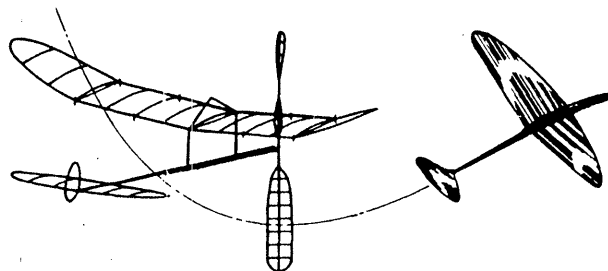


# INDOOR

## NEWS and VIEWS



#47,48

Editors: Richard & Melody Doig - 6 Canary Hill Drive, Pontiac, MI 48055 (313) 373-5374

### 1990 F1D WORLD CHAMPIONSHIPS

### AMA INDOOR NATIONALS

### NINTH UNITED STATES INDOOR CHAMPIONSHIPS

### MINIDOME - JOHNSON CITY, TN - JUNE 4-9

#### THIS ISSUE

Melody and I got really burned out last year with the effort to move the 1989 Indoor NATS and F1D Team Finals to the Kibbie Dome, and we just needed a break. We decided to ignore modeling for a while, do lots of snow skiing this winter, and generally clean up our lives.

As part of that effort, we sat down in late October and made a list of all the activities we were involved in during 1988 and 1989, in an effort to plan 1990. We were startled by the number of activities we had said "yes" to over the past few years. In an effort to get things back under control, we decided to concentrate our efforts on the few items where we felt we could accomplish the most good, and divorce ourselves from the other activities.

So, we have decided to concentrate on INAV, and to retain my positions on the Indoor Contest Board and F1D Team Selection Committee. We will not run any local contests (we ran 3 in 1989), and we will limit our work at national meets to on-site work only, since the jobs that require significant advance preparation are the real time consumers.

It is our opinion that getting out a newsletter on a regular basis is critical to continued growth in indoor, and this is where we are going to try to put our efforts.

Several people have suggested that we either turn over INAV to another person, or possibly combine INAV into the NFFS Free Flight Digest, if we are unable to get INAV back on a regular schedule. Combining into the Digest has it's appeal, since the assembly and mailing of 425 copies is a bit time consuming, but it also has it's drawbacks. In a letter to Tony Italiano back in November, we proposed that we attempt to get out at least three issues before Johnson City, and if we couldn't, we would turn the activity over at that meet.

This was supposed to be a January issue, but the flu epidemic in January got both of us, and combined with four weekend trips during February and early March, has delayed this issue. Can we get things going again? I don't know. We will see.

#### 1990 INDOOR WORLD CHAMPIONSHIPS

The 1990 Indoor World Championships will be held in the ETSU Minidome in Johnson City, Tennessee, on June 3-6, 1990. At the December meeting of the CIAM, Romania's tentative bid to host the champs was denied because their FAI dues were not up to date. This left the FF subcommittee with no bids for the 1990 World Champs. Rumors of England bidding for the meet turned out to be false. Some fast planning and several phone calls by the National Free Flight Society resulted in AMA submitting a bid for the US to host the meet, with NFFS actually running the contest. In late January, I received word that the bid was approved.

Even though the Kibbie Dome in Moscow, Idaho had been promoted as a possible site, NFFS felt that Johnson City would allow more of the contest officials and supporters to attend for less money than Moscow. Also, ETSU rental fees are about 2/3 of the Moscow rent. One of the conditions for allowing NFFS to put this bid together was that it must be a self-supporting meet, and be run without losing money as has happened in previous World Champs.

The World Champs will be held back to back with the 1990 USIC/AMA Nationals. All those attending the World Champs are invited to stay for the remainder of the week.

I personally feel that having two World Champs back to back in North America might be counter productive due to the expense involved for the foreign teams, but I also feel that having no World Champs in 1990 would be far more devastating.

#### CALL FOR WORKERS FOR 1990 WORLD CHAMPS

Workers, especially timers, are needed for the World Champs. Timers must be able to work all 3 days, starting with the orientation meeting the morning of June 4 thru the last round on June 6. If you are interested in working at the 1990 Indoor World Champs, please contact:

Tony Italiano  
1655 Revere Drive  
Brookfield, WI 53005  
(414) 782-6256 after 7 pm Central time

## THE JOHNSON CITY VENTS

Several modelers have had problems with the vents in Johnson City, and there have been several possible theories presented as to how they operate, opening and closing at what seemed like random intervals. After last year's problems with helicopters sticking in them and the rain pouring in through the vents, we decided to pursue exactly how they work.

Tony Italiano talked to the building people, and they insist that there are no controls on the vents anymore, that the control system was disconnected several years ago, and the vents sealed. He politely pointed out that the seal must have deteriorated, since the rain poured through last year.

The University people are of the opinion that the wind has been opening and closing the vents. They have agreed to re-seal the vents and double check that the controls are disconnected, sometime in the Spring before the 1990 World Champs. (I've suggested that they take a pair of wire cutters up on the roof with them, just to be certain that the controls are disconnected.) Hopefully this will solve the problem.

## SEPARATE FREE FLIGHT NATS IN 1990

In 1988, outdoor Free Flight at the AMA Nationals was cancelled due to the loss of the intended field at the last minute. In an effort to fill the void, NFFS put together a replacement meet in late October at a site near Lawrenceville, Illinois. This meet drew about 90 contestants on 5 weeks notice.

NFFS ran a similar meet in June of 1989 at Lawrenceville, combining it with the SAM (Society of Antique Modellers) Champs, and drew something like 350 contestants. I've never been to a meet with 350 contestants before.

With this tremendous success as a background, AMA has decided to have NFFS run this year's Indoor and Outdoor Free Flight Nationals for them, and these events will not be held with the R/C and Control Line NATS. As such, the USIC in June at Johnson City will be the AMA Indoor Nationals for 1990. (See details and entry blank elsewhere in this issue.)

The 1990 AMA Outdoor Nationals will be combined with the United States Outdoor Championships on October 16 - 20 at Mid-American Air Center, Lawrenceville, IL. SAM 57 and FAC events and the Nostalgia Champs will also be part of the USOC. For details send #10 SASE to:

USOC, 4760 N. Battin, Wichita, KS 67220

## USIC FUND ACQUISITION PLAN (FAP)

We all have acquired model supplies which are not useful to our present or projected building plans. Please find them and bring to the USIC. Please do not bring useless items. It is expected that we will conduct 2 on site raffles at 5 tickets/\$1 donation. If sufficient material is donated we could go to the third day. The donated material may be supplies/kits for indoor, outdoor, u-control, R/C or new General Motor autos, etc..

## GRAND PRIX (MIAMA Sponsored)

1) Pistachio - Maximum of 8" span or max or 6" overall length. No limit on type of construction, double covering not required, hand launching and 2 best flights (no limit) determines. Do require a 3 view and photo of full size aircraft.

1A) Model of a Model - Pistachio size model of an outdoor free flight fuselage model.

ALL ABOVE MODELS MUST FLY MINIMUM 30 SECONDS

SUB-EVENT - "RIDOTTO" smallest span model to fly over 30 seconds.

2) Coconut Scale - 36" minimum span for monoplanes/30" min. for multiwing, 1 oz. min. weight for model w/o rubber, ROG, best flight of 3 official determines (30 second min.). Static points based on Mooney rules at 10 feet. Any ties broken based upon best static points. Scale documentation not required.

3) George Rush/Miama Comet "Grumman Avenger" one design event. For full size plan and all rules send large SASE along with \$3.50 to John Martin, 2180 Tigertail Av, Miami, FL 33133.

## SCORES SUPPLEMENT

Due to our inactivity of the last few months, we have several lists of scores from major meets that we've never printed. All of these are from contests where we did the scoring on our portable computer, so they don't need any re-typing. Also, most of them are old news.

There are several subscribers to INAV who are fascinated by complete lists, but with the rise in activity at the USIC and NATS over the past 4 or 5 years, the space required has become disproportionate to their value for the bulk of subscribers (we think), at least it has for several vocal subscribers.

There is some value in knowing the winning times at Johnson City, for example, for the foreign competitors coming over for the World Champs who wish to stay for the rest of the meet. About 1/5 of our subscribers are overseas. So, we are including these scores as a supplement at our own expense this time, and not charging it against your subscription. That's a fair amount of paper and postage for the 425 issues we mail. If you don't like seeing that you placed 56th in EASY B, and hoped no one else would notice, oh well.

## 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  
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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.

## FAI TAN RUBBER

Early in 1989, FAI Model Supply introduced their new tan rubber. Initial reports from the first batch sounded discouraging (3500-3600 ft-lbs/lb), but there apparently was a second batch, and I received 3 pounds from it in late May, intending to use this for outdoor flying.

However, when I tested it, I got energy storage numbers in the range of 3950 ft-lbs/lb, which is as good or better than almost all of the Pirelli I've ever seen. It had a stretch ranging from 8.1 to 8.25, which is stretchier than all of the high energy storage Pirelli I've ever tested (my Pirelli tests showed stretches of 7.3 to 7.4 on average).

For several reasons (most of them dumb), I continued to use Pirelli through the Team Finals, but both Larry Cailliau and Don Slusarczyk used the new tan rubber at the Finals, and both placed ahead of me.

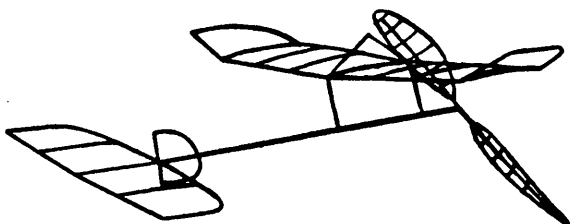
I began to fly the FAI tan rubber at an Autumn contest in Detroit, and the main thing I noticed is that it has a very supple feel, and doesn't feel as though it is about to explode during winding the way my Pirelli does. I did a flight of 17:30 under 40 ft, no touch. It seems as though this rubber may actually have more potential than even Pirelli, since it will take more turns, as indicated by the stretch numbers.

In actual practice, you need to use a slightly shorter and thicker loop of the tan to get the same performance as from the light brown Pirelli, as the same amount of energy storage spread over more turns will yield less power per revolution of the prop. The torque curve is very flat, much like the good Pirelli.

I haven't a clue as to what kind of lube to use on this new rubber, since my existing lubes don't stay put as well as they did on the Pirelli. However, the tan holds these lubes far better than the old gray FAI did.

I have just received a report that a recent batch had very low energy numbers, on the order of 3100 ft-lbs/lb. I hope this isn't representative of future production runs, because we need a reliable source of decent rubber if indoor flying is to continue to grow. Only time will tell.

FAI Model Supply	1/4", 3/16", 1/8",
3/32"	
P.O. Box 3957	1/16", all .042" thick
Torrance, CA 90510	1 lb. box \$13.75
213-830-8939	postpaid in US via UPS
	CA residents add 6% tax
	Catalog \$1.50



## FLYING SITE STATUS

Things have changed drastically in the flying site picture over the last 12 months. The good news is there is now indoor flying once again in Lakehurst. The bad news is that there is no flying in Santa Ana. Akron is questionable as more and more structures are erected inside the Airdock.

The allure of flying in the dirigible hangers is that for close to 40 years, they were the largest buildings around. Plus, there has usually been no charge to use the facilities. But the strict security requirements for access to these sites are in conflict with AMA sanctioning policies for contests, and thus limit the activities to FAI team selection and record trials. Also, the unpredictable weather in the East and Midwest, and the unpredictable military activities in California have made these sites less attractive than they used to be.

I have always felt that colleges & universities offered more potential for flying sites, since most are not in the business of renting the facilities outside of student activities. It is also feasible to obtain a regular site by methods other than paying direct rent. For example, Oakland University near my home has a Presidents Club, where people or groups who donate money to the school get the free use of the facilities for the year (unfortunately they don't have a suitable indoor site).

In addition to the USIC in Johnson City, Andy Tagliafico is putting together a meet for the Kibbie Dome in Moscow, to be held the first weekend of August. These domed football stadiums are wonderful places to fly, with decent lighting, good facilities, and a floor that is easy on the feet and knees (if the astro-turf is in place). And they are generally a lot wider at the roof than the Airdocks. Unfortunately, they do charge rent, in many cases proportional to the perceived ability of the group to pay. In other words, they charge what the market will bear.

Do not mis-understand me, I feel that we MUST continue to use the Airdocks as long as they are available, since there are so very few large building anywhere - but we must always be looking for alternatives for the day they are no longer available.

## VINCE MANKOWSKI SUCCEEDS JOHN WORTH

John Worth has retired as AMA Executive Director. He will continue to work for AMA on several special projects, but he is no longer the head of day to day operations. Vince Mankowski has succeeded John as Executive Director, and has lots of fresh ideas.

Several people, myself included, have had run-ins with Vince over the years, but I've always felt that he did the best job he could with the NATS within the constraints of Executive Council directives. In other words, he did what his bosses told him to do.

I feel that Vince will do an excellent job as Executive Director, as he seems sensitive to the needs of indoor flyers. After all, Vince is not an R/C flyer, but a Control Line flyer, and these days, C/L is an endangered species, even when compared to Indoor.

## 1989 UNITED STATES INDOOR CHAMPS

There were several interesting stories at the 1989 USIC. The first big story was the new FAI tan rubber, discussed elsewhere in this issue. Another big story was the weather.

Unlike past USIC's which have been blessed by great weather, last year was really different. We had some rain every day, with temperatures in the 60's and low 70's, and during Easy B (I think) we had a tremendous thunderstorm complete with tornadoes in the area, large hail, and about three inches of rain in 20 minutes. The rain was literally blowing sideways, and at the height of the storm, water just poured in through the vents in the center of the building, removing any doubt that the vents were open to the outside air and not sealed.

Surprisingly, the air recovered rather quickly after the rain, but times in most events were lower than normal due to the much cooler air after the daily rain showers went through the area.

The other big stories were about models and rules. The first controversy was in helicopter, when a young Canadian flyer had his model stick in the vents. The lower rotor continued to rotate, but the upper rotor was in-between the louvers, and was stationary. Was the model hung up? The timing continued, the model freed itself at about 15 minutes, and dropped to the floor. (This exceeded the previous high time ever done with a helicopter by about 5 minutes.) As a result, the Contest Board members in attendance (8 of us, including the chairman) got together and drafted a ruling which says:

*INTERPRETATION OF THE HELICOPTER RULES TO COVER FLIGHT IN LIMITED CEILING CONDITIONS: If an indoor helicopter ceases translational movement, and if any rotor(s) or vane(s) stop rotating, the flight shall be considered to have stopped. In that case, the watches shall be permitted to run for an additional ten seconds. If translational movement resumes or if the stopped rotor(s) or vane(s) resume rotation within ten seconds, timing shall continue. Otherwise, the watches shall be stopped and ten seconds shall be deducted from the time indicated and the resulting time recorded.*

The second controversy was in Easy B, where the Event Director Don Lindley ruled Dick Obarski's torque burner illegal, on the basis that it was a brace not entirely made of wood. It was not clear to the rest of us at that time why Don had disallowed the model, and I found this out in a phone conversation with Don after the meet. However, the Indoor Contest Board ultimately issued the following interpretation:

*INTERPRETATION TO DISALLOW THE TORQUE BURNER IN EASY B: It is prohibited to use any scheme, device, or mechanism, except for propeller blade flare or deformation, which affects the rate of energy release from the rubber motor.*

The third controversy was in ROG Cabin, when Event Director Charlie Sotich ruled two of the disc type models illegal, (discs glued to the bottom of the rolled tube) on the basis of the motor not passing through the built-up structure(s). Meanwhile several people had been researching this topic, and found that a Contest Board ruling made in the late 30's had been deleted from the rules by a printing error in 1959, and was actually still in effect! We combined the original ruling with an explanatory note and drafted the following:

### *INTERPRETATION OF CABIN MODEL FUSELAGE*

*REQUIREMENTS: A rolled tube used as part of an indoor cabin model fuselage shall not be considered to be a built-up structure. When a rolled tube is used as part of a cabin model fuselage, the balsa shall not be considered to be covering. When a covered superstructure is used to fulfill the requirements of Section 5, Cabin Model, the superstructure must entirely enclose the rubber motor(s) as defined in Section 5.*

This means that disc models are illegal, as well as balsa tubes with a bubble. Only full body models, and rolled tubes with a superstructure that extends beyond the end of the rubber are currently legal.

The rest of the meet just seems blurry, as there were something like 95 contestants, and lots of activity. All in all, it was an outstanding meet.

## AMA PROPERTY PURCHASE

AMA has signed an agreement to purchase approximately 1280 acres of land southeast of Muncie, Indiana as a National flying site. THIS IS NOT THE SITE THAT WAS TALKED ABOUT LAST FALL! It is much, much, better. Total change in elevation for this 1 1/2 square mile parcel is 8 feet, and current off-site chasing looks very good. There is also the potential to purchase adjacent parcels.

Current crop leases on the land run out in the next two to three years, and at that time AMA will dictate what kind of crops are to be grown by the farmers for ease of chasing. Why continue to farm? Simple. If you don't mow a field yearly, in 20 years it becomes a woodland. By leasing the land to farmers, the farmers mow it twice a year, and pay you for the privilege.

What about indoor? Well, it seems that the Muncie city managers are extremely concerned, because they are building a new exhibition and civic center (the drawings have just been started), and they are afraid that AMA will build their own exhibition center and go into competition with them for convention and event business. According to Vince Mankowski, the Muncie people are willing to adapt their exhibition hall design to make it suitable for indoor flying, in return for AMA not going into competition with them.

This would mean either Category II, or III with a smooth ceiling. It looks as though the indoor community will actually get a chance later this year to have some input into an indoor site while its still on paper. Amazing!



## 1989 AMA NATIONALS & FAI TEAM SELECTION FINALS

This was a unique meet since the FAI Indoor Team Selection Finals were incorporated into the Nationals, with the Indoor Team Selection fund paying part of the rent for the three day meet. Sixty seven contestants gathered in Moscow, Idaho to prove how important the site is to drawing contestants, as Moscow is not an easy place to get to. Outstanding flying was the order of the day as record high temperatures raised the floor level temperature to the high 70's.

The meet started off with a bang as Stan Buddenbohm became one of only a small group of people to ever break 75 seconds with an indoor glider on his way to easily winning Open HLC. Stan also won Catapult with times in the high 80's. Scale and Peanut Scale were run simultaneously in the other half of the building, CD'd by the scale group that ran Control Line and R/C Scale. Entries in the Scale events were pitifully small due to the fact that Scale judging was two days earlier in Pasco, Washington (site of the outdoor events) 147 miles west of Moscow. Many indoor flyers who normally fly AMA Scale and Peanut Scale just didn't think it was worth it to make the drive.

At two o'clock the F1D models came out to start the Team Finals portion of the meet, along with ROG Cabin. ROG Cabin was largely ignored although Don Slusarczyk put up an outstanding 25 minute flight to easily win Senior. In F1D, Cezar Banks put up two 40 minute flights in the first two rounds, to insure a team spot for a fourth consecutive time. The remaining team members were not decided until the third day, when Larry Cailliau and Bob Randolph secured the other two places.

On day two, Pennyplane, Novice Pennyplane, and Manhattan were flown together, and it was the usual crowded conditions. As in glider, times were very high, and it was surprising how quickly most people adapted to a ceiling much higher than most had ever flown in before. In the afternoon, F1D continued, with Cailliau moving into the team picture using a variable pitch prop based on rubber tension, in principle like a tensioner stop on a Wakefield, rather than torque actuated mechanisms like most others. AMA Stick was also largely ignored, with Joe Foster winning Open, flying his F1D models in AMA Stick.

Day three started with Intermediate Stick, Ornithopter, Easy B, and a demonstration of a torque burner motor stick during the contestant meeting. I had built a 14" long, very light Easy B motor stick and equipped it with a torque burner.

I demonstrated that with a fully wound motor, if I did not hook up the torque burner, the stick bent out about 2" to the side, and if I didn't hold it, the stick would snap. I then hooked up the torque burner, and the stick only deformed about 1/16" to the side. I let the prop spin, and as the motor unwound, the torque burner released, and the stick stayed pretty straight.

My conclusion is that with a torque burner, you can successfully support more power than you can support without it, because the column lengths are shorter. In fact it is a brace, not entirely made from wood, and I declared it illegal on that basis. Whether or not a given stick will support the rubber without the burner is irrelevant, since there is no way for a CD to know during processing whether a contestant is exploiting the bracing aspect or not.

As with the other events, the times were very high, solidifying our opinion that the Kibbie Dome is a world class site.

We did all of the scoring on our portable computer, and the site manager loaned us their copier, and moved it out to our officials table. We were able to offer copies of the complete results approximately one hour after the end of each event. It was fabulous.

The logistics of running a meet and flying airline to get there posed some unusual problems for us. The contest and processing equipment filled eight boxes (124 pounds) that we shipped out to Andy Tagliafico, and picked up in Portland before heading up to Moscow. We also had to pick up the awards (22 boxes!) in Pasco, and drive them to Moscow. Along with my own models for the Team Finals, we filled a rented Mini-Van.

Andy made all of the site arrangements with some help from Bob Stalick. Andy and Bob also CD'd the F1D event for us. They really made this meet possible and we owe them our thanks for a job well done.

### INDOOR AND OUTDOOR FREE FLIGHT SURVEY

AMA, in an October 1989 survey found 450 Indoor and 1503 Outdoor Free Flyers. These numbers are low. NFFS is doing this survey in an effort to get a good handle on Free Flight activity in the US. This is urgently needed to aid in the direction of future activities. (Non-US members can complete the survey, however the data will be kept separate.)

Please mail your completed survey form(s) no later than ~~March 17, 1990~~ **ASAP**  
Send to: Anthony J. Italiano  
1655 Revere Drive  
Brookfield, WI 53005 USA

### ATTENTION WORLD CHAMPS WORKERS/SPECTATORS

ETSU CAFETERIA: Meals will be served in the cafeteria on a cash basis. The days and hours are unknown as of this time. However, if you want a box lunch in the Dome, please indicate and include funds:

June 4 \_\_\_\_\_ June 5 \_\_\_\_\_ June 6 \_\_\_\_\_ at \$3.25 per box lunch.

These will be the only meals served in the Minidome.

IF YOU WANT BOX LUNCHES DURING THE WORLD CHAMPS CUT ALONG DOTTED LINE AND SEND THIS FORM IN WITH YOUR DORM ROOM RESERVATIONS ON YOUR USIC ENTRY BLANK.

## CONTEST CALENDAR

### CALIFORNIA - BURBANK

Blacksheep Squadron flying on July 12: Embryo & HLG BBK, Sept 12: Indoor Scale Contact: Tony Naccarato, 3512 W. Victory Blvd, 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. March: HLG, April & May: Pussy Cat, June & July: Chili Bean. Contact: John Hutchison (619) 669-0146.

### CALIFORNIA - SAN FRANCISCO

Possible flying in the Cow Palace. CAT III. Contact: Bud Romak 85 Sullivan Dr., Moraga, CA 94556 or (415) 376-4624.

### CALIFORNIA - TUSTIN

There is NO flying in Hangar #1 for the near future. 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.

### CONNECTICUT - GLASTONBURY

Glastonbury Modelers Spring Fling on April 1 at Glastonbury High School. EZB, P'nut, AMA Scale (FAC rules), HLG, Dime Scale, FAC Scale, P'nut (FAC rules), 14g Bostonian, No-cal Scale, WWI & WWII Mass Launch. Contact CD: George Armstead Jr. 89 Harvest Ln, Glastonbury, CT 06033 or (203) 633-7836.

### CONNECTICUT - WILTON

New England Indoor Group flies at Wilton High School. Contact Roger Kleinert (203) 655-1585

### FLORIDA - MIAMI

MIAMI Proxy Pistachio Intergrats on April 21 & 22 at Miami Dade South College 11011 SW 104th St. Call to Confirm: Dr. John Martin, 2180 Tigertail Av, Miami, FL 33133 (305) 858-6363.

### FLORIDA - TAMPA

M.I.A.M.A. Indoor meet #5 end of March and last meet on May 19 & 20 in Hanger 5 at MacDill AFB. Contact: Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 (305) 858-6363.

### IDAHO - MOSCOW

Indoor flying possible the first weekend of August in Kibbie Dome at University of Idaho. Contact: Andy Tagliafico 650-B Taybin Road NW, Salem, OR 97304 or (503) 371-0492.

### KANSAS - TOPEKA

Kansas Indoor State Model Aircraft Champs 2nd annual for CAT II on April 21 at Washburn University - Whiting Fieldhouse. Manhattan, 7g Bostonian, EZB, Limited PP, HLG, P'nut, Peck ROG, 7g No-cal, Federation ROG, 14g Bostonian, Pistachio, Old Timer Baby ROG.

### KANSAS - TOPEKA continued

First TOPMAC Indoor meet (combined funfly, club record trials & mini-contest) on May 13 at the Old Stone Hangar, Philip Billard Municipal Airport. Check hangar availability the day before with the CD. Contact for both meets: Jack Koehlar 3425 Arrowhead Rd, Topeka, KS 66614 or (913) 272-8439.

### MICHIGAN - STERLING HEIGHTS (north of Detroit)

Cloudbuster Winter Indoor program at Heritage Jr. HS. Dodge Park at 16 Mile Road. 7:30 - 9:30 pm March 23, April 6, April 20. Contact: George Lewis 3997 South River Road, #6, St. Clair, MI 48079 (313) 329-6833.

### MINNESOTA - BURNSVILLE

Monson's Indoor Massacre on April 8 at Burnsville Senior High School (CAT II). EZB, PP, HLG, P'nut, Walnut Scale (modified FAC rules), Bostonian (West Coast rules), No-cal, Indoor Towline & Junior Rubber. Contact: D. Monson 131 W. Wentworth W., St Paul, ZMN 55118 or (612) 457-2321.

### NEW YORK - NEW YORK CITY

Columbia Indoor Model Aircraft Society flying sessions and contests in the Low Library Rotunda (CAT III) at Columbia University. May 20. Contact Praful Zope (212) 853-7602 or Ed Whitten (212) 724-0282.

### OHIO - AKRON

Possible F1D Team Selection contests & Record Trials. Loral Airdock at Akron Municipal Airport. Call Bill Hulbert to find out if any 1990 sessions will be scheduled. Bill Hulbert, 174 Castle Blvd, Akron, OH, 44313 or 216-864-8030.

### OHIO - PARMA

Cleveland Free Flight Society contest April 1 at Normandy High School gym, 2500 W. Pleasant Valley Road. CAT III - 53' dome. 8 am to 5 pm. EZB, Jetco ROG, F1D, Hi-wing P'nut, No-cal, WWI Biplane mass launch, WWII No-cal, 7g Bostonian & Int. Stick. Contact: Michael Zand 7055 Seven Hills Blvd., Seven Hills, OH 44131 (216) 524-3480.

### PENNSYLVANIA - BYRN ATHEN

Delaware Federation Indoor flying on Tuesday evenings at Academy of the New Church fieldhouse. CAT I (25'9") Contact: Joe Krush 409 Warner Rd, Wayne PA 19087 (215) 688-3927.

### PENNSYLVANIA - PHILADELPHIA

Delaware Federation Indoor flying in Memorial Hall, Fairmont Park. Contact: Joe Krush (215) 688-3927.

### TENNESSEE - JOHNSON CITY

1990 F1D World Championships on June 4-6 and Ninth United States Indoor Championships on June 7-9 in Minidome at East Tennessee State University. Info & entry blank in this issue.

# 1989 UNITED STATES INDOOR CHAMPIONSHIPS

HAND LAUNCH GLIDER JUNIOR	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
Peter Kearney	29.0	26.2	55.2	1
Jeff Plassman	0.0	0.0	0.0	2
John Gagliano	0.0	0.0	0.0	3
Domenic Gagliano	0.0	0.0	0.0	4

HAND LAUNCH GLIDER SENIOR	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
Jim Buxton	58.4	54.8	113.2	1
Don Slusarczyk	41.0	27.4	68.4	2
Joel Plassman	0.0	0.0	0.0	3

HAND LAUNCH GLIDER OPEN	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
Bernie Boehm	68.4	66.4	134.8	1
Charles Gagliano	64.4	63.6	128.0	2
Bill Schlarb	53.2	52.8	106.0	3
Chuck Slusarczyk	52.0	50.2	102.2	4
Jesse Shepherd, Jr	49.8	45.6	95.4	5
Wayne Trivin	47.8	47.4	95.2	6
Vito Gagliano	48.0	45.4	93.4	7
Phil Hartman	46.8	45.0	91.8	8
Brian Pardue	43.8	36.6	80.4	9
Dan Belieff	37.6	37.0	74.6	10
Bob Warmann	0.0	0.0	0.0	11
Kris Warmann	0.0	0.0	0.0	12
Gerry Plassman	0.0	0.0	0.0	13

CATAPULT GLIDER JUNIOR	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
Peter Kearney	37.4	35.6	73.0	1
Anthony DeSouza	32.2	31.6	63.8	2
Jeff Plassman	0.0	0.0	0.0	3
Dominic Gagliano	0.0	0.0	0.0	4

CATAPULT GLIDER SENIOR	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
Jim Buxton	56.0	55.0	111.0	1
Joel Plassman	0.0	0.0	0.0	2

CATAPULT GLIDER OPEN	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
Chuck Markos	77.8	75.4	153.2	1
Bob Warmann	72.6	67.8	140.4	2
Bill Schlarb	71.0	69.2	140.2	3
Ralph Schlarb	69.8	69.8	139.6	4
Jesse Shepherd, Jr	71.0	65.2	136.2	5
Keith Fulmer	65.0	62.0	127.0	6
Ed Konefes	62.2	62.2	124.4	7
Wayne Trivin	62.8	61.2	124.0	8
Gordy Wisniewski	62.6	60.8	123.4	9
Jim Thornberry	60.2	58.0	118.2	10
Dick Obarski	57.4	57.0	114.4	11
Jim Davidson	57.2	56.4	113.6	12
Vito Garafalo	56.0	53.4	109.4	13
Mike Arak	49.8	47.4	97.2	14
Bill Henderson	48.6	48.2	96.8	15
Phil Hartman	51.0	43.8	94.8	16
Richard Ennis	47.4	45.2	92.6	17
Jack Greene	46.0	46.0	92.0	18
Wally Simmers	44.6	44.6	89.2	19
John Voorhees	44.2	43.4	87.6	20
Richard MacEntee	41.4	41.0	82.4	21
Fred Rash	40.2	38.4	78.6	22
Jesse Shepherd, Sr	42.8	23.6	66.4	23
Ed Burke	27.4	25.6	53.0	24
Otto Curth	29.0	0.0	29.0	25
Burr Stanton	0.0	0.0	0.0	26
Chuck Slusarczyk	0.0	0.0	0.0	27
Gerry Plassman	0.0	0.0	0.0	28
Doc Martin	0.0	0.0	0.0	29
Garry Hunter	0.0	0.0	0.0	30
Lew Gitlow	0.0	0.0	0.0	31
Cliff Culpepper	0.0	0.0	0.0	32
Bernie Boehm	0.0	0.0	0.0	33
Bill Bigge	0.0	0.0	0.0	34

PENNYPLANE JUNIOR/SENIOR	Best Flight	Place
Don Slusarczyk (Sr)	14:00	1
Jim Buxton (Sr)	09:31	2

PENNYPLANE OPEN	Best Flight	Place
Chuck Slusarczyk	15:05	1
Larry Loucka	14:51	2
Gordy Wisniewski	14:47	3
John Marett	14:29	4
Joe Nuszer	14:19	5
Les Garber	13:57	6
Ken Groves	13:49	7
Walt Van Gorder	13:21	8
Doug Barber	12:39	9
Terry Hreno	12:36	10
Ron Ganser	12:29	11
Phil Hartman	12:16	12
Pete Staehling	12:03	13
John Voorhees	11:58	14
Jim Clem	11:56	15
Dan Belieff	11:28	16
Manny Radoff	10:34	17
Charles Gagliano	10:24	18
Bob Oppegard	09:59	19
Joe Krush	09:46	20
Jim Grant	09:24	21
Ed Konefes	09:11	22
Tony Italiano	08:58	23
Tom Vallee	08:49	24
Tony Sutter	08:26	25
Bob Champine	07:33	26
Dick MacEntee	03:58	27
Bob Warmann	00:00	28
Kris Warmann	00:00	29
Wally Simmers	00:00	30
Jess Shepherd	00:00	31
Fred Rash	00:00	32
Russ Putnam	00:00	33
Jim Jones	00:00	34
Jim Davidson	00:00	35
Chet Wrzos	00:00	36
Vito Gagliano	00:00	37

INTERMEDIATE STICK JUNIOR/SENIOR	Best Flight	Place
Don Slusarczyk (Sr)	23:48	1
Peter Kearney (Jr)	17:37	2

INTERMEDIATE STICK OPEN	Best Flight	Place
Dan Belieff	26:30	1
Ron Ganser	24:13	2
Larry Loucka	24:07	3
Dick Obarski	23:48	4
Lew Gitlow	22:41	5
Joe Krush	22:08	6
Jim Grant	21:56	7
Tony Sutter	21:54	8
Ken Groves	21:16	9
Walt Van Gorder	21:02	10
Joe Nuszer	19:48	11
Gordy Wisniewski	19:37	12
Wally Simmers	17:37	13
Dave Aronstein	16:37	14
Doug Barber	16:04	15
Bill Henderson	15:44	16
Ed Burke	15:12	17
John Marett	14:44	18
Tom Vallee	13:03	19
John Voorhees	11:31	20
Don Krupp	10:29	21
Gary Underwood	00:00	22
Chester Wrzos	00:00	23
Pete Staehling	00:00	24
Chuck Slusarczyk	00:00	25
Les Garber	00:00	26
Bill Bigge	00:00	27
Russ Putman	00:00	28
Billie Landrum	00:00	29

NOVICE PENNYPLANE JUNIOR	Best Flight	Place
Peter Kearney	09:46	1
Tony Desouza	06:11	2
Domenic Gagliano	00:00	3
Jeff Plassman	00:00	4
John Gagliano	00:00	5

NOVICE PENNYPLANE SENIOR	Best Flight	Place
Don Slusarczyk	09:48	1
Jim Buxton	08:21	2
Joel Plassman	00:00	3

NOVICE PENNYPLANE OPEN	Best Flight	Place
Bob Champine	12:27	1
Richard Miller	12:16	2
Chuck Markos	11:57	3
Walt Van Gorder	11:57	4
Phil Hartman	11:51	5
Tom Vallee	11:50	6
John Voorhees	11:28	7
John Barker	11:27	8
Ken Groves	11:27	9
John Marett	11:23	10
Joe Nuszer	11:18	11
Les Garber	11:12	12
Doug Barber	11:10	13
Wayne Trivin	11:06	14
Chuck Slusarczyk	11:02	15
Del Ogren	10:54	16
Jim Grant	10:53	17
Jim Clem	10:47	18
Bill Henderson	10:41	19
Bill Clarke	10:41	20
Garry Hunter	10:25	21
Ron Ganser	10:18	22
Jim Davidson	10:03	23
Chet Wrzos	09:52	24
Wally Simmers	09:44	25
Pete Staehling	09:41	26
Vito Gagliano	09:29	27
Plenny Bates	09:21	28
Ken Crump	09:19	29
Gordy Wisniewski	09:19	30
Ed Konefes	09:17	31
J Blair	09:08	32
Charles Gagliano	09:05	33
Jim Thornberry	08:54	34
Tony Sutter	08:52	35
Bud Tenny	08:35	36
Ed Burke	08:21	37
Dick MacEntee	08:11	38
Otto Curth	08:01	39
Stu Weckerly	08:00	40
Bob Oppegard	07:15	41
Bob Butsch	07:09	42
Jim Jones	07:04	43
David Smith	06:51	44
Dick Obarski	06:43	45
Lou Leiffer	05:14	46
Manny Radoff	02:44	47
Larry Loucka	00:00	48
Kris Warmann	00:00	49
John Triolo	00:00	50
Burr Stanton	00:00	51
Fred Rash	00:00	52
Russ Putnam	00:00	53
Gerry Plassman	00:00	54
George Leffler	00:00	55
Billie Landrum	00:00	56
Howard Henderson	00:00	57
Ed Knight	00:00	58
Tony Italiano	00:00	59
Tom Green	00:00	60
Gil Graunke	00:00	61
Lew Gitlow	00:00	62
Dick Ennis	00:00	63
Cliff Culpepper	00:00	64
Bill Bigge	00:00	65
Dave Aronstein	00:00	66
Carl Butsch	00:00	67
Bob Warmann	00:00	68
John Fellin	00:00	69

# 1989 UNITED STATES INDOOR CHAMPIONSHIPS

EASY B JUNIOR/SENIOR		Best Flight	Place
Don Slusarczyk (Sr)		17:09	1
Peter Kearney (Jr)		16:33	2
Jim Buxton (Sr)		13:08	3
Joel Plassman (Sr)		00:00	4

EASY B OPEN		Best Flight	Place
Chuck Markos		22:01	1
John Marett		20:38	2
Walt Van Gorder		20:35	3
Andy Tagliafico		20:23	4
Les Garber		19:56	5
Richard Miller		19:50	6
Gordy Wisniewski		19:36	7
Ken Groves		18:40	8
Jim Grant		18:39	9
Wally Simmers		16:22	10
Lew Gitlow		16:18	11
Joe Krush		15:58	12
Doug Barber		15:52	13
Ron Ganser		15:49	14
Dick Obarski		15:47	15
Don Belieff		15:39	16
Bill Henderson		15:39	17
Joe Nuszer		15:10	18
John Barker		14:57	19
Charles Gagliano		14:56	20
Bob Champine		14:38	21
Gary Underwood		14:26	22
Howard Henderson		14:13	23
Stu Weckerly		14:11	24
Jim Clem		14:02	25
Pete Staehling		12:42	26
Wanyne Trivin		11:32	27
Dick MacEntee		11:17	28
Jess Shepherd, Sr		10:53	29
Tom Vallee		10:30	30
Otto Curth		10:02	31
John Fellin		09:45	32
Garry Hunter		09:41	33
Vito Gagliano		09:21	34
Terry Hreno		09:15	35
Ed Konefes		09:08	36
Tony Sutter		08:51	37
Fred Rash		07:33	38
Manny Radoff		07:32	39
Bob Loeffler		07:31	40
Chuck Slusarczyk		07:16	41
Bob Opegard		07:08	42
Chester Wrzos		05:57	43
Ed Knight		05:47	44
Jess Shepherd, Jr		05:36	45
Carl Butsch		04:12	46
Len Singer		03:58	47
Don Krupp		03:48	48
Bob Warmann		00:00	49
Burr Stanton		00:00	50
Gerry Plassman		00:00	51
Larry Loucka		00:00	52
George Leffler		00:00	53
Phil Hartman		00:00	54
Walt Everson		00:00	55
Richard Ennis		00:00	56
Lou Leifer		00:00	57
Russ Putnam		00:00	58
Gil Graunke		00:00	59
Jim Davidson		00:00	60

GRAND CHAMPION		TOTAL (7 EVENTS)	Place
Ken Groves		622.9	1
Ron Ganser		570.3	2
Larry Loucka		506.6	3
John Marett		479.2	4
Walt Van Gorder		450.4	5
Joe Krush		433.1	6
Don Slusarczyk (Sr)		415.2	7
Jim Grant		396.9	8
Chuck Slusarczyk		365.4	9
Dick MacEntee		328.5	10
Tom Vallee		232.0	11
Jess Shepherd, Jr		196.3	12
Jim Davidson		145.2	13
Fred Rash		34.3	14
Russ Putnam		0.0	15

MANHATTAN CABIN COMBINED AGES		Best Flight	Place
Joe Krush		11:16	1
Larry Loucka		10:39	2
Chuck Markos		10:38	3
Walt Van Gorder		10:29	4
Don Slusarczyk (Sr)		10:28	5
Ken Groves		10:19	6
John Marett		09:58	7
Ron Ganser		09:35	8
John Triolo		09:04	9
Keith Fulmer		09:02	10
Jim Grant		08:59	11
Plenny Bates		08:57	12
Charles Gagliano		08:17	13
Chuck Slusarczyk		07:40	14
Peter Kearney (Jr)		07:36	15
Tony Sutter		04:14	16
Jess Shepherd, Jr		03:57	17
Millard Wells		00:00	18
Burr Stanton		00:00	19
Russ Putnam		00:00	20
Gerry Plassman		00:00	21
Rich MacEntee		00:00	22
Bill Henderson		00:00	23
John Fellin		00:00	24
Jim Davidson		00:00	25

NO-CAL COMBINED AGES		Best Flight	Place
Chuck Slusarczyk		05:03	1
John Marett		04:38	2
Bill Henderson		03:40	3
Terry Hreno		03:21	4
Stu Weckerly		03:10	5
Dave Aronstein		03:09	6
Jim Miller		02:53	7
Ken Groves		02:52	8
Bob Butsch		02:47	9
John Voorhees		02:44	10
John Blair		02:41	11
Peter Kearney (Jr)		02:36	12
John Martin		02:25	13
Don Lindley		02:18	14
Garry Hunter		02:18	15
Curt Haskell		02:01	16
Tom Nied		02:01	17
Dave Livesay		01:48	18
Bob Champine		01:17	19
Carl Butsch		01:16	20
Walt Everson		01:08	21
Del Ogren		00:38	22
Fred Rash		00:35	23
Bob Warmann		00:00	24
Wayne Trivin		00:00	25
Burr Stanton		00:00	26
Don Slusarczyk (Sr)		00:00	27
Joel Plassman (Sr)		00:00	28
Jeff Plassman (Jr)		00:00	29
Gerry Plassman		00:00	30
Dick Miller		00:00	31
Rich MacEntee		00:00	32
Larry Loucka		00:00	33
Bob Loeffler		00:00	34
Ed Konefes		00:00	35
Dick Ennis		00:00	36
Jim Buxton		00:00	37
Mike Arak		00:00	38
Bill Bigge		00:00	39

ORNITHOPTER Combined Ages		Best Flight	Place
Frank Kieser		11:12	1
Don Slusarczyk		09:55	2
Roy White		09:24	3
Joe Krush		06:32	4
Larry Mzik		05:17	5
Doug Barber		00:04	6

PEANUT SPEED		BEST MPH	PLACE
Chuck Markos		11.21	1
George Nunez		10.08	2
John Blair		7.99	3
Bill Henderson		7.18	4
Jim Davidson		0.00	5
Doc Martin		0.00	6
Vito Gagliano		0.00	7
Jeff Plassman		0.00	8
Millard Wells		0.00	9

HAND LAUNCH STICK JUNIOR/SENIOR		Best Flight	Place
Don Slusarczyk (Sr)		35:21	1

HAND LAUNCH STICK OPEN		Best Flight	Place
Rich Doig		35:21	1
Larry Loucka		32:48	2
Dan Belieff		29:58	3
Larry Mzik		27:16	4
Ed Burke		15:24	5
Tom Vallee		13:16	6
John Marett		13:11	7
Jess Shepherd, Jr		10:11	8
Chet Wrzos		00:00	9
Walt Van Gorder		00:00	10
Joe Nuszer		00:00	11
Billie Landrum		00:00	12
Don Krupp		00:00	13
Jim Grant		00:00	14
Don Godfrey		00:00	15
Jim Davidson		00:00	16

AJI OLD TIMER MICROFILM COMBINED AGES		Best Flight	Place
Don Slusarczyk (Sr)		26:51	1
Larry Loucka		22:06	2
Chuck Markos		22:02	3
Joe Krush		20:36	4
Wally Simmers		20:18	5
Ron Ganser		19:32	6
Joe Nuszer		18:20	7
Gil Graunke		12:28	8
Bill Bigge		00:00	9
Dan Belieff		00:00	10

R.O.G. CABIN COMBINED AGES		Best Flight	Place
Ron Ganser		24:38	1
Dan Belieff		24:08	2
Larry Loucka		17:31	3
Tom Vallee		13:50	4
Joe Krush		11:05	5
Tony Sutter		10:59	6
Don Slusarczyk (Sr)		00:00	7
Jess Shepherd		00:00	8
Russ Putnam		00:00	9

R.O.G. STICK COMBINED AGES		Best Flight	Place
Dick Obarski		14:37	1
Larry Loucka		12:57	2
Don Slusarczyk (Sr)		12:30	3
Joe Krush		11:55	4
Ron Ganser		11:13	5
Joe Nuszer		10:23	6
John Marett		10:09	7
Jess Shepherd		09:30	8
John Voorhees		07:15	9
Russ Putnam		00:00	10
Lew Gitlow		00:00	11
J Davidson		00:00	12
Bill Bigge		00:00	13

HELICOPTER COMBINED AGES		Best Flight	Place
Peter Kearney		10:36	1
Bill Henderson		08:24	2
Gary Underwood		07:42	3
Larry Loucka		06:40	4
Ron Ganser		05:28	5
John Marett		04:12	6
Dick Obarski		04:05	7
Tom Vallee		02:10	8
Pete Staehling		00:00	9
Don Slusarczyk		00:00	10
Chuck Slusarczyk		00:00	11
Lew Gitlow		00:00	12
Bill Bigge		00:00	13

# 1989 AMA NATIONALS - KIBBIE DOME - MOSCOW, IDAHO

HAND LAUNCH GLIDER JUNIOR	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
DALLAS MACE	26.4	26.2	52.6	1
SCOTT ROBBINS	23.0	23.0	46.0	2
ANDY TAGLIAFICO	0.0	0.0	0.0	3
CLINT HANNESON	0.0	0.0	0.0	4

HAND LAUNCH GLIDER SENIOR	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
ALAN MACE	40.8	40.2	81.0	1
DAVE WARREN	34.8	31.9	66.7	2
JASON YOUNG	0.0	0.0	0.0	3

HAND LAUNCH GLIDER OPEN	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
STAN BUDDENBOHM	77.2	77.0	154.2	1
DAN BELIEFF II	66.5	66.0	132.5	2
TOM STALICK	62.9	59.9	122.8	3
BRUCE KIMBALL	59.4	55.4	114.8	4
MARTY THOMPSON	53.7	53.2	106.9	5
DENNIS WEATHERLY	52.1	49.9	102.0	6
RICHARD PETERSON	51.9	49.9	101.8	7
KEITH VARNAU	48.5	47.3	95.8	8
STEVE GERAGHTY	45.4	42.5	87.9	9
JIM THORNBERRY	39.9	39.7	79.6	10
DAVID HOOKE	39.5	36.9	76.4	11
DRAYCOTT HOOKE	35.7	35.7	71.4	12
PATRICK MEEHAN	0.0	0.0	0.0	13
MARK SEXTON	0.0	0.0	0.0	14
CHUCK SLUSARCZYK	0.0	0.0	0.0	15
JOHN BORTNAK	0.0	0.0	0.0	16

CATAPULT GLIDER JUNIOR	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
SCOTT ROB	37.0	32.0	69.0	1

CATAPULT GLIDER OPEN	Best Flight	2nd Flight	TOTAL (BEST 2)	PLACE
STAN BUDDENBOHM	89.0	88.8	177.8	1
JOE FOSTER	71.5	68.1	139.6	2
JIM THORNBERRY	68.2	65.7	133.9	3
DAN BELIEFF	65.1	62.5	127.6	4
CEZAR BANKS	59.0	56.7	115.7	5
GORDON WISNIEWSKI	56.3	56.2	112.5	6
STU BENNETT	58.6	51.8	110.4	7
AL BORER	51.2	48.4	99.6	8
DICK PETERSON	48.2	47.5	95.7	9
DENNIS WEATHERLY	48.0	47.0	95.0	10
LARRY KRUSE	47.1	46.0	93.1	11
HERB ROBBINS	35.0	34.0	69.0	12

ROG CABIN JUNIOR	Best Flight	Place
DWIGHT LARKS	00:58	1
CLINT HANNESON		

ROG CABIN SENIOR	Best Flight	Place
DON SLUSARCZYK	25:25	1
JASON YOUNG		

ROG CABIN OPEN	Best Flight	Place
RICH DOIG	17:10	1
DAN BELIEFF	17:04	2
CHUCK SLUSARCZYK	00:00	3
BOB NICHOLS	00:00	4
LARRY LOUCKA	00:00	5
JOHN BORTNAK		
BILL BIGGE		

INTERMEDIATE STICK JUNIOR	Best Flight	Place
DWIGHT LARKS	07:06	1
CLINT HANNESON	00:00	2

INTERMEDIATE STICK SENIOR	Best Flight	Place
DON SLUSARCZYK	11:09	1
DAVE WARREN	03:11	2
JASON YOUNG	00:00	3

INTERMEDIATE STICK OPEN	Best Flight	Place
CLARENCE MATHER	27:19	1
DAN BELIEFF	26:45	2
STAN CHILTON	26:06	3
EARL HOFFMAN	25:52	4
LARRY LOUCKA	25:32	5
KEN GROVES	25:03	6
WALT VAN GORDER	19:38	7
GORDY WISNIEWSKI	19:26	8
PHILLIP HAINER	18:22	9
BOB RANDOLPH	10:26	10
CHUCK SLUSARCZYK	00:00	11
DICK OBARSKI	00:00	12
BRUCE KIMBALL	00:00	13
JOE FOSTER	00:00	14
CHARLES DORSETT	00:00	15
BILL BIGGE	00:00	16

NOVICE PENNYPLANE JUNIOR	Best Flight	Place
ANDREW TAGLIAFICO	09:11	1
DWIGHT LARKS	05:14	2

NOVICE PENNYPLANE SENIOR	Best Flight	Place
DON SLUSARCZYK	08:11	1
JASON YOUNG		

NOVICE PENNYPLANE OPEN	Best Flight	Place
CEZAR BANKS	13:05	1
JACK MCGILLIVRAY	12:44	2
JIM CLEM	12:25	3
KEN GROVES	12:12	4
WALT VAN GORDER	11:43	5
DAVE HAGEN	11:34	6
JOE FOSTER	11:14	7
BRUCE KIMBALL	10:52	8
RICHARD MILLER	10:48	9
EARL HOFFMAN	10:16	10
BUD TENNY	10:06	11
DENNIS WEATHERLY	09:11	12
SHERMAN GILLESPIE	09:07	13
GORDY WISNIEWSKI	09:04	14
BOB OPPEGARD	08:24	15
STUART BENNETT	06:41	16
JIM THORNBERRY	04:32	17
RICHARD STUART	04:29	18
KEITH VARNAU	00:00	19
FUDO TAKAGI	00:00	20
CHUCK SLUSARCZYK	00:00	21
BUD ROMAK	00:00	22
HERB ROBBINS	00:00	23
DICK OBARSKI	00:00	24
LARRY LOUCKA	00:00	25
CHARLES DORSETT	00:00	26
HANK COLE	00:00	27
BILL BIGGE	00:00	28
GORDON POLLOCK	00:00	29
BOB NICHOLS	00:00	30

HAND LAUNCH STICK JUNIOR	Best Flight	Place
DWIGHT LARKS	07:58	1
SCOTT ROBBINS	00:00	2
CLINT HANNESON	00:00	3

HAND LAUNCH STICK SENIOR	Best Flight	Place
DON SLUSARCZYK	29:40	1
DAVE WARREN	00:00	2
JASON YOUNG	00:00	3

HAND LAUNCH STICK OPEN	Best Flight	Place
JOE FOSTER	38:44	1
BOB RANDOLPH	36:07	2
RICH DOIG	29:09	3
BRUCE KIMBALL	18:25	4
WALT VAN GORDER	00:00	5
CHUCK SLUSARCZYK	00:00	6
BUD ROMAK	00:00	7
HERB ROBBINS	00:00	8
JACK MCGILLIVRAY	00:00	9
LARRY LOUCKA	00:00	10
EARL HOFFMAN	00:00	11
DAVE HAGEN	00:00	12
DON GODFREY	00:00	13
HANK COLE	00:00	14
JIM CLEM	00:00	15
STAN CHILTON	00:00	16
BILL BIGGE	00:00	17
DAN BELIEFF	00:00	18
CEZAR BANKS	00:00	19

EASY B JUNIOR	Best Flight	Place
ANDREW TAGLIAFICO	17:03	1
SCOTT ROBBINS	08:16	2
DWIGHT LARKS	04:50	3
CLINT HANNESON	00:00	4

EASY B SENIOR	Best Flight	Place
DON SLUSARCZYK	14:49	1
DAVE WARREN	03:18	2
JASON YOUNG	00:00	3

EASY B OPEN	Best Flight	Place
STAN CHILTON	23:43	1
JACK MCGILLIVRAY	23:39	2
EARL HOFFMAN	22:45	3
WALT VAN GORDER	22:01	4
JOE FOSTER	20:10	5
KEN GROVES	19:37	6
JIM CLEM	18:57	7
GORDY WISNIEWSKI	18:40	8
ANDREW TAGLIAFICO	18:38	9
BRUCE KIMBALL	16:51	10
RICHARD MILLER	16:37	11
BOB OPPEGARD	09:29	12
JAMES LONGSTRETH	08:30	13
DENNIS WEATHERLY	05:37	14
KEITH VARNAU	00:00	15
JIM THORNBERRY	00:00	16
CHUCK SLUSARCZYK	00:00	17
HERB ROBBINS	00:00	18
DICK OBARSKI	00:00	19
CLARENCE MATHER	00:00	20
LARRY LOUCKA	00:00	21
DOUG HANNAY	00:00	22
CHARLES DORSETT	00:00	23
DAN BELIEFF	00:00	24
STUART BENNETT	00:00	25

# 1989 AMA NATIONALS - KIBBIE DOME - MOSCOW, IDAHO

FAI INDOOR & TEAM SELECTION FINALS	BEST FLIGHT	2ND FLIGHT	TOTAL (Best 2)	NATS PLACE	FINALS POINTS	REGIONAL POINTS	TOTAL POINTS	TEAM PLACE
CEZAR BANKS	41:59	41:29	1:23:28	1	1000.00	100.00	1100.00	1
LARRY CAILLIAU	40:15	40:13	1:20:28	2	964.06	100.00	1064.06	2
BOB RANDOLPH	39:44	39:44	1:19:28	3	952.08	98.51	1050.59	3
JOE FOSTER	39:03	38:18	1:17:21	4	926.72	100.00	1026.72	4
BUD ROMAK	38:32	38:04	1:16:36	5	917.73	96.42	1014.15	5
DON SLUSARCZYK (SR)	37:34	37:18	1:14:52	6	896.96	100.00	996.96	6
RICH DOIG	36:50	36:21	1:13:11	7	876.80	100.00	976.80	7
LARRY LOUCKA	35:24	33:00	1:08:24	8	819.49	96.93	916.42	8
EARL HOFFMAN	34:53	32:57	1:07:50	9	812.70	93.65	906.35	10
LEW GITLOW	33:47	33:46	1:07:33	10	809.31	100.00	909.31	9
HERB ROBBINS	32:03	30:39	1:02:42	11	751.20	79.80	831.00	11
HANK COLE	33:33	27:15	1:00:48	12	728.43	85.47	813.90	12
CLARENCE MATHER	31:03	29:06	1:00:09	13	0.00	76.04	0.00	*
DON GODFREY	26:34	26:06	52:40	14	630.99	89.96	720.95	13
WALT VAN GORDER	27:57	19:43	47:40	15	571.09	75.51	646.60	14
STAN CHILTON	30:24	14:18	44:42	16	535.54	100.00	635.54	15
KEN GROVES	22:08	18:00	40:08	17	0.00	-	0.00	
BRUCE KIMBALL	13:08	12:40	25:48	18	0.00	-	0.00	
JACK MCGILLIVRAY	24:21	00:00	24:21	19	0.00	-	0.00	
DAN BELIEFF	17:55	00:00	17:55	20	214.66	82.98	297.64	16
JIM CLEM	00:00	00:00	00:00	21	0.00	75.58	75.58	17
DAVID ARONSTEIN	00:00	00:00	00:00	22	0.00	-	0.00	

\* Did not enter the Finals

INDOOR PEANUT SCALE JUNIOR	SUBJECT	BEST FLIGHT	2ND FLIGHT	Average Best 2	Scale Points	Total Points	PLACE
DWIGHT LARKS	PIETENPOL	16.8	0.0	8.4	52.50	60.90	1

INDOOR PEANUT SCALE OPEN	SUBJECT	BEST FLIGHT	2ND FLIGHT	Average Best 2	Scale Points	Total Points	PLACE
LARRY KRUSE	SANTOS DUMONT 14 bis	95.0	90.9	92.95	113.25	206.20	1
JACK MCGILLIVRAY	ISSAC'S FURY	94.0	94.0	94.00	94.00	188.00	2
CLARENCE MATHER	WITTS VEE	85.5	85.5	85.50	85.50	171.00	3
KEN GROVES	BRISTOL SCOUT D	54.0	53.8	53.90	115.08	168.98	4
MARK ALLISON	RM-12	74.9	73.5	74.20	91.83	166.03	5
SHERMAN GILLESPIE	EVANS VP1	58.0	57.8	57.90	80.25	138.15	6
CHARLES SCHAAF	WITTMAN TAILWIND	61.5	61.5	61.50	61.54	123.04	7
TOM STALICK	FIKE	58.3	55.8	57.05	58.33	115.38	8
RICHARD PETERSON	LET X2-377	52.5	52.5	52.50	52.50	105.00	9
SHERMAN GILLESPIE	GADFLY	26.3	12.1	19.20	65.33	84.53	10
SHERMAN GILLESPIE	ORD HUME DH7	0.0	0.0	0.00	73.50	0.00	11
TOM STALICK	ANDRESSON	0.0	0.0	0.00	57.75	0.00	12

INDOOR RUBBER SCALE JUNIOR	SUBJECT	BEST FLIGHT	2ND FLIGHT	AVERAGE BEST 2	SCALE POINTS	TOTAL	PLACE
DWIGHT LARKS	PC6	30.5	24.2	27.3	51.00	78.35	1

INDOOR RUBBER SCALE OPEN	SUBJECT	BEST FLIGHT	2ND FLIGHT	AVERAGE BEST 2	SCALE POINTS	TOTAL	PLACE
LARRY KRUSE	SANTOS DUMONT 14bis	83.7	82.3	83.00	91.500	174.50	1
KEN GROVES	BRISTOL SCOUT D	65.6	58.5	62.05	90.000	152.05	2
DAVID ARONSTEIN	CESSNA CARAVAN	90.0	114.1	90.00	52.500	142.50	3
CLARENCE MATHER	TIPSY JR	62.5	59.4	60.95	74.830	135.78	4
SHERMAN GILLESPIE	GADFLY	47.8	45.5	46.65	75.333	121.98	5
CHARLES SCHAAF	LACEY M10	42.9	16.9	29.90	72.833	102.73	6

PENNYPLANE JUNIOR	Best Flight	Place
SCOTT ROBBINS	07:36	1
DWIGHT LARKS	05:35	2

PENNYPLANE SENIOR	Best Flight	Place
DON SLUSARCZYK	12:25	1
JASON YOUNG	00:00	2

PENNYPLANE OPEN	Best Flight	Place
JOE FOSTER	14:34	1
GORDY WISNIEWSKI	13:52	2
BRUCE KIMBALL	12:59	3
LARRY LOUCKA	12:29	4
HANK COLE	12:07	5
KEN GROVES	11:54	6
WALT VAN GORDER	11:53	7
BUD TENNY	10:51	8
DENNIS WEATHERLY	10:11	9
JIM CLEM	09:58	10
SHERMAN GILLESPIE	09:44	11
DOUG HANNAY	08:38	12
GORDON POLLOCK	08:35	13
BOB OPPEGARD	04:38	14
CHUCK SLUSARCZYK	00:00	15
DAVE HAGEN	00:00	16
CHARLES DORSETT	00:00	17
BOB NICHOLS	00:00	18

MANHATTAN CABIN JUNIOR	Best Flight	Place
DWIGHT LARKS	01:37	1
CLINT HANNESON	00:00	2

MANHATTAN CABIN SENIOR	Best Flight	Place
DON SLUSARCZYK	07:11	1
DAVE WARREN	00:00	2

MANHATTAN CABIN OPEN	Best Flight	Place
WALT VAN GORDER	10:21	1
LARRY LOUCKA	09:38	2
BOB NICHOLS	09:32	3
KEN GROVES	08:54	4
JAMES LONGSTRETH	05:26	5
STUART BENNETT	04:55	6
FUDO TAKAGI	00:00	7
CHUCK SLUSARCZYK	00:00	8
BUD ROMAK	00:00	9
RICHARD PETERSON	00:00	10
BRUCE KIMBALL	00:00	11

ORNITHOPTER COMBINED AGES	Best Flight	Place
FRANK KIESER	09:33	1
ROY WHITE	09:30	2
DON SLUSARCZYK (Sr)	08:55	3
SCOTT ROBBINS (Jr)	04:28	4
WALT ERBACH	03:15	5
PAT DESHAYE	02:38	6
GORDON POLLOCK	01:59	7
DWIGHT LARKS (Jr)	00:28	8

1990 - INDOOR SURVEY

I am interested in Indoor activity as a:

Competitor\_\_\_\_, Enthusiast/Supporter\_\_\_\_, Sport Flyer\_\_\_\_.

I am a member of: AMA\_\_\_\_, NFFS\_\_\_\_.

NIMAS\_\_\_\_ SAM\_\_\_\_ FAC\_\_\_\_ MECA\_\_\_\_ OTHER\_\_\_\_.

INTERESTS:

CONTESTS I HAVE ENTERED:

HLG/Catapult G. \_\_\_\_

1 to 3 in 1989\_\_\_\_ over 3\_\_\_\_

NPP/PP \_\_\_\_

1 to 3 in 1988\_\_\_\_ over 3\_\_\_\_

Easy B \_\_\_\_

1 to 3 in 1987\_\_\_\_ over 3\_\_\_\_

Ultra Lite \_\_\_\_

1 to 3 in 1986\_\_\_\_ over 3\_\_\_\_

(microfilm type)\_\_\_\_

Bostonian/No-Cal \_\_\_\_

On an overall average, how much  
do you estimate you spent on  
Indoor Modeling (exclusive of  
travel expenses).

P-Nut/AMA Scale \_\_\_\_

Manhattan/Orn/

Helicopter \_\_\_\_

Intermediate STK \_\_\_\_

1989 \_\_\_\_\_ 1988 \_\_\_\_\_

ROG (Cabin)/STK \_\_\_\_

1987 \_\_\_\_\_ 1986 \_\_\_\_\_

Other \_\_\_\_\_

R/C Soaring \_\_\_\_\_

Have you traveled over 300  
miles (one way) to a contest  
during these years? \_\_\_\_\_

Other R/C \_\_\_\_\_

How many Indoor Models of all types did you build in:

1989 \_\_\_\_\_ 1988 \_\_\_\_\_ 1987 \_\_\_\_\_ 1986 \_\_\_\_\_

AGE GROUP: JR. \_\_\_\_ SR. \_\_\_\_ OP. \_\_\_\_

Under 30 \_\_\_\_ Under 50 \_\_\_\_ Over 50 \_\_\_\_

\*\*\*\*\*PLEASE PRINT!\*\*\*\*\*

OCCUPATION: \_\_\_\_\_

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_

1990 - OUTDOOR SURVEY

I am interested in Outdoor activity as a:

Competitor\_\_\_\_, Enthusiast/Supporter\_\_\_\_, Sport Flyer\_\_\_\_\_.

I am a member of: AMA\_\_\_\_, NFFS\_\_\_\_\_.

NIMAS\_\_\_\_ SAM\_\_\_\_ FAC\_\_\_\_ MECA\_\_\_\_ OTHER\_\_\_\_\_.

INTERESTS:

CONTESTS I HAVE ENTERED:

HLG/Catapult G. \_\_\_\_  
Towline Gliders \_\_\_\_  
Mulvihill/  
Wakefield \_\_\_\_  
Electric \_\_\_\_  
CO2 \_\_\_\_  
Cargo/Payload \_\_\_\_  
Pee Wee 30 \_\_\_\_  
Coupe \_\_\_\_  
P-30 \_\_\_\_  
Scale \_\_\_\_  
Orni/Rub.Speed \_\_\_\_  
1/2 A Power \_\_\_\_  
A Power \_\_\_\_  
B Power \_\_\_\_  
C Power \_\_\_\_  
D Power \_\_\_\_  
FIC Power \_\_\_\_  
FAI Events (only)\_\_\_\_  
R/C Soaring \_\_\_\_  
Other R/C \_\_\_\_  
Other \_\_\_\_

1 to 3 in 1989\_\_\_\_ over 3\_\_\_\_  
1 to 3 in 1988\_\_\_\_ over 3\_\_\_\_  
1 to 3 in 1987\_\_\_\_ over 3\_\_\_\_  
1 to 3 in 1986\_\_\_\_ over 3\_\_\_\_

On an overall average, how much  
do you estimate you spent on  
Outdoor Modeling (exclusive of  
travel expenses).

Have you traveled over 500  
miles (one way) to a contest  
during these years?

How many Outdoor Models of all  
types did you build in:  
1989\_\_\_\_ 1988\_\_\_\_ 1987\_\_\_\_ 1986\_\_\_\_

AGE GROUP: JR.\_\_\_\_ SR.\_\_\_\_  
Under 30\_\_ Under 50 \_\_Over 50\_\_

\*\*\*\*\*PLEASE PRINT!\*\*\*\*\*

OCCUPATION: \_\_\_\_\_

REMARKS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_



# AMA NATIONALS combined with NINTH UNITED STATES INDOOR CHAMPIONSHIPS

June 7, 8, 9, 1990

East Tennessee State University  
"Mini-Dome"  
Johnson City, TN



CATEGORY IV

Sponsored by  
National Free Flight Society/Academy of Model Aeronautics

Send entry payable to:  
USIC, 1655 Revere Drive, Brookfield, WI 53005  
(414) 782-6256 (after 7 pm Milwaukee time)



	7	8	9	10	11	12	1P	2	3	4	5	6	7	8	9	10	11	12	1A	2A
THUR		HLG																		
6/7 7:00A		CATAPULT GLIDER						EZB												
12:30A								EZB INTERNATIONAL							PP					
FRI		ORN/HEL													MANHATTAN					
6/8		INT. STK/SPEED						LPP									F1D/H.L. STK			
7:00A								R&D												
2:00A												BOST./NO-CAL					(1 Ft Min.—Both Events)			
												FED. ROG					ROG CAB			
SAT		PEANUT SCALE													F1D					
6/9								AMA SCALE							HL STK	OT				
7:00A																				
1:00A		GRAND PRIX						KIT PLAN SCALE												

## TABLES AND CHAIRS

If you are driving, please do **bring tables and chairs along**. There will be a limited amount of tables and chairs available for rent at \$2.50 per full day (1 table and 2 chairs). No partial days rent—you may do your subleasing (no gouging!). **NOTICE:** You are responsible to pick up table and chairs and return whence they came.

## LIGHTING

Bring your own portable fixture along with plugs and extra long extension cable.

## SCALE JUDGING

Models must be submitted with documentation and contestant's name—Peanut Scale by 12:00 noon, Friday, June 8; AMA Scale by 5:00 pm, Friday, June 8. Judging will be performed by independent judges.

**NOTE:** For details of the Miami Grand Prix, send a large SASE to Dr. J. Martin, 2180 Tigertail Avenue, Miami, FL 33133.

Included will be Pistachio, Coconut, and George Bush-Grumman Avenger (one design) events.

All Senior and Open fliers will be required to time flight and assist as called upon (be happy and **VOLUNTEER!**). **Bring your own stopwatch.**

All 1990/1991 AMA rules apply. All rule change "proposals" **DO NOT APPLY!**

## PRACTICE

During official events, practice is permitted in two basketball courts on north end of dome (at your risk).

**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.)

(Ceiling—116', floor—208' x 420')

Astro-turf may not be on floor.

Helium available, bring your own balloons.

**NOTE:** Helium belongs to all fliers—please lend your balloon to others.

All entrants must be AMA members or of their country's governing body. (Contestants provide proof.)

Entries must be postmarked by **MAY 12, 1990**. Late fee **\$10.00 payable on site**.

## PENNYPLANE FLIERS

The new **20" overall total length** may disqualify your present model. It is your responsibility to comply—please check **before** the contest. No model **part** shall extend beyond 20.00000 inches.

EBZ International event is only for foreign fliers with models built to the rules of their country. USA and Canadian fliers not eligible due to no weight limit.

## NATS/USIC GRAND CHAMPION

If you wish to participate in the Grand Champion Award, you must select a maximum of seven events for score. Your declaration must be made **before** you fly any events whatsoever.

**EVENTS ELIGIBLE:** HLG, F1D, H.L. STK, ROG CAB, ORN, EZB, INT. STK, P-NUT, AMA SC, PP, LPP, MAN, HEL, BOST.

## AJI OLD TIMER (OT)

**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.

## BOSTONIAN

Models must be turned in for judging by 4 pm, Friday, June 8.

AWARD LEVEL					
EVENT		JR SR OPEN			
NATS	BOST.				6
NATS	EZB		4		8
NATS	FID				6
NATS	HELI				3
NATS	HLG		3	3	6
NATS	HL STK		3	1	5
NATS	INT. STK		3		6
NATS	LPP		3	3	8
NATS	PP			3	6
NATS	MANHATTAN				6
NATS	ORNI				3
NATS	ROG CAB				3
NATS	P-NUT SCALE		3		6
NATS	AMA SCALE				4
USIC	CAT. GLIDER				6
USIC	EZB INT'L.				5
USIC	FED. ROG				4
USIC	KIT PLAN SCALE				6
USIC	NO-CAL				5
USIC	OT				3
USIC	P-NUT SPD				—
USIC	R&D				3
USIC	UNL. SPEED				—
USIC	GRAND PRIX				—

## 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.

## R&D

- Span (maximum)—18".
- Overall length (maximum)—20. NOTE: Consider a model which would fit into a box 20 x 18 x 18.
- No area limitation.
- Weight (minimum)—3.1 gram.
- Single, multi or continuous surfaces are permitted.
- No microfilm.
- Configurations not permitted—helicopter, autogiro, ornithopter, etc.
- Any bracing is permitted.
- Tractor, pusher, canard, or whatever is permitted.
- Hand launched or ROG permitted.
- Any "gadget" permitted.
- No dropping of parts.
- Model must be rubber powered.
- Any quantity of motivation devices permitted.
- If there are any rules not covered above, then remaining AMA 1990 published apply.
- Models will be judged solely on a duration basis, i.e., best of three official flights.
- Sixty seconds minimum required for an official flight (unlimited attempts).
- Model must be presented to CD (prior to test flying) for final decision on acceptance of design for competition for reason of safety (to the CD, as well!).
- Maximum of two essentially identical models permitted to complete official flights.
- Other designs may be entered separately, but only highest time is considered for placing.
- NOTICE: The top six places must provide the NFFS (free of charge, et al) with a full-size reproducible plan along with written details of the model and all of its features, 30 days from close of USIC 1990.

## CATAPULT GLIDER

- Maximum wing span—12".
- Maximum wing chord—3".
- Maximum launching stick length—6".
- Nine official flights.
- Sum of best two flights determines winner.

## KIT/PLAN SCALE

Turn in plan and plane by 7:30 AM, Saturday, June 9.

- 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 (number of seconds) 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.

## NO-CAL PROFILE SCALE

- A recognizable model of a full-scale aircraft, with a wing span not exceeding 16".
- 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 profile gear).
- Win based on best of five flights (20 second minimum and 2 attempts/flight).

## UNLIMITED RUBBER SPEED AND PEANUT SPEED

- 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.

## FEDERATION ROG

- Model must be rubber powered and propeller driven.
- All flight ROG and weight at 3.1 gram minimum.
- Molded plastic propeller—6" diameter maximum. (Bushing may be added and prop sanded but no cutouts.)
- Projected wing area—30 square inches maximum.
- Projected stab area—maximum of 50% of wing area.
- Landing gear must support model with two wheels of 1/2" diameter minimum and turn freely at all times.
- Minimum flight of 20 seconds counts—best flight of five determines winner.
- No restrictions on covering, dimensions, or construction. All ballast must be permanently affixed.
- One hi-time award and three places for two man by state team.

# 1990 USIC/NATS

**DORMITORY:** Air-conditioned. Room rate is \$21.00 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 \$6.25 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:

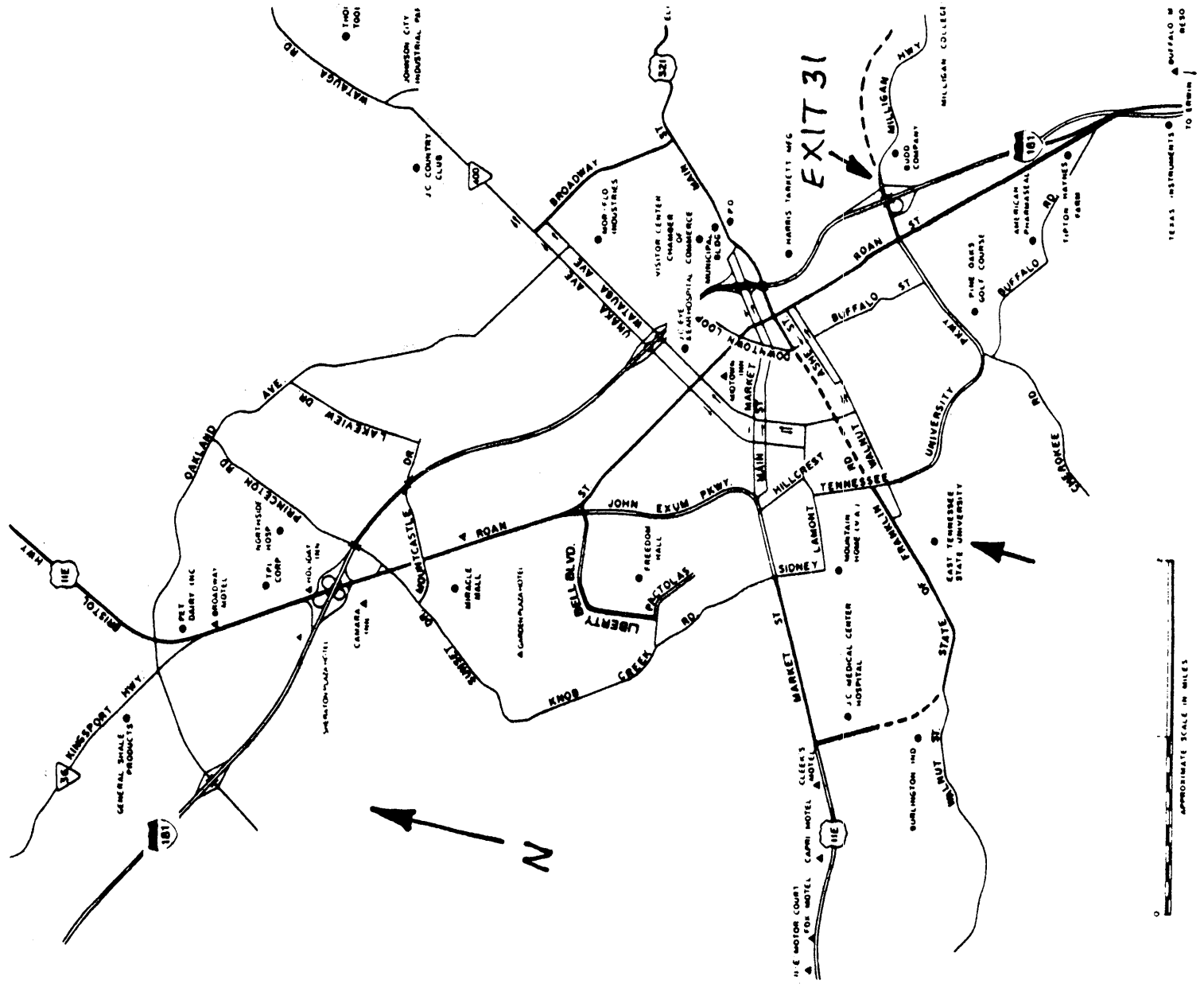
June 2 through June 8—5 to 7 pm and 8 to 11 pm.

## 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, 615-542-4466, 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

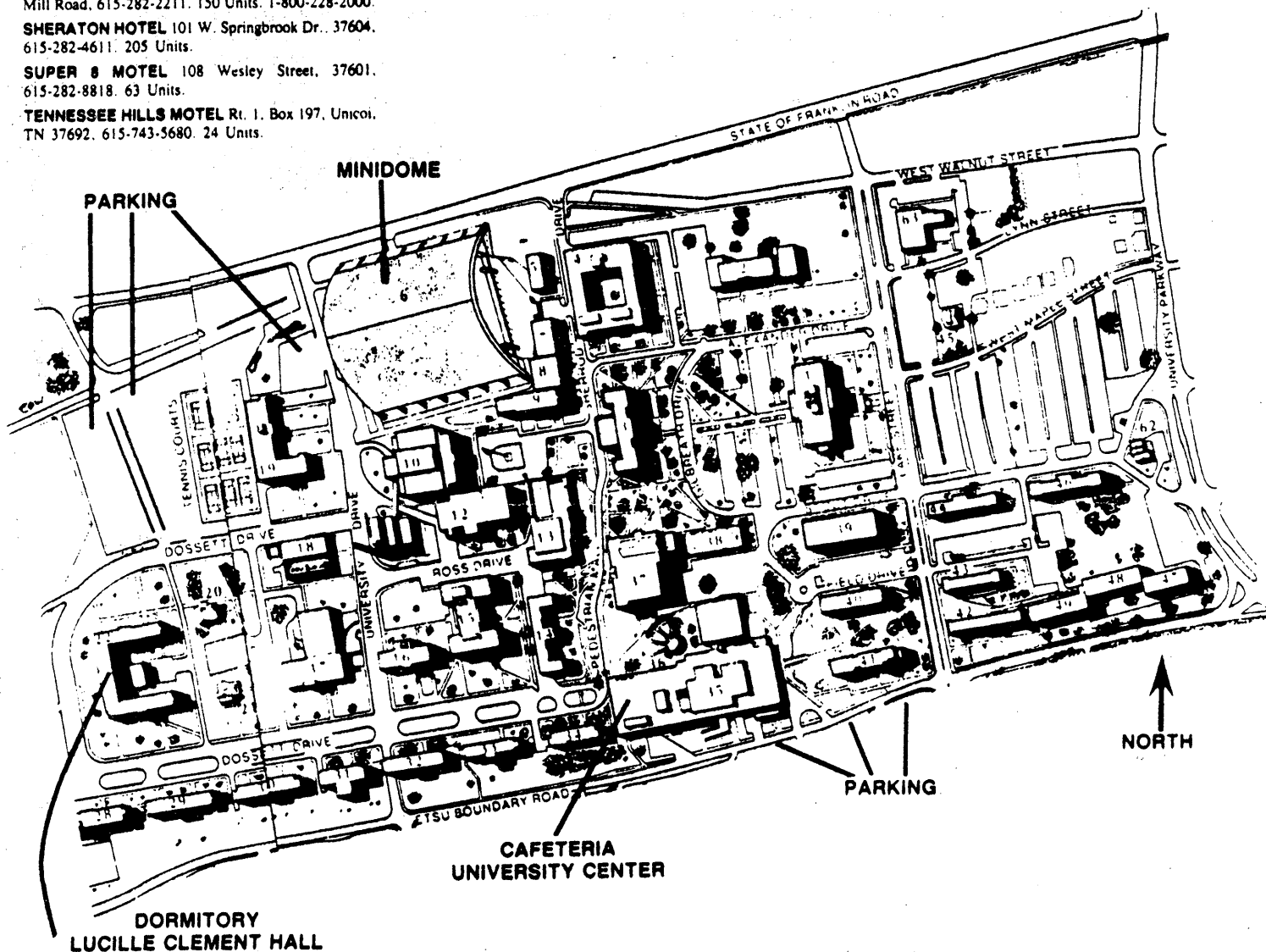
## DOUBLE

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
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11-E Motor Court	\$22.00	\$25.00
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Fox Motel	\$30.00	\$41.00
Garden Plaza	*	*
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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 \$55.00 plus tax for a very attractive room. State you are part of USIC. Suggest you make reservation by May 1, 1990.



# AMA NATIONALS combined with NINTH UNITED STATES INDOOR CHAMPIONSHIPS

JUNE 7, 8, 9, 1990

EAST TENNESSEE STATE UNIVERSITY  
"MINI-DOME"  
JOHNSON CITY, TENNESSEE



**NFFS**  
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 \_\_\_\_\_

## CIRCLE EVENTS ENTERED

## FEES:

ENTRY—\$20.00 Open \_\_\_\_\_  
1.00 Junior and Senior \_\_\_\_\_  
EVENTS—\$5.00 each—Open \_\_\_\_\_  
.50 each—Junior and Senior \_\_\_\_\_  
BANQUET (see below) \_\_\_\_\_  
DORMITORY \_\_\_\_\_  
TOTAL \_\_\_\_\_

CHECK FOR  
TOTAL FEES  
ENCLOSED

NATS A. GRAND CHAMPION\*  
201 Hand Launch Stick  
202 Intermediate Stick  
203 F1D  
204 ROG Cabin  
205 Manhattan  
206 EZB  
207 Pennyplane  
208 Limited Pennyplane  
209 Helicopter  
210 Ornithopter  
212 Hand Launch Glider  
215 Bostonian  
505 Peanut Scale  
507 AMA Scale

USIC 1. Catapult Glider  
2. EZB International  
3. Federation ROG  
4. Kit/Plan Scale  
5. No-Cal  
6. Old Timer  
7. Peanut Speed\*\*  
8. Unlimited Speed\*\*  
9. R&D  
10. Grand Prix (enter on site)

\*Indicate "GC" in front of 7 selected AMA events.

\*\*Sponsored by Hardy Brodersen—  
\$5/each mph over 6 mph to winner  
only (\$100 maximum).

Are you a member of NFFS ☐ Yes ☐ No

Foreign entrant must include \$10.00 insurance fee

World Championships Banquet @ \$20.00 (Sheraton Plaza, June 6)

Dormitory at ETSU reservation:

Daily room rate is \$21.00 (2 beds). Linens (includes one set of towels) at \$6.25/person. Change of linens @ \$6.25.

Please indicate reservation in appropriate block:

June	2	3	4	5	6	7	8	9	10
1 Room									
2 Rooms									
Linens									

In case of emergency please contact:

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

Send fees payable to:

USIC  
1655 Revere Drive  
Brookfield, WI 53005

Must be postmarked by May 12, 1990  
Late entry fee of \$10.00 payable on site.

NOTE: You can join NFFS and AMA on premises.  
*It is best if you join NOW!*

# INDOOR

## NEWS and VIEWS FEBRUARY - 1991 #53 , 54 , 55

FUTURE EDITOR: Plenny Bates, 2505 White Eagle Trail, SE, Cedar Rapids, IA 52403

Editor: Frank Kieser - 2595 Whippoorwill Lane, Vero Beach, FL 32960 (407) 569-7812

CO-EDITOR: A.J. Italiano - 1655 Revere Drive, Brookfield, WI 53045

### NEWSLETTER INFO

Here is my third issue of INAV. I have received many encouraging comments from our subscribers which I appreciate. I always encourage comments and suggestions and particularly welcome articles and items that I can publish. I will try to answer your letters, but I am not always prompt. You will probably notice some changes in format and mailing. These have been made with an eye towards reducing publishing and mailing costs without sacrifice in quality.

In my last mailing, I had an error due to changes I made in my mailing program. As a program manager I worked with many years ago said, "Improvements will kill us". I think I corrected the error by mailing out additional copies but if any of you didn't receive issue #51 & 52, let me know and I will send you a copy. For that matter if you ever have a question about your subscription status, speak up! You probably know that the issue number on which your subscription expires is to the right of your mailing address and there is a box for subscription status later in this issue.

One other slip in the last issue was the omission of ROG CABIN in the USIC results. This was brought to my attention by several of my good friends. I could say that it was intentional to see if you were reading what I wrote but in reality, it got misplaced when I was rearranging the many events to best fit the space. Fortunately I found the results and they appear further on.

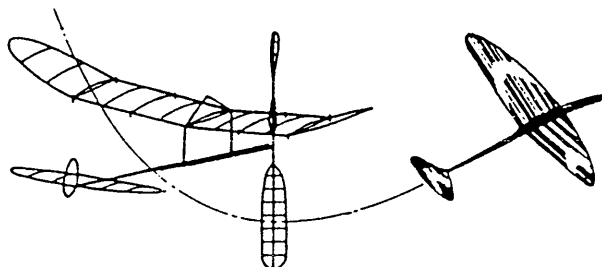
### GOOD NEWS - 1992 USIC

You all know that at the last USIC, Tony Italiano announced that he would not be running next years event and was looking for someone to do the job. Well, Chuck Slusarczyk has come forward and volunteered his services as overall Administrator and Contest Director of the 1992 United States Indoor Championships. June 4-7, 1992. All of us who know Chuck know that he will do a splendid job. So lets all get behind Chuck and lend our support in whatever way we can. You can contact Chuck at:

Chuck Slusarczyk  
4200 Royalton Road  
Brecksville Ohio 44141  
(216) 526-8613

### LAKEHURST

The East Coast Indoor Modelers headed by Gary and Kit Underwood ran a splendid season at Lakehurst this past summer, the highlight being the the World Championship team selection over the Labor Day week-end. The results



and a commentary by Cezar Banks is covered in this issue. I was unable to attend the Labor Day event, but I did get there for a flying session on Sept. 15. There was a good turn out and an excellent day of flying.

### 1991 FREE FLIGHT HALL OF FAME

The National Free Flight Society has announced the recipients of the Free Flight Hall of Fame for 1991. One recipient is well known to indoor modelers. He is RICHARD W. OBARSKI. The citation reads as follows:- A versatile fellow with excellence in both indoor and outdoor activities. An early member of the Chicago Aeronuts he worked very hard at scoring high in competitions. His list of wins is very long. As an engineer, he developed new types of product test equipment. He also developed and produced products for the model trade. - CONGRATULATIONS DICK

### 1992 NATS

The 1992 National Championships both indoor and outdoor will be held at Westover Air Force Base at Chicopee, MA June 20-28, 1992. The championships were last held there in 1983. The indoor site is an Air Force hanger with a 61 foot height (Cat III) at the center.

### 1992 F1D POSTAL CONTEST

I received a letter from Tom Vallee dated Sept 20, 1991. The following are some excerpts from that letter:

The Japanese indoor flyers are planning to evaluate a new sports complex in Izumi City. The Izumi dome has a ceiling of 45 meters and ample floor area. If available this may prove to be a world class flying site.

Have passed on Mr. Shigeyoshi Nonaka's hopes that Bob Randolph will field a team in next years Japan vs United States F1D (Indoor FAI) postal contest. Bob has accepted.

This means we should have at least 2 teams from each country. Mr. Nonaka has advised me that next years meet will be considered a major contest in Japan.

The rules for the contest are simple.

1. Three man teams.
2. F1D (FAI Stick) flown according to FAI rules, 6 rounds over one or two days.
3. Cat. I. No fudge factors, best time wins.

The idea of the contest is to provide more flyers a chance to engage in serious international competition. Any person wishing to field a team should contact me. We need more teams and flyers. I assume the contest would be some time after next years world championships.

Thomas Vallee, 444 Henryton So.  
Laurel, MD 20724

## 1991 FID FINALS TEAM SELECTION RESULTS - LAKEHURST HANGAR #1 - AUG 31 TO SEPT 2, 1991

CONTESTANT	ROUND 1	ROUND 2	ROUND 3	ROUND 4	ROUND 5	ROUND 6	ROUND 7	ROUND 8	ROUND 9	BEST FLIGHT	SECOND FLIGHT	TOTAL BEST 2
Rich Doig	00:34:14	00:40:15	00:38:19	--	00:30:17	00:40:07	00:43:28	00:24:54	00:44:06	00:44:06	00:43:28	01:27:34
Cezar Banks	00:32:12	00:36:54	00:49:00	--	--	--	--	--	--	00:49:00	00:36:54	01:25:54
Larry Loucka	--	00:18:18	00:39:27	--	--	00:28:53	00:30:07	00:35:00	att	00:39:27	00:35:00	01:14:27
Don Slusarczyk	--	00:12:57	00:35:13	00:37:38	00:06:52	00:31:33	--	00:32:40	00:33:57	00:37:38	00:35:13	01:12:51
Larry Cailliau	00:12:07	00:36:56	00:35:16	--	00:20:39	att	--	00:09:33	00:11:28	00:36:56	00:35:16	01:12:12
Bud Romak	--	00:35:24	--	--	00:12:02	00:31:27	00:26:07	00:34:31	00:29:51	00:35:24	00:34:31	01:09:55
Bill Hulbert	--	00:28:20	00:21:41	--	00:17:24	00:34:15	00:29:07	00:34:31	00:32:42	00:34:31	00:34:15	01:08:46
Chuck Slusarczyk	--	--	00:12:01	--	--	--	00:29:33	00:27:03	00:35:20	00:35:20	00:29:33	01:04:53
Jesse Shepherd, Jr.	--	00:26:38	00:35:36	00:19:04	00:28:09	00:28:45	00:24:21	00:13:37	00:12:16	00:35:36	00:28:45	01:04:21
Tom Vallee	00:15:54	--	00:00:07	--	--	00:32:41	00:31:21	att	00:01:04	00:32:41	00:31:21	01:04:02
Don Belieff	--	00:31:12	00:13:29	--	--	00:20:30	00:32:41	00:23:06	00:20:13	00:32:41	00:31:12	01:03:53
Bob Gibbs	--	00:26:46	00:27:52	--	00:29:39	00:24:42	00:28:30	00:22:21	att	00:29:39	00:28:30	00:58:09
Bob Randolph	00:10:05	att	att	--	--	att	att	00:25:17	00:22:45	00:25:17	00:22:45	00:48:02
Larry Mzik	--	--	--	--	--	--	--	--	--	00:00:00	00:00:00	00:00:00

## 1991 FID FINALS TEAM SELECTION RESULTS

CONTESTANT	FINALS PLACE	FINALS POINTS	REGIONAL POINTS	LOCAL POINTS	TOTAL POINTS	TEAM PLACE
Rich Doig	1	1000.00	100.00	10.00	1110.00	1
Cezar Banks	2	980.97	100.00	10.00	1090.97	2
Larry Loucka	3	850.21	100.00	10.00	960.21	3
Don Slusarczyk	4	831.94	100.00	9.82	941.75	4
Larry Cailliau	5	824.51	100.00	10.00	934.51	5
Bud Romak	6	798.44	97.07	0.00	895.51	6
Bill Hulbert	7	785.31	96.13	10.00	891.43	7
Chuck Slusarczyk	8	740.96	77.81	8.18	826.95	9
Jesse Shepherd, Jr.	9	734.87	100.00	10.00	844.87	8
Tom Vallee	10	731.25	75.90	9.97	817.12	11
Don Belieff	11	729.54	77.92	10.00	817.45	10
Bob Gibbs	12	664.07	99.25	9.47	772.78	12
Bob Randolph	13	548.53	100.00	10.00	568.53	13
Larry Mzik	14	0.00	80.64	8.98	89.62	dnf

1991 USIC/NATS --- ROG CABIN ---  
CD: CHARLIE SOTICH

CONTESTANT	BEST FLIGHT	PLACE
Ron Ganer	00:24:26	1
Larry Loucka	00:23:05	2
Anthony D'Alessandro	00:20:38	3
Joseph Krush	00:19:17	4
Dan Belief	00:17:14	5
Tom Iacobellis	00:16:11	6
Tony Sutter	00:13:43	7
John Marret	00:10:29	8

THE ABOVE RESULTS OF USIC ROG CABIN  
WERE INADVERTANTLY OMITTED FROM  
THE PREVIOUS ISSUE OF INAV

1992 FID TEAM SELECTION FINALS  
LAKEHURST N. J. - LABOR DAY WEEKEND  
AUGUST 31, TO SEPT. 2, 1991

By Cezar Banks

First Contest Day: HOT AND MUGGY; 85% R.H. and 85-87 deg. F. Air was somewhat gusty up to 100 ft. in round one, less so in round two, and smooth in round three. Only five fliers (of 13 active contestants - down from the usual 20 finalists) posted times in round one amid much muttering about air conditions. Doig was best with a 34:14. My model got to about 100 ft. at the seven minute mark, then intersected gusty air once each flight circle and found itself down to 50 ft. at nine minutes. It did climb back up to 75 ft. but scored only 32:27. Round two gustiness was more moderate and only up to about 50 ft.. Drift above that altitude was often sever however, requiring frequent steering. Steering was sometimes challenging to say the least because of the floor layout i.e. the carrier deck, parked aircraft, myriad stores and boxes and fenced off areas with limited ingress/egress. Still, it was the same for everyone and this time ten fliers posted scores. Doig again was showing the way with an excellent 40:15 to put him first. My flight was lackluster, notable only for a lot of steering, over one minute of it with prop stopped, and scored only a modest 36:54. Nevertheless, the air was getting smooother -- so-- on to round three. I launched a bit before 6:00 PM. After watching it the first few minutes, I was convinced I had under-motored badly based on its rate of climb and prop rpm. But to my growing surprise and delight the darned thing just kept climbing, slowly but relentlessly, topping out at about 130 ft. at 20 plus minutes. It stayed at that altitude past the 30 minute mark, now and then drifting toward the south wall and then back away again

always just shy of where steering would have been mandatory. It then started a steady drift westward it continued in super air. A pole steer helped clear some 12 ft. high boxes and it finally hit a box at about 18 inches altitude and settled down for a new record, 49 minutes even, verified by four different watches. Oh, what a feeling! Numb? Shocked? Happy? Yes, all that and more. The best air of the meet I thought, yet I was the only one in round three to catch it. Loucka did make his presence and intent known however with a strong 39:27.

Second Contest Day: COOLER-NOT MUGGY; 75-77 deg F. & 50% R.H.. Very windy outside which made it so drafty inside that it was almost unflyable. CD Harlan extended the fourth round but still only two flyers posted scores. Nineteen year old Don Slusarczyk showed it could be done by recording a 37:38 in round four to move into third place. Round five conditions continued to be poor but now seven flyers posted scores, more out of desperation than anything else, I think. Of these only Doig broke 30 minutes. The muttering grew. Round six conditions were much improved but still far from ideal. Doig took the round again with 40:07 to give him a stronghold on #2 spot and we were all looking at him with new eyes now. He wasn't done yet though as he continued to amaze us even more the next day. Slusarczyk and Cailliau were third and fourth with Loucka and Romak at their heels. Early team spot favorite Randolph ran into nothing but grief when his models developed a severe case of longitudinal instability at launch torque which plagued him throughout the meet. Now only one day left. What would conditions be?

Third Contest Day: BIT WARMER - NOT MUGGY - MUCH LESS WIND; More like second day than first but lesser winds from a different direction made all the difference. All in all, fair to good flying in rounds seven and eight turning to very good to excellent late in round nine. I kept two ships ready to fly "just in case" but didn't need to to assure a team position. Doig sustained his magic with two super flights in rounds seven and nine of 43:28 and 44:06 to clinch first team spot. I held second and Loucka posted a 35:00 in round eight to gain the third spot. Five or six guys took a shot at him in round nine but came up short.

Footnote: Hangar 1 is a marvelous enclosure but it has some bad air leaks, the most serious being the west door where a six inch gap exists around its whole periphery. This makes conditions inside a virtual slave to weather outside to a higher degree than other airship hangars I have flown in. But, as bad as it can get, it can also get "super good" too. No way would I have scored 49 minutes without lots of thermal help. In fact, Bud Romak, flying around 7 PM Monday in a "just for the heck of it unofficial round ten" had a flight of 49 1/2 minutes!! Also Walt Van Gorder did 25 minutes plus for a new EZB record about the same time Bud was flying! So you can see what is possible. Nevertheless, even though I am the lucky recipient of "super air", I prefer fairer sites. Two good examples are Johnson City and Moscow, Idaho which are fairly tight and have gobs of insulation in their ceilings. This means a much smaller temperature differential between floor and ceiling which means much lower velocity vertical convection currents which means insignificant or no thermals.

#### VANGORDER SETS EZB RECORDS

Twice within a month, Walter Van Gorder set new EZB records. Both were at Lakehurst, N.J. the first on August 3, 1991 at 6:30 PM and both were with his model "PIECES" which was built in 1981. He published a very excellent and detailed construction article of this model in the January 1982 issue of Model Aviation. The model had been recovered replacing the original condenser paper with mylar film. The original prop which had a 13 inch diameter and was quite flexible was replaced with a stiffer 14 X 27.3 inch prop. The time for the first record was 24:15. The model weighed .755 grams and the motor which was FAI Tan rubber .040-.042 X 17-1/8 weighed .752 grams. The motor was wound to 2320 turns and landed 380 turns for an average of 80.33 RPM.

The second record of 25:58 was set on Labor Day, Sept. 2, 1991 at 5:58 PM. The wing was replaced with a lighter wing that had been braced with diagonal supports from the wing posts to the leading and trailing edge spars and the condenser paper was replaced with mylar. The same 14 inch prop was used. The model weighed .745 grams and the motor which was now 1981 Pirelli .042-.043 X 17-1/2 weighed .775 grams. The motor was wound to 2300 turns plus 8 turns hand wound. 280 turns left for an average of 79.28 RPM. Walt tells me it won't be long before he breaks 26 minutes and I am sure he will.

CONGRATULATIONS WALT!

#### ENGLISH EZB RECORD

I hear that Bernard Hunt flying an EZB built to U.S. rules set a record of 26:38. I don't

have any further details.  
CONGRATULATIONS BERNARD!

#### WHY CHANGE EZB RULES?

Perhaps this is a good place to express my feelings on the proposed EZB rule change requiring a minimum weight of 1.2 grams. The only reason for the change I have heard expressed is that it will give the less experienced builders a better chance to compete. I really don't think that will happen. There are many factors involved beside the weight of a piece of wood and the smart and experienced builders will know best how to optimize them and therefore still be the winners. I believe in simplifying rules and allowing the most possible creativity in design. If we really want to give newcomers a chance to compete, do it by creating a novice class to give recognition to those who have not yet won in that event. This is done successfully in many sports such as rowing and running. Of course next year the rule change will be optional for any given event and lets hope that's as far as it will get.

#### TAN VS PIRELLI RUBBER

While I'm still on my soapbox, let me talk about restricting the use of Pirelli rubber because it is no longer available to everyone and constitutes an unfair advantage. Measurement of rubber performance is a very inexact thing. There is much data available but so much depends on the exact properties of the test sample and the conditions under which it was taken that it is difficult to quote energy values with much accuracy. No two pieces of Pirelli are alike as are no two pieces of FAI TAN. In general, however, the data does seem to indicate that some Pirelli does have a slightly higher energy content than some FAI TAN. It is also true that beside energy content, other properties such as modulus of elasticity are different which require TAN rubber to be sized different from Pirelli. We must learn how to use TAN rubber efficiently. Many records have been set and many contests won with TAN rubber including my 17:01 cat IV ornithopter record at Lakehurst and 1990 & 1991 USIC wins in the ornithopter competition. So lets get with it and forget about restricting the use of Pirelli. Ed Whitten in his recent newsletter published a letter by John Triolo which expressed very eloquently, much the same opinions. You must have concluded by now that I am an old reactionary who resists rules and rule changes. Maybe so.

#### Review of the 1991 indoor flying season at Cardington - by Laurie Barr

At the end of last year, the situation at Cardington was bleak.

Very few people turned up to fly and the Airship Industry were asking numerous passenger flights at week-ends, which meant the side doors were constantly being opened, usually coinciding with windy weather! and there were numerous large crates and two or more Airships, reducing the available space.

The end of the year indoor technical committee meeting made vital changes to the admin. team and we were fortunate to have Mike Colling as our Chairman. Laurie Barr re-joined the team which had Butch Hadland, Reg Parham Brian



Kennny and John Kirkpatrick; a formidable array of the best indoor talent!

At about the same time, Airship Industry had to close its operation at Cardington and its lease on the No. 1 hanger reverted back to its owners Holgrove Properties who were, and still are, looking for a new tenant.

Initially the hanger was left in an appalling state inside with the floor covered with "major" trash!, and we were fortunate enough to get Holgrove to agree to give us 12 meetings on specific dates at an "affordable" rent and they also had the hanger cleared and swept.

Our lease was conditional in the event of a major "let" to a third party, we would have to give way and although this gave great organizational difficulties, it was an excellent opportunity. The well publicized advice to ring before coming is necessary due to the Give Way clause in our agreement. We were lucky that we only gave way on one occasion when a "Pop" group assembled a mobile stage in the hanger and could not work without the doors open and their work overran time.

The publicized desire (Free Flight News) to attract more sport and general flyers was quite successful and this made funding of the hire cost much easier. What it did mean was that no Microfilm flying took place before the August Indoor Nationals and team trials took place, and none of us were well enough rehearsed to be able to put up any substantial flights from the start of the day(s) film flying and this accounts for the low scores and also the hang-ups in the roof.

Our biggest disappointment was the turn out of young flyers for the practice and the Delta Dart events. In fact, only five new young faces were present but at least the flight times were very good. Next year, we will not rely on the commercial model press but try local newspaper ad's.

However, this season has been outstanding in the interest and quality of EZB model flying and the advent of our decision to try the USA model rule for one year proved a good one. To clarify this matter, I should point out that the USA rule model has only a 50% of the wing area stab (maximum allowed), no "funny" props, no microfilm covering and only wood bracing is allowed.

A number of 20 minute flights were made early in the year and when Bernard Hunt and Laurie Barr went to compete in the USA National Champs at the start of June, (*complete results in last issue - ed.*) we made a great impact, and had much better times than the misery of previous misfortunes there!

Laurie won the EZB (22 entries!) with a flight of 22:07 (A new USA record), Bernard was 4th with 21:22. We also flew EZB for practise, in their intermediate stick class (32 entries) although it was not realistic to win against much larger models. Bernard came 12th, 22:03 and Laurie 11th with 22:16.

In limited pennyplane (68 entries), Bernard came 5th with 13:09 and Laurie 10th with 12:28. Laurie took a USA rules 4 gram Manhattan model which placed 5th without much practise and the same in Catapult Glider with a respectable 12th place out of 21 entries and was twice 3rd in Mini Stick.

We deliberately took no microfilm models, to ease the travel problem, and we hope to return there next year, better prepared, for other non-microfilm events. I can commend this as the indoor modelers mecca for quantity, quality and the excellent flying conditions, with great contest direction. The evening socializing kept the party spirit going!

Editor's note:- *We congratulate our English competitors for their fine performance at the USIC. We enjoyed having them there and look forward to their returning next year.*

The world wide "postal" contest inspired and organized by Mike Colling was very well supported with 60 entries! including large USA and Japanese support (*complete results in last issue - ed.*). Although Laurie Barr made the longest flight our own John O'Donnell won it by flying well under a low ceiling, giving him the best corrected time. This event will take place next year, and in high ceiling sites, times of over 9 minutes (Bernard Hunt) are now taking place!

For next year, as far as we can tell, Cardington will again be available for any indoor modeller who is a BMFA/SMAE member and we hope to see all of you there, especially a lot more Delta Dart model flyers who want to win some of the £100 prize money!!

Nationals and team trial results - Cardington  
26 Aug. 1991 and 2nd trial 8 Sept. - F1D

#### Aeromodeler Trophy & Houlberg Gold

1. Bernard Hunt - 38:59 + 39:08 = 78:07
2. Laurie Barr - 35:23 + 35:29 = 70:52
3. Brian Kenny - 31:11 + 31:55 = 63:06

#### Houlberg (Silver) Trophy - for EZB

1. Bernard Hunt - 23:38 + 24:03 = 47:41
2. Bob Bailey - 22:32 + 22:41 = 45:13
- 3) Laurie Barr - 20:22 + 21:38 = 41:58

#### Sweepette Trophy - for catapult glider

1. Mark Benns - 1:15 + 1:12 = 2:29
2. Mike Page - 1:05 + 1:12 = 2:17
3. Derek Richards - 1:06 + 1:07 = 2:13

It has been a great year (Again!) for Bernard Hunt as he won every contest he entered in the U.K. and flying one of the USA rules EZB, he set a new world record time of 26:38!! at the end of the day during the second trials of Sept. 8th. It might have been a longer flight had not one of the security guards opened the large end door, just as the model was on final decent.

So at the end of the year of good flying in the old "shed", we look forward to next year with equal keenness and opportunity and hope to see more of you take advantage of an outstanding place to fly and we especially want to encourage new people with the promise that indoor modellers are a friendly lot, and are willing to pass on their knowledge to help newcomers achieve serendipity with "true" religion!

#### 1991 JAPAN VS. UNITED STATES F1D POSTAL

The F1D postal contest between Japan and United States was organized by Mr. Shigeyoshi Nonaka of Japan and Mr. Thomas Vallee of the United States as a result of contacts made when Tom was one of the official timers for the Japanese team at the 1990 world championships in Tennessee. The contest rules were simple:

1. 3 man teams

2. Cat I flying sites - no fudge factors - best time wins
3. F1D models flown to FAI rules over 1 or 2 days

The United States team flew at the Goddard Space Flight Center auditorium on June 22, 1991 and the Japanese team flew at the National Olympic Memorial Center on July 15, 1991.

#### INDIVIDUAL STANDINGS

1. T. Vallee	- USA	27:18 + 27:12 =	54:30
2. H. Enomoto	- Japan	25:48 + 26:52 =	52:40
3. D. Belieff	- USA	22:40 + 23:00 =	45:40
4. P. Kleinert	- USA	21:41 + 22:40 =	44:21
5. H. Odagiri	- Japan	18:34 + 14:47 =	33:21
6. S. Nonaka	- Japan	12:11 + 16:49 =	29:00

#### TEAM STANDINGS

1. United States	144:31
2. Japan	115:01

The Japanese team was quite strong, consisting of their top two 1990 team members Hideyo Enomoto, Shigeyoshi Nonaka and former team member Hideharu Odigiri. Mr. Enomoto is also a former Category I world record holder.

#### 1992 F1D WORLD CHAMPIONSHIPS

The 1992 F1D - FAI world indoor model championships will be held in Warsaw, Poland on July 6 - 12, 1992.

#### SCHEDULE

July 6 - arrival  
 July 7 - check-in, practice, opening of W/CH  
 July 8 - 10 - competition flights  
 July 11 - reserve day, sightseeing, closing & banquet  
 July 12 - departure

#### CONTEST SITE

The World Championships will be held in a 48 meter high sports hall, situated in the center of Warsaw.

#### CONTEST RULES

The contest will be run according to the rules of the current FAI Sporting Code, Section 4 - General and Section 4a - Aeromodels - part two.

#### PARTICIPATION

Every member of the FAI is allowed to enter for the W/CH a team consisting of:

- not more than three senior competitors
- not more than three junior competitors
- one team manager
- one assistant team manager
- helpers, supporters, etc.
- reigning World Champion
- one timekeeper

every competitor must possess a Sporting License of the FAI affixed with the FAI stamp for 1991, issued by his National Aero Club.

#### CLASSIFICATION

Both individual and team classification, separately for seniors and juniors. Winners will be awarded with medals, diplomas and trophies.

#### LANGUAGE

The official languages are English and Polish.

NOTE: Frank Kieser had a stroke and can no longer operate the INAV/NIMAS newsletter. Write him.

#### 1992 JAPANESE W/C TEAM SELECTION

DREAM ISLAND GYM - (12.5 METER HEIGHT)  
 SEPTEMBER 23, 1991  
 WEATHER - FINE, TEMP. - 31C

1. Satoshi Kinoshita	28:38 + 28:16 =	56:54
2. Hideyo Enomoto	28:25 + 25:59 =	54:24
3. Masatoshi Misawa	27:17 + 26:36 =	53:53
4. Kazumasa Kihara	26:48 + 25:01 =	51:49
5. Toshiaki Okada	24:33 + 12:05 =	36:38

NOTICE: Please submit much needed articles, model designs, helpful hints, sketches, photos, contest results, etc., in reproducible form directly to Plenny Bates.

#### SIMPLE ORNITHOPTER DESIGN

You may recall in the May '91 issue of INAV, I discussed the possibilities of a Simple Ornithopter Design (SOD) as suggested by Tony Italiano. I put some limited effort in a design that started as a monoplane and could later be converted to a biplane. I built one with some success but haven't had time to do much more. Warren Williams also took up the challenge with an interesting approach which is to have two similar designs, one a tractor and the other a canard pusher. They both have similar wing planforms and flapping mechanisms as shown in the accompanying plans and pictures. He also sent me an interesting description from which I have excerpted the following:

I'm happy I took the challenge and built two simple biplane ornithopters. Yes, I now have complied with your SOD rules - 16" wing, solid motor stick & weight over 3 grams. I thought I would kill two birds with one stone by using the same wing and stabilizer outlines. My original tractor and canard were under three grams and I was able to test them during a session at the armory in Los Angeles. I found the tractor flying right off the drawing board with very little adjustment needed. The canard was trouble from the start, very unstable with elevation and directional problems. I found the C.G. too far forward and had to move the elevator to the end of the stick. At the same time, I added a rudder and from then on I had no more trouble. My best time was over three minutes and I attribute this to being under weight and the design of my new efficient wing. Over 50% of the area is thrust producing. A wider chord at the tip than the inboard section works great for me.

I have built several new models from the prototype that weigh over 3.2 grams with smaller stabilizers. I also put the extra weight needed in the structure. I will do more testing at our session next month. Both models have lots of potential and should be competitive as the new trend progresses. They say my design may look complicated but it's real;ly simple to build. Look at it this way. If you build one biplane, in reality, you are building two simple single flappers. It just takes a little more time. I crank out two or three ornithopters a month just for therapy and besides it keeps me occupied and out of trouble.

Note:- The crank shaft bearing is 1/8 round balsa sliced 3/64 inch thick. Drill an .015 hole in the center and install balsa bearing in place on the crank shaft and squeeze a drop

of super glue on the back side. Dust drop with baking soda thus locking in the crank shaft and hardening the balsa bearing. Balsa push rods are drilled at the ends and painted over with thin super glue. This also leaves the wood rock hard. All my double thrust bearings are made from the top of "Planter's" .010 aluminum peanut cans.

#### SUBSCRIPTIONS

We plan to publish this newsletter four times a year. Subscription rates include membership in the Indoor Model Airplane Society. The following are the rates for four issues:

\$ 8.00 U.S., Canada, Mexico  
 \$ 9.00 overseas surface mail  
 \$11.00 Air mail - Europe & S. Amer.  
 \$12.00 Air mail - Asia, Australia,  
 New Zealand

Please remit in U.S. dollars by cash, check drawn on U.S. bank, money order, or U.S. Postal money order. Make checks payable to the order of Plenny Bates

Send to: Plenny Bates  
 2505 White Eagle Trail, SE  
 Cedar Rapids, Iowa 52403  
 USA

#### DYEING ULTRAFILM by Fred Rash

Recently I wanted colored indoor covering for improved visibility. Instructions for dyeing tissue and silk have appeared in the model literature but I had not seen instructions for polyester film. Two batches of Ultrafilm polyester (from Ray Harlan) were dyed rather easily. Cut the film from the roll (and later from the edges of the framework) with a hot wire to reduce the likelihood of rips and tears. For this, I use a crude cautery or hot wire cutter made from .009 to .010 inch diameter nichrome wire about 2 inches long, a Radio Shack battery box and two alkaline or nicad AA cells. Enough film for about 2 planes was crumpled into a small metal can with a 1:3 mix of Rit dye and water. This mix was stirred with a popsicle stick and simmered for 20 minutes over a Sterno stove outside to avoid messy spills. While we all wear dyed clothes, wise modelers minimize to dyes as well as to thinners, balsa dust and rotating power props. Once the dyed film has been rinsed well, the remaining dye is inside the film and can not rub off. My color was pleasing but not too deep. Use the more intense colors. I did not weigh the film to measure any weight gain but the dye experts I consulted said that dyeing polyester film might add 1% weight.

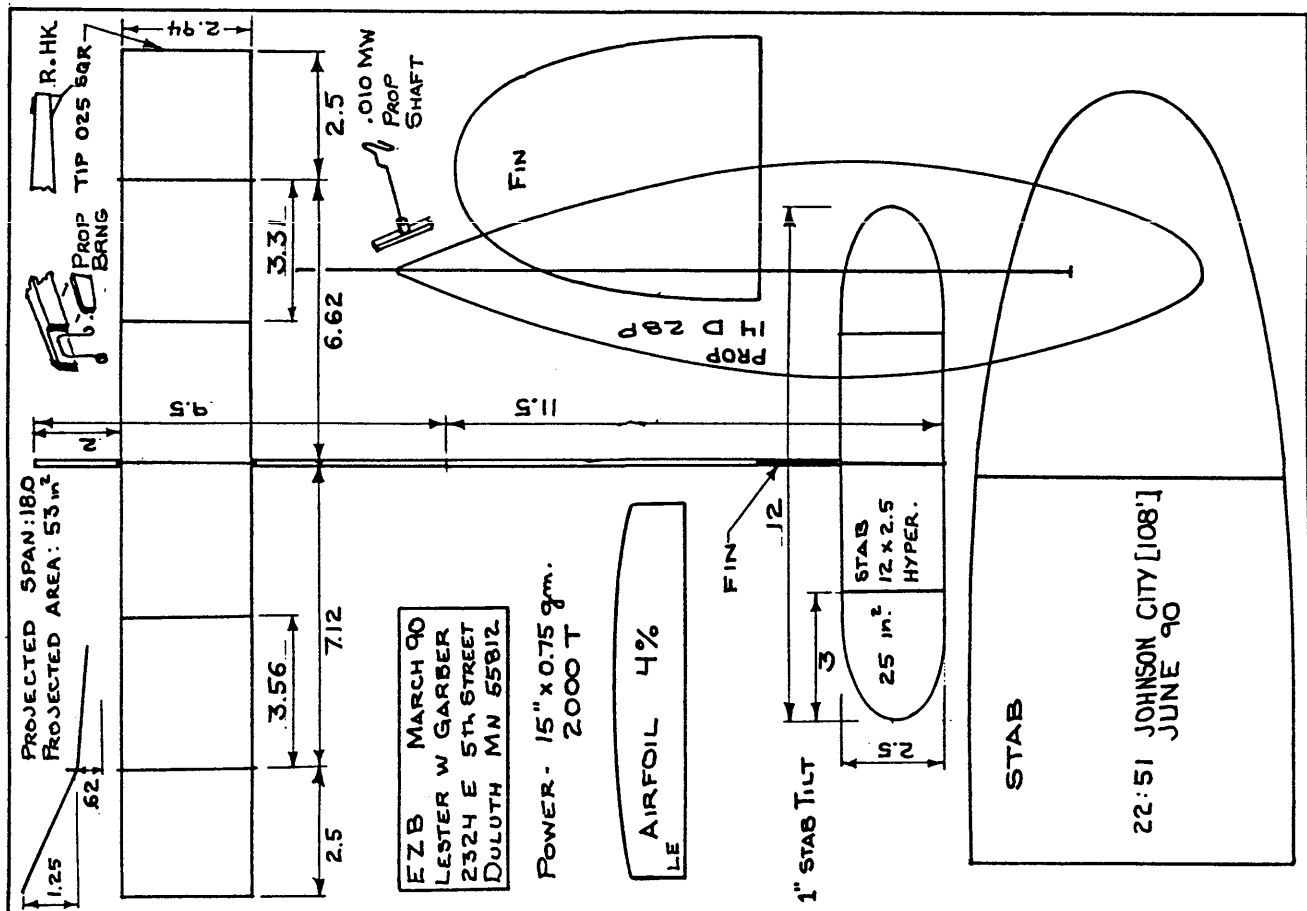
## Subscription Status

SUBSCRIPTION EXPIRES THIS ISSUE -----

SUBSCRIPTION EXPIRES NEXT ISSUE ~~---~~

FOR RENEWAL - See rates above

NO X - Indicates at least one more issues

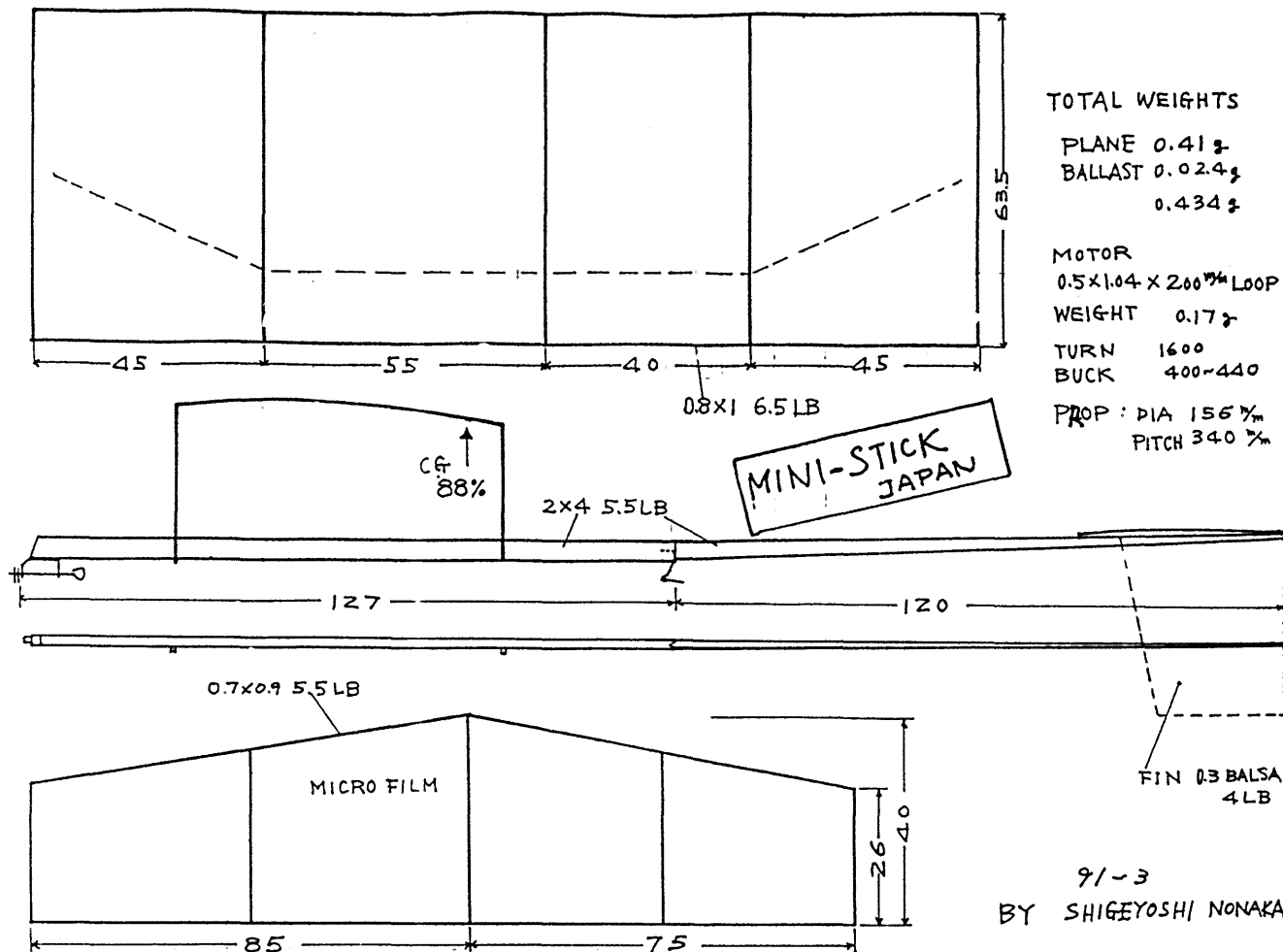


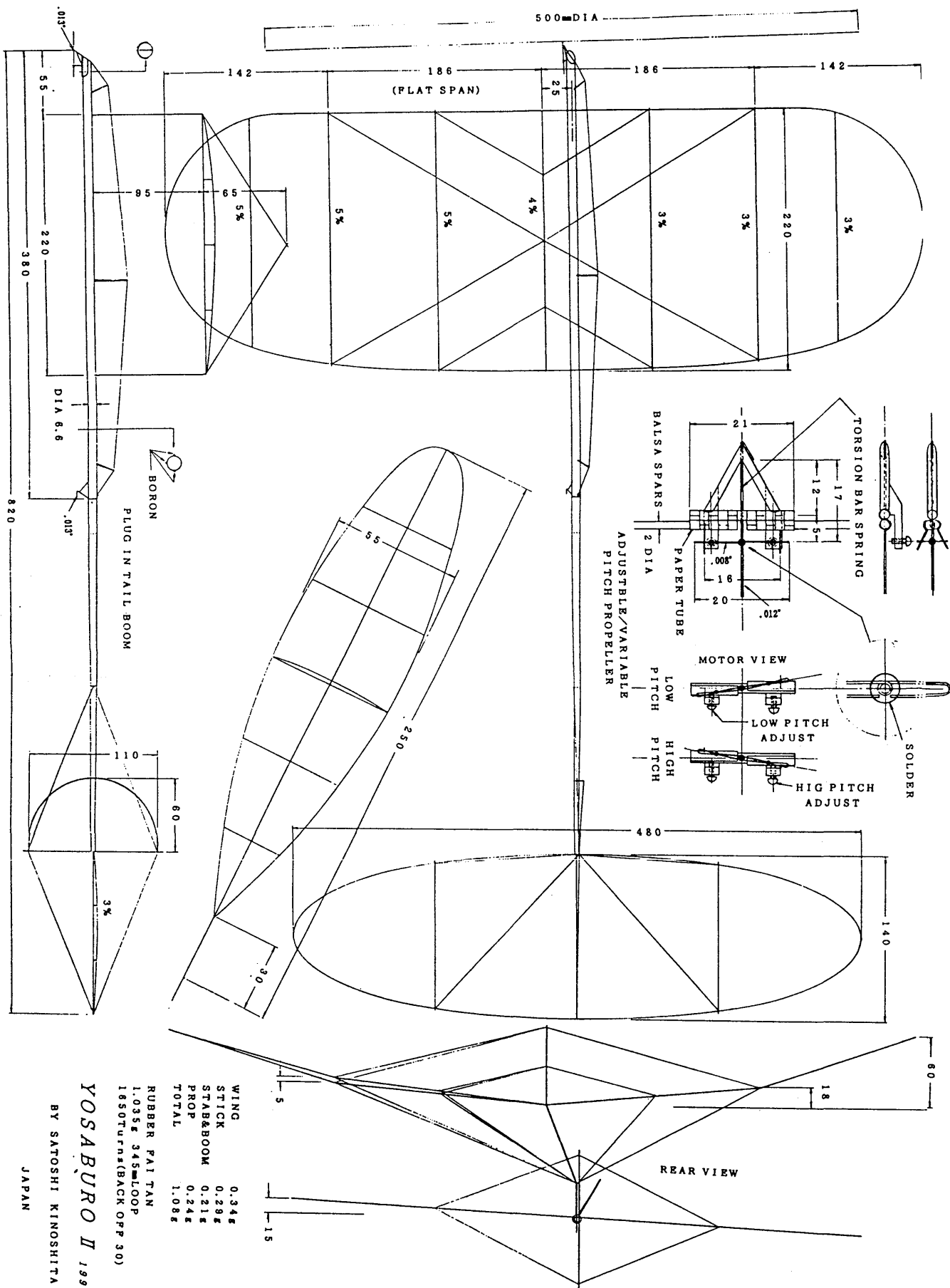
# 1) EZB WOOD SIZES AND DENSITIES.

**Motor Stick:** Size: .160Dx.080W to .240Dx.120W to .160Dx.080W x 9.5L  
Density: 3.7 lb/ft<sup>3</sup>.  
Weight: 0.191 gm.  
**Tail Boom:** Size: .090Dx.075W to .045Dx.040W x 11.5L  
Density: 4.2 lb/ft<sup>3</sup>.  
Weight: 0.051 gm.  
**Front Wing Spars:** Size: .070Dx.030W to .035x.022 x 10L  
Density: 6.5 lb/ft<sup>3</sup>.  
Weight: .027 gm @ 10L before cutting to final length.  
**Rear Wing Spars:** Size: .065Dx.027W to .030x.025 x 10L  
Density: 4 lb/ft<sup>3</sup>.  
Weight: .019 gm @ 10L before cutting to final length.  
Note: Left rear spar is heavier (.020 gm @ 10L) than is right rear spar (.018 gm).  
**Wing Ribs:** Size: .030Dx.019W  
Density: 4 lb/ft<sup>3</sup>.  
Weight: 5 ribs weighed .006 gm.  
Note: Stab ribs .025Dx.019W  
**Stab Spars:** Size: .040Dx.020W to .020Dx.020W to .040Dx.020W  
Density: 5.5 lb/ft<sup>3</sup>.  
Size: .020 x .020  
**Fin Frame:** Density: 5 lb/ft<sup>3</sup>.  
Size: .047 Dia x 1 L  
**Wing Posts:** Density: 5.5 lb/ft<sup>3</sup>.  
Weight: 2 posts, .009 gm.  
**Prop Spar:** Size: .028x.028 to .059Dx.052W to .028x.028 x 12L  
Density: Center 3 in. section 6 lb/ft<sup>3</sup>.  
Outer 4.5 in. sections 4 lb/ft<sup>3</sup>.  
Weight: 0.032 gm.  
Note: Prop spar+.010 prop shaft+Teflon Brng: .049 gm.  
**Prop Blades:** Size: .005/.006 Quarter grain (Sand to dim. on glass).  
Density: 4 lb/ft<sup>3</sup>, (low as possible)  
Weight: .045 gm finished weight.  
Note: Grain at 30 deg. to prop shaft. On blades, glue blade sections with .060 lap joints before cooking blade to shape.

## 2) WEIGHTS OF COMPONENTS.

Flat wing frame: 0.112 gm.  
Covered flat wing frame: 0.192 gm. (Mylar + Spray = 0.080 gm)  
Covered wing w/ posts & Dih: 0.205 gm.  
Stab frame: 0.030 gm.  
Covered stab: 0.070 gm.  
Fin frame: 0.003 gm.  
Covered fin: 0.009 gm.  
Total Mylar + Spray: 0.126 gm.  
Nose Bearing (0.010 MW): 0.006 gm.  
Motor Stick: 0.191 gm.  
MS + Brng: 0.208 gm.  
MS + Brng + R.Hk: 0.214 gm.  
MS + Brng + R.Hk + T. tubes: 0.217 gm.  
Tail Boom: 0.051 gm.  
Body + Tail: 0.352 gm.  
Wing + Posts: 0.205 gm.  
Prop: 0.149 gm.  
TOTAL WEIGHT: 0.706 gm.





WING 0.34g  
 STICK 0.28g  
 STAB&BOOM 0.21g  
 PROP 0.24g  
 TOTAL 1.06g

RUBBER FLY TAN  
 1.035g 345=LOOP  
 1650turns(BACK OFF 30)

YOSABURO II 1991

BY SATOSHI KINOSHITA

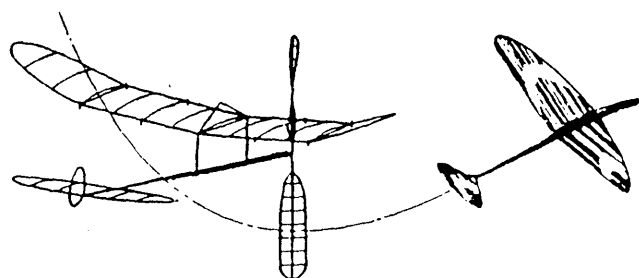
JAPAN

The Voice of N.I.M.A.S.

# INDOOR

NEWS and VIEWS MAY - 1991 #49,50

Editor: Frank Kieser - 2595 Whippoorwill Lane, Vero Beach, FL 32960 (407) 569-7812



## AMA NATIONALS combined with TENTH UNITED STATES INDOOR CHAMPIONSHIPS

June 6, 7, 8, 9, 1991

"Mini-Dome"—East Tennessee State University  
Johnson City, TN



NFFS

Sponsored by  
National Free Flight Society/  
Academy of Model Aeronautics



### REVISED SCHEDULE

DOMES HOURS	7A	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10P
THURSDAY 6/6		HLG/CAT GLI					INT. STK/MANH.									
7:00A																
11:00P																
FRIDAY 6/7		BOST/NO-CAL														
7:00A		SPEED/KIT PLAN														
7:00P		SPCL. DELTA D. (UNOFF.)														
		7" MINI-STICK (UNOFF.)														
SATURDAY 6/8		PEANUT SC/RUB SC														
7:00A		GRAND PRIX/FAC EVENTS														
10:30P		SPCL. DELTA D. (UNOFF.)														
		7" MINI-STICK (UNOFF.)														
		FED. ROG														
SUNDAY 6/9		PP														
7:00A																
10:00P																

The tenth annual United States Indoor Championship will be held for the sixth successive year in the Mini-dome and for the second year, it will also be the AMA National Indoor Championships. As everyone knows who has been there previously, it is a marvelous site. The ceiling is 116 feet at the center of the arch and the floor is 206 feet by 420 feet. In previous years, the air has been very calm with little drift and models that have gone to the ceiling have landed in almost the spot from which they were launched.

So we are looking forward to another great contest this year and anyone that makes it will not be disappointed. There will be a total of 26 events of which 14 are National Championships. There certainly should be an event for every indoor modeler from beginner to expert. Please see the revised schedule above and let's make it the biggest turnout yet.

## WHAT'S NEW

As you can see from the masthead, there has been a change in editors since the last issue. Melody and Richard Doig have asked Tony Italiano to find a new editor since their numerous personal and business commitments have prevented them from devoting sufficient time to this publication. At Tony's request, I have agreed to be the new editor, although I have not had much experience at this kind of thing. We all thank Richard and Melody for the fine job they did and I hope I can keep up the high standards they set.

I thought I might give you a few words of introduction about myself. I am one of the many model builders that enjoyed the hobby in my youthful days but had little time to devote to it during the hectic days of raising a family and earning a living as a research and design engineer. As retirement approached a some years ago, I renewed my interest in the hobby and although I had not done so previously, I began competing in the indoor meets in the Cleveland area. I never felt skilled enough for the delicate work of microfilm covered models so I stuck to things like Easy B, Bostonian and the first circular speed contest at West Baden. Then one day, in an airport gift shop, I came across a plastic rubber powered bird and that was my introduction to the ornithopter.

From there, I progressed to Lew Gitlow's ornithopter kit but I had little success with it. It was about that time that Pat Deshayes broke the ornithopter record with his biplane ornithopter. I immediately grasped upon this concept as the solution to the vibration problems I was having with the monoplane design. I added my own innovation of a canard design and had a model ready for the USIC that year in Detroit. Although it was pretty crude and heavy, I placed a close third behind Walter Erbach and Roy White and I knew I was on the right track.

At about that time we decided to move to Jacksonville Beach FL where I had a couple sons living. Fortunately, I got access to the community center building called the Flag Pavilion to do a lot of test flying and gradually I refined the design and improved my construction techniques. I also was able to compete with "Doc" Martin's MIAMA club in some of the fine indoor sites he provided. It soon became obvious that I did have the right design and although there were others that were far better craftsmen than I was, I began winning meets and setting records. Because of my success I devoted more and more time to the ornithopter and less to other types.

So as you can see, I am not the well rounded indoor contestant but I hope I can cater to all your interests. I will be anxious for comments, criticism and suggestions. I will also be looking for technical articles, pictures and anything of interest for our readers.

For those who would be interested in subscribing to the Hangar Pilot send \$12.50 to:  
Dr. John Martin Jr. - Editor  
2180 Tigertail Ave.  
Miami FL 33133 USA

## MIAMA

The glue that holds the indoor modeling world together is the model airplane club starting with the AMA and NFFS and spreading down to the many local clubs throughout the country. They bring together modelers with common interests, provide information exchange, teach newcomers the hobby and sponsor contests and provide flying sites.

One of the best clubs is the MIAMA (Miami Indoor Aircraft Model Association) Club which was started over 20 years ago by Dr. John Martin of Miami, Florida. Their motto is "Indoor Isn't For Everyone". Besides his untiring leadership of the club, "Doc" edits regularly the newsletter "The Hangar Pilot" which is a very unique newsletter featuring aviation and modeling art work (a sample of which is included herein) as well as contest news, plans, technical articles and trivia of general interest. It is certainly worth the subscription price.

Although "Doc" is noted worldwide for his work in Peanut Scale, MIAMA is a club of well rounded indoor interests from intermediate stick to Easy B and Pennyplane to Bostonian to all types of scale contests and even Ornithopter. There are monthly meets in all but the summer months. One of the most notable meets is the Indoor King Orange which is usually held at the Delta Maintenance Hangar at the Tampa Airport over the Christmas to New Years holiday. There is always a good turnout from the club and visitors from the North including Walt Van Gorder, Ron Ganser, Gary Underwood, Dave Aronstein, Roy White, Gerry Nolin and many others. If you get the chance, it is a wonderful meet to attend. Other contest sites are the Mc Dill Air Force hangars, the Clearwater Coast Guard hangar and Miami Dade College.

Some of the best indoor model builders are MIAMA members. In addition to "Doc" some of the scale modelers are Millard Wells who is also one of the fine cover artists, George Nunez, Wayne Trivin, Dave Linstrum, Mike Arak, Walt Everson and Rich Mac Entee. MIAMA is also graced by one of the few expert lady builders, Nancy Beitz whose scale models are superb. Dick Obarski has long been a top contender in intermediate stick, Easy B, Pennyplane and Bostonian. Bill Criss and Walt Everson compete in Embryo Endurance and Scale and Frank Kieser has been just about the sole ornithopter competitor. Another unique builder is Charlie Slater who designs and builds scale helicopters, with a driven rear rotor, that fly very realistically.

Finally we must pay tribute to "Doc's" contest organization. Bill Criss, a retired Air Force officer, has been responsible for getting the Mc Dill hangar. There are also the large job of Contest Directors among them being Dick and Elsie Obarski, Rich Mac Entee, Dave Linstrum and "Doc" himself. Dick also secures the Delta hangar for the King Orange meet.

In closing, no one in the MIAMA Club will ever forget Tony Becker who it seems like only yesterday left us for that better place in the sky. Tony was one of the finest model builders I have known and held many records in Pennyplane and other events. He was also a great and always helpful person. We will always miss him.

## SIMPLE ORNITHOPTER DESIGN

Tony Italiano has proposed a new class of ornithopter for the beginner as outlined in his letter below followed by my response to him. I would be happy to hear from anyone with ideas for this design.

Dear Frank

April 14, 1991

It seems to me that we need to revive the ornithopter event or at least kick it up to a higher level of participation.

The designs and technology are too complex for the average modeler. Why not create a new ornithopter event around the "KISS" principal? Create a set of rules that will result in simple designs that rank amateurs can build. Possibly limit size, weight (if needed), single set of flapping wings, tractor or canard, etc. It would also be extremely helpful if a very detailed set of instructions could be written and offered. Also, the hinge/pin design could be molded as a package and then maybe we could get Lee Campbell to produce the whole thing. A couple of simple designs could be presented in the various press vehicles.

Think about it. Maybe you could put that as a challenge in the newsletter.

Have fun, Tony

Dear Tony,

April 19, 1991

I read your recent letter with interest and I agree with most of what you said. We do need a simple ornithopter design to encourage more indoor builders to give it a try. The ornithopter isn't that difficult a design, it just impresses people that way. The SOD (Simple Ornithopter Design) might have the following rules:

1. No high tech materials such as boron.
2. Minimum weight - say 3.1 gm. - like Pennyplane
3. Maximum span - say 16 inches
4. Mylar covering - OK
5. Stab area - 50 % flapping area max.
6. Solid motor stick

The design should not be restricted to a monoplane. A biplane is no more complex to build, just a few more parts and the advantages of the smoother propulsion is certainly worth it. I, for one, probably never would have continued with ornithopters if I hadn't tried a biplane design.

I am presently working on a design that looks promising. The key is in utilizing a simple tissue hinge for the wing hinges in combination with a simplified assembly procedure. I hope to have one to demonstrate at the USIC. By copy of this letter, I am also requesting other ornithopter designers such as Roy White, Joe Krush, Les Garber and Warren Williams to consider the problem. Hopefully we can all get together at Johnsons City in June.

Sincerely,

Frank

cc: Les Garber, Ken Johnson, Joe Krush, Bob Meuser, Herb Robbins, Roy White, Warren Williams

## EASY B

There is to be a provisional FAI rule for Easy B which will be the same as the AMA rule except that the weight will a minimum of 1.2 gms. and it will be the best 2 of 6 flights. The Contest Board will be receiving a request for interpretation with the following choices:

1. Do not fly FAI rules in AMA competition
2. Fly both in competition
3. Have a provisional ruling to replace the AMA rule with the FAI rule

If either of the last 2 is selected, an additional decision will be made to:

1. Begin immediately
2. Start on Jan. 1, 1992

Contact your Contest Board representative to give him your opinions on this matter.

## ACTIVITIES

For this first issue of mine, I am omitting this section but in future issues, I hope to have a good run-down on planned indoor competition and other activities. Please help to make this complete and informative by sending me a list of those activities you wish to have published. For the time being, see Bud Tenney's column in Model Aviation.

## SUBSCRIPTIONS

We plan to publish this newsletter four to six times a year. Subscription rates include membership in the Indoor Model Airplane Society. The following are the rates for six issues:

\$ 8.00	U.S., Canada, Mexico
\$ 9.00	overseas surface mail
\$11.00	Air mail - Europe & S. Amer.
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Vero Beach, FL 32960  
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## SUBSCRIPTION STATUS

SUBSCRIPTION EXPIRES THIS ISSUE -----

SUBSCRIPTION EXPIRES NEXT ISSUE -----

FOR RENEWAL - See rates above

NO X - Indicates at least two more issues



Bob Randolph getting ready to launch his record-breaking "Top Cat 90L" FID. FROM F.F. DIGEST

## How To Cure Her Headache? Remove Bullet

FERNANDINA BEACH (AP) — An emergency room patient with a bullet in her head denied she had been shot and accepted only pills and staples as treatment.

Three days later, after Josephine Zangla's eyes began bulging out, she went to a second hospital and was admitted. Her husband then was jailed on a charge of attempted murder.

Mrs. Zangla, 40, was in stable condition Friday at Methodist Medical Center in Jacksonville, a hospital spokeswoman said.

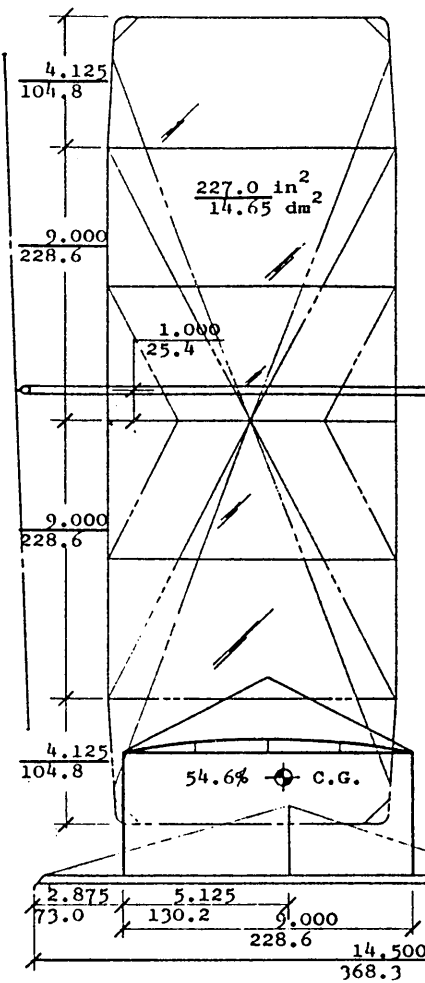
On May 3, when Mrs. Zangla showed up at the emergency room of Nassau General Hospital, she said she had been hit with a gun butt during an argument with her husband. Hospital officials said she refused extensive treatment, possibly because she was trying to protect her husband.



DESIGN & FLIGHT BY ROBERT RANDOLPH

F1D 32a WORLD RECORD 30 MIN. 20 SECONDS  
INDOOR AEROMODELS CAT 1

RECORD FLIGHT DECEMBER 27, 1990  
LOMA LINDA ACADEMY GYM  
LOMA LINDA, CA  
CEILING 25.1 FT. (7.6 M.)



WEIGHTS	OZ	GRAMS
WING	.0110	.31
PROPELLER	.0097	.28
REMAINDER	.0177	.50
	.0384	1.09

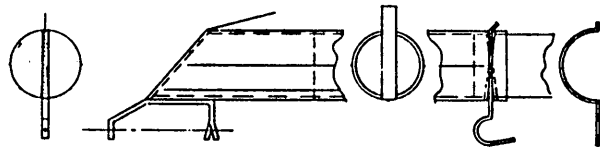
PROPELLER (VAR. PITCH)  
22.0" (559) DIAMETER  
36.5" (927.7) LOW PITCH

RUBBER MOTOR  
13.0" (330) LOOP  
.070" (1.78) WIDTH  
.041" (1.04) THICKNESS  
.047oz. (1.33gms) WEIGHT  
1340 LAUNCH TURNS

All dimensions -  
inches  
millimeters

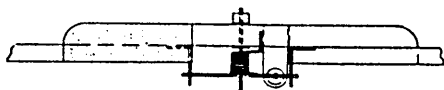


Motorstick



"TOP CAT 90L" DETAILS  
BY ROBERT RANDOLPH

High Pitch Adjustable/  
Variable Pitch Propeller  
22.0"<sup>D</sup> x 36.5"<sup>P</sup> with...  
one-piece Spring-driver



Preload

MOTOR VIEW

Boron-Kevlar Composite Ribs

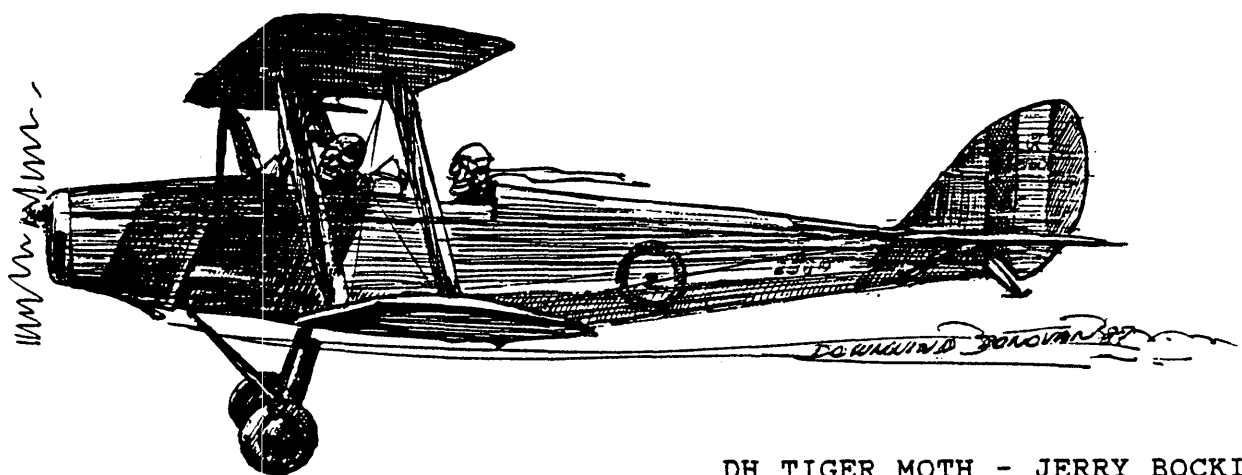
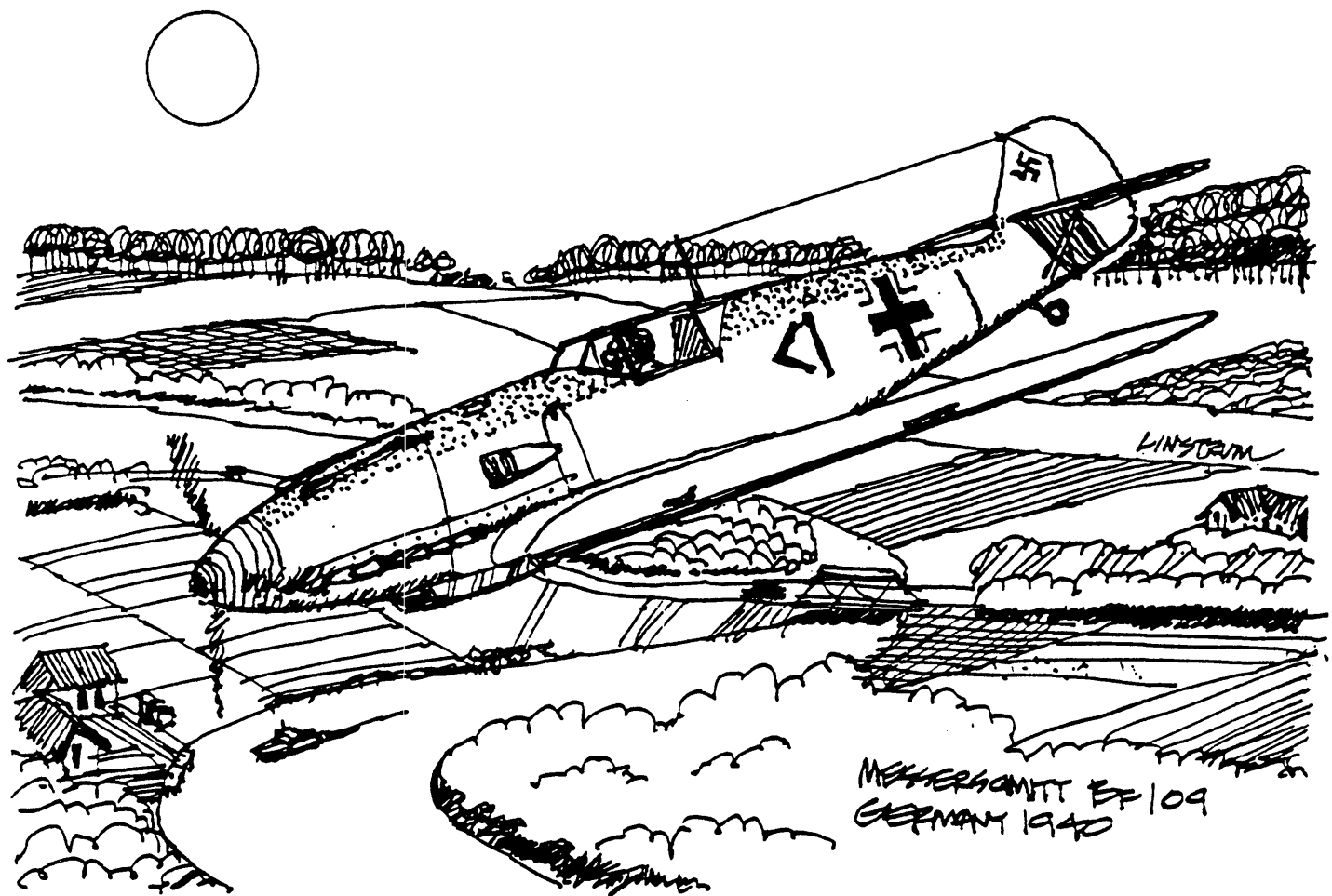
Rudder

Cabane-Posts

ROBERT GIBBS, N.Ae.C.

FOR DESCRIPTION OF BOB'S FLIGHT  
SEE - FREE FLIGHT - MARCH, 1991

Drawn by Jack Carter

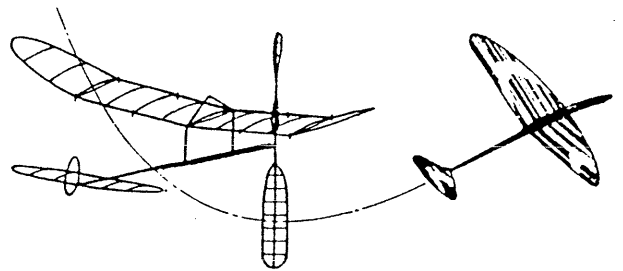


DH TIGER MOTH - JERRY BOCKIUS

COVER ART  
FROM  
THE HANGAR PILOT

# INDOOR

## NEWS and VIEWS



AUGUST - 1991 #51,52

Editor: Frank Kieser - 2595 Whippoorwill Lane, Vero Beach, FL 32960 (407) 569-7812

1991 AMA NATIONAL INDOOR CHAMPIONSHIPS  
UNITED STATES INDOOR CHAMPIONSHIPS  
by A. J. Italiano

### ANOTHER BIGGIE !!

The combined 1991 AMA Indoor Nationals and the Tenth U.S. Indoor Championships has been a resounding success (as perceived by the highly biased CD). The weather was "perfect" in the East Tennessee State University Dome. We enjoyed a count of 120 modelers making over 1,400 official flights. Having the competition spread over 4 days allowed ample time to adjust and competitively fly the darling creations.

This year we had a new event, the MINI-STICK, with both a duration event sponsored by IMARC and a mass launch sponsored by MIAMA. The times for these small models was amazing and it is one of the first times they were flown under such a high ceiling. There were a number of new names on the scene which is a good sign but conversely a number of old familiar names did not appear. Possibly as time progresses, we should think about having such a large competition on an every other year basis. Consider that with the availability of the Lakehurst hangar, we may not be able to support all of the indoor activities by the same modelers.

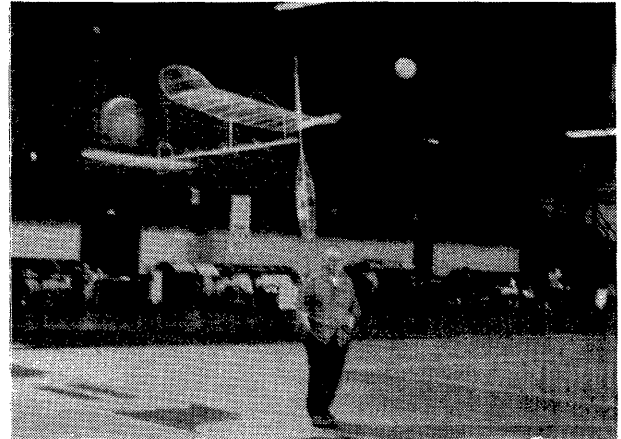
Maybe at a future year, we should run a Johnson City city-wide Delta Dart program. Any volunteers?

The main disappointment was that we only enjoyed the entry of 2 juniors and 2 seniors. On the other hand, we had Messrs. Laurie Barr and Bernard Hunt from England as well as 7 Canadian competitors to compete with the USA crowd. We enjoyed this attempt at infiltrating our activity and they performed exceedingly well. In fact, Jack McGillivray from Canada was the USIC Grand Champion.

During the banquet at the Sheraton Inn, Richard Obarski was inducted into the NFFS Free Flight Hall of Fame.

The downside of the whole proceedings was the announcement that Tony Italiano will be retiring from the active execution of the NFFS USIC. A very great urgency now exists for some aggressive soul or souls to step forward and assume the reigns. A team of 2 or 3 movers could do the job with ease and all it takes is for each of you to assess your priorities --- do you want to have a USIC or have the hobby die an unnatural death?

Step up and be counted, indoor activity needs you.



Joe Krush - Indoor Stick



Laurie Barr & Tom Green - Manhattan Cabin



"Doc" Martin - Mini - Stick

Photos by Frank Kieser

1991 ACADEMY OF MODEL AERONAUTICS NATIONAL CHAMPIONSHIPS  
UNITED STATES INDOOR CHAMPIONSHIPS  
CONTEST DIRECTOR:---A. J. Italiano

HAND LAUNCHED GLIDER-----CD: Doug Barber

PLACE/CONTESTANT	BEST FLIGHT	SECOND BEST	TOTAL BEST 2	PLACE/CONTESTANT	BEST TIME	SECOND BEST	TOTAL BEST 2
JUNIOR				SENIOR			
1 Chris Sydor	42.0	41.0	83.0	1 Jim Buxton	67.5	67.0	134.5
2 Kris Forward	15.4	15.2	30.6	2 Don Deloach	45.3	42.3	87.6
OPEN				OPEN			
1 Bernie Boehm	67.5	67.5	135.0	9 Chuck Slusarczyk	49.5	49.2	98.7
2 Bruce Kimball	65.1	63.3	128.4	10 Mark Vancil	51.9	44.4	96.3
3 Randy Kleinert	58.6	58.3	116.9	11 Dan Belieff	44.1	43.8	87.9
4 Don Slusarczyk	57.7	54.5	112.2	12 Mathew Gagliano	47.0	40.7	87.7
5 Jerry Plassman	55.3	54.1	109.4	13 Bill Schlarb	43.0	42.4	85.4
6 Wayne Trivin	55.3	51.7	107.0	14 Phillip Hartman	41.8	41.1	82.9
7 Moe Whittemore	52.3	52.1	104.4	15 Abram Van Dover	19.0	18.0	37.0
8 Vito Gagliano	51.2	50.8	102.0	16 Tobias Feuer	16.9	16.0	32.9

CATAPULT GLIDER-----COMBINED AGES-----CD: Doug Barber

1 Chuck Markos	80.0	78.4	158.4	15 Bob Champine	60.9	57.2	118.1
2 Wayne Trivin	78.4	75.6	154.0	16 Dan Marek	59.8	57.5	117.3
3 Ralph Schlarb	77.1	74.6	151.7	17 Fred Rash	57.8	56.3	114.1
4 Bill Schlarb	76.0	74.5	150.5	18 Gordon Wisniewski	57.0	56.9	113.9
5 Vito Garofalo	75.3	75.0	150.3	19 Jerry Plassman	57.0	56.2	113.2
6 Phil Klintworth	74.0	73.2	147.2	20 John Triolo	55.3	54.6	109.9
7 Bruce Kimball	73.4	73.3	146.7	21 Jess Shepherd Jr.	51.2	49.8	101.0
8 Don Deloach (SR)	71.3	67.1	138.4	22 Emanuel Radoff	49.1	48.4	97.5
9 Jerry Nolin	67.6	67.2	134.8	23 Stuart Weckerly	49.1	42.2	91.3
10 Ed Konefes	65.1	63.9	129.0	24 Anthony D'Alessandro	46.2	41.7	87.9
11 Ed Deloach	63.4	63.1	126.5	25 John Voorhees	45.3	40.3	85.6
12 Laurie Barr	62.0	59.8	121.8	26 Walter Eggert	44.7	37.6	82.3
13 Richard Doig	60.6	59.8	120.4	27 Tobias Feuer	34.0	31.3	65.3
14 Dan Belieff	60.7	57.7	118.4	28 Moe Whittemore	27.2	10.0	37.2

FAI INDOOR (F1D)-----COMBINED AGES-----CD: Charlie Sotich

1 Larry Cailliau	40:48	38:31	01:19:19	8 Chuck Slusarczyk	31:11	30:32	01:01:43
2 Jack McGillivray	35:43	34:34	01:10:17	9 Jess Shepherd Jr.	32:02	26:39	00:58:41
3 Don Slusarczyk	34:45	33:42	01:08:27	10 Tom Iacobellis	30:12	23:32	00:53:44
4 Bill Hulbert	34:15	34:07	01:08:22	11 Randy Kleinert	27:01	24:45	00:51:46
5 Stan Chilton	33:19	32:09	01:05:28	12 Gilbert Graunke	26:16	25:10	00:51:26
6 Richard Doig	32:51	30:29	01:03:20	13 Edward Burke	15:05	14:49	00:29:54
7 Dan Belieff	32:52	28:56	01:01:48	14 John Chizmadia	14:00	00:00	00:14:00

INTERMEDIATE STICK-----CD: Del Ogren

PLACE/CONTESTANT	BEST FLIGHT	PLACE/CONTESTANT	BEST FLIGHT	PLACE/CONTESTANT	BEST FLIGHT
JUNIOR/SENIOR		OPEN		OPEN	
1 Don Deloach	17:34	9 Ron Ganser	24:47	21 Gordon Wisniewski	18:52
2 Jim Buxton	16:49	10 James Grant	24:14	22 Joseph Krush	18:31
OPEN		11 John Maret	22:56	23 Dan Marek	18:07
1 Dan Belieff	28:23	12 Laurie Barr	22:16	24 Walter Van Gorder	17:52
2 Dick Obarski	28:05	13 Bernard Hunt	22:03	25 Tony Sutter	16:37
3 Stan Chilton	27:45	14 Douglas Barber	21:48	26 W. Hewitt Phillips	16:01
4 John Triolo	26:54	15 Lew Gitlow	21:16	27 Jess Shepherd Jr.	14:43
5 Jack McGillivray	26:26	16 Tom Iacobellis	20:24	28 John Voorhees	14:05
6 Larry Loucka	26:26	17 Chuck Markos	20:09	29 Phillip Hartman	11:50
7 Don Slusarczyk	25:43	18 Walter Eggert	19:39	30 Randy Kleinert	10:38
8 Chuck Slusarczyk	25:02	19 Tom Vallee	19:37	31 David Raymond-Jones	05:15
		20 Wally Simmers	19:11	32 John Chizmadia	01:04

HAND LAUNCHED STICK-----CD: Charlie Sotich

JUNIOR/SENIOR		OPEN		OPEN	
1 Don Deloach	17:07	4 Stan Chilton	33:08	10 Tom Vallee	19:34
		5 James Grant	31:54	11 Dan Belieff	16:44
		6 Jess Shepherd Jr.	28:54	12 Edward Burke	13:03
OPEN		7 Larry Loucka	22:21	13 Chuck Slusarczyk	07:27
1 Don Slusarczyk	38:36	8 Joseph Krush	20:21		
2 Larry Cailliau	37:54	9 Wally Simmers	20:09		
3 Richard Doig	37:24				

1991 ACADEMY OF MODEL AERONAUTICS NATIONAL CHAMPIONSHIPS (cont.)  
 UNITED STATES INDOOR CHAMPIONSHIPS  
 CONTEST DIRECTOR:---A. J. Italiano

LIMITED PENNYPLANE-----CD: Walter Erbach

PLACE/CONTESTANT JUNIOR/SENIOR	BEST FLIGHT	PLACE/CONTESTANT OPEN	BEST FLIGHT	PLACE/CONTESTANT OPEN	BEST FLIGHT
JUNIOR		OPEN			
1 Kris Forward	09:36	19 William Clarke	11:57	44 Del Ogren	09:57
2 Chris Sydor	05:35	20 Larry Loucka	11:47	45 Burr Stanton	09:55
		21 Dan O'Grady	11:45	46 John Barker	09:48
SENIOR		22 Emanuel Radoff	11:40	47 James Grant	09:44
1 Don Deloach	12:35	23 Wally Simmers	11:37	48 Jerry Plassman	09:41
2 Jim Buxton	11:04	24 Tom Vallee	11:34	49 Louis Leifer	09:40
OPEN		25 Ed Konefes	11:32	50 Peter Brocks	09:37
1 Jerry Nolin	13:42	26 Chuck Slusarczyk	11:23	51 Chester Wrzos	09:27
2 Walter Van Gorder	13:22	27 Dan Marek	11:18	52 Abran Van Dover	09:22
3 Tom Green	13:17	28 Fred Rash	11:16	53 Jack McGillivray	09:19
4 Wayne Trivin	13:11	29 John Ganser	11:11	54 Stan Fink	09:05
5 Bernard Hunt	13:09	30 John Voorhees	11:09	55 James Zufelt	08:56
6 Jim Clem	12:53	31 Lew Gitlow	11:08	56 Moe Whittemore	08:49
7 Richard Miller	12:47	32 Larry Mizk	11:00	57 John Fellin	08:48
8 Bruce Kimball	12:44	33 Walter Eggert	10:55	58 Jim Jones	08:45
9 Bob Champine	12:39	34 Paul Avery	10:48	59 W. Hewitt Phillips	08:42
10 Laurie Barr	12:28	35 Don Slusarczyk	10:44	60 Harry Geyer	08:34
11 Gordon Wisniewski	12:25	36 Anthony D'Alessandro	10:42	61 Mark Vancil	08:18
12 Tom Iacobellis	12:16	37 Dan Belieff	10:41	62 Billie Landrum	08:17
13 John Marett	12:13	38 Chuck Markos	10:36	63 John Blair	08:02
14 Douglas Barber	12:08	39 Douglas Barry	10:08	64 Richard Doig	07:31
15 Ron Ganser	12:07	40 Lester Garber	10:06	65 Stuart Weckerly	06:36
16 Phillip Hartman	12:07	41 Joseph Krush	10:00	66 Tobias Feuer	04:06
17 Tony Sutter	11:57	42 Dick Obarski	09:59	67 Lou Black	03:42
18 Randy Kleinert	11:57	43 David Raymond-Jones	09:57	68 Bill Bigge	03:30

PENNYPLANE-----CD: Phil Klintworth

JUNIOR/SENIOR		OPEN		OPEN	
1 Jim Buxton (SR)	11:27	9 John Voorhees	13:43	23 David Raymond-Jones	11:01
2 Don Deloach (SR)	11:14	10 Emanuel Radoff	13:39	24 Tony Sutter	10:39
3 Kris Forward (JR)	09:00	11 Bernard Hunt	13:14	25 Joseph Krush	10:33
4 Chris Sydor (JR)	05:17	12 Phillip Hartman	12:43	26 Bob Champine	10:38
OPEN		13 Tom Green	12:34	27 Bruce Kimball	10:13
1 Lester Garber	15:31	14 John Marett	12:33	28 Abram Van Dover	10:09
2 Gordon Wisniewski	15:11	15 Jerry Nolin	12:20	29 Peter Brocks	10:08
3 Douglas Barber	14:51	16 Ron Ganser	12:15	30 Wally Simmers	09:57
4 Larry Louka	14:47	17 Ed Konefes	11:43	31 Larry Mzik	09:43
5 Don Slusarczyk	14:26	18 Jack McGillivray	11:39	32 John Fellin	09:40
6 Tom Vallee	14:26	19 Fred Rash	11:38	33 James Zufelt	08:02
7 Chuck Slusarczyk	14:20	20 Walter Eggert	11:37	34 Billie Landrum	06:29
8 Tom Iacobellis	13:54	21 Randy Kleinert	11:19	35 Mark Vancil	04:42
		22 Jim Clem	11:15	36 Jess Shepherd Jr.	03:30

MANHATTAN CABIN-----COMBINED AGES-----CD: Abram Van Dover

1 John Marett	11:51	6 Joseph Krush	10:40	11 Moe Whittemore	07:35
2 Walter Van Gorder	11:50	7 Chuck Markos	10:29	12 Stuart Wackerly	07:24
3 James Grant	11:43	8 Ron Ganser	10:26	13 Paul Avery	06:00
4 Anthony D'Alessandro	11:29	9 John Triolo	09:02		
5 Laurie Barr	11:12	10 Randy Kleinert	07:51		

NO-CAL-----COMBINED AGES-----CD: Jerry Nolin

1 Chuck Slusarczyk	06:15	9 Daniel Baird	03:44	17 Douglas Barry	01:48
2 David Aronstein	05:26	10 Richard Stonecipher	03:25	18 Abram Van Dover	01:41
3 Lester Garber	05:01	11 Moe Whittemore	03:22	19 Randy Kleinert	02:01
4 John Marett	04:47	12 Dick Obarski	03:17	20 William Clarke	01:35
5 John Voorhees	04:27	13 Ed Konefes	02:53	21 Vito Gagliano	00:41
6 John Ganser	04:01	14 Stuart Weckerly	02:43	22 Burr Stanton	00:03
7 David Aronstein	03:55	15 Walter Eggert	02:26		
8 Jim Buxton (SR)	03:52	16 Bob Champine	02:07		

1991 ACADEMY OF MODEL AERONAUTICS NATIONAL CHAMPIONSHIPS (cont.)  
UNITED STATES INDOOR CHAMPIONSHIPS  
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EZB-----CD: Cliff Culpepper

PLACE/CONTESTANT	BEST FLIGHT	PLACE/CONTESTANT	BEST FLIGHT	PLACE/CONTESTANT	BEST FLIGHT
JUNIOR/SENIOR					
1 Don Deloach (SR)	19:18	16 Dick Obarski	18:56	36 Dan Baird	15:10
2 Jim Buxton (SR)	07:03	17 Gordon Wisniewski	18:37	37 Stan Fink	14:15
3 Chris Sydor (JR)	06:47	18 Randy Kleinert	18:17	38 James Zufelt	14:09
OPEN					
1 Laurie Barr	22:07	19 Louis Leifer	17:49	39 David Aronstein	14:06
2 Don Slusarczyk	22:02	20 James Grant	17:46	40 Jess Shepherd Jr.	13:48
3 Lester Garber	22:02	21 Richard Miller	17:46	41 Tom Vallee	13:42
4 Bernard Hunt	21:22	22 Stuart Weckerly	17:36	42 John Voorhees	13:32
5 Stan Chilton	21:22	23 Wally Simmers	17:36	43 Fred Rash	12:57
6 Chuck Slusarczyk	21:15	24 Larry Mzik	17:17	44 Douglas Barber	12:16
7 Jerry Nolin	21:11	25 Dan O'Grady	17:08	45 Jerry Plassman	11:44
8 Chuck Markos	20:59	26 Mark Vancil	17:07	46 John Ganser	11:38
9 Jack McGillivray	20:51	27 Gary Underwood	17:06	47 Bob Champine	10:58
10 Dan Belieff	20:47	28 Tom Iacobellis	17:08	48 John Fellin	10:56
11 Walter Van Gorder	20:45	29 Ron Ganser	16:52	49 David Raymond-Jones	09:48
12 John Maret	20:18	30 Jim Clem	16:30	50 Chester Wrzos	08:41
13 Bruce Kimball	20:11	31 Emanuel Radoff	16:29	51 Moe Whittemore	08:38
14 Andrew Tagliafico	19:45	32 Richard Doig	16:21	52 John Chizmadia	07:12
15 Lew Gitlow	19:15	33 Gilbert Graunke	15:13	53 Tony Sutter	05:14
		32 John Barker	15:13		
		35 Dan Marek	15:13		

ORNITHOPTER-----COMBINED AGES-----CD: Burr Stanton

1 Frank Kieser	14:09	2 Joseph Krush	08:37
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HELICOPTER-----COMBINED AGES-----CD: Burr Stanton

1 Tom Vallee	11:17	3 John Maret	05:54
2 Ron Ganser	08:57	4 Larry Loucka	02:02

PEANUT SPEED-----COMBINED AGES-----CD: Larry Mzik

1 Chuck Markos	14.07 MPH
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UNLIMITED SPEED-----COMBINED AGES-----CD: Larry Mzik

1 Chuck Markos	14.21	2 Richard Doig	12.17 MPH	3 Jerry Plassman	8.47 MPH
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BOSTONIAN-----COMBINED AGES-----CD: Gordy Wisniewski

PLACE/CONTESTANT	BEST FLT	SECND BEST	TOTAL BEST 2	CHARISMA	TOTAL	PLACE/CONTESTANT	BEST FLT	SECND BEST	TOTAL BEST 2	CHARISMA	TOTAL
1 David Aronstein	5:02	4:46	9:48	1.20	705.60	17 Hewitt Phillips	2:13	1:59	4:12	1.18	297.36
2 Richard Miller	4:20	4:14	8:34	1.16	596.24	18 Sidney Gilbert	2:10	2:10	4:20	1.13	293.80
3 Wayne Trivin	4:16	3:59	8:15	1.19	589.05	19 Stan Fink	2:04	2:02	4:06	1.19	292.74
4 Red Boyles #1	4:19	3:54	8:13	1.17	576.81	20 Phillip Hartman	2:04	1:52	3:56	1.18	278.48
5 John Maret	3:41	3:36	7:17	1.18	515.66	21 Fred Rash	1:45	1:43	3:28	1.12	232.96
6 Stuart Weckerly	3:40	3:26	7:06	1.20	511.20	22 Jim Pollard	1:52	1:48	3:40	1.00	220.00
7 Ron Ganser	3:29	3:13	6:42	1.20	482.40	23 Aaron Gower	1:49	1:48	3:37	1.00	217.00
8 Judy Boyles	3:45	3:01	6:46	1.14	462.84	24 Kenneth Crump	1:42	1:41	3:23	1.00	203.00
9 Jim Miller	3:22	3:18	6:40	1.12	448.00	25 John Blair	1:50	0:58	2:48	1.15	193.20
10 Dick Obarski	3:16	3:09	6:25	1.14	438.90	26 Tom Iacobellis	2:41	0:00	2:41	1.16	186.76
11 Don Lindley	3:06	2:36	5:42	1.14	389.88	27 Bob Champine	1:19	1:17	2:36	1.12	174.72
12 Chuck Markos	2:51	2:44	3:35	1.15	385.25	28 John Fellin	1:13	1:07	2:20	1.14	159.60
13 Paul Avery	2:46	2:32	5:18	1.16	368.88	29 C. Wojtkiewicz	1:07	1:02	2:09	1.14	147.06
14 John Barker	2:35	2:33	5:08	1.19	366.52	30 Edward Sullivan	0:50	0:43	1:33	1.12	104.16
15 C. David Smith	2:39	2:34	5:13	1.00	313.00	31 William Clarke	0:51	0:29	1:20	1.20	96.00
16 Ed Konefes	2:14	2:09	4:23	1.15	302.45	32 John Ganser	0:31	0:28	0:59	1.13	66.67

AMA SCALE-----COMBINED AGES-----CD: Phil Klintworth

PLACE/CONTESTANT	SUBJECT	BEST FLT	SECND BEST	AVER BE 2	SCALE PTS	TOT	PLACE/CONTESTANT	SUBJECT	BEST FLT	SECND BEST	AVER BE 2	SCALE PTS	TOT
1 Jack McGillivray	SE5	90	95	90	87	177	7 Ed Deloach	Fokker D-7	69	66	68	67	131
2 Wayne Trivin	?	90	91	90	84	174	8 Don Deloach(S)	DH6	67	65	65	63	129
3 Jim Miller	?	90	93	90	82	172	9 John Blair	?	40	37	39	90	129
4 Stuart Wackerly	?	90	109	90	62	152	10 James Pollard	?	55	49	52	72	124
5 George Nunez	Aeronca K	84	75	80	61	141	11 Dave Rees	?	61	0	31	70	101
6 George Nunez	Rumpler	61	60	61	78	139	12 Don Deloach(SR)	BD4	0	0	0	67	0

1991 ACADEMY OF MODEL AERONAUTICS NATIONAL CHAMPIONSHIPS (cont.)  
 UNITED STATES INDOOR CHAMPIONSHIPS  
 CONTEST DIRECTOR:---A. J. Italiano

PEANUT SCALE-----COMBINED AGES-----CD: Phil Klintworth

PLACE/CONTESTANT	SUBJECT	BEST	SECND	AVER	SCALE	PLACE/CONTESTANT	SUBJECT	BEST	SECND	AVER	SCALE
JUNIOR/SENIOR		FLT	BEST	BE 2	PTS TOT	JUNIOR/SENIOR		FLT	BEST	BE 2	PTS TOT
1 Don DeLoach(SR)	Voisin Hyd.	111	111	111	110.7 221						
OPEN											
1 Don Slusarczyk	Voisin Hyd.	127	127	127	127. 254	11 Stan Fink #2	Fokker D-8	46	45	46	88.8 134
2 Jim Miller #1	Voisin Hyd.	103	102	103	114.8 217	12 James Pollard	Tigermoth	63	62	63	71.4 134
3 Jack McGillivray	Isaacs Fury	104	104	104	103.5 207	13 Dr. John Martin	Waco Cabin	66	66	66	65.6 131
4 Wayne Trivin	Dumont 14bis	88	84	86	117.6 204		(on floats)				
5 Walter Eggert	SE5	89	88	89	92.9 181	14 Les Garber	Hergt Mono.	65	65	65	64.5 129
6 James Grant	CLA3	79	76	78	90.6 168	15 Dave Rees	Colibri	41	38	40	87.0 126
7 George Nunez #1	Sop. Tripe	54	52	53	99.0 152	16 Jerry Plassman	Piper J-3	63	63	63	63.0 126
8 C. Wojtkiewicz	Wright WP-1	67	67	67	78.8 146	17 Stan Fink #1	Gee Bee 4	43	26	35	78.2 113
9 Tom Nied	Bat Baboon	43	41	42	94.0 136	18 Ed DeLoach	Dumont 14bis	68	0	34	68.3 102
10 George Nenez #2	Turbo Beaver	67	67	67	67.2 134	19 Joe Mason	Cougar	34	34	34	34.4 69

KIT PLAN-----COMBINED AGES-----CD: Cliff Cullpepper

PLACE/CONTESTANT	SUBJECT	BEST	SECND	FIDEL	CRAFT	PLACE/CONTESTANT	SUBJECT	BEST	SECND	AVER	SCALE
		FLT	BEST	PTS	PTS TOT	JUNIOR/SENIOR		FLT	BEST	BE 2	PTS TOT
1 Paul Avery	Piper Vag.	90	90	55	30 270	9 Tony Sutter	Porter PC-6	60	60	40	20 180
2 John Blair	Piper Cub	85	85	50	35 255	10 Ed Konefes	Found	60	60	40	20 180
3 Walter Eggert	Pusmoth	80	80	50	30 240	11 Judy Nunez	Daphne	55	55	40	15 165
4 Dave Linstrum	Daphne	78	78	48	30 234	12 Tom Nied	Porter PC-6	69	0	45	30 144
5 Chuck Markos	Comet Piper	73	73	48	25 219	13 Richard Miller	Howard DGA	0	0	50	30 80
6 Dr. John Martin	Piper Cub	74	70	45	30 219	14 Don DeLoach(SR)	BD-4	0	0	48	30 78
7 Ed DeLoach	Fokker D-8	67	66	49	32 214	15 Burr Stanton	Curtis Robin	0	0	45	25 70
8 Stuart Wackerly	Found	63	63	40	23 189						

FEDERATION ROG-----CD: Jesse Shepherd

1 Jim Clem	08:48	7 Dick Obarski	06:04	13 Anthony D'Alessandro	04:31
2 Andrew Tagliafico	08:03	8 Fred Rash	05:59	14 Stan Fink	03:35
3 David Aronstein	07:22	9 Douglas Barber	05:42	15 John Ganster	03:21
4 Wayne Trivin	07:03	10 Doc Martin	05:09	16 Tobias Feuer	02:29
5 Moe Whittemore	06:46	11 Daniel Baird	04:40		
6 Lester Garber	06:17	12 Tony Sutter	04:31		

-----1991 FEDERATION R.O.G. TEAM-----

PLACE/TEAM	MEMBERS	BEST	FLIGHT	TOTAL	PLACE/TEAM	MEMBERS	BEST	FLIGHT	TOTAL
1 Washington	Tagliafico	08:03	15:23		5 New Jersey	Barber	05:42	09:03	
	Aronstein	07:22				J. Ganster	03:21		
2 Texas	Clem	08:48	13:19		6 Pennsylvania	D'Alessandro	04:31	08:06	
	Sutter	04:31				Fink	03:35		
3 Florida	Trivin	07:03	13:07		7 Indiana	Whittemore	06:46	06:46	
	Obarski	06:04							
	Martin	05:09			8 Minnesota	Garber	06:17	06:17	
4 Tennessee	Rash	04:40	10:39		9 New York	Feuer	02:29	02:29	
	Baird	05:59							

MINI STICK-----INMARC DURATION

1 Tom Vallee	09:07	7 Doug Barry	06:16	13 Dr. John Martin	05:23
2 Tony D'Alessandro	08:55	8 Dan O'Grady	05:54	(Shillelaghi I Noir)	
3 Laurie Barr	08:26	9 Dr. John Martin	05:41	14 Jerry Plassman	05:05
4 Wayne Trivin	07:57	(Shillelaghi II Rouge)		15 Jim Buxtin	04:34
5 Dan Belieff	07:32	10 John Ganster	05:37	16 Bill Bigge	03:56
6 Vern Hacker	06:27	11 John Blair	05:36	17 Burr Stanton	03:24
		12 Stan Fink	05:34	18 Larry Staples	03:17

MINI-STICK-----MIAMA MASS LAUNCH

LAUNCH #1	1 Tom Vallee	2 Dan Belieff	3 Laurie Barr	LAUNCH #2	John Triolo
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PARTICIPANTS-Daniel Baird, Laurie Barr, Doug Barry, Dan Belieff, Bill Bigge, John Blair  
 John Blair, Jim Buxtin, Tony D'Alessandro, Richard Ennis, John Fellin, Vern Hack  
 Jorgen Korsgard, Joe Krush, Richard Miller, Judi Nunez, Chuck Schultz, John Triolo  
 Tom Tileston, Wayne Trivin, Mark Vancil, Dr. John Martin, Team Stanton, Alice & Burr

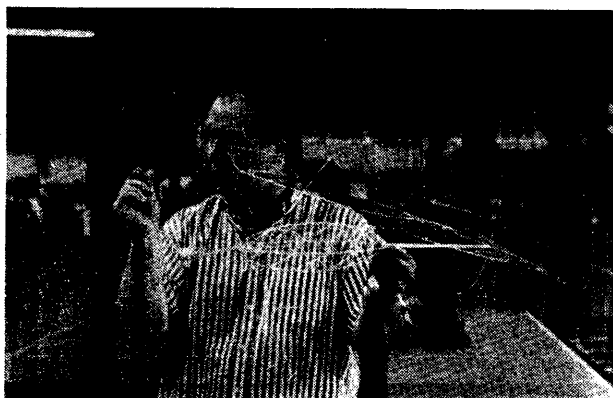
## 1991 UNITED STATES INDOOR CHAMPIONSHIPS - GRAND CHAMPION

PLACE/CONTESTANT	1	2	3	4	5	6	7	TOTAL
1 Jack McGillivray	93.1	88.6	81.5	100.0	68.0	75.1	94.3	600.6
2 Ron Ganser	87.3	67.5	68.3	100.0	88.4	88.0	78.9	578.4
3 Don Slusarczyk	90.5	100.0	86.3	--	100.0	93.0	99.6	569.4
4 John Marett	80.8	52.3	73.0	89.2	100.0	80.9	91.8	568.0
5 Chuck Slusarczyk	90.5	77.8	83.1	--	92.4	73.1	96.1	513.0
6 Joe Krush	65.2	51.5	52.7	78.9	73.0	90.0	68.0	479.3
7 Tom Iacobellis	71.9	67.7	--	66.2	89.5	89.6	77.1	462.0
8 Tom Vallee	69.1	100.0	--	50.7	--	84.4	93.0	397.2
9 Don Deloach (SR)	64.9	--	87.0	72.9	91.8	72.9	--	389.5
10 Larry Loucka	93.1	--	57.9	94.5	--	95.3	0.0	340.8
11 Walter Eggert	70.3	71.3	79.7	--	74.9	--	--	296.2
12 Jesse Shepherd Jr.	--	51.8	61.8	74.9	--	22.5	62.4	273.4
13 Stan Chilton	97.8	82.5	85.8	--	--	--	--	266.1
14 Tony D'Alessandro	--	70.8	78.1	96.9	--	--	--	245.8
15 Chris Forward (JR)	22.7	70.1	58.0	--	--	--	--	150.8

The Grand Champion is determined by the total points of seven events selected by the competitor from the following events:-

1. Hand Launched Glider
2. FLD
3. Hand Launched Stick
4. R.O.G. Cabin
5. Ornithopter
6. EZB
7. Intermediate Stick
8. Peanut Scale
9. AMA Scale
10. Pennyplane
11. Limited Pennyplane

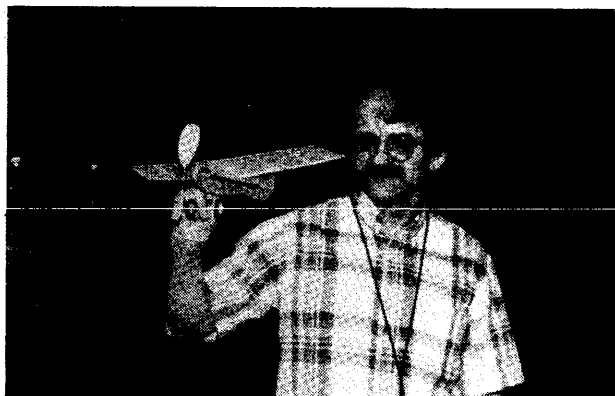
First place is awarded 100 points and other places points equal to the percentage of winning time.



Tom Iacobellis - R.O.G. Cabin



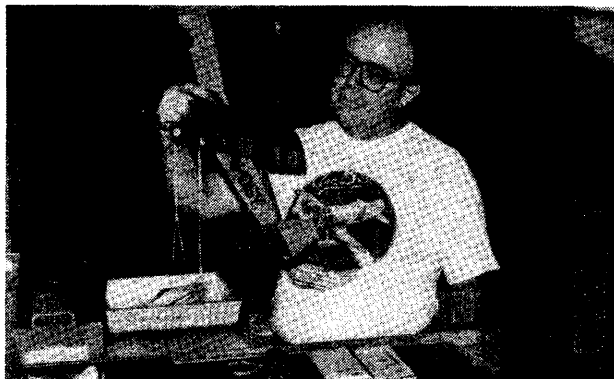
Dick Obarski - Intermediate Stick



Les Garber - Hergt Monoplane



Manny Radoff - Pennyplane  
Note Unique Propeller Design



Dave Linstrum - Kit Plan - Daphne  
Kit by Indoor Model Supply



Joe Krush & Frank Kieser - Ornithopters

Photos by Frank Kieser



## FROM THE EDITOR

Since publishing our first newsletter in over a year, I have received encouraging notes and comments from many of our readers which I deeply appreciate. I have also received a number of inputs for publication. Since the Johnson City meet occupies most of this issue, I have saved some of the inputs for subsequent issues and I will still welcome any further inputs you think will be of interest to our readers.

I have also received a fair number of renewals but due to the expenses of starting up again, our balance is low and I would appreciate prompt renewal when it is due. Your renewal status is included in your copy.

## ACTIVITIES

LAKEHURST NJ - Aug. 3,4,18,31 Sept. 1,2,15,29 Oct. 6,20 This is the 60th anniversary of indoor flying at Lakehurst. You must get on Guards' list to get in. Contact:- Gary W. Underwood President East Coast Indoor Modelers 9 Treelawn Terrace Mercerville NJ 08619 - TEL 609-586-4441 Send SASE and .52c stamp ECIM Lakehurst rules

FLORIDA - Sept. 21,22 Tampa FL First meet of MIAMA season - "Doc" Martin 305-858-6363

NOTTINGHAM ENGLAND - Sept. 21,22 Interscale '91 Indoor scale meet

GREENBELT MD - GFSC Bldg. 8 Auditorium Aug. 10,24 Sept. 14,28 Oct. 12,26 Nov. 9 Tom Vallee 444 Henryton So. Laurel MD 20724 301-498-0790

MOSCOW ID - Kibby Dome - Cat IV Aug. 8-11 Andy Tagliafico 650-B Taybin Rd. NW Salem OR 97304 503-371-0492

## SUBSCRIPTIONS

We plan to publish this newsletter four times a year. Subscription rates include membership in the National Indoor Model Airplane Society. The following are the rates for four issues:

\$ 8.00	U.S., Canada, Mexico
\$ 9.00	overseas surface mail
\$11.00	Air mail - Europe & S. Amer.
\$12.00	Air mail - Asia, Australia, New Zealand

Please remit in U.S. dollars by cash, check drawn on U.S. bank, money order, or U.S. Postal money order. Make checks payable to the order of Frank Kieser.

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## SUBSCRIPTION STATUS

SUBSCRIPTION EXPIRES THIS ISSUE -----

SUBSCRIPTION EXPIRES NEXT ISSUE -----

FOR RENEWAL - See rates above

NO X - Indicates at least one more issue

## GODDARD INDOOR GROUP

The Goddard Indoor Group is a small informal club of indoor fliers made up of Tom Vallee, Tex Baird, Dan Belieff, Randy Kleinert, Pete Staehling, Bill Bigge, Bill Clark, Warren Baker and Kevin Sharabonda. They fly in the Goddard Space Flight Center auditorium (Cat I) and run about about six record trials a year. Judging from their large turnout and performance at the recent USIC (see results in this issue), they are a first rate group of indoor flyers.

Over the years, the group has set a number of records at the auditorium and members have won prizes at major meets. Tom held the Cat I FAI world record from 1975 thru 1980 He also held the national records for FLD and AMA Stick almost continuously from 1975 thru 1990 when they were shattered by a great performance by Bob Randolph. Dan Belieff set records for Paper Stick, Intermediate Stick and Cabin R.O.G.. Most recently, Pete Staehling set Cat I national records for Pennyplane and Limited Pennyplane. The Pennyplane record still stands.

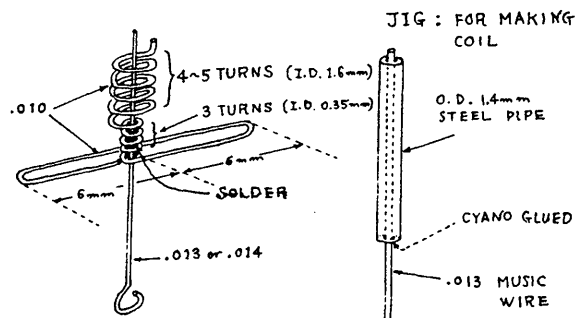
One of the Goddard Indoor Group's claim to fame is the Mini-Stick, AKA Living Room Stick. The rules for this event which are now quite widely available were created about two years ago primarily by Pete Staehling and Tom Vallee and I won't repeat them here. The first contest was held in Tom's living room. There were six contestants with a winning time around three minutes. Since then the best Cat I time is 6:24 by Tom Vallee at the NASA auditorium. Tom also had a time of 7:28 at Lakehurst.

After some discussions between Tom and Mike Colling of England at the 1990 USIC Mike set up an international Mini-Stick postal contest which had over 60 entries (results elsewhere in this issue). So you can see the tremendous popularity of this event and rightly so. The specifications seem to be just right for limited flying space and still there is real competition in the higher sites. The event is simple enough for beginners and is also a challenge to the experts. Certainly there should be consideration to making this a new AMA category. In my opinion it is better to create a completely unique category such as this rather than subdividing an existing category as has been done so often.

So congratulations to the Goddard Indoor Group and keep up the good work.

## VARIABLE PITCH SPRING

Below is a variable pitch spring design by M. Misawa of Japan.



From Mike Colling - 403 Mossy Lea Road Wroughtington Wigan Lancs. England WN6 9SB

Dear Competitor - First of all, Thank you for entering the first Living Room Stick Postal Contest. I hope you all had FUN in flying this little model. Please let me know if you wish another event to be run next winter.

Editor's Note -To correct for ceiling height, it appears that a height of 116 feet is given a correction factor 1.00. The correction factor for any other ceiling height is equal to the square root of (116/ceiling height).

# LIVING ROOM STICK (MINI-STICK) POSTAL CONTEST 91

PLACE/CONTESTANT	COUNTRY	CEILING HGT-FT	ACT SECONDS	TIME CORRCTD	PLACE/CONTESTANT	COUNTRY	CEILING HGT-FT	ACT SECONDS	TIME CORRCTD
1 J. O'Donnell - O'all Ch	U.K.	7.82	295	1136	31 S. Kinoshita	Japan	9.60	169	587
2 P. Steahling - 1 Int.	U.S.A.	18.75	370	920	32 R. Haywood	U.K.	14.50	207	585
3 T. Vallee - 2 Int.	U.S.A.	18.75	362	900	33 R. T. Parham	U.K.	18.50	226	566
4 J. O'Donnell	U.K.	20.75	351	830	34 C. Hadland	U.K.	48.00	360	560
5 C. Hutchinson - 1 U.K.	U.K.	11.08	256	828	35 B. Roberts	U.K.	22.50	241	550
6 C. Hutchinson	U.K.	9.00	227	815	36 B. Roberts	U.K.	14.50	193	546
7 J. Godden - 2 U.K.	U.K.	20.50	337	802	37 W. Bigge	U.S.A.	18.75	215	535
8 P. Steahling	U.S.A.	18.75	313	779	38 Y. Tanaka	Japan	9.60	152	528
9 J. O'Donnell	U.K.	22.00	335	769	39 B. Roberts	U.K.	11.80	168	526
10 C. Hutchinson	U.K.	13.50	259	759	40 S. Finch	U.K.	13.50	179	525
11 D. Yates - 3 U.K.	U.K.	19.75	305	739	41 F. Ikegami	Japan	9.60	148	514
12 J. Godden	U.K.	25.00	341	735	42 G. Axbey	U.K.	7.75	138	511
13 R. Haywood	U.K.	22.25	309	706	43 P. Lee	U.K.	17.00	191	499
14 R. Haywood	U.K.	18.50	276	691	44 R. Haywood	U.K.	11.80	156	488
15 J. O'Donnell	U.K.	24.80	319	689	45 R. Kleinert	U.S.A.	18.75	187	465
16 D. Belieff - 3 Int.	U.S.A.	18.75	263	654	46 Y. Sugi	Japan	9.60	132	459
17 J. Godden	U.K.	25.00	303	653	47 S. Finch	U.K.	11.08	135	385
18 J. Barker	U.K.	25.00	303	653	48 T. Yatabi	Japan	9.60	110	382
19 D. Belieff	U.S.A.	18.75	261	649	49 C. J. Coolen	U.K.	30.00	187	368
20 T. Faulkner	U.K.	20.50	270	642	50 S. Finch	U.K.	9.00	100	359
21 E. J. Baker	U.K.	25.00	297	640	51 K. Hashimoto	Japan	9.60	103	358
22 S. Nonaka	Japan	9.60	181	629	52 Y. Takeuchi	Japan	9.60	102	355
23 E. J. Baker	U.K.	19.75	259	628	53 O. Hayashin	Japan	9.60	99	344
24 M. Aoshima	Japan	9.60	180	626	54 K. Sharbonda	U.S.A.	18.75	136	338
25 D. Richards	U.K.	18.50	241	603	55 M. Colling	U.K.	25.00	154	332
26 L. Minoru	Japan	9.60	173	601	56 R. Harada	Japan	9.60	92	320
27 M. Misawa	Japan	9.60	172	598	57 R. Boor	U.K.	8.50	84	310
28 T. Faulkner	U.K.	25.00	277	597	58 M. Jakaji	Japan	9.60	86	299
29 B. Roberts	U.K.	18.50	235	588	59 T. Searle	U.K.	30.00	127	250
30 L. G. Barr	U.K.	48.00	378	588	60 M. Rodkin	U.K.	11.08	60	194

From the Hangar Pilot - "Doc" Martin, Editor

## RECORD BREAKING VS. CONTEST WINNING by Jim Richmond

After Doc asked me to write about the difference between a contest model and a record trial model I was surprised to recall that I had only built two models in my whole life that were strictly intended for record trials - the big "D" Starwalker and the AROG Atrium Insect (the large and the small of it).

Asside from the fact that these models were most rewarding fliers, I also found them to be a lot of fun to build. You can give vent to your creative urges with record trials models mainly because it's no big deal if you fail to break a record right away. Also, the designs don't have to be as forgiving or reliable for you can keep trying as often as you like. The Atrium Insect was a real devil to get off the ground, with repeated flop-overs and stall-outs. Definitely not the sort of plane you would want for contest work. But it flew really nice once it was up. The Star Walker is so fragile that it can't take a tail slide or very rough air and always comes out a loser in a collision with another plane - but its super-light structure is just the ticket for record trials.

Contest models on the other hand have more stringent requirements. They must be strong and super reliable as well as being very good performers. It's that super reliable part that

separates the contest model from the record type. If you can't take your contest plane out of the box and go for it without testing - you haven't arrived yet. Reliability also requires extremely fail-proof construction. That is, the tail hook shouldn't rip out, the motor stick shouldn't break, the wing post shouldn't slip in the tube, the bracing wires shouldn't slip and the tail boom shouldn't break in a tail slide.

If all such things are well taken care of, then your plane can survive to a ripe old age while you learn to get the most out of it. Mostly, the way you insure against structural failure is to pay attention when something does fail and make sure you change that feature so that it can't fail again. Some contest fliers I know would be a much greater threat if they were to heed this advice. I won't name any names but you can hold up your hand if you are guilty: broken "O" rings, ripped out front bearings, slipped plug-in tail booms and collapsed motor sticks.

So there you have it. Vive la difference.  
\*\*\*\*\*

We can all take these words by Jim Richmond to heart and be better indoor fliers. - Editor

CONTRIBUTORS:- Richard Doig, Anthony Italiano  
Dr. John Martin, Tom Vallee  
THATS ALL FOR NOW - UNTIL NEXT ISSUE HAVE FUN  
FLYING