AMA Members or of their countries' governing body. (Contestants provide proof).

Entries must be postmarked by **MAY 10, 1989**

Late fee **\$10.00 payable on site.**

**BANQUET at Garden Plaza Hotel**

Thursday, June 1, 1989 7:30 p.m.

\$15.00 per person

Send your entry payable to:

USIC

1655 Revere Drive

Brookfield, WI 53005

(414) 782-6256 (after 7 p.m. Milwaukee time)

|       | Awards to 3rd Place      | Entry   | Each Event |
|-------|--------------------------|---------|------------|
| OP    | NFFS and NIMAS MEMBER    | \$15.00 | \$5.00     |
|       | NON NFFS or NIMAS MEMBER | \$30.00 | \$6.00     |
| JR/SR |                          | \$1.00  | \$.50      |

## USIC GRAND CHAMPION (AJI award)

If you wish to participate in the Grand Champion Award, you must select a maximum of 7 events for score. Your declaration must be made before you fly any events whatsoever.

EVENTS ELIGIBLE; HLG, FID, AMA STK, ROG STK, ORN, EZB, INT. STK, P-NUT, AMA SC, PP, NPP, MAN, HEL, ROG CABIN

## AJI OLD TIMER (OT) (Sponsored by AJI)

**STICK ONLY** (Microfilm covered). Design must have been widely published between 1/1/34 and 12/31/42 (bring proof). Construction must be in accordance with plan (balsa sizes may vary). No hi-tech material will be allowed, nor "new" devices such as variable pitch or diameter propeller. Can formed propeller is permitted.

**NOTICE:** Flying schedule may be modified during the contest. The absolute final/official/positively exact schedule will be that which is posted at the official's table. It is your responsibility to check and know the start/stop times of the events. (It may be advantageous to overlap some events.)

**FID AND AMA H.L. STICK:** This year it is **not permitted** to have one flight apply to two events. Each event must be separately flown.

### BOSTONIAN RULES:

1. Maximum projected wingspan(s) 16" and chord(s) 3".
2. Maximum propeller diameter 6" be rubber powered
3. Maximum overall length w/o prop is 14".
4. Minimum weight w/o motor(s) 7 grams (bi-planes-14 g).
5. Fuselage contains a "box", 1½ x 2½ x 3" (min.).
6. Longerns must support the motor(s) and form "box".
7. Fixed landing gear, two or more rotating ¼" dia. min. wheels-model must ROG.
8. Must have a windshield and a window on each side with min. of 1 sq. in. each.
9. Charisma factor: Judge rates model on appeal to him, construction neatness, scale like details, uniqueness, etc. A 1.0 to 1.2 rating is used.
10. Five official flights over 20 seconds, total in full seconds of the best two flights multiplied by the charisma factor determines winner basis.

**MANHATTAN:** Win based on best of 5 flights

### PEANUT SPEED:

The Unlimited Rubber Speed rules apply except:

1. The models are limited to Peanut Scale models.
2. The models' scores will be the time in seconds for the model to fly two laps.
3. The lowest time will determine the winner.
4. Winner only receives cash award.

| EVENT       | JR       | SR | OP |
|-------------|----------|----|----|
| AJI OT      |          |    | X  |
| ROG CABIN   |          |    | X  |
| BOST.       |          |    | X  |
| EZB         | Combined |    | X  |
| FID         |          |    | X  |
| GLI HL      | X        | X  | X  |
| GLI CAT     | X        | X  | X  |
| HELI        |          |    | X  |
| INTER. STK  | Combined |    | X  |
| MANH        |          |    | X  |
| NPP         | X        | X  | X  |
| PP          | Combined |    | X  |
| ORNI        |          |    | X  |
| ROG STK     |          |    | X  |
| SCALE AMA   |          |    | X  |
| P-NUT SCALE | Combined |    | X  |
| NO-CAL      |          |    | X  |
| SPEED P-NUT |          |    | X  |
| SPEED UNL.  |          |    | X  |
| HL STK      | Combined |    | X  |

### CATAPULT GLIDER:

1. Maximum wing span 12".
2. Maximum wing chord 3".
3. Maximum launching stick length 6".
4. 9 official flights.
5. Sum of best 2 flights determines winner.

### TABLES & CHAIRS

If you are driving please do **bring tables along & chairs**. There will be a limited amount of tables and chairs available for rent at \$2.50 per full day (1 table & 2 chairs). No partial days rent-you may do your sub-leasing (no gouging!) Notice: you are responsible to pick-up table & chairs and return whence it came from.

### LIGHTING:

Bring your own portable light fixture along with plugs and extra long extension cable.

### NO-CAL PROFILE SCALE

1. A recognizable model of a full scale aircraft, with a wingspan not exceeding 16 inches.
2. The weight of the model (excluding the rubber motor) shall be no less than 6.2 grams (two pennies).
3. No fancy gadgets permitted-plastic prop is permitted. Balsa and Jap tissue shall be the main construction materials. Use of hi-tech materials such as carbon fibre, boron, et al is not at all permitted.
4. Model must contain control surface outlines, window outline, and registration markings. Model must have full landing gear, ie., as the full scale aircraft (no profile gear).
5. Win based on best of 5 flights (20 sec. min and 2 att./ft.)

### UNLIMITED RUBBER SPEED (BrokenSpar Event)

1. Models must be rubber powered and propeller driven.
2. Models must start from an unassisted ROG launch from a three-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 determined by the two pylons and ends when it crosses the line after completing two laps.
6. Shortest time for two full laps determines winner.
7. No limit to the number of models or launches.
8. Winner only receives cash award.

### FEDERATION ROG:

(Unofficial) for details contact: Tony Becker, 2108 Harringay St., Sun City Center, FL 33570.



# 1989 USIC

**DORMITORY:** Air-conditioned. Room rate is \$20.00 per room per night. It is your responsibility to arrange for a room mate if you want one. No linens are furnished. If you desire linens, they can be provided for \$5.00 per person for the period. This includes a set of towels (no blankets). You must indicate your needs and pay USIC (not ETSU). USIC is being held responsible for the payment, so USIC must be kept informed of all plans and any change of plans. **NOTE:** If you lose the room key or do not turn it back in, there is a \$25.00 charge! (A key ring might be helpful). It is your responsibility to find a room mate. ETSU will have an admissions person at the dormitory. Lavatory/shower facilities are located on each floor. The Dormitory is named LUCILLE CLEMENT HALL (located at west end of Dossett Drive.).

The dormitory provides special areas for married couples, so please indicate as needed.

## DORMITORY CHECK-IN HOURS:

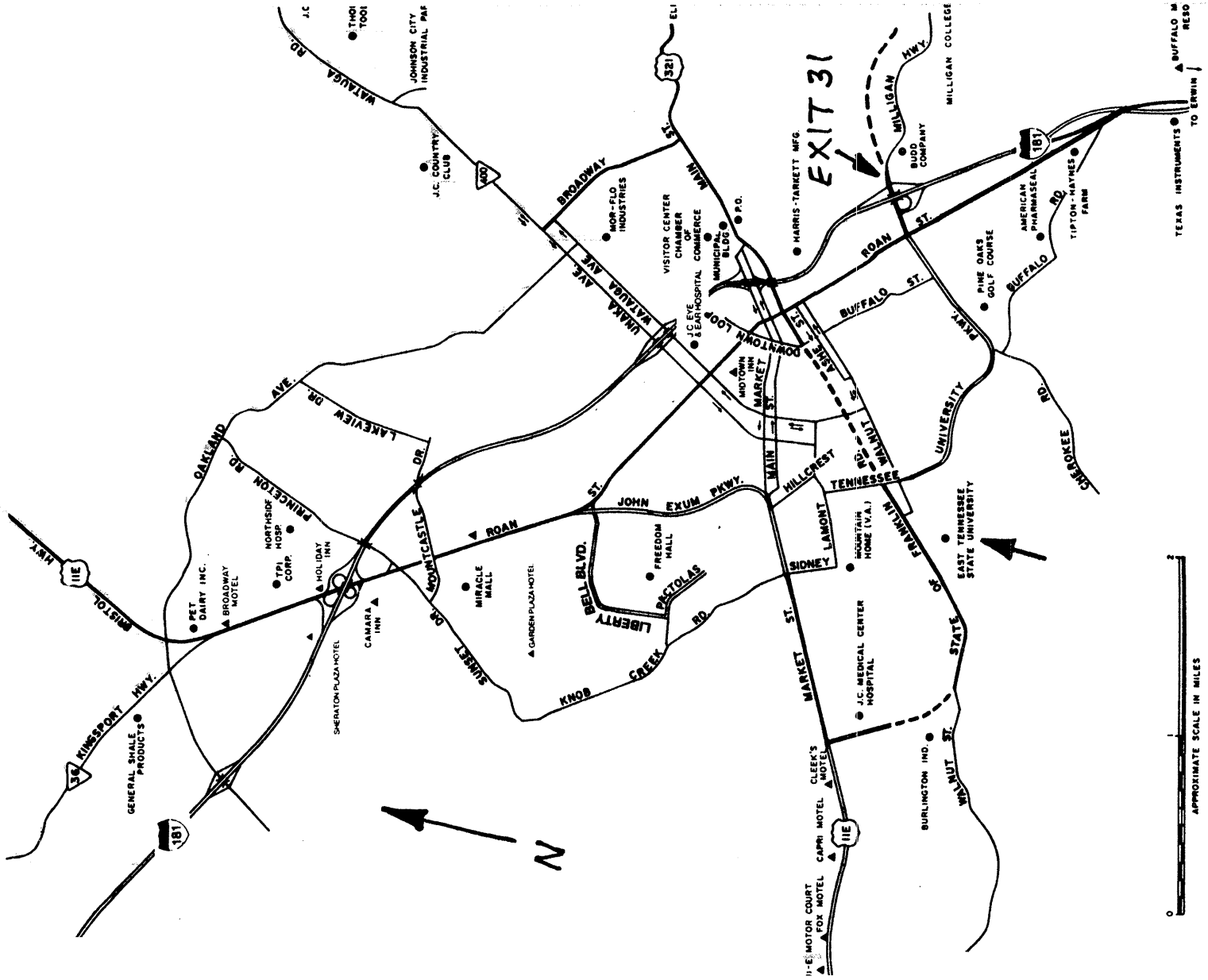
May 31 thru June 3 - 5 to 7 p.m. and 8 to 11 p.m.

## CHECKOUT:

Turn key into Dormitory manager or slip under managers door along with slip containing your name and checkout time.

**ENTRANCE DOOR** to the Mini-Dome will be on the lower level and marked. The door is on the west side of the Dome directly across the street from the parking areas.

**NOTICE, NOTICE:** By law **NO** liquor or beer is allowed on the campus. **ABSOLUTELY NOT!!** If you break this rule, you will be fully disqualified from **all** events and forfeit all fees, and also be subject to any State of TN actions! **PLEASE** watch for and adhere to posted speed limits on campus.



## LODGING

**BROADWAY MOTEL, INC.** P.O. Box B-CRS, 37602, 2608 N. Roan Street, 615-282-4011. 80 Units

**CAPRI MOTEL** P.O. Box 5114-EKS, 37603, 3008 W. Market Street, 615-926-2952. 12 Units.

**CLEEK MOTEL** 2700 W. Market Street, 37601, 615-926-8145. 44 Units.

**COMFORT INN** 1515 US 19-E By-Pass, Elizabethton, TN, 615-342-4466, 1-800-228-5150. 58 Units.

**11-E MOTEL** Rt. #3, Box 451, 37604, Hwy. 11-E & 321 South. 615-928-2131. 25 Units.

**ECONOMY INN** 106 W. Millard Street, 37601, 615-926-4131. 112 Units.

**FAIRFIELD INN** 207 East Mountcastle Dr., 37601. Reservations: 1-800-845-2839, 615-282-3335. 132 Rooms.

**FAMILY INNS OF AMERICA** At Buffalo Mountain Resort, Route 2, 100 Country Club Dr., Unicoi, TN 37692, 615-928-6531. 69 Units.

**FOX MOTEL** 3406 W. Market St., 37604, 615-928-0267. 22 Units with kitchen.

**\*GARDEN PLAZA HOTEL** 211 Mockingbird Lane, 37601, 615-929-2000. 187 Units.

**HOLIDAY INN-JOHNSON CITY** 2406 N. Roan Street, 37601, 615-282-2161. 197 Units.

**JONESBOROUGH BED & BREAKFAST** P.O. Box 722, Jonesborough, TN 37659, 615-753-9223. 8 Rooms.

**ROBERTSON HOUSE** 212 E. Main St., Jonesborough, TN 37659, 615-753-3039. 3 Units.

**RODEWAY INN** Drawer K-CRS, 37602, 2312 Browns Mill Road, 615-282-2211. 150 Units. 1-800-228-2000

**SHERATON HOTEL** 101 W. Springbrook Dr., 37604, 615-282-4611. 205 Units.

**SUPER 8 MOTEL** 108 Wesley Street, 37601, 615-282-8818. 63 Units.

**TENNESSEE HILLS MOTEL** Rt. 1, Box 197, Unicoi, TN 37692, 615-743-5680. 24 Units.

## NAME

## SINGLE

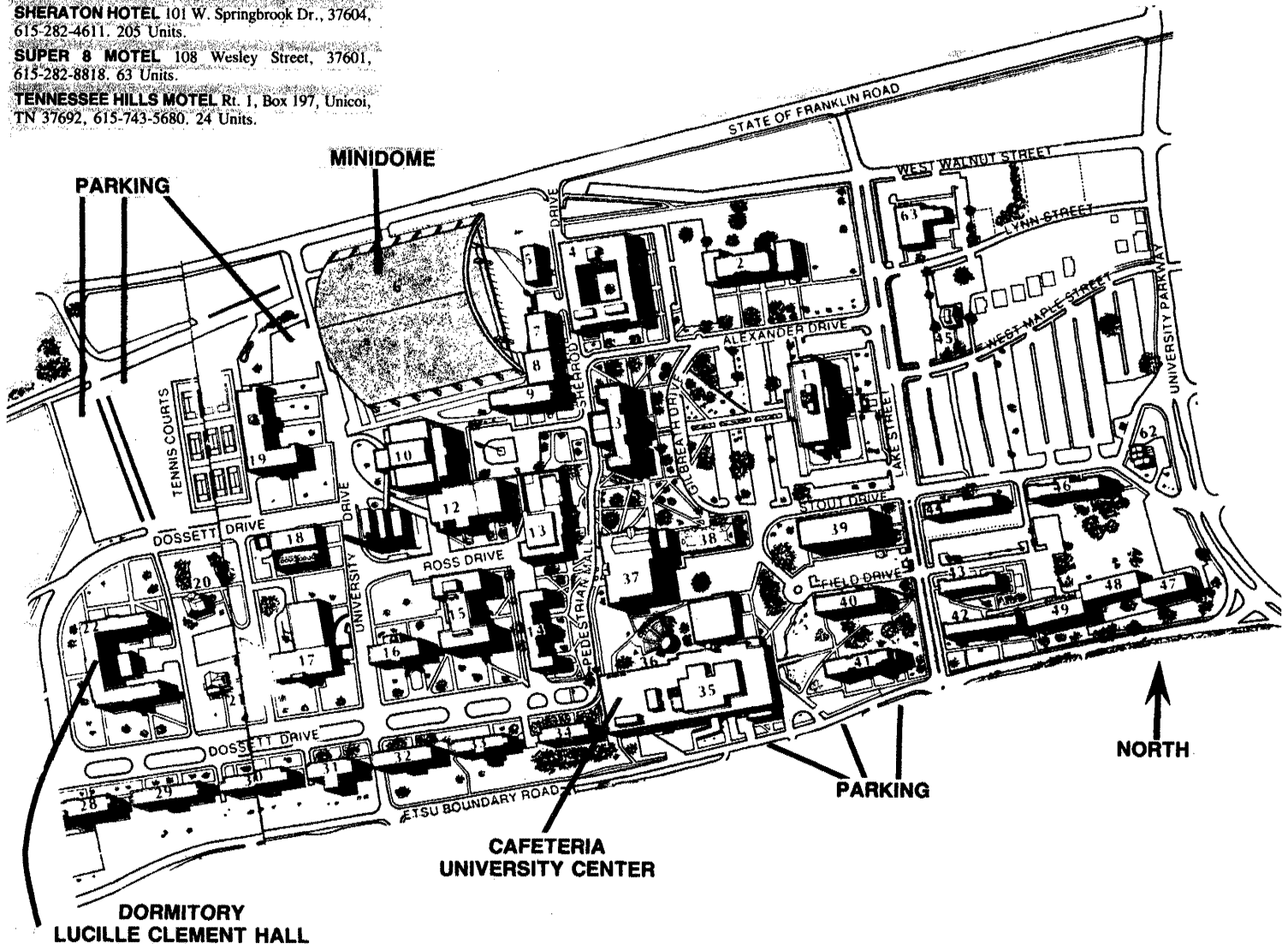
## DOUBLE

|                         |         |         |
|-------------------------|---------|---------|
| Broadway Motel, Inc.    | \$35.99 | \$40.00 |
| Camara Inn-Johnson City | \$36.00 | \$40.00 |
| Capri Motel             | \$20.00 | \$22.00 |
| Cleek Motel             | \$22.00 | \$26.00 |
| Economy Inn             | \$25.00 | \$27.00 |
| 11-E Motor Court        | \$22.00 | \$25.00 |
| Family Inns of America  | \$22.00 | \$27.00 |
| Fox Motel               | \$30.00 | \$41.00 |
| Garden Plaza            | *       | *       |
| Holiday Inn             | \$48.00 | \$48.00 |
| Sheraton Hotel          | \$62.00 | \$72.00 |
| Super 8 Motel           | \$32.00 | \$38.00 |

These are 1988 rates!

When calling for reservations state you are part of USIC for possible special rate. All rates are plus tax.

\*Garden Plaza Hotel is the host hotel for USIC. Special rate is \$52.00 plus tax for a very attractive room. State you are part of USIC. Suggest you make reservation by May 1, 1989.



# EIGHTH UNITED STATES INDOOR CHAMPIONSHIPS

June 1, 2, 3, 4, 1989  
 East Tennessee State University  
 "Mini-Dome"  
 Johnson City, TN



**PLEASE PRINT**

NAME \_\_\_\_\_ AMA NO. \_\_\_\_\_  
                    Last                    First                    Initial

STREET \_\_\_\_\_ JUNIOR \_\_\_\_\_ SENIOR \_\_\_\_\_ OPEN \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_\_

I hereby certify that I understand all of the rules under which I will compete and will diligently follow the official AMA safety code as well as any that may be established on site as well as apply the use of good accepted common sense in all my flying and affairs at the contest site.

Signature \_\_\_\_\_

**PLEASE CIRCLE**

|         |                           | Entry Fee | Each Event |
|---------|---------------------------|-----------|------------|
|         | NFFS or NIMAS Member      | \$15.00   | \$5.00     |
|         | Non NFFS or NIMAS Members | \$30.00   | \$6.00     |
| Jr./Sr. |                           | \$1.00    | \$.50      |

BANQUET - No. of reservations @ \$15.00 \_\_\_\_\_

**DORMITORY RESERVATION:**

Daily room rate is \$20.00/per day (2 Beds). Linens (includes one set of towels but no blanket) is at \$5.00 per person. A change of linens costs \$5.00.

Please indicate reservation in appropriate block: Married couple area \_\_\_\_\_

|          | MAY | JUNE |   |   |   |
|----------|-----|------|---|---|---|
|          | 31  | 1    | 2 | 3 | 4 |
| 1 Room   |     |      |   |   |   |
| 2nd Room |     |      |   |   |   |
| Linens   |     |      |   |   |   |

Check for \$ \_\_\_\_\_ is enclosed

In case of emergency please contact:

NAME \_\_\_\_\_ PHONE \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Send fees payable to: USIC  
 1655 Revere Drive  
 Brookfield, WI 53005

Contest Sponsors:  
 National Free Flight Society  
 National Indoor Model Airplane Society

Must be postmarked by May 10, 1989  
 Late entry fee of \$10.00 payable on site.

NOTE: You can join NFFS or NIMAS and AMA on premises.  
 It is best if you join NOW!

**CIRCLE EVENTS ENTERED**

- A. USIC Grand Champion\*
- 1. AJI OT Event
- 2. ROG Cabin
- 3. Bostonian
- 4. Easy B
- 5. FID
- 6. Glider-Hand Launched
- 7. Glider-Catapult
- 8. Hand Launch Stick
- 9. Helicopter
- 10. Intermediate Stick
- 11. Manhattan
- 12. Novice Pennyplane
- 13. Pennyplane
- 14. Ornithopter
- 15. ROG Stick
- 16. Scale-AMA
- 17. Scale-Peanut
- 18. Scale-No Cal
- 19. Speed-Peanut\*\*
- 20. Speed-Unlimited\*\*  
 (Pistachio Grand Prix  
 Enter on Site)

\*Indicate "GC" in front of 7 selected events

\*\*Sponsored by Hardy Brodersen-\$5/ea mph over 6mph to winners only (\$100 max)



