# THE HANGAR PILOT

29TH YEAR of PUBLICATION
INDOOR ISN'T FOR EVERYONE

SUMMER ISSUE 208

LEGAL EAGLE COMENTARY




JULY 8,9 PALM BAY - FLY FOR FAC
KANONES AT FLORIDA STATE MEET
JULY 29 - GREAT FLA KEYS ROW MEET




FAC CLUB #11

"LIKE A LETTER FROM HOME" Whelan

THE HANGER PILOT

The Hanger Pilot, edited by John Martin Jr., who is solely responsible for its content, is published 8 or 9 times a season for bunch of middle aged guys who refuse to grow up. MIAMA ( Miami Indoor Aircraft Model Association ) - AMA club [redacted]. One of two active all indoor free flight clubs in AMA. For a mere $12.50 you will receive all of the published issues that year. We encourage reader contributions because, frankly, we need the material. Letters, plans, ]-views, complaints, gripes and compliments to: Dr.John Martin Jr., President / Editor, 2180 Tigertail Ave., Miami, FL 33133 USA. phone: 305-858-6363.

3624

# WELLS ROW MEET JULY 29

PLANTATION YACHT HARBOR..MILE MARKER 87-WELLS ROW FAC MEET JULY 29 from 6 AM to 10 AM. The beach is open to the public after 10. You can fly longer at your own risk but official flying ceases at 10.Three classes..FAC..Peanut, and Coconut. Wells Watercolor painting to first overall, Kanones to others.

Scale Judging: ; done after the fact. Rank Style - 1 to total number of entries - example : If there were 10 entries, the highest scale score was 10 - etc. Planes were judged only after successful flights. No R.O.W., NO SCORE.

Flight Score:

1 to 10 points..Take off
1 to 10 Flight charisma
1 to 10 Landing approach

Plus 1 point per sec, flight duration,

BEST SINGLE FLIGHT OF UNLIMITED ATTEMPTS. NO MAX. FLIGHT

ANY FLIGHT THAT TAKES OFF IS OFFICIAL. NO MINIMUM TIME.

Millard reminds you to bring Mosquito repellant. (Cutter )

Breakfast and awards after meet

. BRING VIDEOCAM

The Millard Wells Florida Keys ROW meet . Saloon Lagoon remains the site of this FAC classicbut much has changed in Islamorada. The County has purchased this land as a park, and the Loreli restaurant where we held our awards brunch has sold out and no longer exists. The awards brunch will be held atthe TIKI bar. The Motel, PLANTATION YACHT HARBOR IS STILL THERE FOR THOSE WHO WISH TO COME DOWN Friday before the early Sat. morning flying. 305-852-2381

We urge you to put some floats on some old turkeys you would otherwise trash and try your luck at ROW. or just come to spectate.

Bring your video or still camera for some great photo ops. Also Mosquito repellant,wading shoes,hat,sun screen,fresh water and towels/paper towels in your kit. You have to rinse the salt water off your plane and wire parts. The metal will rust overnight, and the tissue will never dry in salt.

FOR MEET INFORMATION: 305-852-4783 Mile Marker 87, Islamorada

# MIAMA

## MEET 7 USCG APRIL 22,23 '00 CD OBARSKI

(21)

### Peanut Scale..Flying Aces

| | | Flt | Total |
|---|---|---|---|
| 1.R. MacEntee | Waco SRE | 75.2 1:12 | 141.2 |
| 2.Doc M. | Macchi-M-7 | 82.5 :49.5 | 131,5 |
| 3.N.Bollinger | Cougar | 61.2 1:16 | 129.2 |
| 4.J. Wormley | Lacey | 60.0 1:10 | 125 |
| 5.Sidney Gilbert | Lacey | 55.5 1:18.5 | 124.7 |

### FAC Scale

| | | | | |
|---|---|---|---|---|
| 1.R, MacEntee | Clipped Cub | 59.5 | 1:08.8 | 123.4 |
| 2.Doc M. | Waco SRE | 73.5 | :46 | 119.5 |
| 3.S. Gilbert | Comper | 59.4 | :56 | 115.4 |

### AMA Mini Stick

| | |
|---|---|
| 1.Dick Hardcastle | 7:35 |
| 2. John Barker | 6:16 |

### AMA Easy B

| | |
|---|---|
| 1.D.Hardcastle | 13:26 |
| 2.J. Barker | 12:25 |

### International Easy B

| | |
|---|---|
| 1.J. Barker | 9:22 |
| 2.D. Obarski | 8:11 |

### MIAMA Pistachio

| | | | |
|---|---|---|---|
| 1. Doc M | Goldwing | 1:21 | 1:17 |
| 2,D,Brimmer | Citabria | 44.4 | 58.4 |
| 3.S. Gilbert | Fike | ::44,3 | :47 |

### Model of a Model

| | | |
|---|---|---|
| 1.D.Obarski | Snuffy | 1:33 2:21 |
| 2.S.Gilbert. | Comrt | :32 |

### MIAMA Legal Eagle

| | | | |
|---|---|---|---|
| 1. | D. Obarski LE-3 | 3:53 | 4:03 3:33 |
| 2.N.Bollinger | Maxi | 3:18 | 3:25 3:23 |
| 3.R.Osborne | Pro Bono | 2:38 | 2:27 2:17 |
| 4.S. Gilbert | Maxi | 2:02 | 2:05 1:57 |
| 5.John Edwards | | 1:28 | 1:51 1:49 |

### MIAMA Dime Scale

| | | |
|---|---|---|
| 1.D. Hardcastle | Comet D VII | 370 |
| 2.Doc M. | Caudron Racer | 233 |
| 3.D. Obarski | C. Robin | 189 |
| 4.J. Barker | Wiley PostA | 126 |

### Penny Plane

| | |
|---|---|
| 1.D. Hardcastle | 8:36 |

### AMA Limited Penny

| | |
|---|---|
| 1.D. Hardcastle | 8:35 |
| 2.J. Barker | 8:05 |

### AMA Bostonian

| | | | | |
|---|---|---|---|---|
| 1.John Barker | Romulus | 2000 | 1.02 | 318 |
| 2.N.Bollinger | Colt48 | | 1.05 | 295 |
| 3.S. Gilbert | 7-Up | | 1.05 | 241 |
| 4.R.Osborne | Colt 48 | | 1.05 | 226 |

### No-Cal 1.D.Obarski 3:17

### Catapult Glider

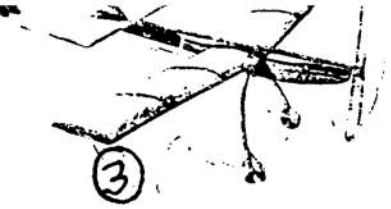
| | | |
|---|---|---|
| 1.John Barker | 23.5 | 22.2 |

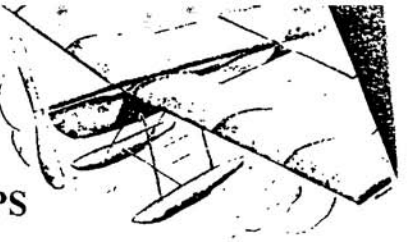
### FLYING ACES EMBRYO ENDURANCE

| | | | | |
|---|---|---|---|---|
| 1.N. Bollinger | Patriot | 6Pt. | 2:37 | 2:51 2:35 |
| 2.J.Barker | Swordfish 1 | 9Pt. | 2:20 | 2:22 2:17 |
| 3.R. Osborne | Colt 50 | 6Pt. | 2:03 | - - |

### FLYING ACES PEANUT MASS LAUNCH:

1.N.Bollinger. 2. Tie between Doc M. and S.Gilbert..3 more





# FLORIDA STATE FREEFLIGHT CHAMPIONSHIPS
# JULY 8 AND 9, 2000
# PALM BAY, FLORIDA

## SPONSORED BY THE FLORIDA MODELERS ASSOCIATION

A.M.A. AA CONTEST: CATEGORY 3 FOR ALL EVENTS EXCEPT F.A.I. COMBINED

**CONTEST DIRECTOR: MIKE JORDAN, 3817 MUIRFIELD CT., PALM HARBOR, FL. 34685**
**PHONE- 727-781-4919**
ASSISTANT DIRECTOR: REX HINSON, 1141 SOUTH WATERVIEW DR., INVERNESS, FL. 34450
PHONE: 352-344-5931

EVENTS MAY BE FLOWN ON EITHER DAY, EXCEPT DAWN EVENTS AND FAI COMBINED.
EVENTS MUST BE COMPLETED ON THE DAY STARTED. DAWN EVENTS SUNDAY ONLY.
HIGH POINT: DECLARE 4 EVENTS , 1 RUBBER, 1 POWER,1 GLIDER, 1 OPTIONAL
POINTS AWARDED FOR FLIGHT TIME. MAX OUT IN ANY EVENT=360 SEC.
FAI COMBINED-ONE HOUR ROUNDS STARTING AT 8.00AM SATURDAY FOR SEVEN ROUNDS

**ENGINE RUNS:** O.T. ALL ROG 12 SEC.,H/L 9 SEC.,IGN ROG 20 SEC. H/L 15 SEC
NOST, H/L 9SEC., (FIRST FLYOFF 7 SEC.,SECOND ON 6 SEC.)
DIESEL, 7SEC., FAI MINI EVENTS 5 FLIGHTS, NO ROUNDS.

**SATURDAY JULY 8: 7.00AM TO 4.30PM** **SUNDAY JULY 9: 6.30AM TO 2.00PM**

**EVENTS**

**AMA POWER**
1/2 A
A
B
C
D

**AMA RUBBER**
P-30
MOFFETT
MULVIHILL

**AMA GLIDER**
OHLG
OCG

**NFFS NOSTALGIA**
1/4A
1/2A
A
B
C
EARLY 1/2A

**OTHER**
O/T RUBBER STICK/CABIN SMALL
O/T RUBBER STICK/CABIN LARGE
FAI COMBINED
F1G
ABC NOSTALGIA
F1J

**DAWN**
DAWN GAS SHOOTOUT
DAWN UNLIMITED RUBBER

**JUNIOR EVENTS**
HLG
CATAPULT GLIDER
1/2 A GAS
P-30

ENTRY FEE: $12.00 FIRST EVENT,$2 00 EACH ADDITIONAL , $18 00 MAX, JR/SR $5.00 TOTAL

••••••••••••••••••••••••••••••••DON'T FORGET YOUR MOTORCYCLE HELMET••••••••••••••

NAME:_____ AMA NUMBER_____

ADDRESS _____ CITY/STATE/ZIP_____

CLASS: JR SR OPEN TOTAL ENTRY FEE PAID_____

**DON'T FORGET THE SEMI-ANNUAL FLORIDA MODELERS ASSOCIATION MEETING**
**SATURDAY NIGHT. TIME AND PLACE POSTED AT FIELD**

YES, FAC EVENTS!

# FLYING ACES MEET 1 SAM 46 PALM BAY MAY 6-7 2000



PEANUT SCALE

| | | | | | |
|---|---|---|---|---|---|
| * | 1. R. MacEntee | Waco SRE | 71 | 1:31 | 146.5 |
| | 2.Doc Martin | Macchi M-7 | 82 | 56.6 | 138.6 |
| | 3.Don Reed | Cougar | 59.5 | 1:28 | 133.5 |
| | 4 Don Brimmer | Lacey | 60 | 1:18 | 129 |
| | 5. John Polento | H. Ableson | 61.5 | :24 | 85.5 |
| | 6.Chas. Nelson | Cougar | 57 | :21 | 78 |
| | X.Doc Martin | Gotha-Ursinus | 80 | :57 | 137 |

FAC SCALE

| | | | | | |
|---|---|---|---|---|---|
| * | L.L.R. MacEntee | Lemberger | 71.5 | 2:30 | 154 |
| | 2.Doc Martin | Waco SRE | 75 | 1:28 | 149.5 |
| | 3.Don Reed | Fleet Canuck | 60.5 | 1:05 | 125.5 |
| | X.Don Reed | Fokker D-7 | 75 | :59.7 | 134.7 |

FAC DIME SCALE

| | | | Bonus | | | |
|---|---|---|---|---|---|---|
| * | 1.Doc Martin | Burd Caudron | 10 | 1:47 | 1:24 | 1:24 |
| | 2.R. MacEntee | BF 109 | 10 | 2:01 | 1:05 | :58 |
| | 3.Don Reed | Fairchild 24 | 0 | :50 | :23 | |
| | 4.C. Nelson | Robin | 0 | :24 | :23 | |

* = FAC KANONES

FAC GOLDEN AGE

| | | | |
|---|---|---|---|
| 1.R. MacEntee | Curtiss Y050 | 368 | * |
| 3.Doc Martin | Ford 2-AT | 201 | |
| 2.Don Brimmer | Cessna | 213 | |
| 4.C. Nelson | Fokker F II | 52 | |
| 5,Don Reed | Curtiss Robin | 43 | |

POWER SCALE

| | | | | |
|---|---|---|---|---|
| Karl Bromm | Mr.Mulligan | 61.2 | 2:48 | |

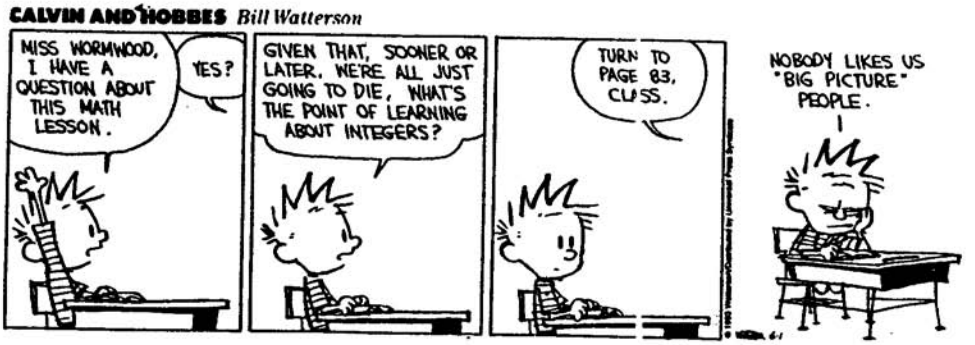
FLYING ACES EMBRYO

| | | |
|---|---|---|
| 1. AJ Pailleron | 363 | * |
| 2. Don Reed Honey Bee | 109 | |
| 3. C, Nelson Pup | 79 | |

Annual Points

| | |
|---|---|
| 1.R.MacEntee | 17 |
| 2.Doc Martin | 14 |
| 3.Don Reed | 13 |
| 4.Don Brimmer | 7 |
| 5.Chas. Nelson | 4 |
| 6.John Polento | 2 |
| 7.Karl Bromm | 1 |
| 8. Pailleron | 1 |

The Flying Aces Summer Series are off and running. Eight FACers flew at Don Brimmer's Sam meet including Don himself. Results are above. The next FAC meet will be with Mike Jordan and Rex Hinson's Florida State Championship meet on July 8 & 9. See opposite page for details. Look for the FAC Van for a separate sign-up sheet. For sure we will have FAC and Peanut Scale, Golden Age and Embryo, Dime and Power Scale. We would also like to see Jumbo and Old Time Rubber.



(5)

**To:**
Dave Stott
4304 Madison Ave.
Trumbull, CT 06611
Ph. 203 459-0572

**From:**
Dick Obarski
2112 N. Halcyon Dr.
Sun City Center, FL 33573
email: rwogfo@aol.com
Ph. 813 634-8683
and
Newt Bollinger
2538 Laurelwood Ln.
Valrico, FL 33594
email: Newtsworld@aol.com
Ph. 813 685-4164

Dear Dave:

The Legal Eagle class has turned out to be a very successful event in our Florida contests because it has provided a challenge for the designer and builder to use his imagination and skills in maximizing performance in a design that conforms to some very simple rules and provides a easy to build, good performing model. Since the rules are very simple, they have been subject to different interpretations by enthusiastic designers. This has led to confusion and some serious dissatisfaction when various Contest Directors and flyers interpret the rules differently.

We would like to see the Legal Eagle event promoted on a national (or international) level. It can bridge the gap between pure endurance models and scale or semi-scale models and yet can be simple enough to make a good beginner's stick and tissue model that is easy to build and trim. However, the rules may need to have some minor modifications to avoid conflicts in interpretation, which will kill the event.

At our last contest, a survey was made to try to reach a consensus on some of the rules that have been interpreted differently. For your information only, we have enclosed a summary of the survey. Based on this, we feel the following changes to the original rules are appropriate:

DRAWING REQUIREMENTS

Unless a rule is added to say that the *fuselage must be drawn full size and continuous, nose to tail*, it will be interpreted that the fuselage can be drawn in sections and then assembled together creating a total fuselage length longer than would fit on the 8.5" x 14" paper. *(What was the original intent?)*

DESIGN REQUIREMENTS

1. Smallest wood size to be 1/16" x1/16" except for *propeller and wheel(s). (This means that the wood must be at least 1/16" thick in both cross section dimensions.)*

2. Fuselage measured to its *outside surface* must contain a space 1" x 1.5" x 3". *(Cube is wrong word because it is defined as a solid bounded by 6 equal squares.)*

7. Japanese tissue covering *on all non-sheeted flying surfaces and fuselage surfaces and no fuselage open framework other than those areas covered directly by a flying surface or areas involved in an open cockpit or a minimal rubber access area.* No ultra light *film* covering to be used *except for windscreen or windows.* Flight surfaces may be single or double covered.

FLYING

2. Total of the *best* 3 flights *of 5 total flights* wins. Delay timing at CD discretion. *(You need 5 flights if you are flying indoors with numerous obstructions.)*

We would appreciate your review and comments on these proposals. We need to resolve these issues prior to our next flying season which starts in the fall. Most of our flyers are not going to build anything new until these questions are resolved, (especially the fuselage length issue). We have had a lot of "fun" debating the "capricious and arbitrary" interpretation of the rules but we are ready now to settle the issues and get down to some serious (fun) flying. As previously mentioned, we also would like to see the event grow elsewhere but we all have to be flying either "apples" or "oranges", not both.

We look forward to your reply.

**SUMMARY OF COMMENTS ON LEGAL EAGLE PROPOSALS 05/06/2000**

(6)

1. Best 3 flights total of 5. Also delayed flight of 30 secs. (See AMA Rule 7, Pg. 21)

**Yes-9, No-2**

*Comments:*

*1.Bollinger-You don't need delayed flights if you have best 3 out of 5. Don't complicate the rules by bringing another technicality into the scoring with another AMA rule. Rule already says "Delay timing at CD discretion".*

*2.Martin-Keep the present 3 out of 4 flights.*

2. Do not impose a weight limit. 1/16" by 1/16" is enough limitation for fuselage and tail structures. Part of the challenge is designing for minimum weight.

**Yes-10, No-1**

*Comments:*

*1.Barker-Weight limit 4 grams. Use scale for go/no go check.*

3. Part of fuselage must contain an external volume of ." x 1.5" x 3" minimum with the complete fuselage covered with tissue or sheet wood.

**Yes-11*, No-0 *(with comments)**

*Comments:*

*1.Hardcastle, Barker and Gilbert- Include tail boom in (3) and eliminate (4).*

*2.Bollinger-Covering can be omitted immediately adjacent to rear motor peg for access to rubber, under wing and stab where they are attached directly on fuselage, and in open cockpit. Don't mention sheet wood for covering because by rule, all wood must be minimum of 1/16".*

4. Tail boom must be covered up to L.E. of stabilizer minimum. (Note: This proposal was removed).

5. Permit the use of round wing posts (.0625" diam.), paper sockets and aluminum tubes for rear hooks. Fuselage nose and tail plugs to be any thickness of wood.

**Yes-9, No-2**

*Comments:*

*1.Bollinger-You don't need **any** of this if you will simply hold to the **minimum** wood size of 1/16" x 1/16". This means you would use a .088" diameter post (sanded from a 3/32" square) instead of sanded from a 1/16" square. Fuselage and tail plugs must be made from a minimum of 1/16" sheet. Keep it simple.*

6. Limit overall length to 21" including prop.

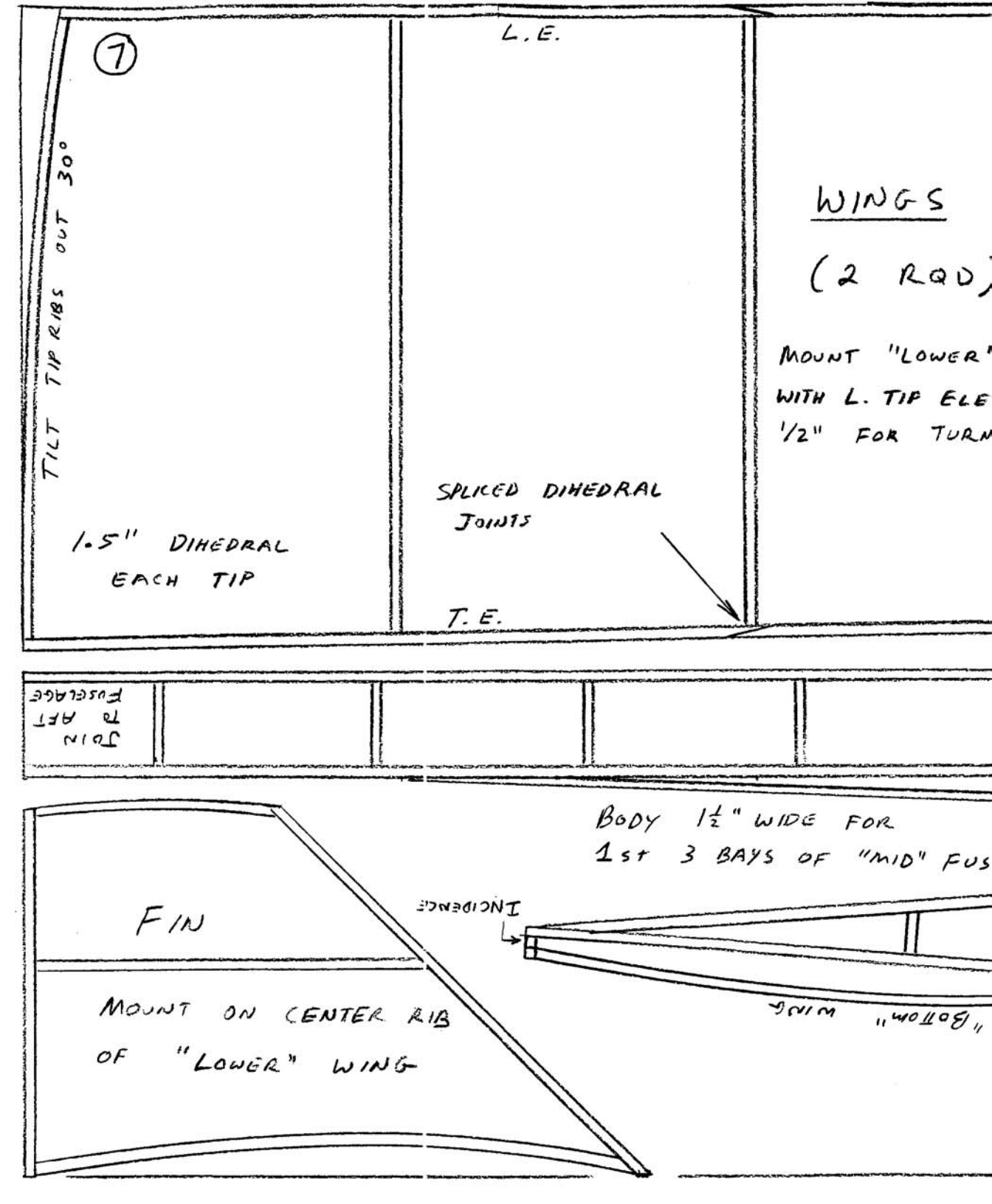
**Yes-7, No-3, ?-1**

*Comments:*

*1.Barker- Fuselage all in one piece, (no separate tail boom)*

*2.Bollinger- Fuselage side view must be shown full size in one continous length. (Assuming this is what the original rules had intended). If this was not the original intent and the fuselage can be shown on the plans in pieces, then let the designer make the fuselage, (not a tail boom, but a built-up fuselage with minimum 1/16" sq.), as long as he desires providing all the pieces fit on the drawing. Also, if you have a overall length rule, you would have to show the prop. on the drawing so the CD could approve the plan and not have to measure the built-up model.*

Respondents to Survey: C. Nelson, Sadwick, D. Obarski, D. Hardcastle, J. Barker, S. Gilbert, N. Bollinger, D. Brimmer, J. Martin, R. MacEntee, and J. Nuzer.


7
L.E.
TILT TIP RIBS OUT 30°
WINGS
(2 RQD)
MOUNT "LOWER"
WITH L. TIP ELE
1/2" FOR TURN
SPLICED DIHEDRAL
JOINTS
1.5" DIHEDRAL
EACH TIP
T.E.
JOIN TO AFT FUSELAGE
BODY 1½" WIDE FOR
1st 3 BAYS OF "MID" FUS
FIN
MOUNT ON CENTER RIB
OF "LOWER" WING
INCIDENCE
"BOTTOM" WING

This is one big, ugly tandem time machine. Dave Aronstein points out the evils of the sectional fuselage.

**ILL EAGLE**

David Aronstein
May 1, 2000

**Disclaimer**
This airplane is not intended to be built. It is intended to provoke discussion, hopefully to the end that this, and all other models with the side view drawn in multiple sections, will be ruled **ILLEGAL**.

USE 11" PROPELLER

NOSE VIEW
JOIN TO
FWD
MID FUSELAGE
TOP
BOTTOM

CABIN

"TOP" WING
POSITION WING AS REQUIRED

AFT FUSELAGE
TOP
BOTTOM

$\frac{1}{16}$" HARDWOOD WITH LIGHTENING HOLES

NOSE
TOP
BOTTOM

(9) ARONSTEIN PUTS IN HIS 2¢

May 1, 2000

Doc,

Objection, Your Honor! This is hearsay! Who, besides Dave Stott himself, can say what Dave Stott intended with the Legal Eagle rules? Why should we speculate? Why not just ask him?

My reactions to Newt's notes follow; but again, let's ask Stott if we really want to know the intent. Or, if we just want to make sure this growing event stays alive, then do whatever will preserve whatever nice qualities these models seem to have. I think those "nice" qualities are:

- moderate size with 1/16 sq minimum insures a reasonably durable model
- they are simple
- they fly well
- the unusual design constraints force a tradeoff among ALL parts of the airplane for prime plan real estate. I know of no other class where you have to simultaneously juggle wing span, wing area, fuselage length, stab area, and prop clearance.

Page 9 of HP Issue 207

Weight minimum: NO, especially if you allow outsized models. Lighter weight is the only way a small model can hope to compete with a large one. Imposing a weight minimum will force everybody toward the maximum available wing area, and an overlength fuselage if you continue to allow that, and make a variety of other interesting approaches less competitive. In other words, a weight minimum would make it more like a one-design event, where all competitive models are minor variations on a common theme (which Bostonian has become).

Page 10

2a. I agree with Newt completely. No dimension of a stick may be less than 1/16.

2b. Cabin definition. Again, I agree.

2c. I do not agree that tailbooms or open framework should be illegal. In fact, Mr. Stott once sent me a photo of a really neat twin-motor flying boat Legal Eagle that he built. I can't remember if it had motor sticks, or just had the motors running to the stab tips, but I think the former, which would prove the intent was to allow such features. (If I can find the photo, I'll report what it shows).

2d. Mr. Stott also commented on a plan I sent him, that my design was illegal because it called for a 1/64 ply wheel. The 1/16 minimum thickness does apply to the wheel, and if we asked he might say it applies to propellers as well.

2e. The tailboom issue again. Why should we assume it's illegal just because the rules say nothing about it? I see nothing wrong with a tailboom, as long as it fits on the SINGLE side view in its proper position subject to all other clearance requirements. Again, if I can find my photo of Stott's airplane, it might prove his intent on this matter.

I hope that the CD who permitted Dick Obarski's model, did so on a one-time basis out of compassion for a young modeler. I hope that upon further reflection, the club will reach a consensus that a 2-part side view is NOT in the spirit of the event, and agree to prohibit such models in the future.

If we can infer anything from the way the rules are stated, the fact that the rules specifically mention the vertical tail as NOT having to be shown on the side view, implies that all other parts normally shown on the side view should be there. I would interpret this to include the wing(s) and the horizontal stabilizer(s), inasmuch as a cross section taken on the fuselage centerline but not including sweep and/or dihedral. It would also include the landing gear, and I believe there has already been a ruling to the effect that the gear must be shown in position, full scale, on the side view, subject to the same 1/8" clearance as the other components.

Allowing a segmented side view would undermine the landing gear ruling. That's because you could draw the landing gear attached to a short piece of fuselage anywhere you want to put it on the plan, and get all kinds of prop clearance that you'd never get if the gear were drawn in place on a single, continuous, side view (as exemplified on my Ill Eagle plan, enclosed).

The Ill Eagle – which I have no intention of building - also potentially abuses the rule which allows one drawing for multiple, identical wings of a biplane. You could even get into spanwise stagger (the "top" wing goes right, the "bottom" wing goes left, producing an actual wingspan up to two times what the rules were intended to allow). Del Ohlsen once brought a spanwise-staggered biplane pennyplane to U.S.I.C. to illustrate this point.

I would suggest the following interpretation for biplanes. To qualify, multiple wings must:

- Overlap each other chordwise
- Be separated vertically by at least 1" (or, alternatively, by an amount at least equal to the chordwise stagger)
- Have same dihedral angle(s)
- Have the same airfoil section(s)
- NOT be staggered at all, spanwise

I would happily submit this interpretation to Stott for review. If he intended for tandems to be legal, then the first 2 of the above guidelines could be deleted

Regardless of the outcome, my next Legal Eagle ("Original Intent") will have a single, full size, side view which shows the entire fuselage, the landing gear, the nose block, and all flying surfaces *except* the vertical tail(s), in their proper positions and maintaining proper clearances, because I believe that was the original intent of the rules.

Very respectfully,
David Aronstein



(11) DAVE STOTT COMMENTS-

PINKHAM FIELD IRREGULARS,
SQUADRON 22, FLYING ACES CLUB
4304 MADISON AVE.,
TRUMBULL, CT 06611

4/27/00

Hi Doc,

I would like to comment on Legal Eagle. In the case of indoor flying of the event, I really think you ought to go ahead with a variation of the original rules to suit your needs. It seems to be taking place anyhow, and I endorse it. As you well know, all the rules for events I have come up with over the years were for outdoor flying. Peanut Scale received so much publicity in model publications that it was widely considered to have been an indoor event! Originated by Bill Hannan, in many cases! Bill is the best P.R. man Peanut ever had.

Making up rules for flying models has gotten to be a tough deal. If you keep them brief, you are criticized for being inexact. If you make them detailed so as they are less subject to bending, you have made them too long and complicated. And, it is quite impossible to convey the spirit of the event in writing, try though you may. In many cases where I have written an "INtent" to accompany rules, it is usually edited out in time. You might recall that the "FAC Scale" rules of today were termed "FAC Handicap Representative Scale" when I first set them forth. But, I degress...

Legal Eagle was born one night as I sleepily climbed the stairs to go to bed. On the stairs was a ream of legal size paper my wife had put there. It was open, that is without the wrapping. I glanced at it and my foggy mind saw a model plan on it. I blinked, and it went away. But, not for long. As I lay down to sleep, what I thought I saw came back to me and I spent the next hour or more (I really have no idea how long it was) mentally laying out rules for the event. Next day I wrote them up.

I hoped Legal Eagle would accomplish a few things that Embryo had not.
I hoped their smaller size would keep fly aways less frequent.
I hoped the specs would produce some more curvacious designs more pleasing to the eye than the parade of angular models that all looked like Adolph Rohrbach designs as most Embryo models displayed.
I tried to keep the rules to a minimum.
I succeeded in nothing but the last.

As an after thought, I decided to make the rules actually hazey in order to give the many "rule benders" I had run into in my day an event they could have a field day with. I decided not to even mention the power to be used to fly these babies. In short, the rules are written to convey more by what they don't say, than by what they do say.

I reluctantly added "square" after "Smallest wood size to be 1/16"

Now, I suppose all this has really accomplished is to make life hard for the C.D. I have not had any bad experiences acting as Judge Roy Bean, but I get the feeling you probably have. In my naivete I imagined all modelers to have an outlook as I had concerning this passtime. That being that I already had a job, (or was retired from it), and this was a game to be played lightheartedly. I mean that Legal Eagle and all the other things I have come up with were never intended to be contested on a national or international scale. Many modelers must answere to political backers in some cases, and so now have another "job".

As I mentioned above, You simply cannot convey the spirit of an event in writing. And, if you could, along the way it would be edited out.

We Pinkham Field Irregulars have 3 more events we fly that will never see a write up. They are for windy and foul weather, and most modelers wisely stay in and build on such days. Where indoor is not for everyone, these events are for a very few. But, what FUN!

Keep your nose on the horizon,



Dave

**A BETTER RUBBER LUBE by Steve Gardner** FROM INAV + TAILSPIN

**A lot of us use Son-Of-A-Gun as a rubber lube and it can be improved without using any additives. Larry Calliau was the one who told me how to recondition this product. He does his in an oven under very low heat, but I set mine out on a counter top until all the emulsifiers have evaporated, which will take from three to four days.**

**I start out by taking a sheet of aluminum foil about two feet long and rolling up the edges to form a very shallow pan. Smooth out the bottom so that it is flat as possible. Shake up the container of Son-Of-A-Gun and pour out just enough to cover the bottom of the foil pan (about 1/16" deep). If you put in more lube, it will take much longer to clear up. As the lube thickens it will become clearer in color and look like light sewing machine oil. It's a good ides to place a paper tent (not a tight fitting cover) over the evaporation pan to keep dust particles from collecting on the lube.**

**After the lube has cleared, scrape the lube into a low, wide mouthed jar such as a pimento jar for storage. I use the lube by touching it with my index finger and wiping off the excess on the edge of the jar. It takes just a small amount to lube a motor. Place the lube in the palm of one hand and then rub the lube into the motor with both hands. After the motor is lubed, I clean off my hands with Wet Ones, a moisturized towelette purchased from grocery stores.**

**Again, don't over lube the motor, only a small amount is needed to do the job. The motor will not need to be relubed during any one flying session, even if it's wound ten times. Also, there is no need to wash the motor when putting it away, the modified Son-Of-A-Gun will not harm it.**

# New Rules F1D

## - First Impressions -

by B J Hunt (GBR)

FROM INDOOR NEWS

The FAI CIAM meeting in Lausanne last March passed changes to the rules for F1D (effective 1 Jan 2001). The maximum span will be reduced to 55cm, the minimum model weight increased to 1.2 gram and the rubber weight limited to 0.5 gram maximum.

These changes are pretty major and there was much concern (particularly in the USA) that the class would be ruined. Some of us felt that the new rules needed a fair practical evaluation before making a judgement and so I have "built" and flown a couple of models to the new specification.

My first model was a simple variant of my Stork design (see John Tipper plan in IN48). I used the same stick, boom and tail but I replaced the unbraced wing with a similar rectangular one of 160 mm chord (6.3") x 550 mm (21.6") span. I also reduced the wing post height from 150 mm to 75 mm (3") and increased the boom to 460 mm (18"). The model was covered with Y2K 0.5 micron plastic film and it required 60 mg ballast to bring it to 1.2 g. Flight tests at Cardington showed the hook distance of 320 mm was impractical (too much tension / stick bow at launch) so I moved the rear hook forward to give 200 mm (8") between the hooks.

I flew this model at the US championships at Johnson City (end May) using my standard 500 mm (19.5") vp prop. The model was very easy to trim but there was an obvious problem with the propeller. The rubber for the new rules is much thinner and shorter than for the current rules so my prop spend almost all the flight on the bottom stop - it was effectively a fixed 600 mm (24") pitch prop. I couldn't change the spring on site so I set the pitch higher (800 mm =31.5") using the adjuster screws. I then had about a dozen 1/2 motor flights to get the rubber size right. On the optimum motor ( 97 mm (3.8") loop of 1.18 mm (0.046") Tan 2 = 0.25g, 750 turns), the model climbed to 23 M (70') and landed deadstick at 14-35. On this evidence, a vp is necessary for this site (32 M) but probably not so for Cardington (46 M) where I would expect about 30 min on a full motor.

On my return from the USA, I built a bigger unbraced wing (220mm=8.6" chord) and tail (40% of wing) and fitted it to the stick/boom above. By being careful with wood sizes, I was able to build the wing at 0.29g (even covered with Y2K). I also fitted a softer spring to my VP and reduce the preload to about 6 gcm. This model now weighs 1.21g and flies fine in my kitchen. I hope/expect that the bigger chord will give 1.5 min extra duration at Cardington.

Overall I am very happy flying to the new F1D rules. The models still fly majestically slowly and I can build unbraced, plastic covered models just about down to weight. Good wood and careful building technique is still required. The essential character of traditional microfilm flying has been retained but I think that the FAI have achieved their aim of improved practicality and reduced performance and I see no reason to look back.

Dave Mills of Atlanta Thermal Thumbers had club mate Fruty do an analysis of the power unit in the $15 E-CHARGER. This is probably the 1ST of many such articles -

JAKE HAD AN "E CHARGER" AT THE LAST MEET. GREAT FUN! (14)

## E-Drives by Capacitors

FROM "THUMB PRINT" (Fritz)

As promised, our tireless editor sent me the power unit of an electric toy plane made by the same people which are making the now famous Air-Hogs. As a rule, all "flying" toys are designed to function just barely enough to pass. A kid tries one of these and trash it shortly thereafter. The tragedy is, that this kid will have lost his confidence to build a flying model again.

That can't deter us, because we already are well versed model builders. Yes? David's question was, whether we could use the electric power unit of this particular plane to create an in- or out-door event for our club. The plane is called "E-charger". It retails for only $15. "Spin Master Toys" is the distributor.

The electric motor and gear reduction are nice, the prop is just right. But the power supply in flight is highly questionable, because it consists of a discharging capacitor. In my static tests a full charge drops down within 4 seconds to the point where there is not enough thrust for an ideal model to climb.

The charger uses the power of 4 AA alkaline pen light cells. The motor runs during the charging process. That puts so much load on the small batteries, that the 3.3 volt potential on my diagram can be only reached twice with fresh batteries, after that the charges become gradually weaker. That boosts the sale of batteries and it becomes impossible to blow the capacitor, which pleases the producers of the toy immensely.

The capacitor is rated 3.3 Farad at 2.5V. Its extra thin insulating layer between the plates is maintained impermeable to electrical currents by a fluid electrolyte, that repairs molecular separations where electricity momentarily can pass. The frequency of these electrical leakages increase when the rated potential of 2.5 volt is exceeded. The 4 alkaline cells in the charger add up to 6 volts, but here most of the battery power is diverted by the running motor. What a waste!

I repeat: The capacitor can hold a charge of the rated 2,5 volt for a long time. A charge up to 4V will leak fast at first, then slow down toward 2.7V. At 6 volt the leakage can be so severe, that the cap could gravely heat up and the motor will not live long when suddenly started at this high potential. An accidental reverse charge will decisively damage the cap.

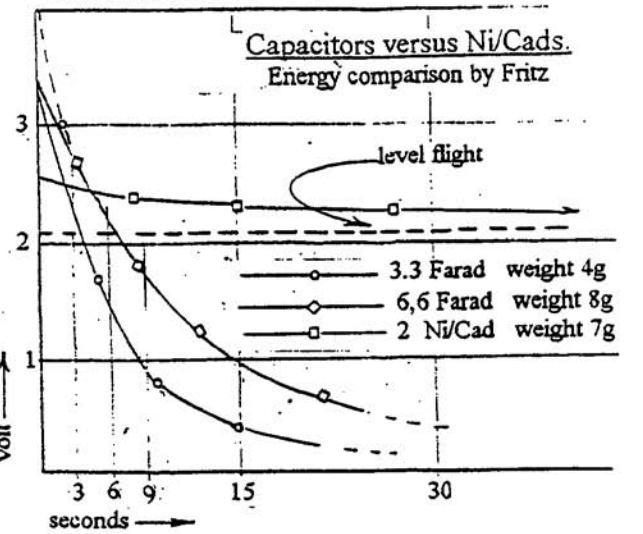
In my diagram I am assuming, that you have the skill to build a model light and fit enough to maintain a level flight when this particular motor is connected to a potential of 2.1 volt. That is the expected final voltage of two 50mA/hr Ni/Cad cells after having supplied 1Amp for nearly 3 minutes. The current drain of this motor at that potential is about .95Amp and maybe .8Amp in flight. Rechargeable cells maintain a nearly level output for a long time, because power is steadily produced by chemical action, while a capacitor doesn't produce anything, it simply discharges and that is it! Thus you see on the graph a 4 seconds climb with one cap and a 7 second climb with two.

Improvements:

1.) Install this drive in a light, slick and rigid plane. Here, at the models slowest speed the prop spins the fastest, but the prop slows down at the model's fastest speed. A "right" prop for this astray situation can't be predicted. Try adjustable pitch and folding props. My graph resulted from static tests. Durations may increase by 17% in flight.

2.) Install a reed switch where the contacts are closed by spring tension. While charging, open this switch by inserting a plastic strip. With the motor off, the potential in the cap may go up to 4 volt in 10 seconds.

3.) Tie the plastic strip to your wrist with a string to turn the motor ON after the launch, so none of the peak power period will be wasted. Use one cap only, because 2 of them weigh as much as two 50mA/hr Ni/Cads.




Nevertheless, the answer is: Yes! capacitor driven planes could be employed in some fun event, where brevity is an asset. It is not everybody's penchant to watch a plane made by a rare kind of devotee drifting and gyrating for more than 20 minutes. Here you charge for 10seconds, toss it and 30 seconds later you will know, whether you are a champ or a chump. After all, catapult gliders are powered for much less than 1/10 of a second and they are a lot of fun too.

About the rules I have not much to say. Frank Hodson told me to shut up, because as a non-contestant I don't know nothing. The Spin Masters told me, that the supply to individual stores of this toy is assured by computerized predictions, thus we know the reason why sometimes there are too many and at times not any available. Kenway, Box 889, Hacketstown NJ 07840 sold some nifty cap drives in the past, let's include his products in the rules. A slow Pennyplane-like model will not accelerate enough to take advantage of a 5 second power burst. A slick and super light HLG would do better, but when throwing it too hard, this category could wind up a HLG "Electro-Cap-Assist" (HECA ?) contest.

# WHAT'S ON IN FREE FLIGHT ?

305-858-6363

JULY 8,9 PALM BAY - FLORIDA STATE MEET + FAC SUMMER SERIES #3
JULY 20→23 GENESEO N.Y. - FLYING ACES NATS
JULY 29 ISLAMORADA; GREAT FLA. KEYS MILLARD WELLS ROW MEET
AUG 12,13 PALM BAY - DIXIE NATS AND FAC SUMMER SERIES #4
SEPT 9,10 PALM BAY - DIST V CHAMPS AND FAC SERIES #5
BEGIN 30TH INDOOR SEASON - NO DATES ARE CONFIRMED AS YET.
SEPT 16,17 TAMPA - MIAMA INDOOR MEET #1 MACDILL AFB
OCT 23,24 ST. PETE - MIAMA #2 US COAST GUARD STATION
NOV 18,19 TAMPA - MIAMA #3 - MAC DILL AFB
DEC 30,31 TAMPA - MIAMA #4 DELTA AIRLINE HANGAR
INDOOR KING ORANGE


**THE HANGAR PILOT**

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