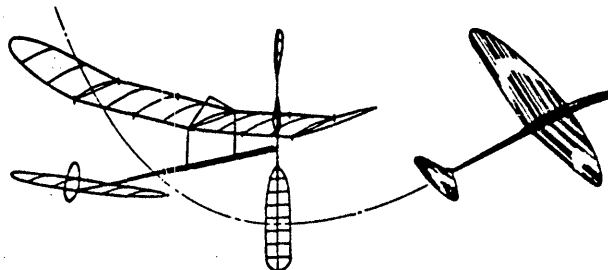


INDOOR

NEWS and VIEWS



#37,38,39,40,41,42

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

THIS ISSUE

In early January, Melody and I both came down with mononucleosis, a blood disease that leaves you feeling completely exhausted for as long as six months to one year after having the infection. The major symptom is that you sleep - almost all of the time. We are just coming back to life now. It's as though I went to sleep in January and woke up in the middle of May. The Doctor's have told us that it is very rare for someone over thirty to get this disease, but we always have been a bit unusual.

I've also had some surgery to remove some common warts from my right hand. The surgery was supposed to be minor, but the warts had gone completely through the skin, and in the process of removing them, a tendon in one finger has been seriously damaged. I may need a major operation on my finger, but we are waiting to see how well it can heal on it's own. The result of all of this is that I can't write very well, (but I can type) so I won't be making any construction tip drawings for a while.

This issue contains material concerning the upcoming Indoor World Championships, corrections to the rulebook, and a potpourri of other items we've collected over the last year.

SUBSCRIPTION INFO

Indoor News & Views is published approximately four times per year. Current rates are:

\$8.00 USA, Canada, & Mexico
\$9.00 Overseas Surface Mail
\$11.00 Air Mail, Europe & South America
\$12.00 Air Mail, Asia, Australia, New Zealand

Please make payment in U.S. Dollars by cash, money order, U.S. Postal money order, or check drawn on a U.S. bank. Make payable to the order of Richard Doig. Partial payments OK.

The number in the upper right-hand corner of the mailing label is the final issue of the current subscription.

1988 INDOOR WORLD CHAMPIONSHIPS

On December 4, the CIAM approved the USA bid to host the Indoor World Championships at Johnson City, Tennessee on **May 28, 29, & 30, 1988**. The original schedule called for one day of practice followed by two days of official flying. (The practice day is a requirement in the FAI rules.) Within a few days many requests had come in to modify the schedule, and the FAI Technical Committee has approved the change.

The final schedule calls for practice flying each day in the morning followed by two official flights per contestant in the afternoon and evening. We also have obtained the site for limited World Champs test flying on May 27, from 2 to 9 pm. This is only limited because we will be setting up the site during this period, and conditions may not be ideal.

We will not be using rounds, but instead a system where each team will be assigned a pair of timekeepers for the duration of the contest. Each team will be limited to one model airborne at a time.

This is the same arrangement we used at West Baden in 1980, and most flyers were pleased with it, as it allows a lot of flexibility. Unlike West Baden, this site is large enough that 11 or 12 models airborne at one time does not appear to be a problem.

As of this writing, the following teams have entered:

Argentina
Canada
Czechoslovakia
Finland
France
Great Britain
Hungary
Japan
Netherlands
Romania
Switzerland
United States
Jim Richmond (defending Champion)

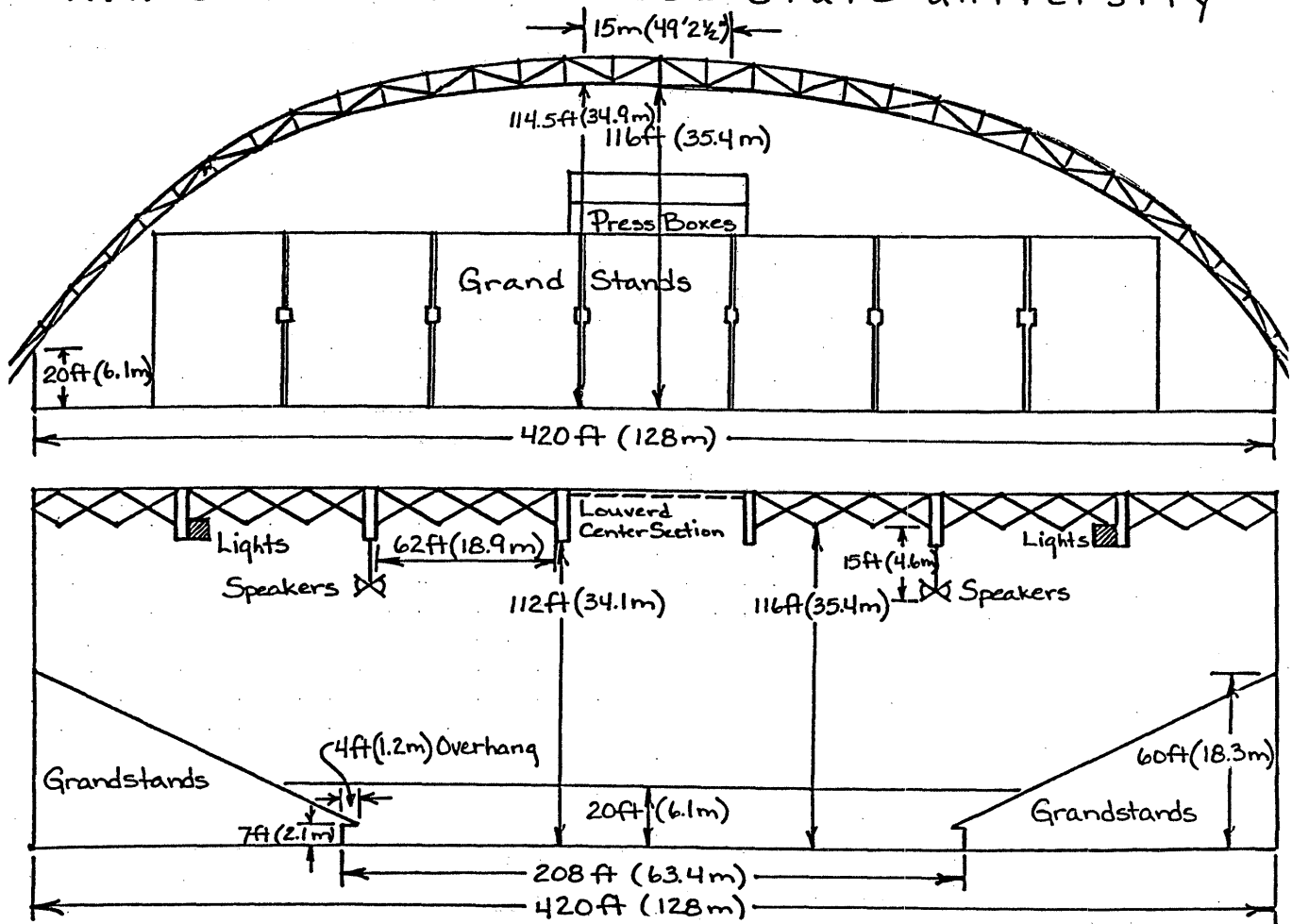
1988 INDOOR WEEK SCHEDULE

WORLD CHAMPIONSHIPS

FRIDAY, MAY 27		SATURDAY, MAY 28	SUNDAY, MAY 29	MONDAY, MAY 30	
6:30 am		minidome opens	minidome opens	minidome opens	6:30 am
7:00 am					7:00 am
8:00 am	Arrival	Official F1D practice	Official F1D practice	Official F1D	8:00 am
9:00 am				practice	9:00 am
10:00 am					10:00 am
11:00 am					11:00 am
12 noon					12:00 pm
1:00 pm		Opening Ceremony		2 Competition	1:00 pm
1:30 pm					1:30 pm
2:00 pm					2:00 pm
3:00 pm	World Championships Set up	2 Competition flights (no rounds)	2 Competition flights (no rounds)	flights	3:00 pm
4:00 pm	Competitors Check in			(no rounds)	4:00 pm
5:00 pm					5:00 pm
6:00 pm					6:00 pm
7:00 pm	Informal F1D practice			minidome closes	7:00 pm
7:30 pm					7:30 pm
8:00 pm					8:00 pm
9:00 pm				Banquet at Sheraton Hotel	9:00 pm
9:30 pm	-----	- minidome closes -	minidome closes -		9:30 pm

F1D OPEN INTERNATIONAL				7TH UNITED STATES INDOOR CHAMPIONSHIPS					
TUES, MAY 31		WED, JUNE 1		THURS, JUNE 2	FRI, JUNE 3	SAT, JUNE 4			
6:30 am	minidome opens @ 6:30 am			minidome opens @ 7:00 am	minidome opens @ 7:30 am	minidome opens @ 7:00 am	6:30 am		
7:00 am	F1D								7:00 am
7:30 am	Practice			Easy B International Easy B Intermediate Stick	Manhattan Cabin Bostonian Speed Events: Peanut & Unlimited	Novice Pennyplane Pennyplane	7:30 am		
8:00 am									8:00 am
9:00 am									9:00 am
10:00 am									10:00 am
11:00 am							11:00 am		
12 noon							12 noon		
1:00 pm							1:00 pm		
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4:00 pm							4:00 pm		
4:30 pm							4:30 pm		
5:00 pm							5:00 pm		
6:00 pm							6:00 pm		
7:00 pm							7:00 pm		
8:00 pm							8:00 pm		
8:30 pm	minidome closes @ 8:30 pm						8:30 pm		
9:00 pm							9:00 pm		
9:30 pm							9:30 pm		

"MINIDOME" East Tennessee State University



WORLD CHAMPS VOLUNTEERS

We still have a need for a number of qualified timers to time for all three days. The schedule will require you to arrive by 9:00 am on Saturday, May 28, as there will be an extensive briefing including stopwatch calibration and approval. We will need a large number of watches as well, as each timekeeper needs to have a primary watch, a backup watch, and a third watch for prop stop time. We prefer not to use wristwatch / stopwatch combinations. Please make sure your name is on any stop watch that you bring. (The contest management has some stop watches, but not enough.) If you speak a foreign language, that is a plus.

There may also still be some other jobs available for those wishing to contribute. Any volunteers selected to work will receive meals for all three days, as well as not having to pay the supporters fee for access to the main floor.

All volunteers for timing should contact:

Ed Stoll
30471 Manse
Mount Clemens, MI 48045
(313) 463-5588

Volunteers wishing to work in other capacities should contact:

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

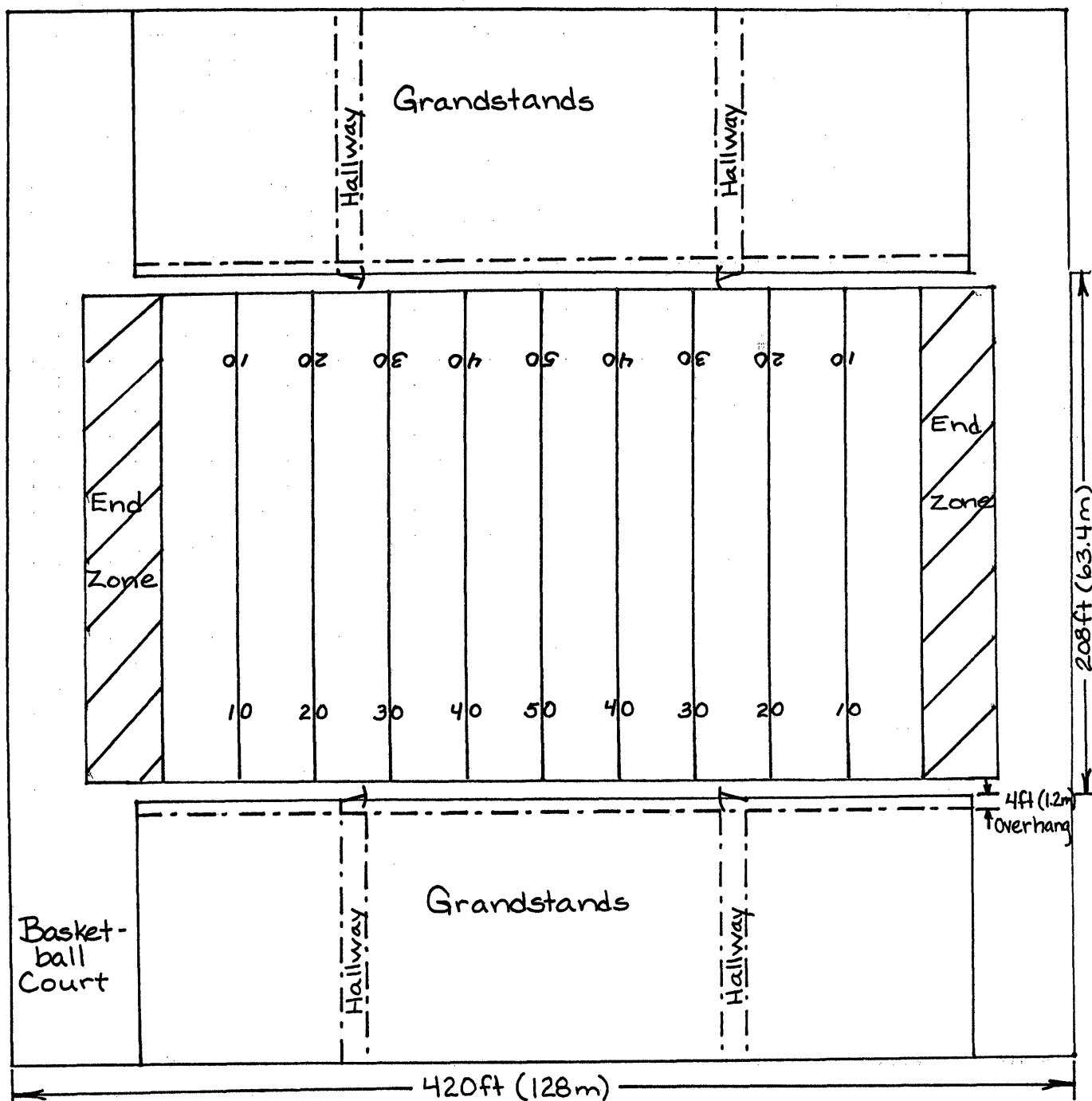
Tony will direct you to the correct department head for the job you request.

MORE LOST AND FOUND FROM THE 1987 U.S.I.C.

One stopwatch and one electrical extension cord were left at last year's U.S.I.C. If they belong to you contact Tony Italiano, 1655 Revere Dr, Brookfield, WI 53003 and describe the item in detail.

The cheap reel and balloon that were also found last year have been thrown out. (Notice was in last issue of INAV.) You're too late!

"MINIDOME" East Tennessee State University



1988 United States Indoor Championships

The 1988 USIC will begin the day after the World Championships with a two day open F1D International contest, and continue through the week with most of the traditional events. Several events have been added, and one event has been dropped (ROG Cabin).

The entry forms are included in this issue for those of you who have not received them by direct mailing. This promises to be the most outstanding contest in recent memory.

We also have a need for workers and qualified CD's to assist in running the USIC portion. Especially during Pennyplane & Easy B. Any volunteer's should contact Tony Italiano.

KEVLAR

We have more Kevlar available. Don Lindley arranged to give us 1/2 of the huge spool that he has. I'm not sure, but it's something like 10 or 20 miles of individual filament. For a spindle of tow about 15 feet long, send a self-addressed stamped envelope to Richard Doig, at the address on the masthead. Free to INAV subscribers.

We will bring the spool to Johnson City, so anyone who wants some can spool their own as this is extremely difficult for me to do at this time (it gets caught on the spint!).

INTERNATIONAL EASY B

One of the events at this year's USIC will be a second EZB event. We will have the traditional EZB event flown by current AMA rules with entry open to any flyer, from any country.

The International EZB event is for models built to alternate EZB rules. The idea is that the overseas contestants who come over for the World Champs, should also bring the EZB they normally fly, and a copy of their rules. The event will be scored using an index of performance, by comparing a model's performance to the highest time ever achieved under those rules.

The tentative plans are that U.S. and Canadian flyers may also enter this event by paying the appropriate entry fee, but flying to the American rules. Whether this will mean flying 5 flights for each EZB event or flying 5 flights which are counted in both events is yet to be decided.

There has been a lot of debate over the years about whether the British rules, or the American rules, or some other rules are better. This is a rare opportunity to fly all of the various types of EZB's in the same site, on the same day, and see if there is any significant difference in the performance, handling, and ease of building under the various formats.

Since many flyers would like to see EZB as an international event, unified rules would be a necessity. This is a rare opportunity to try this out.

UNOFFICIAL EVENT - KIT/PLAN SCALE

Sponsored by the Chicago Aeronauts

\$1.00 per entry. Turn in plan & plane by 4 pm Wednesday, June 1. Fly Thursday, June 2, 2 to 6 pm. Trophies to third place.

Rules:

1. Models must be built from published plans or kits.
2. Size of plans may be reduced if wood sizes are in proportion.
3. All surfaces must be covered both sides, or be solid material.
4. Models must take off unassisted for official flights.
5. Any flight in which the model is airborne for more than ten seconds is official.
6. Two attempts may be used for each of five official flights.
7. Timing starts at release of the model and terminates when the model next touches the floor or comes to rest after take off. The ten second hang-up rule will be used.
8. No flight score (no. of sec.) will exceed the total of Craft and fidelity points.
9. Up to 60 points will be awarded for fidelity of the model to the plans and instructions from which it was built.
10. Up to 40 points will be awarded for Craft, based on workmanship and finish.
11. Nose block and rear rubber post may be altered without penalty.
12. Tissue type and color are optional, but control outlines and registration numbers (even if made up) must be used.
13. Propeller may be altered from plan without penalty.
14. Final score is sum of best two flights plus Craft and Fidelity.

U.S.I.C. UNOFFICIAL EVENT - FEDERATION R.O.G.

The great state of Florida and its indoor model builders (most of whom belong to M.I.A.M.A.) challenges modelers from other great states to a team event at Johnson City, TN on Fri. June 3, 1988 from 2 pm to 4:30 pm.

This will be a team event; an unlimited number of contestants from each state can enter. The two highest times of five attempts will count for each contestant. The two highest totals from each state will count. All flights will be timed from the M.I.A.M.A. official table. All models must be registered and processed before flying and flights over 4 minutes will be weighed after the flight. Entry fee \$1.00 per model.

For more info: Tony Becker
2108 Harringay St.
Sun City Center, FL 33570
813-634-8572

Delaware Valley Federation R.O.G. rules - see Model Aviation, May 1987, page 69

1. The model must be rubber-powered.
2. All flights must rise-off-ground.
3. The assembled model without rubber must weigh 3.1 grams (.109 oz.) or more.
4. The propeller must be one-piece molded plastic. Diameter 6 inches or less. You can add a bushing to the prop shaft hole and lighten the prop by scraping or sanding. You cannot cut out and recover any part of the prop.
5. Projected wing area must be 30 square inches or less.
6. Projected stab area must be 50% or less of the projected wing area.
7. Landing gear must have 2 wheels and support the model in a normal position when at rest. The wheels must be 1/2 inch diameter or more and turn freely. Gear and wheel tests must be met before flight and after landing without repairs or adjustments; otherwise, the flight is disqualified.
8. Except as noted above, there are no restrictions on covering, dimensions, or construction.
9. All ballast for weight or balance must be permanent affixed.

M.F.F.S. SOLICITING DONATIONS FOR U.S.I.C.

The National Free Flight Society is soliciting donations in the way of merchandise or money to help offset the costs of running the upcoming indoor extravaganza at Johnson City, Tennessee. The merchandise would be used for two raffles, in which tickets would be sold and prizes distributed by random selection. The cash will be used to offset the operating expenses. We are in need of merchandise, not gift certificates because of the many international contestants participating. Of course, the names of the donators will be prominently displayed, showing the support of all who contribute.

This is a perfect time to show our nation's support to the rest of the world. If you need additional information or wish to contribute please contact:

John Lorbiecki
1508 Valley View Dr.
Hubertus, WI 53033
(414) 628-4296 home
(414) 646-3877 work

NATIONAL FREE FLIGHT SOCIETY

In announcing the 1988 Free Flight Hall of Fame recipients and the Top Ten Models of the year, many indoor modelers are being honored.

Frank Cummings, 1964 US Indoor Team member, and Walter Erbach, indoor pioneer and ornithopter enthusiast, are being inducted into the Hall of Fame. Top Ten Models awards go Walter Van Gorder for his Manhattan Pieces design and Robert Wilder is being given the special award for his contribution of winders, torque meters, etc. for both indoor and outdoor.

These awards will be given at the NFFS Symposium on Thursday evening July 28, 1988 during the 1988 Virginia Nationals. Also available that evening is Sympo 88, the technical yearbook of NFFS, which includes a flying and strategy article written by Jim Richmond, 1968, 1978, 1984, & 1986 Indoor World Champion.

PROJECT DAE DALUS SUCCEEDS

On April 23, 1988, the pink-and-silver Daedalus 88 flew across the 74 mile stretch from Crete, to Santorini, Greece, setting a new world record for human powered flight of 3 hours 54 minutes. Unfortunately, the turbulence near the beach broke the tailboom, and the plane crash landed into the surf about 30 feet offshore. The pilot, Greek cycling champion Kanellos Kanellopoulos, was not injured. (In mythology, didn't Daedalus crash into the surf just offshore too?)

Long time Indoor modeler Mark Drela was part of team that designed and built Daedalus. Foreign competitors may remember Mark as one of the processing team members at the 1980 World Championships in West Baden. I have to believe that Mark's experience with micro-film models played a key role in the project's success.

Congratulations to Mark and the rest of the team on this incredible accomplishment.

CATEGORY I WORLD RECORD

Thedo Andre' of the Netherlands broke the Category I world record last June setting a new mark of 28:54. He has supplied us with the following article and plans for his record setting model.

His article points out one of the many vague sections of the steering rules, that of steering from the side with a pole. However, since the record has been homologated by the FAI, must we add this to the list of "acceptable" steering practices? This brings up an important point. Who has the final say in questions like this with the FAI?

WORLD RECORD FOR INDOOR MODELS CATEGORY I.

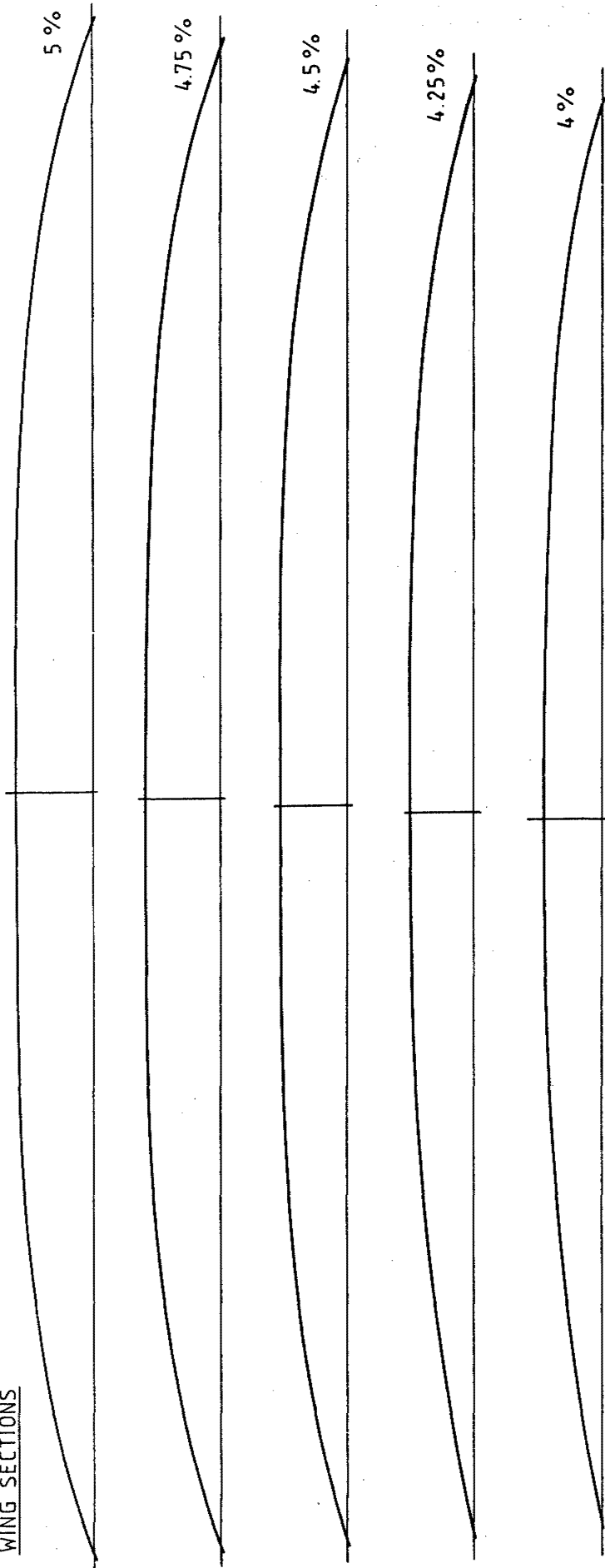
The record flight was made with a standard F1D microfilm indoor model, i.e. maximum wing span 650 mm and minimum airframe weight 1 gram. The model was a derivation of the model I used at the 1986 World Championships in Cardington. The motorstick length was increased to 450 mm. This made it possible to shift the centre of gravity more aft, thereby increasing the lifting force of the stabilizer. The camber of the stabilizer section was increased to 5% in order to retain sufficient stability margin. The long motorstick necessitated the use of thinner rubber motors and smaller propellers in an attempt to limit an increase in total rubber weight.

The very first test flight of the model necessitated a slight decrease in stabilizer incidence. The second flight was an immediate improvement of my personal record, which stood at 22:42. Apart from a pair of flights with damage the following flights were improvements also. On every flight however about 400 turns of the motor stayed unused. This normally indicates that the cross section of the motor used is too thin. The let down phase of the flights however showed such an efficiency that it was decided to shorten the motor from 40 cm to 38 cm. This resulted in a flight time of 25:46. Despite this there were still about 400 turns left. The motor was shortened by another 3 cm and the maximum winding torque as well as the launch torque were increased. When flying in low ceiling halls it is normal use to let the model fly against the ceiling, provided that the ceiling is flat and free of obstructions. On this flight the model reached the ceiling in about 1 minute. It stayed there for about 16 minutes, about 3 minutes longer than on the previous flights. The model had to be steered twice. This was done by changing its direction by touching the tailboom from the side with a fishing pole. A few moments after the model lost contact with the ceiling it flew into strands of a cobweb which caused a loss in height of at least half a meter. The descent phase however proved to be at least as good as on the last flight and finally the model landed at 28 minutes and 54 seconds. Exactly an improvement by 60 seconds of the existing world record by Ron Higgs of Canada.

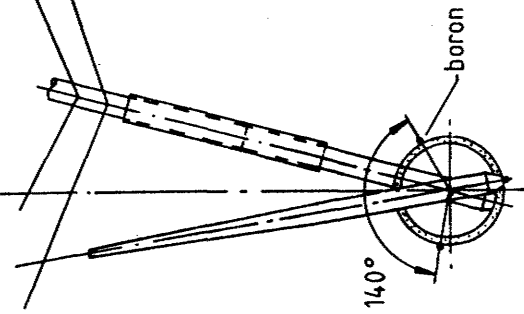
The flight was made at the International Butterfly Meeting in the Goffertal in Nijmegen, the Netherlands. This hall has a free flying height of 7.81 meter. The weather conditions outside were bad, with a hard wind and rain. Inside however the air was fairly calm. There was mainly some drift near the ceiling.

Thedo Andre
Venusstraat 49
7557WP Hengelo (O)
Holland

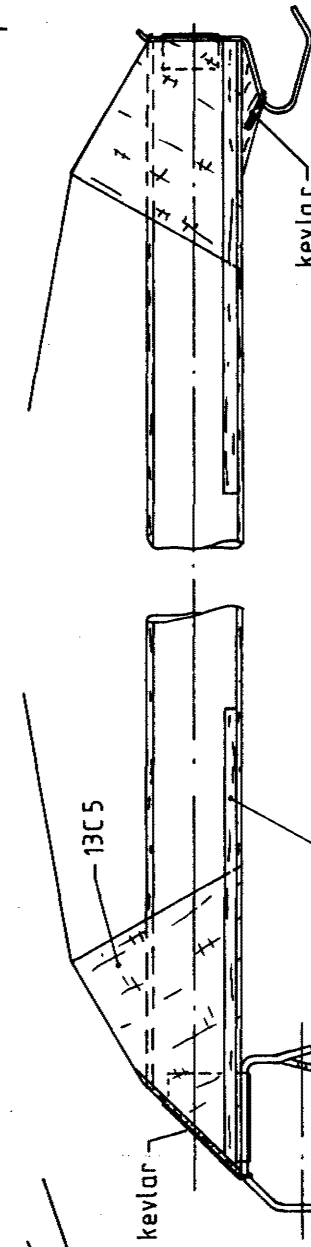
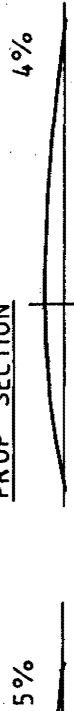
WING SECTIONS



TAIL SECTION



PROP SECTION



2 x 24B5 x 0.6

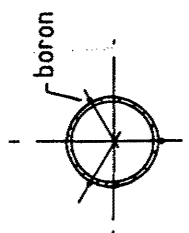
MOTORSTICK DETAILS



WING SPAR SECTION

TADELOOS DETAILS

TAILBOOM SECTION



Scale 1:1, 2:1, 10:1

STEERING

We've received letters and comments from several sources over the past few months concerning the steering rules and what constitutes a legal steer. I threw in my two cents worth about steering on the Modelnet bulletin board on CompuServe (a nationwide computer service) and it popped up in Indoor News, Jorgen Korsgaard's fine newsletter from West Germany. The entire exchange between Del Ogren, Bob Clemens and myself ran out to about 14 pages, but the guidelines section is pretty useful.

We're reprinting it here just so everyone can see how muddled up the situation can get. After all, the rules say "all steering shall be done from the front end of the model and never from behind." Taken literally, that means the *leading edge of the prop*. Now, while some of us occasionally have steered from the leading edge of the prop, nobody does it on purpose because it wrecks models!

So, here is a cross-section of thoughts from some well known flyers:

EUROPEAN WORLD CHAMPIONSHIPS: CLOSING COMMENTS

By Thedo Andre

Something completely different now nl. rules changes. At the team managers meeting an explicit question was posed about allowing steering of the model from the side (e.g. at the tailboom). This was said to be against the rules but during the contest several people were seen doing it. Nobody made a protest and in a talk to the jury they said they were allowing it because the flying height was not influenced this way. This is right and I think we should change the steering rule into something general which states that by steering the flying height may not be influenced intentionally omitting reference to the front of the wing.

Kujawa was using a device similar to the prop protector which was not allowed at the 1978 world championships to ease disentangling the line from the model. However he placed it so far forward on the fuselage that the steering line would inevitably stop the propeller. This "clips" the model to the line preventing a height increase and it should thus be allowed.

With regard to steering it should be pointed out that steering is only allowed to avert collision with the hall structure or with other models. Several people were seen to steer during the climb to prevent power-stalling.

A point raised by Andras Ree is the definition of end of flight. When do you press the button: when the prop touches or when the model completely comes to rest? There can be seconds of difference. It may be better to define the moment the fuselage comes to rest on the ground as the end of flight.

Another thing is the commitment to forward an FAI model specification certificate for indoor models. As all relevant dimensions are checked before every flight there is little reason for this certificate.

I heard nobody talk about changes to the model specifications. I suppose we are content with them as they are.

Please express your views on the above. We can discuss it publicly through INAV and Indoor News and then try to make a rules change proposal by the end of 1988.

MORE STEERING COMMENTS

from Andras Ree, HUN:

We have spoken about two items during the competition (European Champs):

1. Termination of flight in normal landings. The rule says: "the model comes to rest on the floor...". It is not a well defined moment even for experienced timekeepers. Sometimes the wing tilts down quicker, sometimes very slow, sometimes not at all! It would be better with: "the fuselage of the model contacts the floor of the building".

2. Steering from the side (from the boom or the rounding of stabilizer). Some countries tried to use it (Holland, Yugoslavia, Hungary, etc.) in local contests and the opinion is that it is a very useful and safe way to TURN the model in the horizontal plane.

The first item doesn't need more comment, or maybe one: What happens when the model stalls at the start and the end of the fuselage contacts the floor for a moment??

The second needs some more trials and clarification. What is YOUR opinion to these subjects??

MORE STEERING COMMENTS

From Leif Englund, Finland:

About the steering business:

At the European Champs in Poland I think there were too much steering. Steering was used not only to save the model from collision with the building and other models - as the rule book says - but also to place the model in better air - I call this tactical steering and should not be used - and to help the model to handle high torque at launch - and this is **NOT** foreseen in the rule book, too. In MY opinion the contest directors should take more serious actions against these "steering ACROBATS". In Romania in 1982 it was not allowed to steer a bad launch.

Well, let me hear what other people say about this subject.

Date: 28-Feb-87
Subject: Steering Ugh...
From: Del Ogren
To: Rich Doig

Rich, got a call the other night from Don Lindley. He was all fired up about the steering rules. Was bothered by what he thought were violations of the rules at the IMAC meet. We are co-ord'ing the Midwest Champs and Lindley wanted to talk about how we were gonna enforce the rules.

So, I decided to re-read the steering rules, since it looks like I'm gonna have to play cop. Looks grim... As far as I can tell the rules are so much of a judgement call that they are unenforceable.

The intent seems to be to allow steering to save the model from a collision. That means any steer is legal as long as the contestant THINKS that the model is in trouble. And there is nothing that says that moving a model from down to up air is illegal. And, worse, it seems that the only violation that will result in stopping the clock is REPEATED altitude changes during a steer (the number is not specified).

This is awful...

Date: 01-Mar-87
Subject: Indoor steering fiasco
From: Bob Clemens
To: Richard Doig

I'd like to add my personal opinion to Del Ogren's indoor steering inquiry. Steering of indoor models is without doubt the most abused privilege in that area of our hobby.

Easy B's, Penny Planes, Manhattans, as well as mike models are many times steered by some of our foremost "experts" STRICTLY FOR POSITIONAL ADVANTAGE without penalty. Most timers at most meets have no knowledge of, or desire to enforce, the applicable regulations regarding steering of models. Most of the fliers involved in this abuse DO know the rules, but choose to ignore it because they have an almost fanatic urge to win above all else.

It's unfortunate no one submitted a new steering rule this cycle. I must say that I believe ALL steering should be disallowed with the exception of FAI, indoor stick, and ROG cabin. Other models could be steered to avoid loss or damage, but the flight would be terminated at the moment of steering contact.

Severe? You bet, but it would surely bring steering abuse to a quick halt. Not too many years ago, steering was virtually unknown, yet somehow the good fliers still won meets and everyone was happy. The current steering rule is an open invitation to cheating that is all too often readily accepted.

Please pass these thoughts along to your fellow Indoor Contest Board members, some of whom can readily identify with this problem.

Date: March 1, 1987
To: Del Ogren (with a copy to Bob Clemens)
From: Richard W. Doig

Del, the key gray area in the rules is to define "imminent danger". Steering to avoid collision with another model is really not a problem, since it is usually pretty obvious to all involved. My own guidelines on when it is OK to steer are as follows:

STEERING GUIDELINES (per Rick Doig) March 1, 1987

1. If the model's circle is entirely over the floor, and is not overlapping the stands, you don't have the right to steer. If the model is more than one diameter away from the wall, you don't have the right to steer. "Diameter" is the diameter of the model's turning circle.

2. If there are obstructions on the floor, and the model will hit the obstruction during the next one or two circles, then it is OK to steer. If the model is drifting over the obstructions toward the wall or stands, and the edge of the floor is blocked off, like by a row of trucks, then consider the edge of the obstructions as the edge of the floor, and it is OK to steer when the circle begins to overlap the edge of the obstructions.

3. Obstructions on the ceiling, i.e. lights, basketball hoops, flags, cables, scoreboards, etc. These are all items defined as obstructions for steering purposes, since they are not part of the building's primary structure. It's OK to steer away from them, but only if the model is drifting sideways and is going to hit one of them on the next 1 or 2 circles. Steering any sooner than this should not be allowed.

4. Girders. This is tricky, especially in a building with a parabolic roof. Essentially, if the model is touching the girders on the outside of the circle (that is, away from the centerline of the building), and moving the model horizontally towards the centerline will stop the bouncing, it's OK to steer. In the Jones armory, this is really only kosher within about 25 feet of the edge of the floor, since the roof is pretty flat over most of the floor. If the model is banging away against the girders in the center of the building, tough! No steering to avoid the girders, only to avoid the lights. Avoiding the girders would be altitude control, and is not allowed.

5. Descent. During the descent, it is OK to steer if the model is coming down over an obstruction, or the stands, and will land on the obstruction if not steered. When you can steer in this situation is dependent on the nature of the obstruction, since once the model is actually over the obstruction, it is usually too late to steer.

6. Altitude change. During climb, if the prop keeps turning, don't worry about altitude change. If you straighten out the turn during climb, the model may look like it is going straight up, when in fact it isn't climbing any faster, it's just not circling.

During cruise and decent, again don't worry about altitude change if the prop keeps turning. If a guy knocks his model down three or four feet, that's his mistake.

If the prop stops, that's when the trouble begins. The model must not slide up or down any appreciable amount. This is paramount to controlling altitude. It must be watched at all times. Also make certain that the prop-stop time is deducted. Steering time is not deducted, only prop-stop.

7. Special situations. The Jones armory has one special situation where I think steering is OK in the middle of the floor. The ventilators. If your model will be sucked out onto Cottage Grove Avenue on the next circle, then I think it is proper to steer away from the vent.

8. The thing to keep in mind is that the point of steering is to avoid having to climb to retrieve your model. You should do just enough to get the model to land on the floor, and no more. This is not a kite flying contest!

9. Steering to avoid collision with another model. This is easy to enforce. Courtesy dictates that the competitor who has been up the longest has the right to the airspace, and the other competitor has the obligation to steer.

10. In all cases you must declare your intent to steer, and the reason to your timer. Example: "I'm getting awfully close to the scoreboard, I'm going to steer it on the next circle." The timer then has the responsibility to say "OK" or "you aren't in any danger, don't steer."

Del, why don't you print out the steering guidelines, and post them at the meet. Have a contestant's meeting at the beginning of each event and read them the law!

I voted against the rule proposal to go back to the old 15 second three steers rule, because it was even more unenforceable than the current one.

Let me know what you decide, as I think the guidelines I've written here could be the basis for a rules interpretation for all AMA events as it has become obvious that we need a set of uniform guidelines to minimize the abuses.

SOURCE OF STEERING BALLOONS

Steve Brown says that a good source of steering balloons is:

G.S.P. Products
2238 Rogueriver Dr.
Sacramento, CA 95826

They sell a variety of Japanese made meteorological balloons, the best for indoor is the "30 gram" size at \$4.40 each. He says they are well made, and last up to a year.

PAPERWORK BLUES

Here we go again. AMA Headquarters seems to have a real problem issuing peripherals along with licenses. It has come to our attention that many of the people who paid for their FAI stamps when they renewed their licenses, never received the stamps.

I paid for mine back in October, and only received it by pestering the people in the AMA booth at the Toledo show in April. I was in the computer as having paid, but they never mailed me the stamp. Walt Van Gorder had to make three phone calls to get his. I've talked to 5 other flyers about this, and only one received his stamp properly. Don Godfrey is still waiting for his 1987 stamp!

I spoke to Micheline Madison at Headquarters about this, and she is pulling her hair out because it is the membership department's responsibility to issue the stamps, but her phone rings when it doesn't happen. She has been assured that things will be done differently next year.

What this means is that, if you paid for an FAI stamp, and haven't received it, call Micheline at Headquarters and let her know. She will try and get your stamp mailed. Meanwhile, dig out the canceled check, and make a copy to carry in your wallet.

If we're lucky, all of this will get straightened out by the USIC.

1988 AMA NATIONALS

The Indoor events at the 1988 AMA Nationals will be held Sunday, July 24th, and Monday, July 25th at the "Scope", in downtown Norfolk, Virginia. The schedule will be the same as last year. There is a mistake in the published schedule, however, as the people laying out the form failed to drop the "all wood" from Hand-Launched Glider. We will be flying glider as called out in the current rules. Melody and I will again be the CD's.

The site is a cylindrical building topped by a geodesic dome. The dome covers an arena and grandstands. The floor is 227 ft by 113 ft. The ceiling is advertised as 110 ft BUT there is a circular catwalk, a so-called "light ring", that hangs down to 65 ft. The light ring appears to be about 125 ft in diameter and there is a scoreboard in the center. We do not know if the scoreboard can be raised higher than 65 ft or not. There also appears to be an American Flag, and a speaker hanging from the roof. The scoreboard hangs on a single cable, which makes it impractical to shroud. The parking facilities are underground at the site, and the parking concession will be active.

We will be arriving on Friday to meet with the managers and clean up the ceiling as much as we can, however, do not expect to be able to use the altitude above the light ring. This building looks as though it would be spectacular without the "light ring". It may be pretty good if the scoreboard can be raised high enough. Unfortunately, we really won't know what we have until we arrive.

1988 NATS PLANNING

I sent the following letter to the Executive Council for use in their meeting last October, when the final decision was made to go to the Tidewater area of VA with indoor events at the Scope Arena in Norfolk, VA, for 1988. I thought the contents of this letter might give some insight into the amount of planning involved in a project of this size, and the difficulty making this kind of decision.

October 19, 1987

From: Richard W. Doig, 1987 NATS Indoor CD
6 Canary Hill Drive
Pontiac, MI 48055

To: AMA Executive Council,
and Vince Mankowski

Subject: Indoor at the 1988 NATS

Gentlemen:

Much has been said over the past few years about the future of Indoor flying as part of the NATS. It seems that everyone has an opinion. But by and large these are not the people who have to make the final decision (or do the work!). So, I am presenting some additional information here, in the hopes that it will help the Executive Council make an informed, rational decision.

Background: For the benefit of those who don't know me, I have been flying various types of models for over 20 years, ranging from Control Line Carrier, to Outdoor Free Flight, to Indoor Micro-film models, my greatest love. I am current Chairman of the Indoor Team Selection Committee, District 7 Indoor Contest Board Representative, and my wife Melody and I publish the newsletter Indoor News & Views, when we can find the time. Melody & I together ran Indoor (except Scale) at the last two NATS, and Melody ran the FAI & Indoor Stick events so I could fly as well. I placed first in Stick both years, and first in FAI in 1986 & 2nd in '87. The point is that I have seen the NATS and other major meets from both sides of the official's table, and recently enough to be current.

Assessment of Indoor at Lincoln: Last year's Indoor NATS was a marvelous contest. There were 65 contestants in attendance, including Scale. There are several reasons for the improved attendance, but I can narrow it down to four key factors:

1. Record quality site: In fact, this was really somewhat of an accident, since previous reports indicated the ceiling height was about 52 feet. Fortunately, I didn't believe it, and with Vince's help, we arranged for a local flyer to measure the building accurately, the previous November, well in advance of the meet. It turned out to be 49 feet, and at the upper end of Record Category II (26 through 49 feet), not the lower end of Category III (50 through 98 feet) as previously thought.
2. Accurate publicity: We published photos & descriptions of the site in our newsletter, Indoor News & Views (current

mailing approximately 425). The information spread through the indoor community that the place looked good, and looked like a great place to set Category II Records. The point here is that the contestants didn't get any surprises, and the site was exactly as advertised.

3. Proper Site Preparation: The drift in an indoor site can be tailored by adjusting lighting patterns, plugging leaks with plastic, arranging entry ways to prevent the outside entrances from blowing directly into the site, and so forth. All of this is in addition to shrouding or removal of scoreboards, strings, and other obstructions. All of this takes time, and experience, along with a little bit of magic. Melody & I have a reputation for taking the time to get the most out of a site, and since I usually arrange to fly one or two events myself, I have a vested interest in getting things right. The key point here is that for many years the indoor flyers & indoor management at the NATS were viewed as us verses them. With a well known active flyer running the meet, this gap is eliminated, and the contestants are certain that the site will be as well prepared as possible.
4. Contest Management: Indoor events run by indoor flyers is a good way to run a contest. It is an unreasonable work load to run both indoor and outdoor at a NATS. For example, in Lincoln, we met for two hours with the site managers on Friday afternoon, followed by about four more hours of work picking up plastic sheeting, duct tape, arranging the helium delivery, etc. Saturday afternoon we spent another two hours at the site adjusting the lighting with the building engineer, putting up signs, and so forth. We ran the events on Sunday & Monday (8 am to midnight!), and spent Tuesday reviewing and recording the scores for the Headquarters staff. This followed by about an hour with Doug Pratt going over the whole thing for the NATS News. So, it took about 5 days to run a two day contest. Since Indoor was our only responsibility, we were able to take the time to do a better job. Contestants know and appreciate this.

The upshot of all of this is really quite simple. Three of the four factors I've mentioned can be had with hard work and the right people. The hooker is the site itself. In my opinion the site has more to do with attendance than any other single factor. If the site will be comfortable with a ceiling forgiving to models, people will come; especially if there is a reasonable chance to set records, or if the site is around 90 feet or higher. In my opinion, the real difference between the attendance in Lake Charles (55 feet, lower end of record category III) and the attendance in Lincoln (49 feet, upper end of record category II), is that Lincoln offered a chance to set records, and Lake Charles did not. Even though the two buildings were virtually identical so far as smooth ceiling, preparation, and drift. I really believe that the chance for records tipped the scales for about 20 contestants to attend the Lincoln NATS.

We must remember that it is primarily the SITE that draws the contestants. And high ceilings (over 90 feet) draw better than medium ceilings, unless the site has some other outstanding feature.

Now on to '88: There are several aspects about the '88 NATS that concern me. The first is the cost of the proposed site. I recall that all of indoor at Lincoln, cost about \$3000. That's \$1200 per day rent, about \$425 travel & lodging for Rick & Melody, and scorecards, and so on. The \$2000 per day for the Scope Arena scares me. It scares me a lot. Suppose we don't get 65 contestants. Suppose we get 42 as in Lake Charles. What then?

The other major concern is this. The National Free Flight Society is making a bid to host the 1988 Indoor World Championships in conjunction with the US Indoor Champs in Johnson City, TN, the first week of June. If things go the same way they did at the last US Indoor World Champs in 1980, we'll see about 135 to 150 contestants at the open part of this meet. People practically come back from the grave to watch a World Champs. The US Indoor Champs had 96 contestants last year without a World Champs to increase the draw. So, how many people will be interested in attending the World Champs/USIC and the NATS, since they are in the same geographical area (about 450 miles apart), and only six weeks apart? Would it be financially more prudent to support the one week bash at Johnson City, than to rent an expensive site in Norfolk?

Tony Italiano's proposal to combine the USIC & NATS Indoor into a single meet has been brought up in light of the World Champs proposal and the high rental in Norfolk. In fact, attendance in Norfolk might suffer from a successful USIC. But, it might also flourish, since a large number of flyers would have two major meets in their backyard. A number of flyers who attended the meet in Johnson City, couldn't wait to fly again, so they came to Lincoln. We just don't know.

So, what do we do? If the Council decides to go with the Scope Arena, Melody & I will run Indoor if desired. I think my main concern is the indoor flyers at large getting blamed if the turnout is lower than hoped for, in light of the expense for the site.

On the other hand, splitting the NATS apart is probably not in the long term best interest of Indoor, since I feel that our best source of new Indoor flyers, are people who already participate in some other facet of the hobby. (I used to fly C/L, for example) The chance to watch other events, especially since we run Indoor into the evening, is probably important to Indoor's long range survival, and to the traditional flavor of the NATS.

I talked at length last night with Dan Belieff (a Micro-film flyer from Sterling, VA) about the proposed site. The way he described it to me from the photos he had, it sounded reasonably good. Not a record quality clean ceiling, but better than a lot of places I've flown. So, if you (the Council) think the budget can stand the price, let's do it. If not, that's your decision too. But let's make the decision based on your best assessment of all of the factor's involved.

CONTEST CALENDAR

CALIFORNIA - BURBANK

Blacksheep indoor flying session/contest June 9 (last session til October) 7 - 10 pm CAT I (peak 34') Luther Burbank Jr. HS, Maple between Jeffries & Burbank Blvd. Contact: Tony Naccarato, 2121 N. Hollywood Way, Burbank, CA 91505 or 818-842-5062

CALIFORNIA - SAN DIEGO

San Diego Orbiteers indoor flying sessions and monthly meetings: 2nd Friday meeting, 4th Friday flying sessions 7:30 pm Colina Del Sol Community Center, 5319 Orange Av. Also flying after meeting - call Program Chairman for schedule: John Hutchison 619-465-7698

CALIFORNIA - SAN FRANCISCO

Possible F1D Local trials & flying sessions CAT III Cow Palace. Contact: Joe Foster, 3771 Timberline, San Jose, CA 95121 or 408-274-5479

CALIFORNIA - SANTA MONICA

Flightmasters Low Ceiling Peanut Champs June 12 Paul Revere Jr. High School in Santa Monica. 1 - 4:30 pm Contact: Bill Warner, 423-C San Vincente Bl, Santa Monica, CA 90402 or 213-393-2198

CALIFORNIA - TUSTIN

There is **NO** flying in Hangar #1 for the near future as the doors are broken in the open position. To check on flying status contact Curt Stevens, 25108 Marguerite Pkwy, #B-160 Mission Viejo, CA 92691 or 714-240-8404

COLORADO - BOULDER

Denver Area Indoor Model Airplane Association indoor flying sessions at Balch Fieldhouse, University of Colorado, Boulder. Last date this Spring is May 20. Contact: Les Shaw, 995 McIntire St, Boulder, CO 80303 303-499-0946

FLORIDA - MIAMI

Miami Indoor Aircraft Model Association (MIAMA) May 21 & 22 World Proxy Pistachio Inter-Gnats at Miami Dade South. Tentative - July 16 F.A.R.T. II MIAMA Indoor Cat I Trials Contact: Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363

FLORIDA - TAMPA

Final Father's Day MIAMA Indoor meet June 18 & 19 in Hangar 5 at MacDill AFB. Contact: Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363

MICHIGAN - STERLING HEIGHTS (north of Detroit)

Last Indoor flying session of year May 20 at Heritage Jr. HS. Contact: Rich Doig, 6 Canary Hill Dr, Pontiac, MI 48055 or 313-373-5374

NEVADA - RENO

Academy of Model Aeronautics National Fun Fly and Convention on June 24 - 26. There will be Indoor flying on Friday & Saturday nights from dusk until dawn in the Reno Convention Center. For more info contact AMA HQ 703-435-0750.

CONTEST CALENDAR - continued

OHIO - AKRON

F1D Team Selection & Record Trials. July 4th and Labor Day weekends. CAT IV. Loral Airdock at Akron Municipal Airport. Airdock F1D Flyers. Must call Bill Hulbert for Security Clearance at least 2 weeks in advance. Bill Hulbert, 174 Castle Blvd, Akron, OH, 44313 or 216-864-8030

ONTARIO - BRANTFORD

CANADIAN NATIONALS '88 is having Indoor events on Saturday, August 6 in the Brantford Civic Center. CAT II - 32 ft. to the girders. Events will include: EZB, Novice Pennyplane, AMA Scale, No-Cal WWII Combat, Indoor Rubber Scale (combined sizes), & FAC Embryo/Bostonian plus Record Trials. For info & rules contact: John Marett 5 Vicora Linkway, Don Mills, ONT M3C-1A5 or 416-429-0815

A.M.A. AND INSURANCE

The following excerpt came from the Okie Free Flight Flyer issue #27 1/1/88.

One more angry outburst: I really do not think the AMA insurance/dues are too high in this sense: I pay more each year for insurance on my motorcycle. But it does infuriate me that someone who wants to fly an EZB or a peanut indoors has to pay the same rate as you know who. How many people have been killed by peanuts? AMA now is going to be self insured. They know how many claims have been paid for damage/injury by various categories of models. They could sell several levels of protection based on that experience. It is a fundamental tenet of the insurance industry that "the lower the risk, the lower the premium". I care about this issue because I think many folks just can't bring themselves to pay the present fee to enter their first contest. One reason I got out of the responsibility of the Oklahoma City indoor meets was the distress of telling people they couldn't fly without paying what to them seemed an exorbitant fee. The OFFFF has never endorsed any candidate for any political office in AMA, but now we will support those who run on the platform of this sort of insurance reform.

Bill Baker

About one year ago we asked Carl Maroney, AMA insurance department, if there had ever been any insurance claims against indoor. He checked his records and there has never been any claims made for or against an indoor contest/flyer. However it has been our personal experience in renting indoor sites that the building manager or owner will not rent to anyone or any group that does not have one million dollar insurance coverage.

Bill asks if anyone has ever been hurt by an indoor model? Hurt by a model, no. But hurt at an indoor meet, yes. While the models themselves are reasonably safe, some of the buildings we fly in are not. Here are some of the close calls and injuries we know about:

In 1971 a light and its cable fell from the roof of the Jones Armory in Washington Park, Chicago, barely missing Ron Ganser, Jr. The maintenance people were attempting to lower the light to retrieve a hung-up model, when the cable broke.

In 1980 a section of the fancy plaster scrollwork of the West Baden Atrium fell several floors barely missing Jim Richmond.

Stan Chilton broke his ankle while steering a model out of the stands in Lake Charles, LA in either 1974 or 1975.

Bob Randolph broke his ankle while carrying his boxes into a site in 1984.

Mike Clem had a piece of a shattered torqueometer penetrate his arm requiring medical attention one year at West Baden.

Indoor has not been without some injuries. And it would be very short sighted of us to think that we are immune, simply because the models themselves are not dangerous.

However, since some aspects of aeromodeling are safer than others a lower insurance rate makes alot of sense. However, there is also the problem of the flier who flies many different events.

(I'm a good example of this since I'm primarily an indoor flyer, but I demolished my right ankle flying outdoor Hand Launch Glider several years ago, requiring reconstructive surgery to repair.)

Bill does present a interesting solution to the high cost of AMA membership dues because of the high cost of insurance, since it is a fact that the incidence of serious injuries is much lower with indoor. It is food for thought.

RULES, RULES, RULES

Well gang, here we go again. The new rulebook looked good, but a large number of various mistakes, omissions and typo's got into the indoor section (about 30 or so). Melody and I proof-read the new book and typed up a long list of corrections (typed on a Radio Shack model 100 portable computer at my in-laws on Christmas Day!), which was printed in the May 1988 issue of Model Aviation magazine.

However, since it would be a lot easier if it were all put together, we've done just that. Corrections are shown in ***bold-italics***, and we've moved the FAI section completely outside of the AMA rules, only leaving the selected sections that actually apply to AMA events. We've also included the English equivalents for many of the metric dimensions. **THESE ARE NOT CHANGES - THESE ARE CORRECTIONS.**

Indoor is not alone, however, as the Peanut Scale scoresheet was goofed up as well, and the July 1988 Model Aviation has the 2nd corrected version of the scoresheet.

Hopefully, we got all of them this time.

SEVENTH UNITED STATES INDOOR CHAMPIONSHIPS

May 31 June 1, 2, 3, 4, 1988

East Tennessee State University

"Mini-Dome"

Johnson City, TN



NFFS

CATEGORY IV
Sanction No. 371

Sponsored by:
National Free Flight Society
National Indoor Model Airplane Society

F1D OPEN INTERNATIONAL

	7 am	8	9	10	11	12	1	2	3	4	5	6	7	8	9 pm	DOME HOURS
Tues. May 31	PRACTICE			ROUND 1				ROUND 2			ROUND 3					6:30 a.m. 8:30 p.m.
Wed. June 1	PRACTICE			ROUND 4				ROUND 5			ROUND 6					6:30 a.m. 8:30 p.m.

USIC

Thur. June 2		EZB				PEANUT SCALE				HLG				7:00 a.m. 9:30 p.m.
		EZB (INT'L), INTERMEDIATE STICK				AMA SCALE PISTACHIO				GLIDER-CATAP.				
Fri. June 3			MAN/BOST				ORNITH., HELICOP				BANQUET			7:30 a.m. 6:00 p.m.
			P-NUT SPD, UNL. SPD.				AUTOG., NO-CAL							
Sat. June 4			NOVICE PP				AMA STK							7:00 a.m. 9:00 p.m.
			PENNYPLANE				AJI OT, ROG STK							

F1D OPEN INTERNATIONAL

- Entrants must have FAI sporting stamp
- Entry fee is \$35.00
- Access to arena floor by specators is \$5.00/day.
- Competition rules in accordance with latest FAI sporting code.
- Dome door hours: 6:30 a.m. to 8:30 p.m.
- Non AMA members must obtain an AMA affiliate license required for insurance coverage at \$10.00.

NOTE: Open events which have **less than 4** entries will be cancelled

All models for scale judging are to be submitted between 1 and 7 p.m. at the very latest on June 1 (along with documentation and name of contestant). Models can not be flown without first being judged.

NOTE: For details of the MIAMI PISTACHIO GRAND PRIX, send a large SASE to: Dr. J Martin, 2180 Tigertail Ave., Miami, FL 33133

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

All 1988/89 AMA Rules apply. All rule change "proposals" DO NOT apply!

Contest Directors:

H. Brodersen, A. Italiano
D. Lindley, C. Sotich
J. Lorbiecki
E. Rodemsky, R. Doig

(Ceiling- 116', Floor- 208' x 420')

Helium available, bring your own balloons.

Note: Helium belongs to all flyers—please lend your balloon to others.

All entrants must be AMA Members or of their countries' governing body. (Contestants provide proof).

Entries must be postmarked by **MAY 10, 1988**

Late fee **\$10.00 payable on site.**

BANQUET at Garden Plaza Hotel

Friday, June 3, 1988

7:00 p.m.

\$15.00 per person

Send your entry payable to:

USIC

1655 Revere Drive

Brookfield, WI 53005

(414) 782-6256 (after 7 p.m. Milwaukee time)

Awards to 3rd Place		Includes One Event	Each Addl. Event
OP	NFFS and NIMAS MEMBER	\$15.00	\$5.00
	NON NFFS and NIMAS MEMBER	\$30.00	\$6.00
JR/SR		\$3.00	\$2.00

USIC GRAND CHAMPION (AJI award)

If you wish to participate in the Grand Champion Award, you must select a maximum of 7 events for score. Your declaration must be made before you fly any events whatsoever.

EVENTS ELIGIBLE; HLG, FID, AMA STK, ROG STK, ORN, AUTO, EZB, INT, STK, P-NUT, AMA SC, PP, NPP, MAN, HEL

AJI OLD TIMER (OT) (Sponsored by AJI)

STICK ONLY (Microfilm covered). Design must have been widely published between 1/1/34 and 12/31/42 (bring proof). Construction must be in accordance with plan (balsa sizes may vary). No hi-tech material will be allowed, nor "new" devices such as variable pitch or diameter propeller. Can formed propeller is permitted.

EVENT	JR	SR	OP
AJI OT			X
AUTOG.			X
BOST.			X
EZB	Combined		X
EZB INT'L			X
FID OP INT'L			X
GLI HL	X	X	X
GLI CAT	X	X	X
HELI			X
INTER. STK	Combined		X
MANH			X
NPP	X	X	X
PP	X	X	X
ORNI			X
ROG STK			X
SCALE AMA			X
P-NUT SCALE	Combined		X
NO-CAL			X
SPEED P-NUT			X
SPEED UNL.			X
HL STK	Combined		X

NOTICE: Flying schedule may be modified during the contest. The absolute final/official/positively exact schedule will be that which is posted at the official's table. It is your responsibility to check and know the start/stop times of the events. (It may be advantageous to overlap some events.)

TABLES: If you are driving please do **bring along a table or two**. There will be very limited rented tables available. Share tables, please, and do not hoard from the first day to the third day. Chairs will be available. If you need close-in lighting, it is up to you to bring all equipment, including your own very long extension cord.

BOSTONIAN RULES:

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

MANHATTAN: Win based on best of 5 flights

PEANUT SPEED:

- The Unlimited Rubber Speed rules apply except:
- The models are limited to Peanut Scale models.
 - The models' scores will be the time in seconds for the model to fly two laps.
 - The lowest time will determine the winner.
 - Winner only receives cash award.

CATAPULT GLIDER:

- Maximum wing span 12".
- Maximum wing chord 3".
- Maximum launching stick length 6".
- 9 official flights.
- Sum of best 2 flights determines winner.

"INTERNATIONAL EASY-B"

- This event will allow EZB's from any country to fly against each other.
- If the contest director decides that a model should be checked, it will be done using the rules for EZB of the modeling organization, (recognized by the FAI) in the country of origin.
- Flying will be against a target time set for each model by the contest personnel.
- Highest percentage of target time wins.
- Best 1 of 5 flights counts.
- Awards will be given to the first 5 places.
- PLEASE SEND TO THE ADDRESS BELOW, IN ADVANCE....
- The best time an EZB has done under your rules, at a ceiling height as close to 34.9 meters as possible.
- A copy of your rules
- We are requesting the above even if you are not going to enter. It will help in set up the event.

SEND THIS INFORMATION TO.... Doug Barber, 146 Stratton House, Maple Shade, NJ 08052 USA

NO-CAL PROFILE SCALE

- A recognizable model of a full scale aircraft, with a wingspan not exceeding 16 inches.
- The weight of the model (excluding the rubber motor) shall be no less than 6.2 grams (two pennies).
- No fancy gadgets permitted-plastic prop is permitted. Balsa and Jap tissue shall be the main construction materials. Use of hi-tech materials such as carbon fibre, boron, et al is not at all permitted.
- Model must contain control surface outlines, window outline, and registration markings. Model must have full landing gear, i.e., as the full scale aircraft (no prop-ile gear). **Same rubber must be used for all flying and no other part shall be replaced, dropped or removed.**
- This is a fun event so please honor the intent of the rules. Judges decision will be final, as always.
- Event will be conducted on a mass hand launch basis. Heats will be run with last one down as the winner of each heat. Last heat will be composed only of heat winners. (5 minutes between heats)

UNLIMITED RUBBER SPEED (BrokenSpar Event)

- Models must be rubber powered and propeller driven.
- Models must start from an unassisted ROG launch from a three-point sitting position.
- Model to be timed for two complete laps around two pylons set 20 feet apart.
- Flights will be disqualified if the model touches the pylon or ground after crossing the starting line.
- The timer will stand in line with the two pylons. Timing starts when the model crosses the line determined by the two pylons and ends when it crosses the line after completing two laps.
- Shortest time for two full laps determines winner.
- No limit to the number of models or launches.
- Winner only receives cash award.

DORMITORY: Air-conditioned. Room rate is \$10.00 per person (double occupancy). If you want a room for yourself, alone, it is \$20.00. No linens are furnished. If you desire linens, they can be provided for \$5.00 per person for the period. This includes a set of towels (no blankets). You must indicate your needs and pay USIC (not ETSU). USIC is being held responsible for the payment, so USIC must be kept informed of all plans and any change of plans. **NOTE:** If you lose the room key or do not turn it back in, there is a *\$25.00 charge!* (A key ring might be helpful). It is your responsibility to find a room mate. ETSU will have an admissions person at the dormitory. Lavatory/shower facilities are located on each floor. The Dormitory is named LUCILLE CLEMENT HALL (located at west end of Dossett Drive.).

CAFETERIA SERVING HOURS:

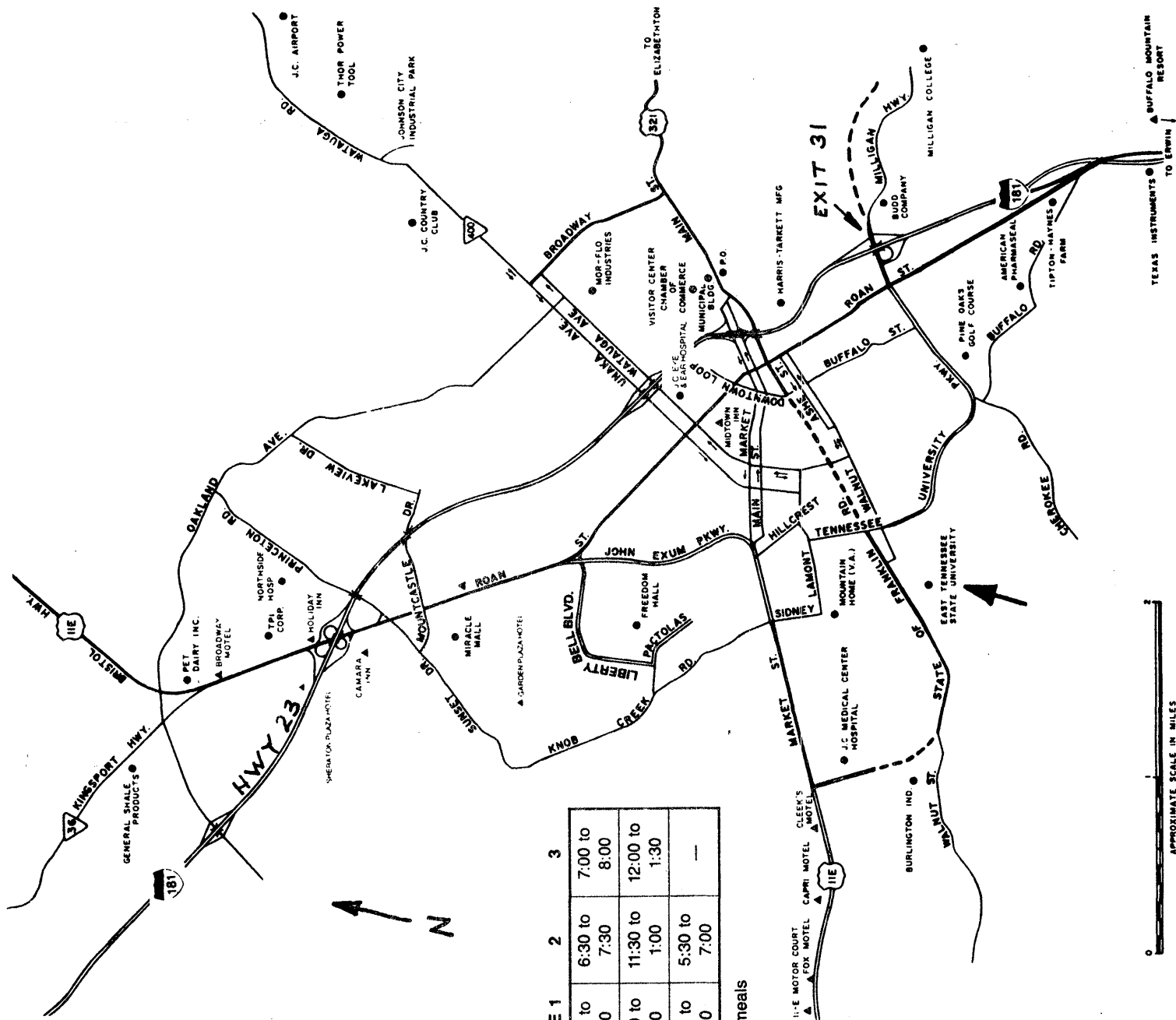
	MAY 28	29	30	31	JUNE 1	2	3
BRFST	6:30 to 7:30	6:30 to 7:30	6:30 to 7:30	6:30 to 7:30	6:30 to 7:30	6:30 to 7:30	7:00 to 8:00
LUNCH	11:30 to 1:00	11:30 to 1:00	11:30 to 1:00	11:30 to 1:00	11:30 to 1:00	11:30 to 1:00	12:00 to 1:30
SUPPER	5:30 to 7:00	5:30 to 7:00	—	5:30 to 7:00	5:30 to 7:00	5:30 to 7:00	—

DORMITORY CHECK-IN HOURS:

28 thru June 3 - 5 to 7 p.m. and 8 to 11 p.m.

Turn key into Dormitory manager or slip under managers door along with slip containing your name and checkout time.

NOTICE, NOTICE: By law **NO** liquor or beer is allowed on the campus. **ABSOLUTELY NOT!!** If you break this rule, you will be fully disqualified from **all** events and forfeit all fees, and also be subject to any State of TN actions! **PLEASE** watch for and adhere to posted speed limits on campus.



LODGING

BROADWAY MOTEL, INC. P.O. Box B-CRS, 37602, 2608 N. Roan Street, 615-282-4011. 110 Units

CAMARA INN-JOHNSON CITY Drawer K-CRS, 37602, 2312 Browns Mill Road, 615-282-2211. (C-D-L), 150 Units.

CAPRI MOTEL P.O. Box 5114, 37605, 3008 W. Market Street, 615-926-2952. 8 Units.

CLEEK MOTEL 2700 W. Market Street, 37601, 615-926-8145. 44 Units.

ECONOMY INN 106 W. Millard Street, 37601, 615-926-4131. (C-D-L), 112 Units.

11-E MOTOR COURT Route 3, P.O. Box 451, 37605, Highway 11-E, 615-928-2131. 16 Units.

FAMILY INNS OF AMERICA At Buffalo Mountain Resort, Route 2, Box 100, Unicoi, TN 37692, 615-928-6531. (C-L), 69 Units.

FOX MOTEL Route 3, Highway 11-E South, 37601, 615-928-0267. 31 Units with kitchen.

***GARDEN PLAZA HOTEL** 211 Mockingbird Lane, 37601, 615-929-2000. 188 Rooms (C-D).

HOLIDAY INN-JOHNSON CITY 2406 N. Roan Street, 37601, 615-282-2161. (C-D-L), 158 Units.

SHERATON HOTEL 101 W. Springbrook Drive, 37604, 615-282-4611. 204 Units. (C-D) Video Lounge.

SUPER 8 MOTEL 108 Wesley Street, 37601, 615-282-8818. 63 Units.

NAME

SINGLE

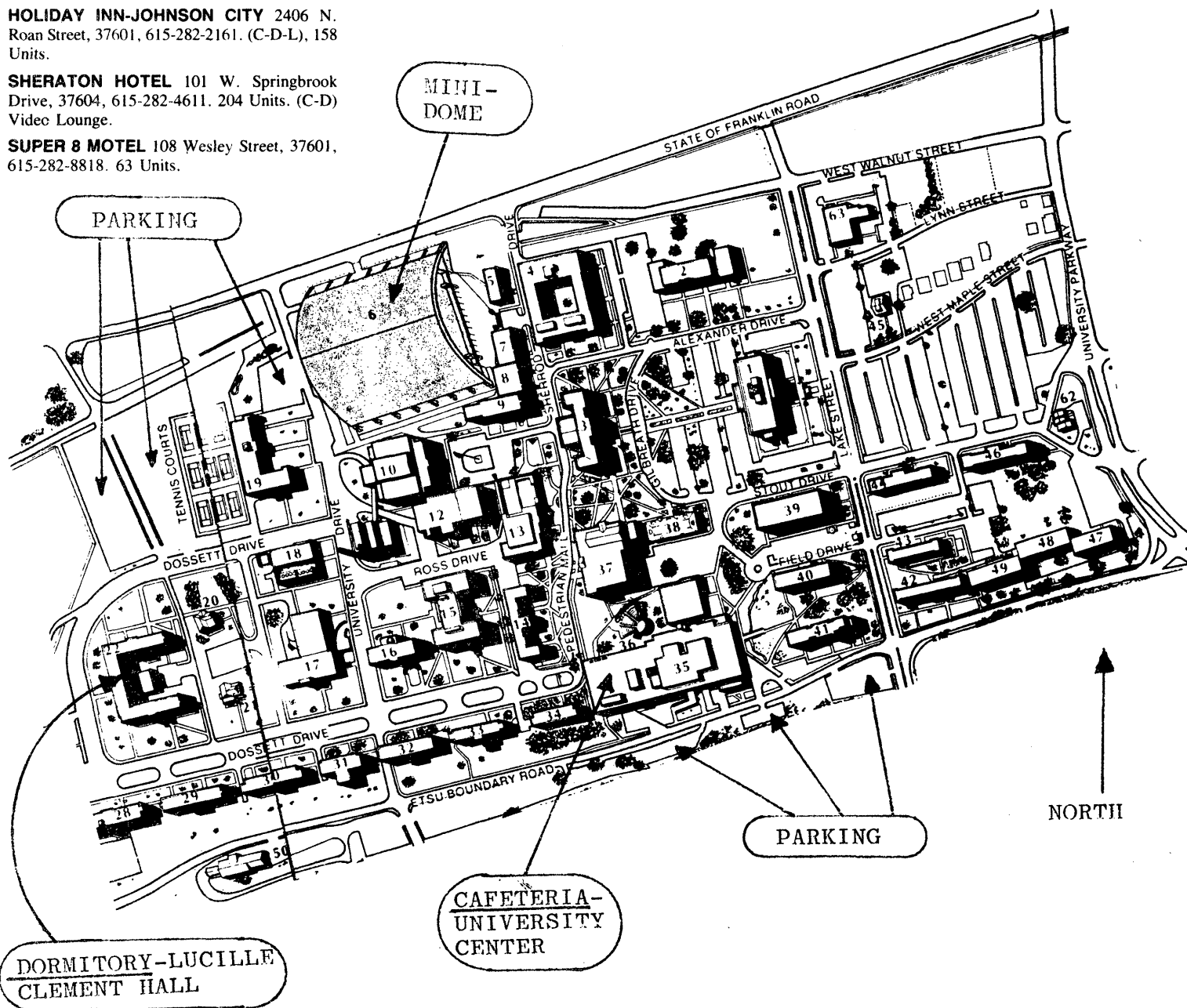
DOUBLE

Broadway Motel, Inc.
Camara Inn-Johnson City
Capri Motel
Cleek Motel
Economy Inn
11-E Motor Court
Family Inns of America
Fox Motel
Garden Plaza
Holiday Inn
Sheraton Hotel
Super 8 Motel

\$35.99	\$40.00
\$36.00	\$40.00
\$20.00	\$22.00
\$22.00	\$26.00
\$25.00	\$27.00
\$22.00	\$25.00
\$22.00	\$27.00
\$30.00	\$41.00
*	*
\$48.00	\$48.00
\$62.00	\$72.00
\$32.00	\$38.00

When calling for reservations state you are part of World Champs and/or USIC for special rate. All rates are plus tax.

*Garden Plaza Hotel is the host hotel for World Champs. and USIC. Special rate is \$49.00 plus tax for a very attractive room. State you are part of World Champs and/or USIC.



SEVENTH UNITED STATES INDOOR CHAMPIONSHIPS

May 31, June 1, 2, 3, 4, 1988
East Tennessee State University
"Mini-Dome"
Johnson City, TN



NFFS

PLEASE PRINT

NAME _____ AMA NO. _____
Last First Initial

STREET _____ JUNIOR _____ SENIOR _____ OPEN _____

CITY _____ STATE _____ ZIP _____

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

Signature _____

PLEASE CIRCLE

	(Excludes F1D)	Includes One Event	Each Additional Event
OPEN	NFFS or NIMAS Member	\$15.00	\$5.00
	Non NFFS and NIMAS Members	\$30.00	\$6.00
Jr./Sr.		\$3.00	\$1.00
	FID OP Int'l	\$35.00	

BANQUET - No. of reservations @ \$15.00 _____

DORMITORY RESERVATION:

Daily room rate is \$10.00/per person (double occupancy basis). If you desire room for one person, rate is \$20.00/day. Linens (includes one set of towels but no blanket) is at \$5.00 per person. A change of linens costs \$5.00.

Please indicate number of people in appropriate block:

	MAY					JUNE				
	26	27	28	29	30	31	1	2	3	4
1 Room										
2nd Room										
3rd Room										
Linens										
Meals	X	X								X

CAFETERIA: 3 meals for \$12/day basis, except @ \$6.75/day for May 30 & June 3. Individual meals ala carte paid at cafeteria.

Check for \$ _____ is enclosed

In case of emergency please contact:

NAME _____ PHONE _____

STREET _____ CITY _____ STATE _____ ZIP _____

and fees payable to: USIC
1655 Revere Drive
Brookfield, WI 53005

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

Must be postmarked by May 10, 1988
Late entry fee of \$10.00 payable on site.

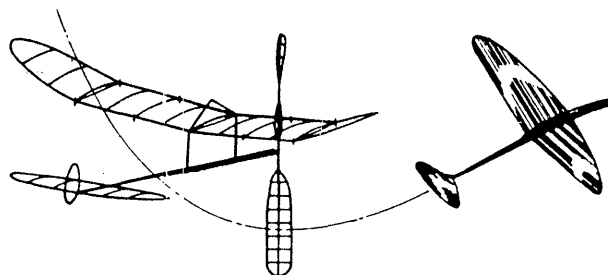
NOTE: You can join NFFS or NIMAS and AMA on premises.

CIRCLE EVENTS ENTERED

- A. USIC Grand Champion*
1. AJI OT Event
 2. Autogiro
 3. Bostonian
 4. Easy B
 5. Easy B Int'l
 6. FID Open Int'l
 7. Glider-Hand Launched
 8. Glider-Catapult
 9. Hand Launch Stick
 10. Helicopter
 11. Intermediate Stick
 12. Manhattan
 13. Novice Pennyplane
 14. Pennyplane
 15. Ornithopter
 16. ROG Stick
 17. Scale-AMA
 18. Scale-Peanut
 19. Scale-No Cal
 20. Speed-Peanut**
 21. Speed-Unlimited**
- Pistachio Grand Prix
Enter on Site

*Indicate "GC" in front of 7 selected events

**Sponsored by Hardy Brodersen-\$5/ea mph over 6mph to winners only (\$100 max)

INDOOR**NEWS and VIEWS**

#43,44,45,46

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

USIC - JUNE 1-4 - JOHNSON CITY, TN - 114 FEET**NATS/F1D FINALS - JULY 21-23 - MOSCOW, ID - 146 FEET****THIS ISSUE**

Where has the time gone? Has it really been an entire year since the last issue? The circumstances of my job, health, several other commitments, and general burnout since the World Champs all combined to put my modelling activities on hold. When people say, "What are you building?", I have to say, "I'm not!"

Melody and I have tried to make some changes to reduce our commitments and limit our modelling activities to where we feel we can make the greatest contribution. Those are running the NATS Indoor events and producing INAV. Let's keep our fingers crossed.

Even though last year's USIC, NATS, and World Champs are all old news by now, we have gotten several requests for complete results. We'll print them over the next couple of issues in reduced size print, just to get them out while still leaving room for more current topics.

This issue covers the upcoming major contests of the season, which include two spectacular high ceiling sites. Let's start building!

SUBSCRIPTION INFO

Indoor News & Views is published approximately four times per year. Current rates are:

\$8.00 USA, Canada, & Mexico
 \$9.00 Overseas Surface Mail
 \$11.00 Air Mail, Europe & South America
 \$12.00 Air Mail, Asia, Australia, New Zealand

Please make payment in U.S. Dollars by cash, money order, U.S. Postal money order, or check drawn on a U.S. bank. Make payable to the order of Richard Doig. Partial payments OK.

The number in the upper right-hand corner of the mailing label is the final issue of the current subscription.

EIGHTH UNITED STATES INDOOR CHAMPS

The USIC will be held once again in the Minidome at East Tennessee State University, in Johnson City, TN on June 1-4. The events have been scheduled over four days, in order to provide adequate time for the expected large turnout. This is truly one of the finest sites we have ever flown in. Please see the enclosed entry blanks for details.

AMA NATIONALS & FAI TEAM SELECTION FINALS

The AMA Nationals and the U.S. Indoor Team Selection Finals will be held jointly on July 21, 22, & 23, 1989, at the Kibbie Dome in Moscow, Idaho. Moscow is located about 90 miles south-east of Spokane, Washington and about 325 miles from Seattle. The site is located on the campus of the University of Idaho. Moscow is a city of 17,500 people, but with the University, has many amenities.

SCHEDULE: The attached schedule was worked out with Andy Tagliafico, and approved by the Free Flight and Scale Category Managers and the FAI Team Selection participants. Please note that it is completely different than the printed NATS entry form, and it has a minor change from the proposed schedule that was circulated to the Team Selection participants. (ROG Cabin and HL Stick are both one hour longer.) There is one new official event (Ornithopter), and we are open to possibly adding one or two unofficial events like Bostonian if there is interest. Also note that the printed NATS entry form did not include Ornithopter in the event list, but it will be held.

Scale judging might be a problem for some. The judging will be in Pasco, WA on Wednesday for both Indoor and Outdoor Rubber Scale and Peanut Scale. A proxy may present scale models for judging. The outdoor scale events are on Thursday, in the Tri-Cities, then the indoor events are on Friday, in Moscow, ID. Since (hopefully) a large percentage of indoor scale flyers will also fly outdoor scale, this should not present too much dislocation.

THE SITE: The Kibbie Dome is a domed full-sized football field surrounded by a 440 yard track, with seats for 18,000 spectators, all under a parabolic roof. The arches run across the field, so the full height (144 feet) is available down the entire length of the building. There is a speaker cluster in the center that normally hangs down to about 90 feet, but we will see if it can be raised and shrouded. The other speakers visible in the photos are over the edges of the stands and do not come into play.

There are two nets (approximately 20 feet high) that run across the field and are hauled up to the ceiling for storage. They divide the ceiling roughly into thirds, and hang much like curtains. The net at the east end hangs down to about 110 feet and the net at the west end hangs down to about 125 feet. We will also see that the nets are pulled up as tightly as possible. These have not proven to be serious hazards, since there is still a large area available.

The ceiling is suspended acoustical tiles with gaps along the edges. It is possible to get a model up above the tiles, but the only model that ever did popped back out. Banging around on the ceiling could prove to be a hazard.

The astro-turf floor will probably be down. The entire building is posted No-smoking and is a no-alcohol area. At 2574 feet above sea level, the altitude may make some difference in the way the models fly. The building is very well insulated. The plus is that there is very little variation over the course of the day. The down side is that there is not much buoyancy in this site. It has been described as being "honest". Every session has produced flights over 30 minutes. All in all, it looks really good.

HOW TO GET THERE: Seattle and Spokane are the major airline airports in the region. Spokane is served by United, Northwest, Delta, and Continental, along with regional airlines. Seattle is served by American, Braniff, Continental, Delta, Eastern (?), Northwest, TWA, and United, along with regional airlines. There is a small commuter airport between Pullman, WA and Moscow. Check with your local travel agent. My recommendation for anyone east of the Rockies is to fly, and rent a car.

Bob Stalick's son attends the University of Moscow, and Bob recommends that the best route between the Tri-Cities and Moscow is to drive through Kahlotus, Washtunca, and Colfax. It's between 120 and 160 miles depending on which map you look at (and how often you get lost!).

With outdoor Free Flight running through Thursday afternoon, there should be enough time to travel to Moscow for the next day's events.

HOUSING: The University dorms will not be available in Moscow. Moscow has plenty of restaurants and motels:

The University Inn	\$48-75	1-800-528-1234
Cavanaugh's Motor Inn	\$36-50	1-800-the-inns
Super 8 Motel	\$25-37	1-800-843-1991
Hillcrest Motel	\$25-30	208-882-7579
Mark IV Motor Inn	\$35-60	208-882-7557

F1D TEAM FINALS AT THE NATS

The last time the F1D Finals were held at the Nationals, was in 1969 at Lakehurst, NJ. Finally, after 20 years, we again have the good fortune of having one of the toughest F1D contests (other than the World Champs) as part of the NATS. But this creates some potential problems.

Once again the F1D Team Selection participants have voted for a best 2 of 9 flights format, rather than the best two of six flights called for in the FAI Sporting Code.

The way we will run F1D is as follows:

The nine round Team Finals will count as the NATS F1D event, with the National's trophies being awarded based on this one contest. Anyone who enters F1D as a NATS event, will be allowed to fly towards the trophies, regardless of whether they are qualified for the Finals or not. Only qualified F1D Finalists will have their scores count toward the team spots.

All F1D, ROG Cabin, and HL Stick contestants will be required to attend the contestant meeting on Friday at 2 pm, along with anyone who intends to time these events. During this meeting the contest management & participants will decide whether any special restrictions will be placed on the non-Finalists flying in the meet. We will also review the rules at this meeting. At this time, we intend to enforce a time-one-fly-one format for the Team Finalists. The main goal is to prevent mid-air, and insure a smoothly run meet.

CALL FOR NATS WORKERS

When we first recommended the Kibbie Dome, we estimated 75 contestants. Since approval, based on the phone calls we've received, we think that we might get many more than that. Consequently, we need workers!

We would like 3 additional CDs, one for each morning time slot, other than Melody and I to assist in processing models. We had more entries in Virginia than we expected, and processing got backed up. I don't want that to happen again. The F1D Finals portion will have it's own Contest Director & assistants.

We also need timers, paperwork processors to hand out timecards, double check scores, etc. and "go-fors" to run errands, especially to bring us dinner each day. In past years, we've had dinner at 2:00 am because we didn't have a go-for! We are also arranging for an AMA portable booth, and would like people to man it as well. This would involve handing out info and explaining what AMA and Indoor is all about. Let's start promoting ourselves.

Unfortunately, most of the budget has been spent on the rent, so all we can offer is the normal NATS workers credit towards next year's AMA license. Workers can work any portion or all 3 days, you just can not work and fly at the same time. Contact Melody and Rich Doig directly if you're interested in helping out.

WHERE IS MOSCOW, IDAHO?

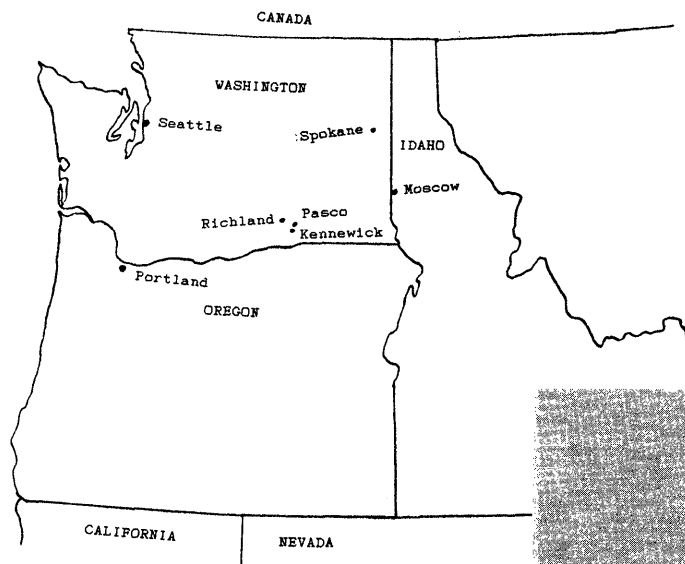
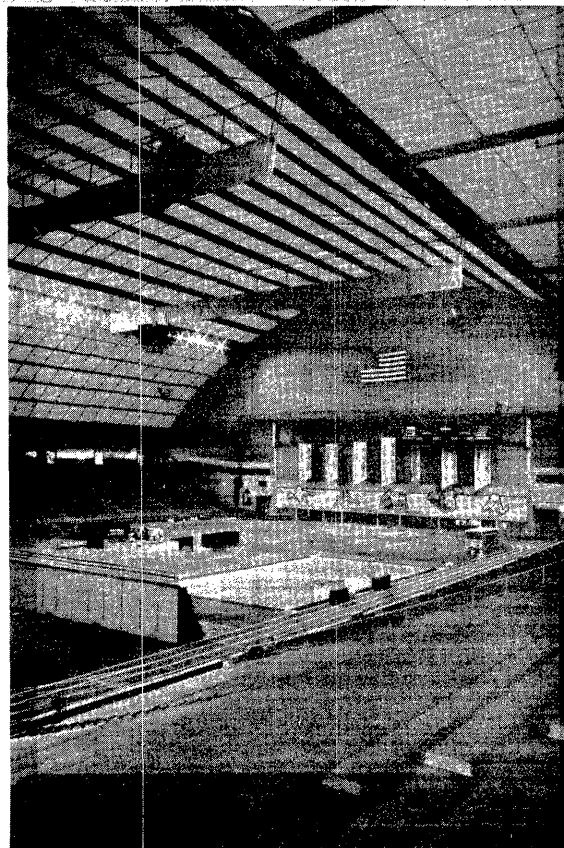
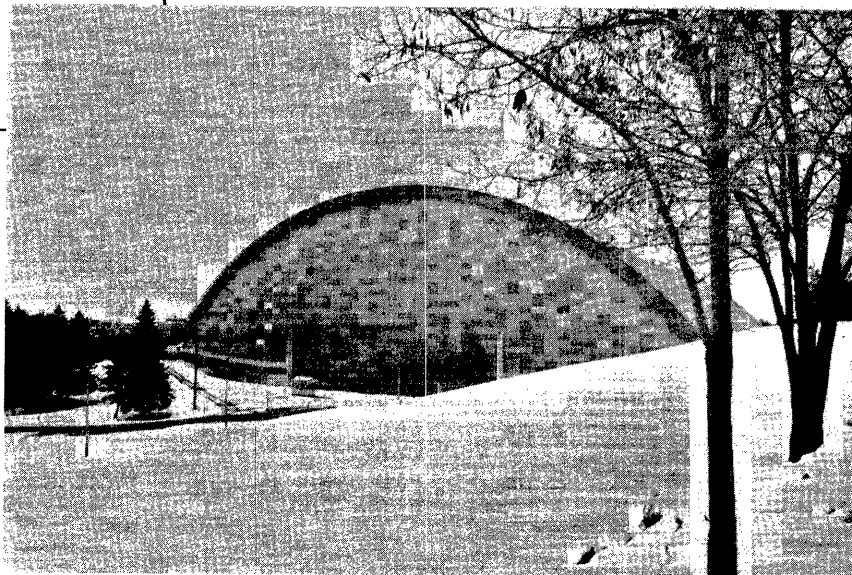


PHOTO CAPTIONS

Top: Exterior of Kibbie Dome in February, snow covered landscape. Lower third of building is below ground level. Entrances to building are at the top of the grandstands, see below.

Bottom: Interior of Kibbie Dome. Floor area approximately 330 feet x 500 feet, 146 feet high. Center speaker cluster (at level of lights) will be shrouded and raised. The six other speakers are over stands. Note that curtains will be raised as high as they will go. The floor will be clear and the astro-turf will probably be down.

Photos taken by Tom Stalick.



KIBBIE DOME - MOSCOW, ID APPROVED 4/10/89

7 am - 8 am	Test flying - HLG, Indoor Scale, & Peanut Scale only
8 am - 12 noon	Hand Launch Glider - West Half of Site
8 am - 1 pm	Indoor Scale & Peanut Scale - East Half of Site
12 noon - 1 pm	F1D test flying - West Half of Site
1 pm - 2 pm	F1D, ROG Cabin Test Flying - Entire Site
2 pm - 3 pm	F1D contestants meeting (F1D Finals & F1D NATS contestants must attend)
3 pm - 8 pm	ROG Cabin
3 pm - 10 pm	F1D (3 rounds)

7 am - 8 am	Test flying - NPP, PP, Manh only
7:30 am	Start processing models
8 am - 2 pm	Novice Pennyplane, Pennyplane, Manhattan Cabin - Center & West sections F1D Test Flying - East Section
2 pm - 3 pm	F1D, HL Stick Test Flying - Entire Site
3 pm - 9 pm	Hand Launched Stick
3 pm - 10 pm	F1D (3 rounds)

7 am - 8 am	Test flying - EZB, Int. Stick, Orni
7:30 am	Start processing models
8 am - 2 pm	Easy B, Intermediate Stick, Ornithopter - Center & West Sections
8 am - 2 pm	F1D Test Flying - East Section
3 pm - 10 pm	F1D (3 rounds)

Friday, July 21				Saturday, July 22				Sunday, July 23					
7 am	Test Flying - HLG,			Test Fly-NPP, PP, Manh				Test Fly-EZB, Int, Ori					
7:30 am	Scale & Peanut only			Start processing				Start processing					
8 am								8 am					
9am	Hand	Indoor & Peanut Scale		Novice	F1D		Easy B	F1D		9 am			
	Launch			Pennyplane			Test			Intermediate	Test	10 am	
10 am	Glider			Pennyplane			Flying			Stick	Flying	11 am	
11 am	West			Manhattan			East			Ornithopter	East	12 noon	
12 noon	Half	East	Cabin	End									
	F1D Test	Half	West &				West &						
1 pm	Test-F1D & ROG Cabin			Center			Center			1 pm			
2 pm				Sections			Sections			2 pm			
	F1D Contestant Meeting			Test-F1D & HL Stick				Test Flying - F1D					
3 pm								3 pm					
4 pm	F1D	ROG	Cabin	F1D	Hand	Launch	F1D	F1D		4 pm			
5 pm	Round						Round				Round		5 pm
6 pm	1			F1D			4			F1D	7	F1D	6 pm
7 pm				Round						Round		Round	7 pm
8 pm	F1D	2		F1D			8	F1D		8 pm			
9 pm	Round			Round				Round		9 pm			
10 pm	3			6				9		10 pm			

AMA NATIONALS: HOW DID THIS HAPPEN?

Last Autumn, we received word that the NATS Planning Committee had selected the Tri-Cities area of Kennewick/Pasco/Richland, Washington for 1989. This was approximately three weeks before an on-site meeting of the committee to preview the recommended sites. We immediately began sending letters and making phone calls recommending that the Kibbie Dome in Moscow, Idaho (about 160 miles away) be used for the indoor events. Andy Tagliafico contacted the Moscow manager and reserved the dates. All of this prior to the planning meeting.

Unfortunately, Sandy Frank (NATS Free Flight Manager) was the only one at the meeting pushing for Moscow, and the rest of the committee out voted him, electing to use a brand new 42 foot high hockey arena in the Tri-Cities. (We are not on the committee.)

Andy Tagliafico visited the hockey arena in early December and reported that it was the worst site he had ever seen, primarily because of the ceiling, which has approximately 40 suspended loudspeakers. In fact, the speakers were all added between the time the planning committee toured the site in November, and when Andy saw it in December. We continued to write letters.

In mid-January, we learned that there was one last chance to get Moscow, since the Executive Council has the final say in the matter, and they had a meeting the following weekend where the NATS package was to be approved. Numerous phone calls were made to get everyone we could to call their District VP about the matter. Our choice was simple. The hockey arena looked so bad, none of us were interested in attending (including me, the CD!). Moscow looked so good, we would do almost anything to get there.

The result of the meeting was that they still wanted indoor in the Tri-Cities, but would approve \$1000 towards renting Moscow the day after the rest of indoor. Andy Tagliafico and I felt that for one day, just for a fun fly, it wasn't worth the bother.

We continued to complain.

Then in mid-February Andy called me with the news. Something had changed, and we could have indoor at Moscow for two days. VICTORY! But, Andy had an even better idea.

Why not combine the FAI Indoor Team Finals with the NATS over three days? Because we were having difficulty scheduling the Team Finals with the loss of Santa Ana, and recent changes to the Airdock in Akron, we had been looking seriously at Moscow for the Team Finals, and Andy had procured two possible weekends; July 21-23 and August 5-7.

Andy proposed that rather than come back to Moscow two weeks after the NATS, that we somehow combine the NATS and the Team Finals. The vote has been circulated, and the F1D Team participants voted to combine the Finals with the NATS. The Team Fund will pay half of the rent for the third day and half of the miscellaneous expenses. The remaining rent for day three is to come from an AMA contingency fund (I don't know the details).

One of my letters to the Executive Council said that this site is what we've been asking for all along. The ball is now in our court, and this is our chance to provide a big turn out, and show the NATS Planning Committee and the Executive Council what a great site does for attendance.

ON TO MOSCOW!

F1D TEAM SELECTION PROGRAM

For 1988-89, the F1D Team Selection participants have approved the same program as used during 1986-87, with the following revisions:

1. Locals have been dropped from this program.
2. The At-Large Regional at the 1989 NATS has been dropped in favor of holding the Finals in conjunction with the NATS.

There is still time to qualify for the Finals. The requirement is that you score at least 75% of the winning time in a Regional meet.

The following Regionals will be held prior to the Finals:

- | | |
|------------|---|
| June 3 & 4 | At-Large Regional
F1D event at theUSIC*
Mindome, Johnson City, TN
Entry blank in this issue |
| June 11 | West Regional
Cow Palace, San Francisco, CA
Contact: Bud Romak
85 Sullivan Drive
Moraga, CA 94556
415-376-4624 |
| July 1-4 | Midwest Regional
Loral Airdock, Akron, OH
Contact: Bill Hulbert
174 Castle Blvd.
Akron, OH 44313
216-864-8030 |

These dates are tentative, and availability must be confirmed with the site contact prior to the meet.

*At theUSIC, the \$10.00 Regional fee will be collected by Melody Doig, if you wish yourUSIC times to also count as Regional times. You must enter theUSIC and theF1D event in order to compete in the At-Large Regional.

FLYING AIRLINES WITH MODELS

Carrying indoor models when flying airlines can be your worst nightmare, but it doesn't have to be. I have flown airlines three times with F1D models, with no significant damage. Here are several approaches to getting to the contest with intact models.

BY CAR: The first is obvious. Find out if another modeler is driving, and have him take your models. Even if you have to drive five hours to deliver them, it might be worth it. But this is a rare situation so let us concentrate on packaging.

AIRLINES: The standard airline rule for carry-on items is length + width + height must equal 45 inches or less. Some airlines break it down to:

- Maximum length 23"
- Maximum width 13"
- Maximum height 9"

In fact, this size box will fit in most overhead compartments and will be allowed with no problems. The problem occurs when you need to take something larger.

American Airlines Customer Service people in Detroit have been very cooperative with me over the years, allowing me to go on board several aircraft during cleaning to measure the overhead compartments. Other airlines may not have the identical compartments, even in the same model of airliner, but you have to start somewhere.

The main thing you notice is that the compartments are considerably longer than the 23" maximum length. This is important since a 9" high x 13" wide box can accommodate (2) Intermediate Stick or (1) F1D if the length is increased to about 28" to 30". Most of the F1D flyers arrange to hand carry one model this way, along with their best props, and send the rest through baggage, arranging for special handling.

CARRY ON MODEL BOX: An overhead compartment box must be light weight. I built mine from a material called foam-core, available at art stores. It is a 3/16" thick layer of dense plastic foam, with a layer of clay coated paper on either side, making a 1/4" thick sandwich. The material can be scored, v-notched, and folded into shape. You just glue with white glue or hot glue gun, using 1/4" balsa reinforcing strips, and tape the joints using 2" wide white duct tape. I also use duct tape for the hinge, and duct tape as the latches. I cut the box open at the side, and re-tape it for travel. This produces a package with nothing sticking out, and a maximum of room inside. I also made a 4" x 6" cutout in the lid, and taped a piece of flat transparent canopy stock over the hole to make a window that is only 1/16" thick.

This box carries one Garfield F1D model, with a 10 1/2" chord wing, in a package only 8 1/2" x 12" x 28", and fits nicely into the overhead on American Airlines DC 10's and two versions of 727's. It will fit under the seat as well if necessary, but it's really cramped. (No room for my feet!) It weighs just over 2 pounds, so there is no concern about having it overhead.

Most airlines are now very strict about a maximum of two carry-on items per person (other than purses and cameras). Don Godfrey has made a novel carry-on box for two F1D models, where each model is in its own box, and the two boxes hook together with velcro into one piece, but split apart to fit through the opening into the compartment. The handle is also removable. This arrangement may allow you to get additional models through carry-on since many overhead compartments will hold a larger box than will fit through the door into the compartment.

Since the airlines will not allow boxes to be packed in the containers used for garment bags, you build a foam-core box inside a garment bag. This method works well with models like Easy B or Scale, and works with braced models if you use folding wing posts. With folding wing posts, even the largest microfilm model will fit in a 4 1/2" thick box, and into a six inch thick garment bag. You attach the hanger to the end of the box and put it into the bag and maybe even put your suit in the bag too. Make sure that you build some vertical support posts inside the box near the center, so if someone jams another garment bag into yours, they don't crush the sides of the box into the models.

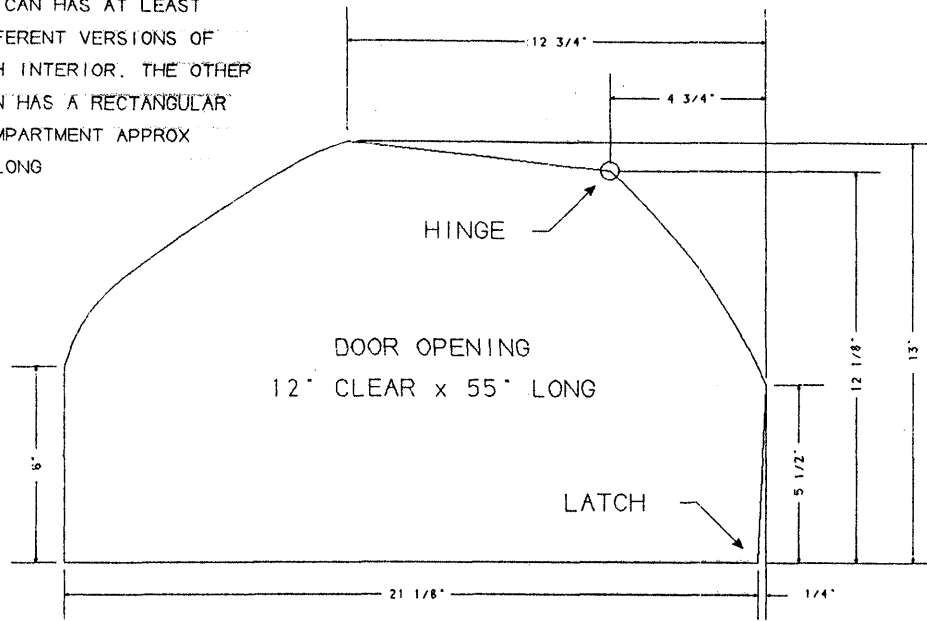
TOOLBOXES: Finally, carry your tool box with you, and disguise it. My toolbox is a small 8" x 8" x 16" plastic tackle box. I put the toolbox inside a locker bag, stuff my skeins of rubber around it, and hand carry this bag. I put it under the seat. If it looks like a toolbox, it will get searched. If it looks like a locker bag, and nothing suspicious shows on the X-ray, it will zip right thru.

Security people are very concerned about flammable liquids and will not allow them as carry on. If they search the box, glues, solvents, film solution, and CyA glues will have to come out. I wrap these in plastic wrap, aluminum foil, and paper towels inside a sealed box in my luggage. This is the only way to insure that you won't end up having to throw them out at the security checkpoints, and find yourself with no glue or solvents. But this seems to vary widely from airport to airport.

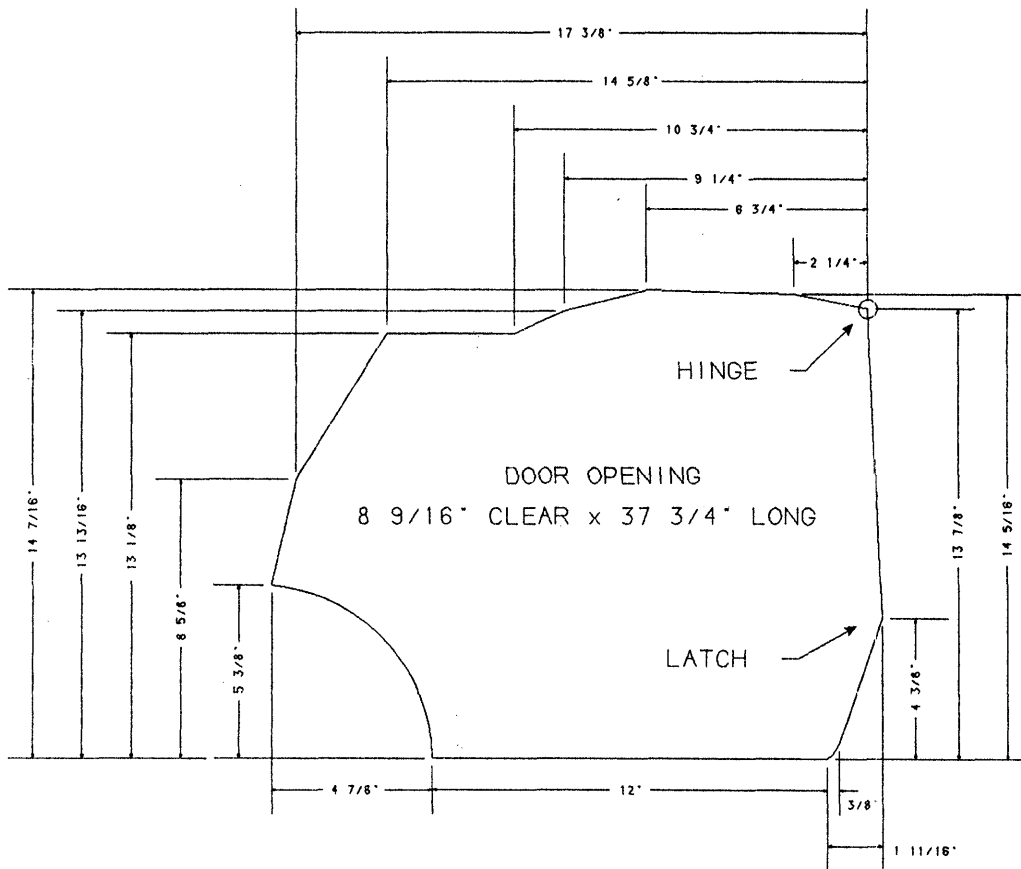
Also, carry a small pair of scissors, and small X-acto knife, so these cannot be argued to be weapons. If you are unsure, take your toolbox down to the airport, stop at security, and tell them that you will be flying in a couple of months, and ask them to search your box for anything that might be a problem. You'll probably find them to be very cooperative since you are taking the trouble to contact them in advance. Any item that makes them nervous, replace or pack in your luggage.

BAGGAGE SERVICE: If you must send a box through baggage, American Airlines offers Escort Service, where the box is hand carried from the gate, and delivered to the gate at the destination. Manny Radoff & Sal Cannizzo have successfully used a similar service from United Airlines. Don Godfrey has had bad luck with Northwest baggage, where they destroyed one of his boxes.

IMPORTANT: AMERICAN HAS AT LEAST
2 COMPLETELY DIFFERENT VERSIONS OF
THEIR 727 STRETCH INTERIOR. THE OTHER
VERSION I'VE SEEN HAS A RECTANGULAR
CROSS-SECTION COMPARTMENT APPROX
10' x 20' x 56" LONG



CROSS-SECTION OF OVERHEAD COMPARTMENT
AMERICAN AIRLINES 727 STRETCH VERSION



CROSS-SECTION OF OVERHEAD COMPARTMENT
AMERICAN AIRLINES DC-10 (OVER WINDOWS)

American charged \$25.00 per plane change the last time I used the service, and requires advance arrangements through the American Customer Service office at your departure airport. Tell them you have an escort bag with very fragile contents. Ask them to notify the agent on duty for your flight, as well as the agent on duty at the destination airport. Be sure to get the phone number of the Customer Service office at the destination as well. Always ask for names. Contact them about three weeks before your flight, and then again one or two days before. Arrive early, and have your credit card ready as they write the bill at the gate, not at the normal baggage check counter. If you have to change planes, you must go through this routine at the changeover airport as well, collecting the box at the exit of the first flight, and going through the routine again at the next flight.

When you get the box back at the gate, do not let them tear the escort tag off of the box. If you do, and then go to collect your other luggage, you may not be able to get the escort bag out of the airport. Save the check tags.

The box must be small and light enough to easily carry up and down a flight of stairs. It also helps if it looks like a professional carrying case with something expensive in it. A plexiglass panel is a must, so the box can be inspected without opening it, and on my box you can see the panel if you slide the box out of it's Naugahyde (vinyl coated fabric) cover. The sides are marked with the phrase "DELICATE INSTRUMENTS", with the phrase "DO NOT DROP" on the top, next to the handle. I also have "up" arrows on all four sides. The box rides inside a 3/4" thick layer of spongy styrofoam, inside the fabric cover. It's 21 1/2" x 12" x 28 1/2" with the cover, and weighs 11 1/2 pounds. The box bolts shut with 8 nylon screws, so no-one can open it without a lot of effort. It carries three F1D models using plug on tails and one wing with folding posts.

MODEL MOUNTINGS: No matter what kind of box, the mountings for the model parts are very important as well. Wings will stay put better if they are mounted in wing sockets, rather than just plugged into holes in blocks of wood. With microfilm models, arrange the parts so if the film flexes wildly, the outlines bump into the bracing wires on the adjacent parts, rather than the film covering hitting anything. Allow for the covering to flex as much as 1 1/2". This is how far one wing flexed when I flew airline in 1986, and the microfilm hit a wing socket and punched a hole in the film.

Following these tips should increase the odds that your models will arrive intact at the contest.

BOSTONIAN AT THE NATS

Pending approval of the Scale CD, Bostonian will be held at the NATS on Friday morning, from 8:00 am to 1:00 pm, during the same time slot as Peanut Scale and AMA Scale. The event will be sponsored and run by Dave Linstrum and Model Builder Magazine.

There will be two separate classes. The first class will be for 7 gram models, built more or less to Ed Whitten rules. The second class will be for 14 gram models, built more or less to Walt Mooney rules. The "more or less" means that Dave wants you to bring whatever Bostonian you have, single covered, double covered, or whatever, and you will be allowed to fly it in one of the classes, regardless of which rules it was originally built to fit.

Entry fee is \$5.00 per model per class. Contestants will be allowed to enter more than one model in either or both classes, providing they pay the appropriate fees. For more info contact: Dave Linstrum 4057 San Luis Drive, Sarasota, FL 34235 or 813-351-1828.

FEDERATION AERONAUTIQUE INTERNATIONALE NEWS

The following news from the CIAM Bureau meeting in December 1988 was taken from the December issue of Free Flight News:

INDOOR BUILDER OF MODEL. After the builder of the model rule was scrapped for free flight models at this year's Plenary meeting, there was some confusion about whether or not it applied to indoor. The FF Subcommittee discussed it and a majority decided to advise that the builder of model rule be retained for indoor models. The CIAM Bureau accepted this and confirms the status in the new Sporting Code.

And this news from the 1989 Plenary meeting from the April issue of Free Flight News:

Another proposal from West Germany was that there should be no limit on the length of steering rods for indoor models (currently rods must be between 2m and 8m long). This was passed unanimously, effective from 1993.

The proposal from Romania to hold the 1989 Indoor European Champs has not been accepted because Romania has not paid outstanding fees to the FAI and has it's membership suspended.

Romania also submitted an offer to host the 1990 Indoor World Champs at Slanic on September 25 - 30, 1990. This offer has been accepted, subject to the FAI status of Romania being satisfactorily resolved. This proposal also includes a Junior World Champs and an Open International contest for both seniors and juniors being held at the same time.

From this year's first issue of Indoor News the 1992 Indoor World Champs at Hala Ludowa, Wroclaw, Poland.

RESULTS FROM 1988 UNITED STATES INDOOR CHAMPIONSHIPS

INTERMEDIATE STICK			EASY B			MANHATTAN CABIN			MANHATTAN CABIN		
JUNIOR/SENIOR	Best Flight	Place	OPEN	Best Flight	Place	COMBINED	Best Flight	Place	COMBINED	Best Flight	Place
DON SLUSARCZYK	00:25:21	1	E. HOFFMAN	21:21	1	R. HARLAN	10:51	1	T. IACOBELLIS	06:12	15
JIM BUXTON	00:14:37	2	C. MARKOS	20:02	2	R. GANSER	10:08	2	J. MARETT	05:56	16
MARK RICHMOND	00:11:00	3	G. NOLIN	20:01	3	C. MARKOS	09:31	3	H. PHILLIPS	05:30	17
RICHARD SMITH	00:05:35	4	G. WISNIEWSKI	19:25	4	W. VAN GORDER	09:24	4	D. GAROFALOW	*****	18
JASON PADDLE	00:02:53	5	L. GARBER	19:10	5	J. KRUSH	09:18	5	C. SLUSARCZYK	*****	19
			A. TAGLIAFICO	19:06	6	K. FULMER	09:05	6	J. PLASSMAN	*****	20
INTERMEDIATE STICK	Best		R. HARLAN	18:44	7	C. GAGLIANO	09:01	7	R. PETERSON	*****	21
OPEN	Flight	Place	J. RICHMOND	18:19	8	W. HENDERSON	08:53	8	R. OPPEGARD	*****	22
			W. VAN GORDER	18:07	9	K. GROVES	08:50	9	L. LOUCKA	*****	23
E. HOFFMAN	00:29:03	1	J. BARKER	17:56	10	J. TRIOLO	08:03	10	G. JENSEN	*****	24
R. GANSER	00:25:41	2	G. UNDERWOOD	17:51	11	J. GRANT	07:15	11	A. D'ALESSANDRO	*****	25
J. RICHMOND	00:25:33	3	R. OBARSKI	17:19	12	T. SUTTER	07:15	12	M. COLLING	*****	26
L. LOUCKA	00:24:28	4	L. GITLOW	16:50	13	D. SLUSARCZYK	07:10	13	E. BURKE	*****	27
R. OBARSKI	00:24:10	5	A. D'ALESSANDRO	16:19	14	S. CANNIZZO	06:42	14	P. BATES	*****	28
D. BELIEFF	00:24:06	6	J. MARETT	15:55	15						
R. HIGGS	00:23:18	7	J. NUSZER	15:50	16						
J. KRUSH	00:22:50	8	K. GROVES	15:39	17						
J. MCGILLIVRAY	00:22:25	9	A. BECKER	15:08	18						
D. BARBER	00:21:28	10	T. VALLEE	15:04	19						
S. CANNIZZO	00:20:33	11	C. SLUSARCZYK	14:55	20						
K. GROVES	00:19:53	12	R. GANSER	14:55	21						
L. GARBER	00:18:33	13	H. PHILLIPS	14:37	22						
T. SUTTER	00:18:32	14	L. MZIK	14:08	23						
J. NUSZER	00:18:03	15	R. MILLER	13:55	24						
J. MARETT	00:17:52	16	J. MCGILLIVRAY	13:52	25						
P. STAEHLING	00:14:35	17	E. KONEFES	13:41	26						
G. UNDERWOOD	00:14:04	18	M. RADOFF	13:35	27						
W. WILLIAMS	00:13:48	19	J. VALERY	13:29	28						
R. POWELL	00:13:20	20	J. GRANT	13:27	29						
E. BURKE	00:11:18	21	D. BARBER	13:13	30						
D. KRUPP	00:09:50	22	J. SHEPHERD, SR.	13:10	31						
H. PHILLIPS	00:08:10	23	V. GAGLIANO	12:41	32						
P. KLEINERT	00:06:58	24	J. CLEM	12:15	33						
J. GRANT	00:05:02	25	S. FINK	12:02	34						
T. VALLEE	00:01:03	26	L. LEIFER	12:02	35						
J. TRIOLO	*****	27	P. STAEHLING	11:52	36						
B. ROMAK	*****	28	K. VON BUEREN	11:50	37						
R. PUTNAM	*****	29	G. GRAUNKE	11:36	38						
G. JENSEN	*****	30	R. MACENTEE	11:19	39						
L. GITLOW	*****	31	C. SLATER	11:19	40						
A. D'ALESSANDRO	*****	32	W. WILLIAMS	11:17	41						
W. BIGGE	*****	33	D. ERBACH	11:14	42						
			J. KRUSH	11:07	43						
HELICOPTER	Best		S. BENNETT	10:21	44						
	Flight	Place	P. KLEINERT	10:01	45						
			C. WRZOS	09:19	46						
J. RICHMOND	07:55	1	J. PULLEY	08:51	47						
W. WILLIAMS	05:57	2	R. WARMANN	08:14	48						
R. OBARSKI	05:36	3	R. PIVITT	08:06	49						
L. LOUCKA	05:18	4	D. KRUPP	07:54	50						
T. VALLEE	04:49	5	T. SUTTER	07:51	51						
R. GANSER	04:10	6	J. BLAIR	07:36	52						
J. CLEM	01:30	7	E. KNIGHT	03:34	53						
C. SOTICH	01:08	8	J. PLASSMAN	01:05	54						
P. STAEHLING	*****	9	E. MOLFINO	*****	55						
D. SLUSARCZYK	*****	10	V. VILARDO	*****	56						
R. PETERSON	*****	11	V. THAXTON	*****	57						
W. BIGGE	*****	12	B. TRACHEZ	*****	58						
			F. RASH	*****	59						
EASY B	Best		R. PUTNAM	*****	60						
JUNIOR/SENIOR	Flight	Place	R. POWELL	*****	61						
			R. OPPEGARD	*****	62						
D. SLUSARCZYK	16:07	1	L. LOUCKA	*****	63						
C. GAGLIANO	15:43	2	F. KIESER	*****	64						
M. RICHMOND	10:24	3	J. JONES	*****	65						
J. PADDLE	04:55	4	G. JENSEN	*****	66						
R. SMITH	04:31	5	G. HONDA	*****	67						
J. BUXTON	*****	6	W. HENDERSON	*****	68						
			P. HARTMAN	*****	69						
			R. ENNIS	*****	70						
			R. DOIG	*****	71						
			M. COPPOTELLI	*****	72						
			S. CANNIZZO	*****	73						
			D. BELIEFF	*****	74						
			L. BARR	*****	75						
				</							

CATAPULT GLIDER OPEN					CATAPULT GLIDER OPEN					HAND LAUNCH GLIDER OPEN				
TOTAL BEST 2 PLACE					TOTAL BEST 2 PLACE					TOTAL BEST 2 PLACE				
R. WARMANN	75.0	73.4	148.4	1	B. ROMAK	0.0	0.0	0.0	27	B. BOEHM	66.2	66.1	132.3	1
C. MARKOS	68.4	66.6	135.0	2	R. PUTNAM	0.0	0.0	0.0	28	P. SHAILOR	63.0	62.0	125.0	2
K. FULMER	64.0	61.4	125.4	3	H. PHILLIPS	0.0	0.0	0.0	29	T. ANDRE	57.8	53.4	111.2	3
W. SCHLARB	62.8	62.2	125.0	4	R. HIGGS	0.0	0.0	0.0	30	B. SCHLARB	56.4	53.0	109.4	4
G. WISNIEWSKI	61.8	59.0	120.8	5	J. GREENE	0.0	0.0	0.0	31	P. KLEINERT	54.4	53.8	108.2	5
R. PETERSON	59.6	58.4	118.0	6	C. FUSON	0.0	0.0	0.0	32	R. HIGGS	56.8	46.4	103.2	6
J. KONEFES	55.6	55.6	111.2	7	O. CURTH	0.0	0.0	0.0	33	R. PIVITT	51.8	51.4	103.2	7
K. VON BUEREN	54.0	53.2	107.2	8	R. BUTSCH	0.0	0.0	0.0	34	V. GAGLIANO	48.1	48.0	96.1	8
J. RICHMOND	48.6	47.6	96.2	9	B. BOEHM	0.0	0.0	0.0	35	J. SHEPHERD, JR.	47.8	46.8	94.6	9
M. ARAK	50.1	45.2	95.3	10	D. BELIEFF	0.0	0.0	0.0	36	J. NUSZER	47.0	44.6	91.6	10
J. PLASSMAN	47.8	46.6	94.4	11	D. BARBER	0.0	0.0	0.0	37	C. SLUSARCZYK	47.0	44.4	91.4	11
R. ENNIS	46.6	44.8	91.4	12						K. VON BUEREN	43.8	43.6	87.4	12
C. SLUSARCZYK	44.6	41.8	86.4	13	HAND LAUNCH GLIDER JUNIOR					P. HARTMAN	44.0	43.0	87.0	13
A. D'ALESSANDRO	44.0	41.2	85.2	14						R. PETERSON	40.2	37.8	78.0	14
J. SHEPHERD, JR.	41.6	38.2	79.8	15						E. LIEM	39.6	38.0	77.6	15
E. BURKE	39.0	38.0	77.0	16	JEFF PLASSMAN	26.2	24.2	50.8	1	F. RASH	37.2	36.6	73.8	16
S. BENNETT	39.8	34.4	74.2	17	MARK RICHMOND	23.0	22.4	45.4	2	N. BEITZ	33.0	32.0	65.0	17
F. RASH	38.0	35.0	73.0	18						C. SLATER	33.0	31.6	64.6	18
R. PIVITT	36.4	36.0	72.4	19	HAND LAUNCH GLIDER SENIOR					J. PLASSMAN	31.8	31.4	63.2	19
J. SHEPHERD, SR.	42.0	26.6	68.6	20						B. PARDUE	46.4	6.6	53.0	20
M. COLLING	24.0	23.4	47.4	21						R. WARMANN	27.0	20.0	47.0	21
P. HARTMAN	26.0	18.0	44.0	22	CHARLES GAGLIANO	59.0	58.2	117.2	1	V. VILARDO	0.0	0.0	0.0	22
W. HENDERSON	21.8	18.6	40.4	23	JIM BUXTON	52.6	51.8	104.4	2	R. PUTNAM	0.0	0.0	0.0	23
D. GAROFALOW	0.0	0.0	0.0	24	DON SLUSARCZYK	45.0	44.6	89.6	3	R. POWELL	0.0	0.0	0.0	24
D. YATES	0.0	0.0	0.0	25	JOEL PLASSMAN					G. HONDA	0.0	0.0	0.0	25
J. VOORHEES	0.0	0.0	0.0	26										

USIC UNOFFICIAL EVENT - KIT/PLAN SCALE

Sponsored by the Chicago Aeronauts

\$1.00 per entry. Turn in plan & plane by 8 am Thursday, June 1. Fly Thursday, June 1, 1 to 6 pm. Trophies to third place.

Rules:

1. Models must be built from published plans or kits.
2. Size of plans may be reduced if wood sizes are in proportion.
3. All surfaces must be covered both sides, or be solid material.
4. Models must take off unassisted for official flights.
5. Any flight in which the model is airborne for more than ten seconds is official.
6. Two attempts may be used for each of five official flights.
7. Timing starts at release of the model and terminates when the model next touches the floor or comes to rest after take off. The ten second hang-up rule will be used.
8. No flight score (no. of sec.) will exceed the total of Craft and fidelity points.
9. Up to 60 points will be awarded for fidelity of the model to the plans and instructions from which it was built.
10. Up to 40 points will be awarded for Craft, based on workmanship and finish.
11. Nose block and rear rubber post may be altered without penalty.
12. Tissue type and color are optional, but control outlines and registration numbers (even if made up) must be used.
13. Propeller may be altered from plan without penalty.
14. Final score is sum of best two flights plus Craft and Fidelity.

THE TORQUE BURNER FOR EASY B

Where would we be without controversy? Dead, that's where. Innovation in any activity usually breeds controversy, and the use of the "torque burner" in EZB is no exception. Since the recent publication of Dick Obarski's article in Free Flight Digest, the questions about this device have come up again. We are not passing judgement on the legality of this device in EZB at this time.

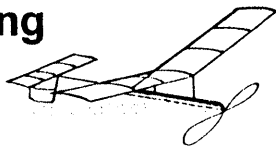
Some have complained that this helps "brace" the motorstick, however I doubt this since the device is mounted off center. I am concerned as to whether it is a 2nd rear hook, and therefore a problem, since rule 8.2.j. says "Tissue or thread wrap at the thrust bearing and rear hook is acceptable." But whether it is hook or hooks seems petty. The plain fact is that rules are a reflection of the past, and not the future. The legality of any device also does not really address whether it is a good idea or easy to build as part of the criteria. As rules makers, we need to take a serious look at these questions.

We have all had a flight where the rubber bunched up, and a knot stuck against the side of the stick. The model cruised around for a while, and then the knot broke away from the stick, and the model started to climb. The idea behind the Torque Burner is to do this on purpose, and produce a flight profile similar to variable props, but without the mechanism.

Some have complained of the lack of availability of the plastic bushing used by Dick Obarski, but that is really not at issue since the brass end of an electric guitar string is just about exactly the same dimensions, although slightly heavier.

The Indoor Contest Board will probably be asked to rule on this, so if you have an opinion about the use of the torque burner in EZB, please let your ICB representative know your feelings.

Indoor Modeling



THE TORQUE BURNER
by Dick Obarski

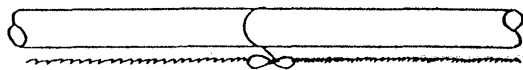
The earliest concept of this device that I can recall, attributed to Louis Garami, was shown in the February 1977 issue of Indoor news and views, at that time published by Bud Tenny:

A LOOK AT YESTERYEAR

Back in 1936, there used to be a magazine called MODEL AIRCRAFT BUILDER. In one of these, Louis Garami suggested a gadget which was intended to help control model altitude in low ceilings. The device consisted of an S-hook and a wire pin. Two motors, shorter than the usual single motor, are hooked to the S-hook and to the prop and rear hook, so the S-hook is in between the motors. The pin mounts to the motor stick and prevents the S-hook from turning for a while. The sketch below shows (top) both motors wound and the pin engaged in the S-hook. The second sketch shows the rig as the front motor is mostly unwound; the S-hook has moved back almost enough to disengage the pin. The intent is for the model to climb on the power of the front motor, then drop down as the second motor rewinds the front motor enough for a second climb (but not as high). He also suggested that the pin location (and relative motor lengths) can be adjusted to tailor the climb pattern. Now - has anyone tried this idea? If so, how about some comments on the results?



BOTH MOTORS WOUND



FRONT MOTOR UNWOUND

I tried it with disappointing results since the motor always got snagged in the wire pin and the rear portion of the motor did not unwind.

After a great deal of frustration and experimenting, the device finally evolved into the following:

Looking at the front of the model on the left side of the motor stick (with a right hand propeller) about one-third back from the prop shaft to the rear hook an offset wire hangar extends downward.

A small bushing, approximately one-third back from the front of the wound motor is then attached to the hangar yielding the same results Garami proposed, but for the most part, successfully released without getting snagged.

The accompanying sketches will clarify the written explanation.

To date, the best flight obtained* has been 19 minutes 06 seconds in a 65 ft. ceiling with a few bumps on the lights and no touch ballooning at the December 31, 1988 and January 1, 1989 Miama contest at the Delta Maintenance Hangar in Tampa, Florida. The model climbed to about 55 feet, descended to 35 feet, climbed to 65 feet and

slowly descended to the floor.

This type of device was approved* for use by the contest directors at the 1987 USIC indoor championships held in Johnson City, Tennessee.

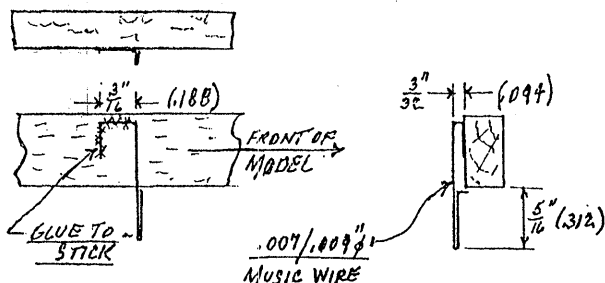
The spool can be made by any competent machinist and the fine wire (.007/.009 inch dia.) can be obtained at any music store that carries banjo or guitar strings. The thread used to tie the rubber motor to the spool can be obtained at any sewing center (.005/.006 inch dia.)

This device is easy to make as compared to a variable pitch or variable diameter propeller, neither of which are allowed under the current EZB rules and should afford a great deal of enjoyment and longer flights for most indoor enthusiasts who do not have an unlimited category IV ceiling to fly in.

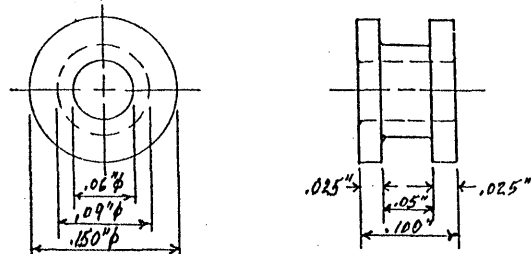
There are some side effects to be overcome such as the tendency for the motor stick to bend when the spool is attached to the offset hangar with a wound motor. The hangar must be offset in

Continued

*All of the above applies to Easy-B models, but Obarski suggests that the principle could be applied to other model classes. The shock that occurs when the spool releases might be too much for microfilm coverings, ultra-light structures, and thin-walled-tubular motor sticks.

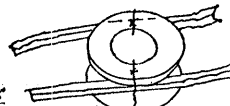


MOTOR STICK & WIRE HANGAR



BUSHING (MATERIAL: NYLON OR PLASTIC)

THREAD TIES THRU
BUSHING HOLE &
AROUND FLANGE
& OVER RUBBER.
SECURE KNOT ENDS
WITH PLIDBOND.



TORQUE BURNER, continued from preceeding page

order to keep the motor from snagging on the hangar when it releases.

The whole idea, of course, which I am sure is already apparent to most of you indoor types, is to utilize the high energy near the breaking point of the rubber motor where the foot-pounds per turn are the greatest. By way of explanation, at present most good indoor mid- and low-ceiling

flights are made by overwinding and then backing off on the turns to keep the model from going too high and getting snagged in the overhead beams and lights.

I hope that some of you indoor modellers will be interested in further development of this simple concept to a greater degree of reliability. At present, it works successfully about 80% of the time and the flight pattern is a joy to behold when all goes well.

CONTEST CALENDAR

CALIFORNIA - BURBANK

Blacksheep Indoor Record Trials & EZB & Pennyplane for Cat I (peak 34') on June 8, 7 - 10 pm at Luther Burbank Jr. High School, Maple between Jeffries & Burbank Blvd.
Contact: A. Naccarato, 3512 W. Victory Blvd, Burbank, CA 91505 or 818-842-5062.

CALIFORNIA - SAN DIEGO

San Diego 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. Contact program chairman: John Hutchison 619-669-0146.

CALIFORNIA - SAN FRANCISCO

F1D practice & flying session on June 4 and F1D West Regional on June 11. Cow Palace. CAT III. Contact: Bud Romak 85 Sullivan Dr. Moraga, CA 94556 or 415-376-4624.

CALIFORNIA - TAFT

19th United States Free Flight Championships Indoor events at Taft High School 6 - 11 pm. North gym: 6-7 pm HLG practice, 7-11 pm HLG & Jr. HLG. South gym: 6-7pm practice, 7-9pm Peanut Scale & Boston Cabin West, 9-11 pm Novice Pennyplane. Due to poor attendance in past, this may be the last year for indoor. Only soft soled shoes or stocking feet allowed on gym floor. Entry blank in February issue Free Flight Digest. CD: Bill Booth P.O. Box 4203, Carlsbad, CA 92008 or 619-940-1069.

CALIFORNIA - TUSTIN

Flying in Hangar #1 for the near future is questionable. The hangar doors were open at the March session and could not be closed. These dates have been reserved: May 6-7, July 1-4, Sept. 2-4. To check on flying status and get on the security list contact Curt Stevens, 25108 Marguerite Pkwy. #B-160, Mission Viejo, CA 92691 or 714-240-8404.

FLORIDA - TAMPA

Final M.I.A.M.A. Indoor meet is tentatively scheduled for May 13 & 14 in Hanger 5 at MacDill AFB. Contact: Dr. John Martin, 2180 Tigertail Av. Miami, FL 33133 or 305-858-6363.

IDAHO - MOSCOW

AMA National Model Airplane Championships Indoor events on July 21 - 23 in Kibbie Dome at University of Idaho. See article in this issue. For entry blank send SASE to AMA HQ 1810 Samuel Morse Dr, Reston, VA 22090.

INDIANA - INDIANAPOLIS

KAT I Contest on May 7 at Ben Davis High School gym. 10 am - 6 pm. CAT I (25'9") EZB, PP, NPP, HLG, Peanut Scale Mooney rules, No-Cal Scale (6.2 g min weight). CD: Jim Richmond 12112 Windsor Dr, Carmel, IN 46203 or 317-848-5312.

MARYLAND - GREENBELT

Indoor Record Trials for Cat I on June 24, July 1, July 29, Aug 26 in NASA Auditorium. All Indoor events except HLG. Meet is limited to members of Goddard M.A.C. and their guests for security reasons. Must be U.S. citizen. Must contact CD the night before the contest to get on guest list and to confirm that meet has not been cancelled. Meets can be cancelled on short notice by NASA. Contact Tom Vallee 444 Henryton S, Laurel, MD 20707 or 301-498-0790 or Pete Staehling 8632 Rock Oak Rd, Baltimore, MD 21238 or 301-882-2686.

MICHIGAN - DETROIT

Balsa Bugs Spring Indoor Contest on May 21 in Calihan Hall (CAT III) University of Detroit. 8 am - 6 pm. HLG, Catapult, Peanut, No-Cal, Coconut Scale, Bostonian, Blatter "40", EZB, NPP & Int. Stick. Contact: Rich Doig 6 Canary Hill, Pontiac, MI or 313-373-5374.

MICHIGAN - STERLING HEIGHTS (north of Detroit)

HLG & 6 inch HLG contest on May 12, 8 pm and last Indoor flying session of year is June 2 at Heritage Jr. HS. Dodge Park at 16 Mile Road. Contact: Rich Doig, 6 Canary Hill Dr, Pontiac, MI 48055 or 313-373-5374.

PENNSYLVANIA - BYRN ATHYN

Flying demonstration for boy scouts & Record Trials on May 16 at Academy of the New Church fieldhouse. CAT I (25'9") 7 - 11pm Contact: Walt Eggert 215-947-4387.

PENNSYLVANIA - PHILADELPHIA

Flying on May 13 in Memorial Hall. Contact: Joe Krush 215-688-3927.

TENNESSEE - JOHNSON CITY

Eighth United States Indoor Championships in Minidome at East Tennessee State University on June 1-4. Info and entry blank in this issue.

OHIO - AKRON

F1D practice & Record Trials on May 13 & 14. F1D Midwest Regional July 1-4. CAT IV. Loral Airdock at Akron Municipal Airport. Must call Bill Hulbert for Security Clearance at least 2 weeks in advance. Bill Hulbert, 174 Castle Blvd, Akron, OH, 44313 or 216-864-8030.

ONTARIO - CENTRALIA (HURON PARK)

CANADIAN NATIONALS '89 will have Indoor events at a site yet to be determined. Schedule is July 3: HLG, FAC scale, FAC Peanut, Bostonian, WW II No-Cal Combat & July 4: EZB, NPP, PP, Manhattan, Int. Stick. For info & rules contact: John Marett 5 Vicora Linkway Don Mills, ONT M3C-1A5 or 416-429-0815.

EIGHTH UNITED STATES INDOOR CHAMPIONSHIPS

June 1, 2, 3, 4, 1989

East Tennessee State University

"Mini-Dome"

Johnson City, TN



NFFS

CATEGORY IV
Sanction No. 138

Sponsored by:
National Free Flight Society
National Indoor Model Airplane Society

	7 am	8	9	10	11	12	1	2	3	4	5	6	7	8	9 pm	DOME HOURS
Thur. June 1	PRACTICE			HLG					ORNITH/HELICOP						BANQUET	7:00 a.m. 6:30 p.m.
Fri. June 2	PRACTICE			CATAPULT GLIDER				AMA SC/UNL SPD/P-NUT SPD (UNOFF.-KIT/PLAN SCALE)								7:00 a.m. 9:30 p.m.
Sat. June 3	PRACTICE			PEANUT SCALE					EZB							7:00 a.m. 9:30 p.m.
Sun. June 4	PRACTICE			PISTACHIO GRAND PRIX (UNOFF.-FEDERATION ROG)					INTERMEDIATE STICK							7:00 a.m. 9:30 p.m.
				MAHN/BOST					F1D (3 FLIGHTS)							7:00 a.m. 9:30 p.m.
				NO-CAL					ROG CABIN A-ROG							7:00 a.m. 9:30 p.m.
				NOVICE PP					F1D (3 FLIGHTS)							7:00 a.m. 9:30 p.m.
				PENNYPLANE					AMA STICK/AJ O.T.							7:00 a.m. 9:30 p.m.

NOTE: Be aware that detailed steering rules will be posted and enforced.

NOTE: Open events which have **4 or less** entries will be cancelled

SCALE JUDGING: Models must be submitted with documentation and contestants name: AMA scale - By 8 a.m. on Thursday June 1.

Peanut Scale - By 1 pm on Thursday June 1.

NOTE:For details of the MIAMI PISTACHIO GRAND PRIX, send a large SASE to: Dr. J Martin, 2180 Tigertail Ave., Miami, FL 33133

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

All 1988/89 AMA Rules apply. All rule change "proposals" DO NOT apply!

PRACTICE: During official events, practice is permitted in 2 basketball courts on north end of dome. (at your risk)

(Ceiling- 116', Floor- 208' x 420')

Astro-turf may not be on floor.

Helium available, bring your own balloons.

Note: Helium belongs to all flyers—please lend your balloon to others.

All entrants must be AMA Members or of their countries' governing body. (Contestants provide proof).

Entries must be postmarked by **MAY 10, 1989**

Late fee **\$10.00 payable on site.**

BANQUET at Garden Plaza Hotel

Thursday, June 1, 1989 7:30 p.m.

\$15.00 per person

Send your entry payable to:

USIC

1655 Revere Drive

Brookfield, WI 53005

(414) 782-6256 (after 7 p.m. Milwaukee time)

Awards to 3rd Place		Entry	Each Event
OP	NFFS and NIMAS MEMBER	\$15.00	\$5.00
	NON NFFS or NIMAS MEMBER	\$30.00	\$6.00
JR/SR		\$1.00	\$.50

USIC GRAND CHAMPION (AJI award)

If you wish to participate in the Grand Champion Award, you must select a maximum of 7 events for score. Your declaration must be made before you fly any events whatsoever.

EVENTS ELIGIBLE; HLG, FID, AMA STK, ROG STK, ORN, EZB, INT. STK, P-NUT, AMA SC, PP, NPP, MAN, HEL, ROG CABIN

AJI OLD TIMER (OT) (Sponsored by AJI)

STICK ONLY (Microfilm covered). Design must have been widely published between 1/1/34 and 12/31/42 (bring proof). Construction must be in accordance with plan (balsa sizes may vary). No hi-tech material will be allowed, nor "new" devices such as variable pitch or diameter propeller. Can formed propeller is permitted.

NOTICE: Flying schedule may be modified during the contest. The absolute final/official/positively exact schedule will be that which is posted at the official's table. It is your responsibility to check and know the start/stop times of the events. (It may be advantageous to overlap some events.)

FID AND AMA H.L. STICK: This year it is **not permitted** to have one flight apply to two events. Each event must be separately flown.

BOSTONIAN RULES:

1. Maximum projected wingspan(s) 16" and chord(s) 3".
2. Maximum propeller diameter 6" be rubber powered
3. Maximum overall length w/o prop is 14".
4. Minimum weight w/o motor(s) 7 grams (bi-planes-14 g).
5. Fuselage contains a "box" 1 1/2 x 2 1/2 x 3" (min.).
6. Longeronis must support the motor(s) and form "box".
7. Fixed landing gear, two or more rotating 3/4" dia. min. wheels-model must ROG.
8. Must have a windshield and a window on each side with min. of 1 sq. in. each.

9. Charisma factor: Judge rates model on appeal to him, construction neatness, scale like details, uniqueness, etc. A 1.0 to 1.2 rating is used.
10. Five official flights over 20 seconds, total in full seconds of the best two flights multiplied by the charisma factor determines winner basis.

MANHATTAN: Win based on best of 5 flights

PEANUT SPEED:

The Unlimited Rubber Speed rules apply except:

1. The models are limited to Peanut Scale models.
2. The models' scores will be the time in seconds for the model to fly two laps.
3. The lowest time will determine the winner.
4. Winner only receives cash award.

EVENT	JR	SR	OP
AJI OT			X
ROG CABIN			X
BOST.			X
EZB	Combined		X
FID			X
GLI HL	X	X	X
GLI CAT	X	X	X
HELI			X
INTER. STK	Combined		X
MANH			X
NPP	X	X	X
PP	Combined		X
ORNI			X
ROG STK			X
SCALE AMA			X
P-NUT SCALE	Combined		X
NO-CAL			X
SPEED P-NUT			X
SPEED UNL.			X
HL STK	Combined		X

CATAPULT GLIDER:

1. Maximum wing span 12".
2. Maximum wing chord 3".
3. Maximum launching stick length 6".
4. 9 official flights.
5. Sum of best 2 flights determines winner.

TABLES & CHAIRS

If you are driving please do **bring tables along & chairs**. There will be a limited amount of tables and chairs available for rent at \$2.50 per full day (1 table & 2 chairs). No partial days rent-you may do your sub-leasing (no gouging!) Notice: you are responsible to pick-up table & chairs and return whence it came from.

LIGHTING:

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

NO-CAL PROFILE SCALE

- 1 A recognizable model of a full scale aircraft, with a wingspan not exceeding 16 inches.
2. The weight of the model (excluding the rubber motor) shall be no less than 6.2 grams (two pennies).
3. No fancy gadgets permitted-plastic prop is permitted. Balsa and Jap tissue shall be the main construction materials. Use of hi-tech materials such as carbon fibre, boron, et al is not at all permitted.
4. Model must contain control surface outlines, window outline, and registration markings. Model must have full landing gear, ie., as the full scale aircraft (no profile gear).
5. Win based on best of 5 flights (20 sec. min and 2 att./ft.)

UNLIMITED RUBBER SPEED (BrokenSpar Event)

1. Models must be rubber powered and propeller driven.
2. Models must start from an unassisted ROG launch from a three-point sitting position.
3. Model to be timed for two complete laps around two pylons set 20 feet apart.
4. Flights will be disqualified if the model touches the pylon or ground after crossing the starting line.
5. The timer will stand in line with the two pylons. Timing starts when the model crosses the line determined by the two pylons and ends when it crosses the line after completing two laps.
6. Shortest time for two full laps determines winner.
7. No limit to the number of models or launches.
8. Winner only receives cash award.

FEDERATION ROG:

(Unofficial) for details contact: Tony Becker, 2108 Harringay St., Sun City Center, FL 33570.

1989 USIC

DORMITORY: Air-conditioned. Room rate is \$20.00 per room per night. It is your responsibility to arrange for a room mate if you want one. No linens are furnished. If you desire linens, they can be provided for \$5.00 per person for the period. This includes a set of towels (no blankets). You must indicate your needs and pay USIC (not ETSU). USIC is being held responsible for the payment, so USIC must be kept informed of all plans and any change of plans. NOTE: If you lose the room key or do not turn it back in, there is a \$25.00 charge! (A key ring might be helpful). It is your responsibility to find a room mate. ETSU will have an admissions person at the dormitory. Lavatory/shower facilities are located on each floor. The Dormitory is named LUCILLE CLEMENT HALL (located at west end of Dossett Drive.).

The dormitory provides special areas for married couples, so please indicate as needed.

DORMITORY CHECK-IN HOURS:

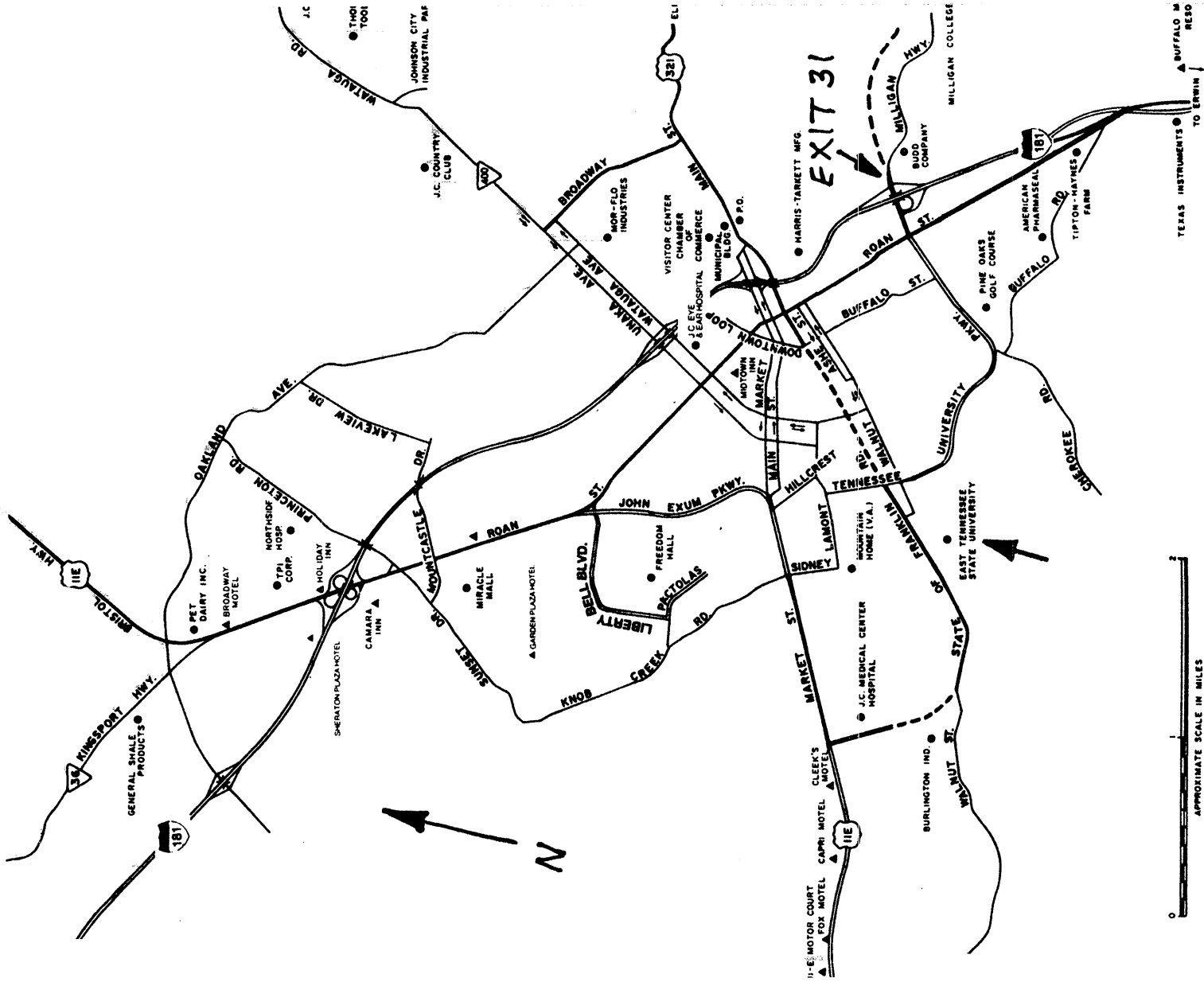
May 31 thru June 3 - 5 to 7 p.m. and 8 to 11 p.m.

CHECKOUT:

Turn key into Dormitory manager or slip under managers door along with slip containing your name and checkout time.

ENTRANCE DOOR to the Mini-Dome will be on the lower level and marked. The door is on the west side of the Dome directly across the street from the parking areas.

NOTICE, NOTICE: By law **NO** liquor or beer is allowed on the campus. **ABSOLUTELY NOT!!** If you break this rule, you will be fully disqualified from **all** events and forfeit all fees, and also be subject to any State of TN actions! **PLEASE** watch for and adhere to posted speed limits on campus.



LODGING

BROADWAY MOTEL, INC. P.O. Box B-CRS, 37602, 2608 N. Roan Street, 615-282-4011. 80 Units

CAPRI MOTEL P.O. Box 5114-EKS, 37603, 3008 W. Market Street, 615-926-2952. 12 Units.

CLEEK MOTEL 2700 W. Market Street, 37601, 615-926-8145. 44 Units.

COMFORT INN 1515 US 19-E By-Pass, Elizabethton, TN, 615-342-4466, 1-800-228-5150. 58 Units.

11-E MOTEL Rt. #3, Box 451, 37604, Hwy. 11-E & 321 South. 615-928-2131. 25 Units.

ECONOMY INN 106 W. Millard Street, 37601, 615-926-4131. 112 Units.

FAIRFIELD INN 207 East Mountcastle Dr., 37601. Reservations: 1-800-845-2839, 615-282-3335. 132 Rooms.

FAMILY INNS OF AMERICA At Buffalo Mountain Resort, Route 2, 100 Country Club Dr., Unicoi, TN 37692, 615-928-6531. 69 Units.

FOX MOTEL 3406 W. Market St., 37604, 615-928-0267. 22 Units with kitchen.

***GARDEN PLAZA HOTEL** 211 Mockingbird Lane, 37601, 615-929-2000. 187 Units.

HOLIDAY INN-JOHNSON CITY 2406 N. Roan Street, 37601, 615-282-2161. 197 Units.

JONESBOROUGH BED & BREAKFAST P.O. Box 722, Jonesborough, TN 37659, 615-753-9223. 8 Rooms.

ROBERTSON HOUSE 212 E. Main St., Jonesborough, TN 37659, 615-753-3039. 3 Units.

RODEWAY INN Drawer K-CRS, 37602, 2312 Browns Mill Road, 615-282-2211. 150 Units. 1-800-228-2000.

SHERATON HOTEL 101 W. Springbrook Dr., 37604, 615-282-4611. 205 Units.

SUPER 8 MOTEL 108 Wesley Street, 37601, 615-282-8818. 63 Units.

TENNESSEE HILLS MOTEL Rt. 1, Box 197, Unicoi, TN 37692, 615-743-5680. 24 Units.

NAME

SINGLE

DOUBLE

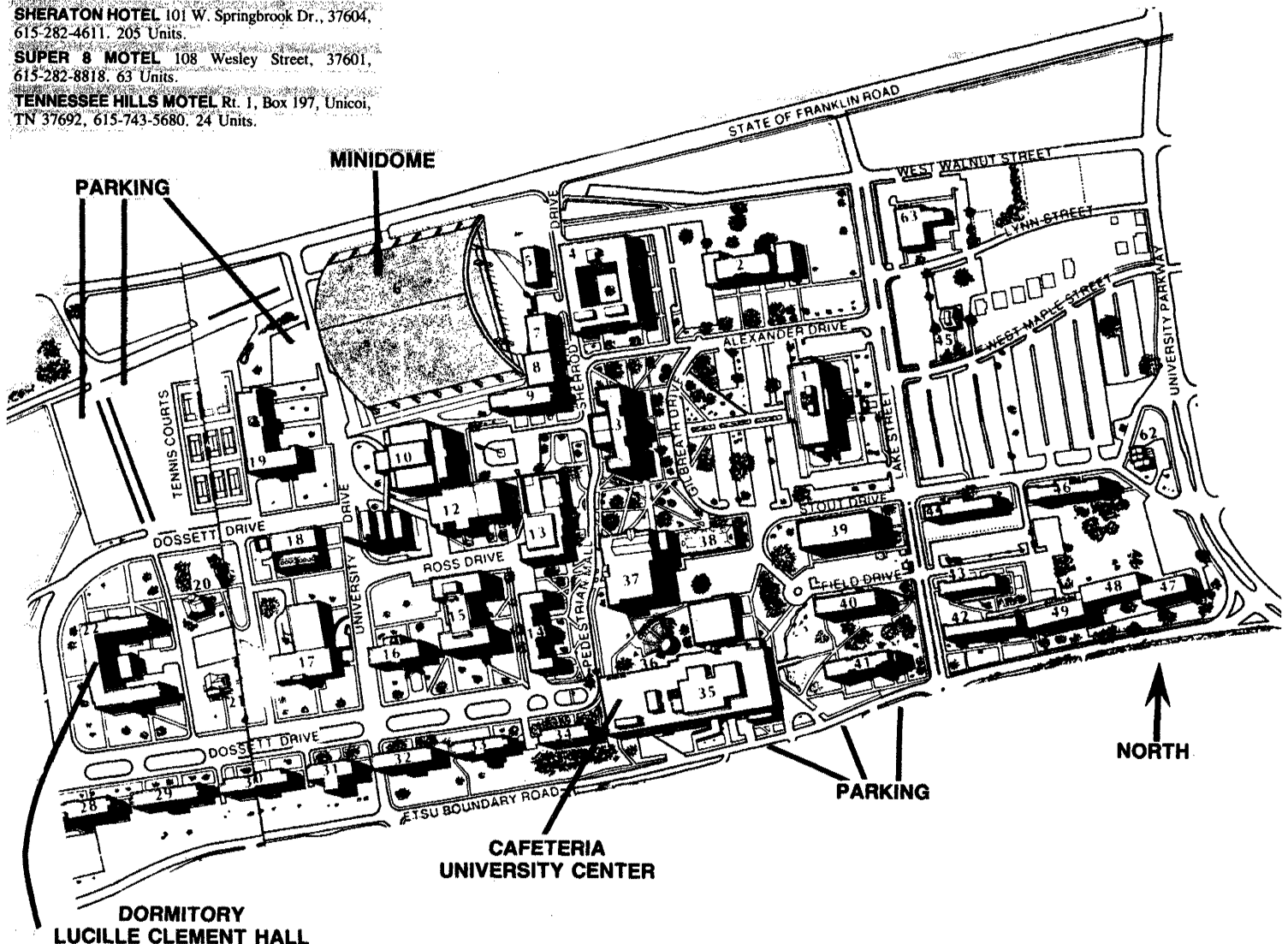
Broadway Motel, Inc.
Camara Inn-Johnson City
Capri Motel
Cleek Motel
Economy Inn
11-E Motor Court
Family Inns of America
Fox Motel
Garden Plaza
Holiday Inn
Sheraton Hotel
Super 8 Motel

\$35.99	\$40.00
\$36.00	\$40.00
\$20.00	\$22.00
\$22.00	\$26.00
\$25.00	\$27.00
\$22.00	\$25.00
\$22.00	\$27.00
\$30.00	\$41.00
*	*
\$48.00	\$48.00
\$62.00	\$72.00
\$32.00	\$38.00

These are 1988 rates!

When calling for reservations state you are part of USIC for possible special rate. All rates are plus tax.

*Garden Plaza Hotel is the host hotel for USIC. Special rate is \$52.00 plus tax for a very attractive room. State you are part of USIC. Suggest you make reservation by May 1, 1989.



EIGHTH UNITED STATES INDOOR CHAMPIONSHIPS

June 1, 2, 3, 4, 1989
East Tennessee State University
"Mini-Dome"
Johnson City, TN



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 _____

PLEASE CIRCLE

		Entry Fee	Each Event
	NFFS or NIMAS Member	\$15.00	\$5.00
	Non NFFS or NIMAS Members	\$30.00	\$6.00
Jr./Sr.		\$1.00	\$.50

BANQUET - No. of reservations @ \$15.00 _____

DORMITORY RESERVATION:

Daily room rate is \$20.00/per day (2 Beds). Linens (includes one set of towels but no blanket) is at \$5.00 per person. A change of linens costs \$5.00.

Please indicate reservation in appropriate block: Married couple area _____

	MAY	JUNE			
	31	1	2	3	4
1 Room					
2nd Room					
Linens					

Check for \$ _____ is enclosed

In case of emergency please contact:

NAME _____ PHONE _____
STREET _____
CITY _____ STATE _____ ZIP _____

Send fees payable to: USIC
1655 Revere Drive
Brookfield, WI 53005

Must be postmarked by May 10, 1989
Late entry fee of \$10.00 payable on site.

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

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

CIRCLE EVENTS ENTERED

- A. USIC Grand Champion*
1. AJI OT Event
 2. ROG Cabin
 3. Bostonian
 4. Easy B
 5. FID
 6. Glider-Hand Launched
 7. Glider-Catapult
 8. Hand Launch Stick
 9. Helicopter
 10. Intermediate Stick
 11. Manhattan
 12. Novice Pennyplane
 13. Pennyplane
 14. Ornithopter
 15. ROG Stick
 16. Scale-AMA
 17. Scale-Peanut
 18. Scale-No Cal
 19. Speed-Peanut**
 20. Speed-Unlimited**
(Pistachio Grand Prix
Enter on Site)

*Indicate "GC" in front of 7 selected events

**Sponsored by Hardy Brodersen-\$5/ea
mph over 6mph to winners only (\$100 max)

