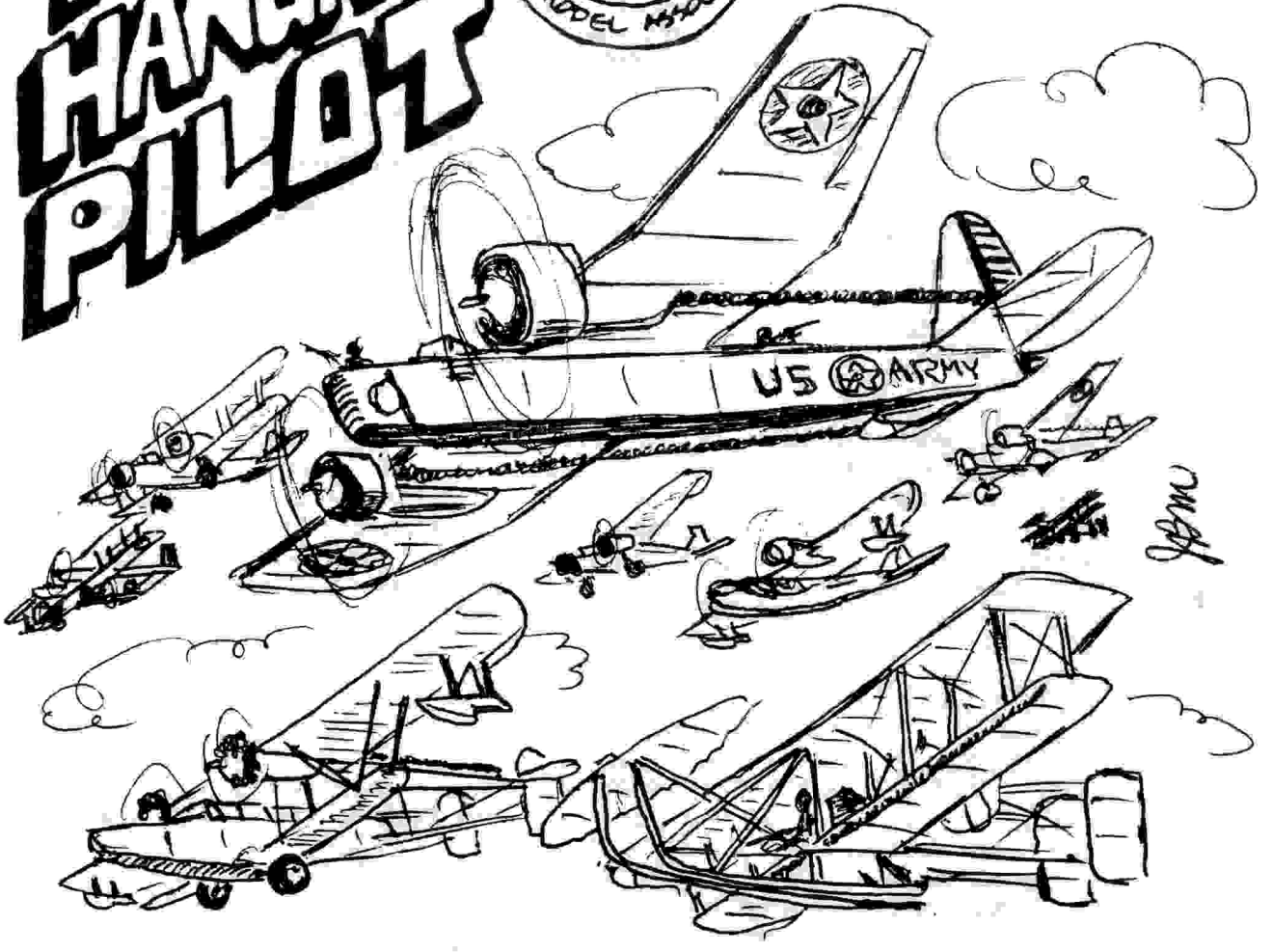
THE HANGAR PILOT

ONE AND ONLY!

THE MIAMA INDOOR AIRCRAFT MODEL ASSOC.

MIAMA

ISSUE 94
MAY 1984
MULTIENGINE ISSUE



MIAMA'S MULTIENGINE FLEET

Hungerford's Wright Flyer, and Wright Baby, Boing 80A, Ford Trimotor, Martin's Bloch MB200, Sikorsky S-36, Boing Death Angel, and Hiscock's Douglass Dolphin, All Flew! Millard Wells' Caproni trimotor

INDOOR WEEK ENTRY FORMS -- QUICK!



THE HANGAR PILOT

Is published 8 (or 9) times a season for a bunch of middle aged guys who refuse to grow up. MIAMA (Miami Indoor Aircraft Model Association,) AMA Club 986, is the only active all indoor free flight club in AMA. Our Mottos: "It must be fun.", and "Indoor isn't for everyone." For $10.00 a year you will receive all copies. We solicit your contributions since we are always running out of material. Letters, plans, 3-views, articles, gripes, and Money to:
Dr. John Martin Pres./Editor. 2180 Tigertail Ave. Miami, Fla. 33133 USA
Phone: 305-858-6363 We want to hear from you!!! Send material!!!

MEET 6 M/D SOUTH APRIL 29

Boy, it was great to see all those guys at out season's local conclusion at the Gym. Hiscock, McCallum, Szymula were back again. You know, that gym isn't so bad, is it? We are just spoiled by those higher sites.

Why do I get so tired after 8 hours of having fun? I don't know about you pilots, but I have dinner and crash after one of our meets. Bang, lights out until next morning. It must be age.

Walt hadit all his way again. Win, win, win. Yuck. He is getting very cocky and ready for the big fall. He thinks he's Jim Richmond. Kiefer was getting some altitude on the oldest plane in the meet- his SopWith Tripe. He's building another one (Ugh) that should take him into 1994. I take that back, Hiscock's Waco E was by far the oldest plane in the meet. He TIED for first with' Everson's Found in the first tie under the new Miller rules. Jim specifies a fly off tie breaker, but by the time we knew it everyone had left so a tie it remains. I suspect that will happen at most meets. Arak was in a testy mood, and punched out the lights on several models that had continued to be rude to him. His Neuport Mono was pounced on, and he drop kicked his Manhattan (Left footed) for a new FAI drop kick record of 8'9 3/4". Martin had his worst meet in years and left feeling the past 40 years have been wasted. He claimed he "faded like a Madras Jacket", but others disagreed. They said he actually "faded like a one dollar tie". Grey Bates tried out his new 200 mm lens for some in-flight shots near the ceiling, and Bob Andrews was taking some 6" close ups of Martin's new 5 3/4" span Elias Airsport sub-pistachio. Kelso scored a "personal best" with a half minute flight with his new Found.

Lots of good stuff coming up, pilots. The Proxy pistachio meet is also a fly in for all you fun-flyers(Whatever THAT means). I always thought contests were fun. THE LAST MEET AT THE IMC WAREHOUSE IN MULBERRY IS GO !! This will probably be the last meet ever held there, and those who have never been there should definitely plan on going. Call Ellis Oglesby for places to stay, etc. how to find the place. Two days, 9 to 5. May 19 & 20 1-813-646-8375, or Dean Mcginnes 858-7579

AT LAST - INDOOR WEEK (2)

⇨ ENTER BY JUNE 4

THIRD

UNITED STATES INDOOR CHAMPIONSHIPS

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

DETROIT, MICHIGAN

Sponsored By: National Free Flight Society

National Indoor Model Airplane Society

SANCTIONED AAAA BY AMA CATEGORY III (CEILING IS 66')

NEWS! SUNDAY FROM 12 NOON TO 6 PM — TEST FLYING

A.M.	MONDAY-JUNE 18	TUESDAY-JUNE 19	WEDNESDAY-JUNE 20
8:30		9:00 TURN IN SCALE	
9:30	H L G	PENNYPLANE NOVICE PP	EZB PAPER STICK
10:30			
11:30			
12:30	FID AMA STK ①		
1:30	② AMA STK	④ ROG CABIN	PEANUT AMA SCALE KIT-PLAN ☆
2:30		⑤	
3:30	③		
4:30		⑥	MIAMA
5:30	MANHATTAN BOSTONIAN ORNITHOPTER	SPEED	GRAND PRIX
6:30		-------7:15------	
7:30			
PM		X BANQUET AT 8:00	
	DOORS OPEN AT 8:00 AM	CLOSE AT 8:00 PM	

X Banquet will probably be on Wed

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

TEST FLYING: SUN 12 TO 6 PM

☆ WE ARE EXTENDING NFFS SCALE FLYING ★ EZB - PAPER STIK

AWARDS to 3RD PLACE

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

CASH PRIZES ONLY

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

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

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

Entries must be postmarked by June 4, 1968 - late fee $5.00 payable on site.

★ Peanut Scale Rules per 51.A - 1982/83 AMA rule book
NOTE: All AMA rules apply except as described [OVER]

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

★ NFFS is going to use the old abhored rules because most of us don't have the "new" rule book yet !! with the much hated "Miller" rules 4/23/84

BRING YOUR OWN CHAIRS AND TABLES-----AND BALLOONS (HELIUM WILL BE PROVIDED)
BANQUET - TUESDAY, JUNE 19, 1984 8:00 PM - $10.50/PERSON ⇒ MAYBE WED!

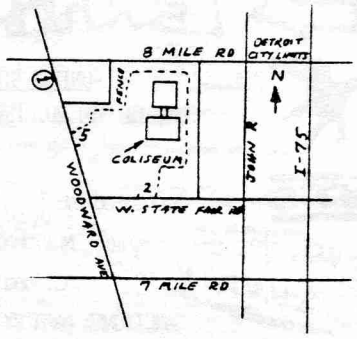
INDOOR WEEK RULES

(3)

KIT - PLAN SCALE RULES

1. Scale, rubber powered models built from kits and/or published plans.
2. The prop and/or rubber may be changed to allow a better prop-power combination.
3. The nose block and thrust button may be altered to facilitate wiring of motor, but the nose block must retain the shape, size, etc. of the original.
4. The tissues and color may be changed, but all pertinent markings must be on the plans, (ie., door lines, wings lines, cowl bumps, etc.). The color and trim should be appropiate for the era of the aircraft being modeled. No condenser paper or film coverings will be allowed. All flying surfaces must be double covered.
5. Static judging documentation will be based on published plans only. Structure, craftsmanship, and fidelity of construction to the plan are the basis for the model's score. Photographs and 3 views are not needed or required.
6. The final score will be the total of the static and flight scores, and are as follows:
   A. Static score: 60 points max. for fidelity of construction to the plan, 40 points max. for craftsmanship.
   B. Flight points: the time of the flight in seconds, the max. time cannot exceed the total of the static score for that model, total flight score will be the best 2 out of 5 officials, an official will be any flight of 15 seconds or longer in the air, model launching will be ROG (or at the discretion of the CD).

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



Register at the Calumet Aircraft Modelers table on the day of the event. For further details, contact- Martin Varney
1020 N. Wood
Griffith, In. 46319 (219) 923-6856

UNLIMITED RUBBER SPEED

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

PEANUT SPEED

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

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

		Includes One Event	Each Addl.Ev
OP	NFFS AND NIMAS MEMBER	$18.00	$3.00
	NON NFFS AND NIMAS MEMBER	$30.00	$5.00
JR / SR		$ 7.00	$2.00

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

Send your entry payable to:
A. J. Italiano
1655 Revere Dr.
Brookfield, WI 53005
(414) 782-6256 (After 7 PM CDST)

(Send large SASE for extra entry blanks)

June 4, 1984 is deadline!

MANHATTAN CABIN RULES

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

BOSTONIAN RULES:

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

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

CONT. IN PAGE 11

THE "MOORE" DRIVE FOR TWIN RUBBER POWERED MODELS

(4)

DESCRIBED & ADAPTED BY MIKE HETHERINGTON - ENGLAND, MIAMA OVERSEAS DIV.

The late Rupert Moore was well known here as an Artist and Flying Scale Aeromodeller. Designed and developed in the late 30's and early 40's, his rubber powered flying scale models incorporated a variety of advanced technical features, perhaps not fully appreciated at the time due to problems we were having with airplanes of a larger size! Retracting and Detracting undercarriages, knock-off airscrews, gearboxes, multi-skein motors, and even V.I.P. tailplanes were just a few. Of particular interest to me was the invention of a flexible drive system which made possible multi-engined subjects with the rubber motor(s) enclosed within the fuselage.

Among his "twin" designs were the "Castor" (a semi-scale which was a flying test bed for the drive) a "Bristol Blenheim" (with automatic u/c) a "Short Scion" and even the "Twin Gull" a Wakefield class duration model. These aircraft were of course outdoor models, and were big, 45"-55" and heavy, 12-26 oz. for rubber models, but the system worked.

These notes describe the "Moore Drive" as I have adapted it for indoor use with a few suggestions thrown in. While I have used the "Drive" in outdoor models using .050-.060 wire shafts, the system is much easier for indoor models as the reduction in wire size simplifies forming. Apart from the twin "nacelle type" model with two motors, my opinion is that this type of drive is the only practical method we have of building rubber powered twins. As long as you appreciate however, from the start, that you'll never beat Jack McGillvray, read on!

Description

The drive consists of a number couplings bent from piano wire in the shape of two stirrups, one triangular, and one square Fig. 1. The two stirrups when linked together will transmit power up to a maximum angle of 45°. To fully understand the principle, bend up the two shapes in any piece of handy wire (paper clip), link together, and holding the end of each shaft between finger and thumb slowly rotate one, to turn the other. Maintain the centres of the shafts at the correct intersection point while you do this and notice there are only two points in contact, between each stirrup during a full revolution of the shafts (The friction is so low that a complete drive assembly as shown in Fig. 6, with the gearbox disconnected, would easily spin with a "windmilling" prop.). You will also appreciate that dimension (a) must always be less than (b) Fig. 2, and that a little mis-alignment can be tolerated except if you go too far the system locks up Fig. 3

The stirrup couplings are arranged at each end of short shafts Fig. 4, and a glance at 6 & 7 show two possible layouts arranged in an aircraft, there are also many others.

The coupling shown in Fig. 1 is about the size to use for a large outdoor model, for indoor application experiment with one ¼ of this size. Shaft/couplings should be formed from .015" - .020", obviously the lighter the wire the better. When bending stirrups use tapered nose pliers and bend each shape at the same point along the taper, so that each stirrup is the same size. Each completed shaft requires two bearings, and suggestions are shown in Fig. 5. Also each shaft requires some means of controlling "end float". I use tiny glass beads cemented into position during final assembly and alignment of the drive in the aircraft structure. The shaft/coupling make up is therefore, (1) form stirrup at one end, (2) thread bead on shaft (3) slip bearing spar on shaft, bearing face to bead, (4) second bearing spar, (5) bead (6) form stirrup in correct position at other end. The ends of the stirrups can be fastened to the shafts at this stage and I simply use a cement blob around the wire. I have used shafts 4" long from .015 wire with just one bearing at each end quite satisfactorily. I feel sure you could even exceed this which was transmitting the power from a ¼" loop of rubber

To refer to Fig. 1 an alternative square stirrup is shown with open forks to allow the removal of say a nacelle nose and prop. In this case the wire needs soldering or epoxying for the necessary strength. Ideally the drive system would be built into the basic wing structure over a plan, one shaft assembly at a time and trimming the oversize bearing spars to suit. Then fit the next shaft assembly and before the cement hardens rotate through 360° to ensure alignment at the intersection of the couplings.

Gearbox

You may think the making of a gearbox difficult. In fact probably the most difficult will be finding suitable gears. I use small plastic gears between 3/16" - ⅜" dia. and about 1/32" - 1/16" thick. They usually have large bosses that can be trimmed away. Shaft sizes can be .020 for the small gear shafts which are part of the square stirrup coupling, to .025 for the main gear and rubber hook. The centre hole in the gear will most certainly be oversize, and I roll paper tubes around the shaft to fit the gears, which I then expoxy to the shafts. Bearings are made from tinplate and you see in Fig. 8 that each gearwheel bearing is carried separately on a frame. The main gear is assembled first with its bearings and cemented or cyno'd in position. Another gear is added using balsa cement and as the cement hardens the gears are gently rotated to obtain the correct running clearance and meshing. Then finally the last gear is added. A gearbox such as described suitable for a model of up to 20" can be built for around 1 gram or less.

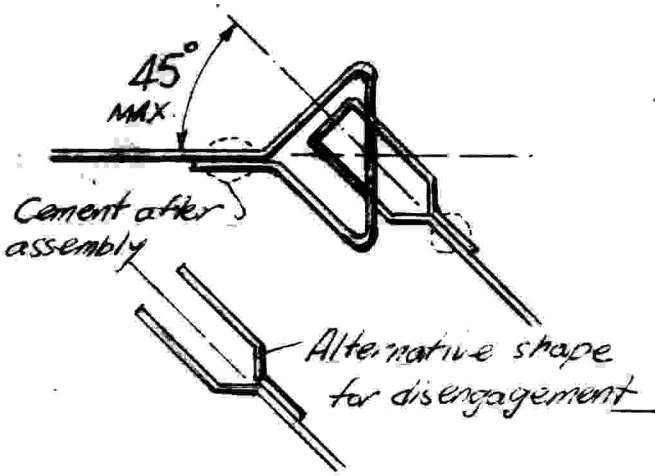


FIG. 1.

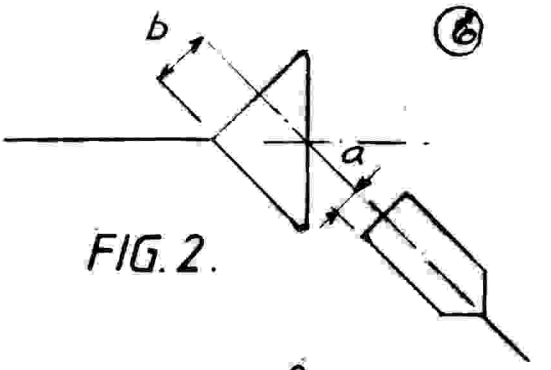


FIG. 2.

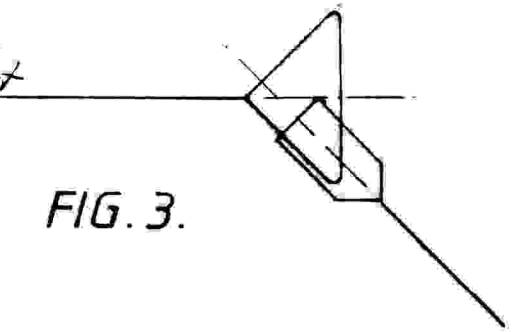


FIG. 3.

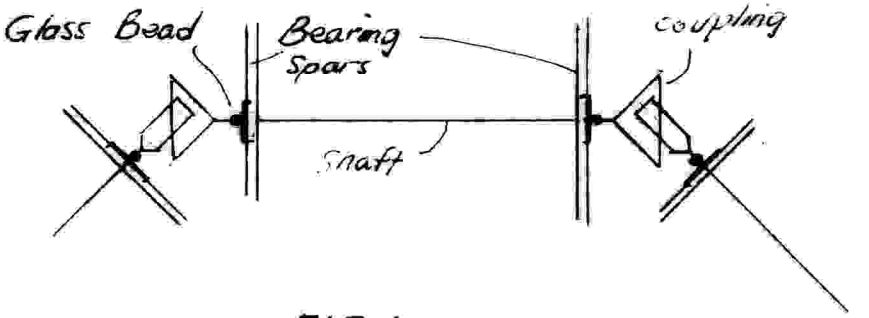
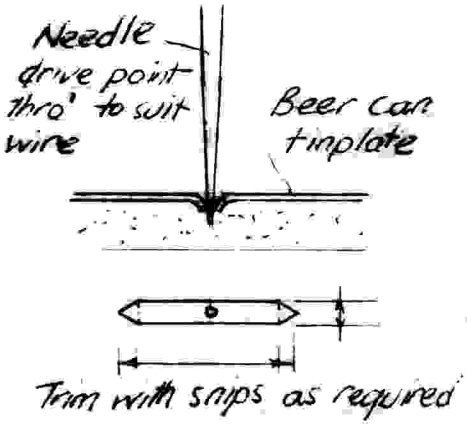


FIG. 4.



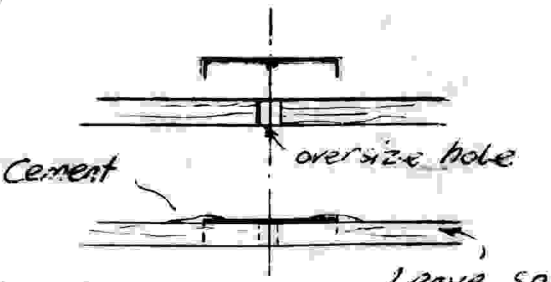


FIG. 5.

Starter Bobbin

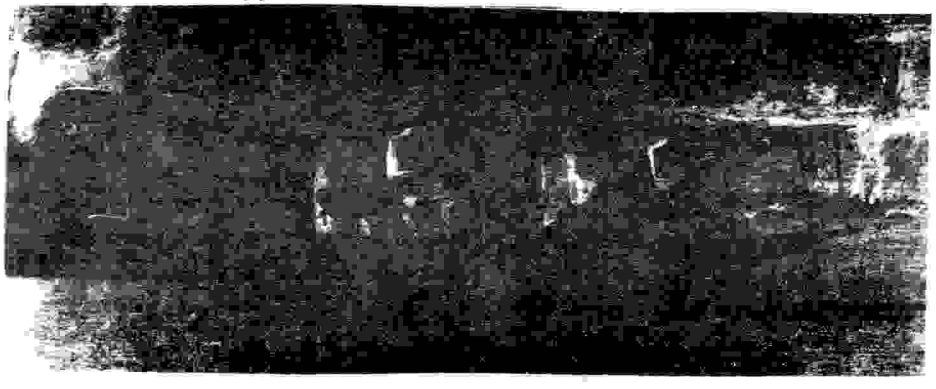
The purpose of the "Starter Bobbin" shown in Fig. 8 is to take the strain of the motor during winding, (indeed the Bobbin itself could be used for winding) When the motor is wound the model is held for launching with one hand, the Bobbin with the other, which is then gradually allowed to spin and is smartly pulled forward with the fingers, off the wire loop in front of the gearbox mainshaft, and the model launched. The Bobbin can be retained by the addition of a thin string loop, to the fingers. The proceedure is reversed if the layout shown in Fig. 7 is used.

General Comments

An alternative to the gearbox, could be the crank or "jigger" shown in Fig,9. I have not tried this but it could be made much lighter than gears. For the actual connecting rod I would use balsa with glass beads cyno'd in to place.

Of the two layouts shown for the arrangement of the "Drive in a model, Figs. 6 & 7, the latter is the easier to start off with as it only requires half the number of couplings - 4 in all. This layout can also be used in a twin pusher which would bring the gearbox to the front. With gearboxes incidentally, don't make the mistake of using a high step up gear ratio, 2 to 1 maximum, - 1½ to 1, - or even 1 to 1 as the crank arrangement would give you, is sufficient.

Fig. 10 is intended to show that the drive shafts need not all be hidden in the wing or fuselage. As the dia. is small they are almost invisible when used as shown. Also the gearbox can be angled with advantage to keep the angular displacement between the shafts at a minimum. The angle of 45° is the max. that can be achieved with the "Moore" Drive, but the less the angle the less the friction, As mentioned previously there are many more design arrangements than I have been able to show. As an example the HELE-FLEX drive described in H.P. NO. 87 could be improved using the "Drive". Hopefully I've stimulated some interest and that some new ideas and of course "twins" will appear.



MIKE'S AEG G-11
20" SPAN
REAR GEARBOX
SINGLE MOTOR
PROPS DO NOT
CONTAROTATE.

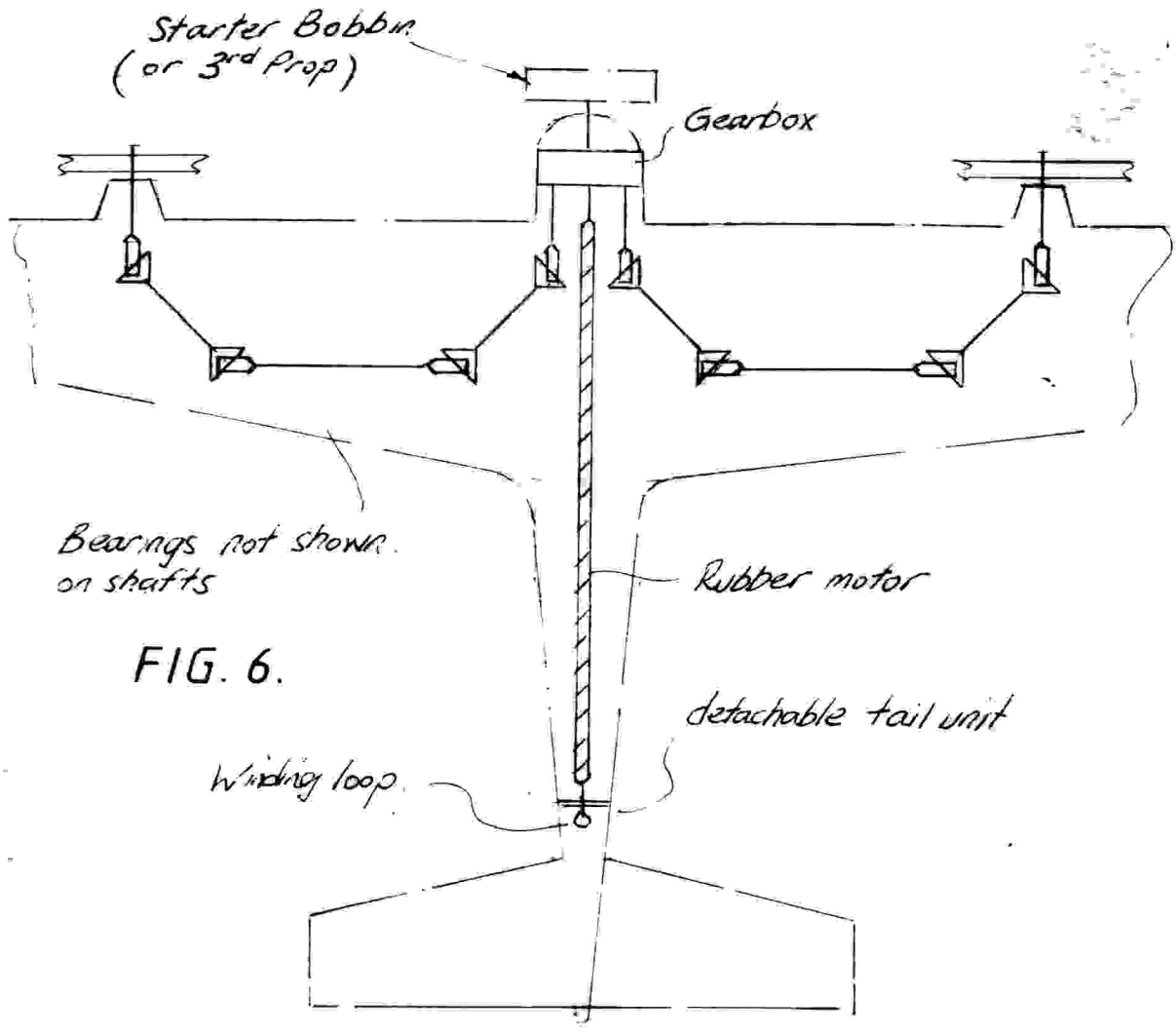

Starter Bobbin
(or 3rd Prop)
Gearbox
Bearings not shown on shafts
Rubber motor
detachable tail unit
Winding loop

FIG. 6.

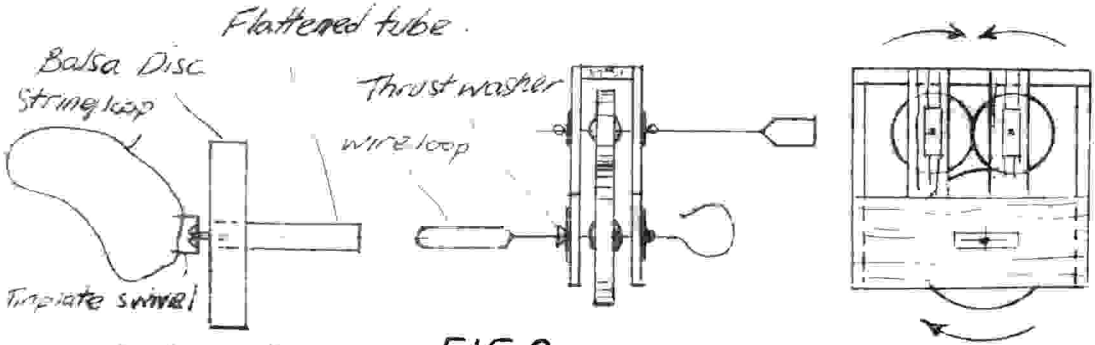

Flattened tube
Balsa Disc
String loop
Thrust washer
wire loop
Turnplate swivel
STARTER BOBBIN
GEARBOX

FIG. 8.

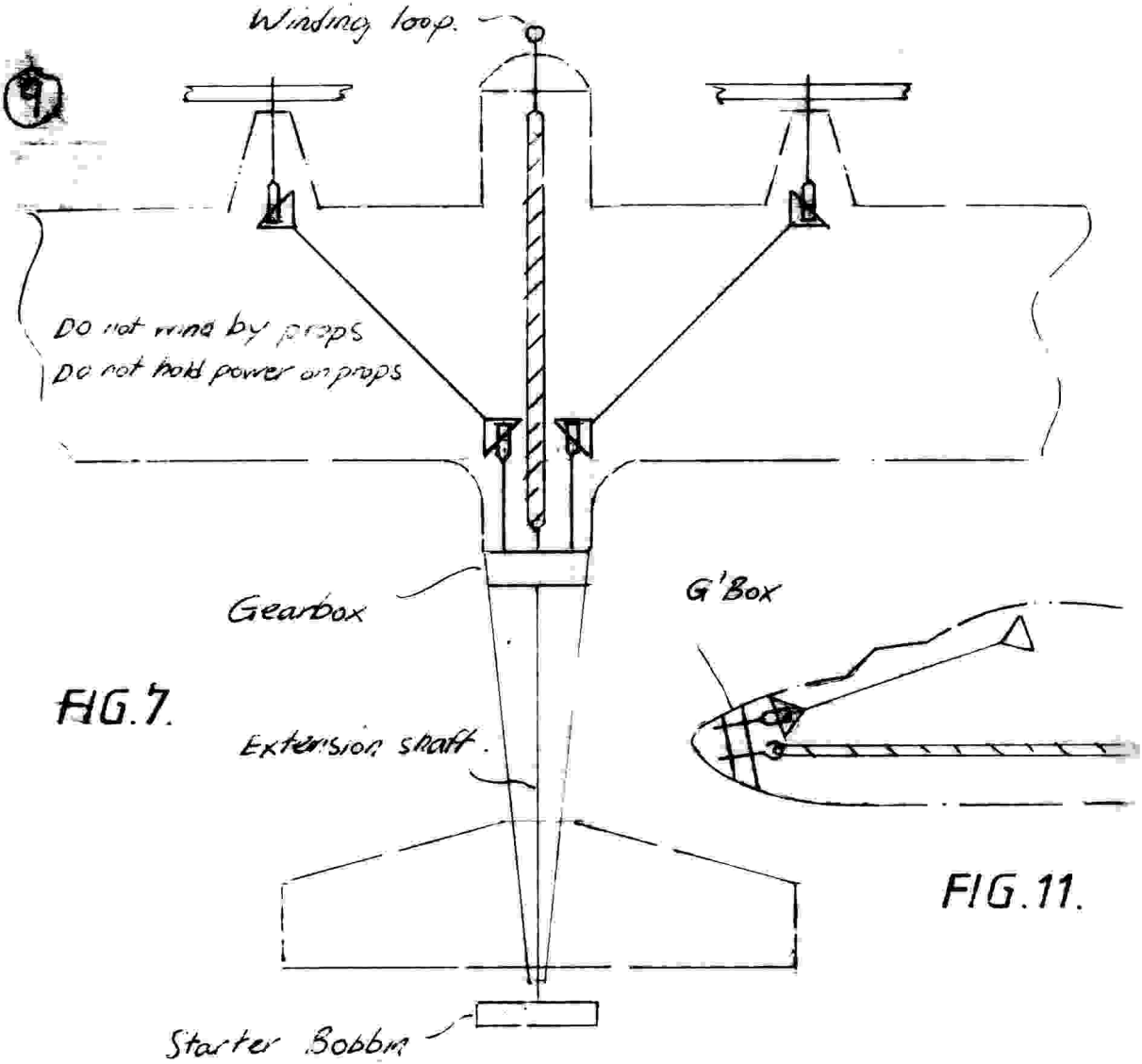


FIG. 7.

FIG. 11.

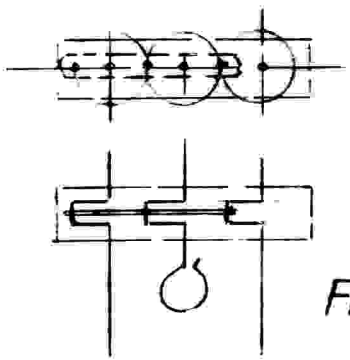


FIG. 9.

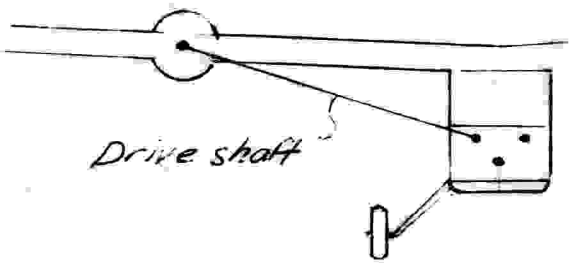


FIG. 10.

MEET RESULTS - MEET 6 APRIL 29 '84

PEANUT SCALE EVENT:

	Static:	Av. of best 2	
1.Walt Everson (Found)	70.4	70.4(Max)	140.8
1.Bill Hiscock (Waco E)	76.7	64.1	140.8
3.Dave Kiefer (Sop. Tripe)	98.0	35.5	133.5
4.Millard Wells(SE-5)	70.1	62.2	132.3
5.John Martin (Ansaldo)	90.4	31.0	121.4
6.Mike Arak (Bleriot)	94.6	18.5	113.1
7.Dick Kelso(Found)	72.0	27.0	99.0

KIT/PLAN EVENT:

1.Walt Everson (Found)	80 Plus 2 best ROG	62.6,72.5		215.1
2.Mike Arak (Robin)	94	56.3	57.5	207.8
3.Bill Hiscock (Waco E)	79.5)	55.3	54.0	198.8
4.Millard Wells (Kawasaki)	72	44.0	46.2	162.2
5.Dave Kiefer (Waco E)	85	32.2	35.0	152.3
6.Dick Kelso (Found)	80.5	27.1	29.5	137.1

GLIDER: 1.Don Bal (31.9)(32.1)
2.Jim Stewart (19.0)(20.4)
Junior: 1.David Bal (24.9)(21.5)
2.Steven Bal (17.0)(18.4)

EASY B EVENT:

1.Roman Szymula	8:14
2.Mike Arak	7:18.5
3.Walt Everson	6:21
4.Jim Stewart	5:59
5.Dave Kiefer	5:06
6.Millard Wells	3:07
7.Ed Shaw	1:40

MANHATTAN/BOSTONIAN EVENT:

1.Everson	3:54
2.Martin (Bost)	3:40.2
3.Wells	3:20.4
4.Arak	1:56.2
5.Kiefer	1:05

CLASS A ROG EVENT:

1.Mike Arak	5:15.7
2.John Martin	3:38
3.W.Everson	3:25
4.D. Kiefer	2:01
5. M.Wells	1:15

NEXT MEET - M/D SOUTH MAY 13 9→5
PISTACHIO INTERGNATS + FUN FLY

YES! LAST MEET SAT. + SUN. MAY 19+20
IMC WAREHOUSE, MULBERRY
FLYING ACES
SUN - 4:00 PM
MASS LAUNCH
GOLDEN AGE
JAR. TISSUE

INDOOR WEEK - THE REST OF THE STORY

Here's the scoop on the rest of Indoor Week. We will have Thursday, June 21 as Scale Day. This does start on Wed. at 3:00 as seen in the NFFS application, and ends 8:00 PM Thurs. We will have the Fifth World Peanut Grand Prix, but it will not be proxy, nor 24 hours (Only 13 Hrs. to get in your flights). Flown to the same rules as in the past..the MIAMA/Hadland rules which are similar to the Miller/AMA rules but give extra static points for weighty details. We will also have the Second GNATS for pistachio (and smaller) models flown to the NEW AMA "Miller" rules with 2 exceptions... double covering NOT NECESSARY, and NO ROG. We will have CO 2 Scale with AMA indoor scale rules, and Calumet Modelers will have their Kit/Plan event. TURN IN ALL THIS STUFF TUESDAY BY 9:00 AM.

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

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

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

PISTACHIO (GNATS) { 8" MAX. SPAN, OR 6" MAX OVERA. LONG

MIAMA SCALE DAY(S) ENTRY -

NAME + CLASS - OPEN/SENIOR OR JR.

ADDRESS

CITY, STATE, ZIP

FEES: Open/Senior..$10.00 for entry to Scale Day (Includes one event) $3.00 for each additional event, and $1.00 for each additional entry per event (Or rentry of first entry)
Juniors..$5.00 , plus $2.00 each extra.

Send Fees payable to:

John B. Martin Jr. D.D.S.
2180 Tigertail Avenue
Coconut Grove, FL 33133
305-858-6363

SEND IN BY JUNE 4. Turn in entries Tue. by 9:00 AM

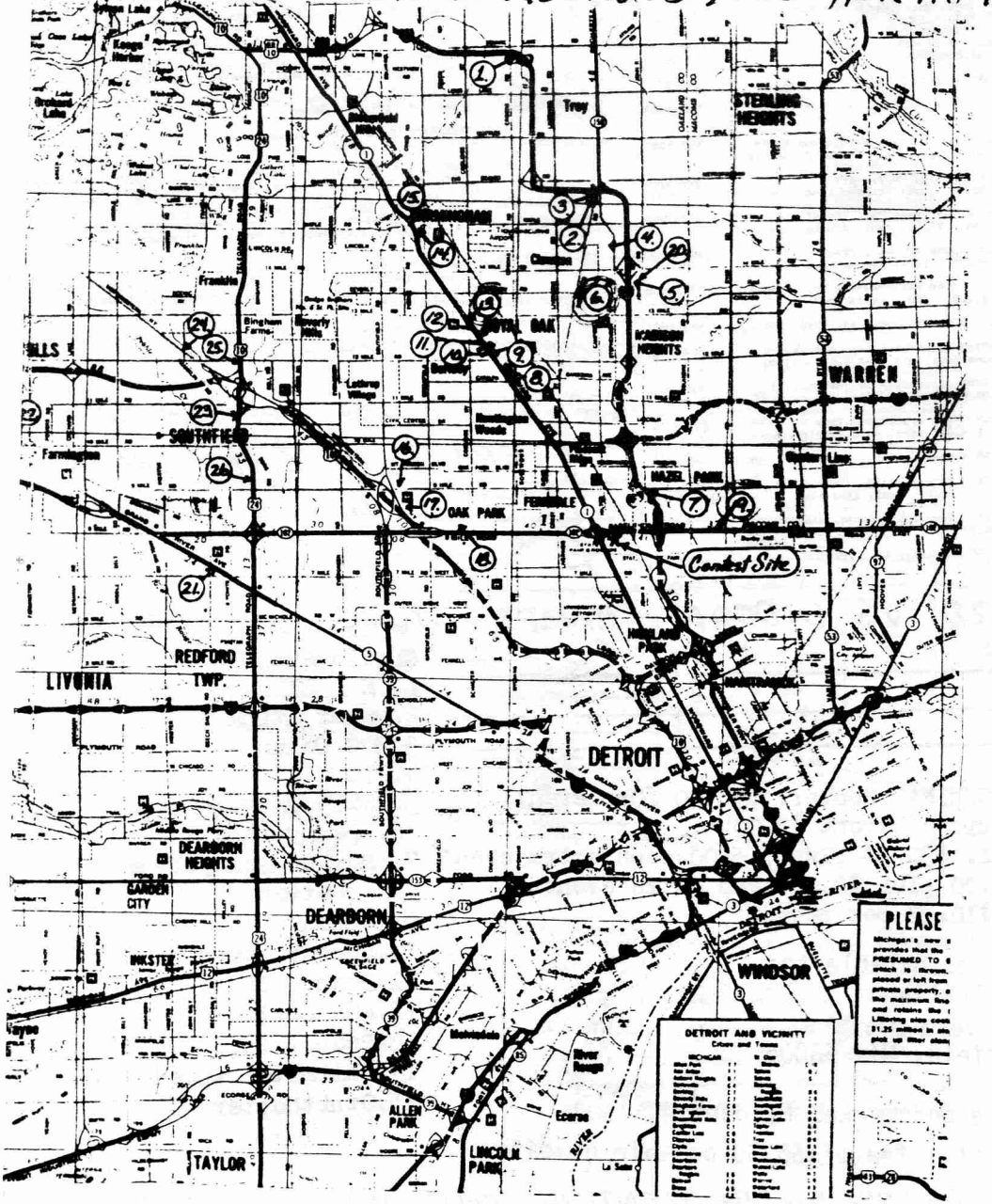
CIRCLE EVENTS:

PEANUT GRAND PRIX -

1. I MONOPLANE
2. II BIPLANE
3. III UNORTHODOX - Heli, Auto, Seaplane/Boat, TRIPE, multiengine, wing (No canard)
4. III ULTRALITE
5. V LACEY / FIKE
6. CO_2 SCALE
7. KIT / PLAN
8. 2ND GNATS [PISTACHIO]
9. FLYING ACES MASS LAUNCH

GNATS CLASSES:
1. UNDER 2gm
2. 2-3.9gm
3. OVER 3.9gm

DETROIT SIDELIGHTS: RICK DOIG SAYS THE FORD MUSEUM IN DEARBORN IS FULL OF AIRCRAFT, NOT TO BE MISSED. RICK HAS OTHER SUGGESTIONS, TOO. ASK HIM. (12)



(13)

SUGGESTED DETROIT AREA MOTELS

Map Key

14. BARCLAY INN 145 S.Hunter, Birmingham (313) 646-7300
AAA *** $45.00 - 65.00, 11 refrigerators, walking distance to downtown Birmingham shopping

20. BARGAINTEL INN 32700 Barrington, Madison Heights 583-0500
AAA ** $27.95 - 28.95

21. BEST WESTERN COACH & LANTERN MOTOR INN 25255 Grand River, Redford $32.00 - 35.00 pool 533-4020

10. DUNES MOTEL 2324 N.Woodward Av., Royal Oak 545-8303

18. EMBASSY MOTEL 14380 W. 8 Mile, Oak Park 967-1505
$34.00 pool

22. HOLIDAY INN 38123 W. 10 Mile, Farmington Hills 477-4000
*** $50.00 - 59.00 pool, game room, dining room

7. HOLIDAY INN 1 W. 9 Mile, Hazel Park 399-5800
** $46.00 - 50.00 pool, dining room

23. HOLIDAY INN 26555 Telegraph Rd., Southfield 353-7700
AAA *** $58.50 - 73.00 pool, dining room

3. HOLIDAY INN 2537 Rochester Ct., Troy 689-7500
** $48.00 - 68.00 pool, dining room

24. HOWARD JOHNSON'S 25100 NorthWestern Hwy.,Southfield 353-5000
** $46.00 - 55.00 pool, restaurant

11. KINGSWOOD MOTEL 2400 N.Woodward Av.,Royal Oak 545-5900

6. KNIGHT'S INN 32703 Stephenson Hwy.,Madison Heights 583-7700
no smoking rooms available $30.00 - 33.00

17. MICHIGAN INN 16400 J.L.Hudson Dr.,Southfield 559-6500
*** $80.00- 104.00 pool, tennis, health club, dining room

1. NORTHFIELD HILTON 5500 Crooks Rd.,Troy 879-2100
**** $80.00 - 115.00 pool, some refrigerators

12. PALMS MOTEL 2428 N.Woodward Av., Royal Oak 548-2345

25. RAMADA HOTEL 28225 Telegraph Rd., Southfield 355-2929
AAA *** $56.00 - 70.00 pool, game room, dining room

5. RED ROOF INN 32511 Concord, Madison Heights 583-4700
** $28.95 - 30.95

2. RED ROOF INN 2350 Rochester Ct., Troy 689-4391
** $26.95 - 33.00

SUGGESTED DETROIT AREA MOTELS (CONTINUED)

Map Key

13. SAGAMORE MOTOR LODGE 3220 N.Woodward Av., Royal Oak 549-1600
AAA * $29.00 - 36.00 8 efficiencies

9. SARANAY MOTEL 1104 N.Woodward Av., Royal Oak 543-0351

8. SEVILLE MOTEL 1120 N.Woodward Av., Royal Oak 547-2710

16. SHERATON INN 17017 W. 9 Mile , Southfield 557-4800
*** $68.00 - 80.00 pool, tennis, dining room, coffeeshop

19. SUEZ MOTEL 3333 E.8 Mile, Warren 757-3333
AAA ** $28.00 - 36.00

26. TELEGRAPH HOUSE 23300 Telegraph Rd., Southfield 358-1800
$32.00 - 36.00 pool

4. TROY HILTON 1455 Stephenson Hwy., Troy 583-9000
*** $68.00 - 92.00 pool, some refrigerators

15. VILLAGE MOTOR INN 300 N.Hunter, Birmingham 642-6200
AAA *** $43.00 - 55.00 some refrigerators, within walking distance to downtown Birmingham shopping

Note: The above double occupancy rates were taken from 1983 guidebooks and are intended as approximate prices. These motels either have dining rooms or are within a block or two of coffeeshops or fast food restaurants serving breakfast.

Call Richard or Melody Doig (313) 373-5374 if you need more information on the Detroit area or assistance finding a motel.

STAY FOR THE DETROIT GRAND PRIX (AUTO RACES) JUNE 21, 22, 23

3RD US INDOOR CHAMPS - JUNE 17,18,19,20

NAME/AMA*

STREET

CITY STATE ZIP

FEES: NFFS/NIMAS Member: $18.00 (One event)
Each additional event $3.00
Non member: $30.00 plus $ 5.00 each extra event
JR/SR $7.00 plus $2.00 each extra event
BANQUET: $10.50 per person

Send fees payable to:
A. J. Italiano
1655 Revere Dr.
Brookfield, WI 53005

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

Circle events entered:
1. H L Glider
2. Paper Stick
3. ROG Cabin
4. F1D
5. Easy B
6. Pennyplane
7. Novice Pennyplane
8. Manhattan
9. Bostonian
10. Indoor Stick
11. Peanut Scale
12. AMA Scale
13. Peanut Speed
14. Unlimited speed
15. Ornithopter

SORRY, PILOTS, WE'RE RENTING THIS HALL FOR BIG $.

(14)

Dr. John B. Martin, Jr.
2180 Tigertail Ave.
Miami FL 33133

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 56TH TACTICAL TRAINING WING (TAC)
MACDILL AIR FORCE BASE, FL 33608

April 27, 1984

Dear Dr. Martin,

It was good to hear from you again. The demonstration of the model airplanes that you and Col. Criss gave in my office was very interesting.

I've checked with some of my commanders, and based on what they told me, we should be able to provide the use of a hangar for the state contests you mentioned in your letter.

Please contact me 30-60 days prior to the desired dates so that we can make final plans to support the contests. I look forward to hearing from you.

Sincerely,

RONALD R. FOGLEMAN, Colonel, USAF
Commander

Readiness is our Profession

Pilots, if you think we don't live in a great country, try to imagine the Moscow Indoor Club getting a letter like this from the Soviet Air Force! Thanks to the help of Col. Bill Criss, and Col. Phil Bayly it looks good for meets here next Nov.,Jan.,March, and May. This is the same 61 ft. hangar as in the '83 Nats at Westover.

SEND IN YOUR INDOOR WEEK ENTRY FORMS TODAY!

INDOOR MEETS:

MAY 13 - M/D SOUTH 9→5
GNATS + FUN FLY
MAY 19+20 - IMC PLANT - SEE INSIDE FOR DETAILS
JUNE 19 TO 21 - DETROIT - INDOOR WEEK
JULY 1 - MIAMA ANNUAL AWARDS DINNER
JULY 14+15 - DETROIT - FLYING ACES NATS

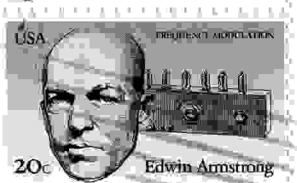
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THE LATEST INDOOR NEWS INSIDE

THE HANGAR PILOT

EDITOR: DR. JOHN B. MARTIN MIAMA
2180 TIGERTAIL MIAMI FLORIDA 33133

MIAMI, FL
MAY 7
PM
1984
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TO:

JIM MILLER
827 YORKHAVEN RD
CINCINNATI OH 45240

1ST CLASS
NOT JUNQUE MAIL