Indoor News

Issue 37 May 1996



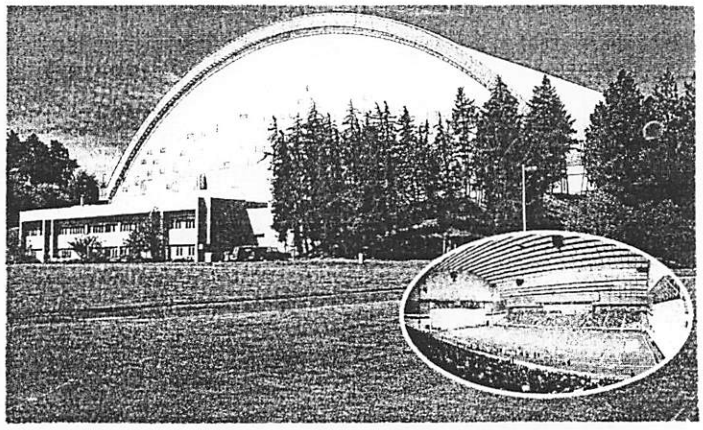
DIARY

29 May - 2 June Johnson City USA	**U.S. Indoor Championships,** Abram van Dover, 112 Tillerson Drive, Newport News VA 23602, USA, T +1 804 877 2830
15-16 June Orleans France	**14th International Competition of Orleans,** F1D, J. Delcroix, 41 Allée du Coudray, 45160 Olivet, France, T +33 3863 4957
29-30 June Angers France	**International Criterium of Sevres Anjou + French National Championships,** All classes, see details in this issue, J-L. Bodin, 2 rue Moulin du Pain, 49000 Sainte Gemmes sur Loire, France, T +33 4147 1697
1-4 Aug Moscow Idaho USA	**Kibbie Dome Annual + 2nd EZB International,** Andy Tagliafico, 10039 S.W. Quail Post Road, Portland, OR 97129, USA, T +1 503 452 0546.
5-9 Aug Moscow Idaho USA	**Indoor World Championships 1996,** Kibbie Dome, AMA, 5151 East Memorial Drive, Muncie, Indiana 47302, USA, T +1 317 287 1256, F +1 317 289 4248
10-12 Aug Tillamook Oregon USA	**3-day Fly-in,** Andy Tagliafico, address see above
22-25 August Liège Belgium	**19th International Indoor,** All classes, see details in last issue. Contact: Bernard Delhalle, 62, Rue de Souvret, B 4200 Sclessin-Liège, Belgium, T +32 41 310792

1996 Indoor World F1D Championships

The 1996 Indoor World F1D Championships for Seniors & Juniors will take place at the Kibbie Dome, on the University of Idaho campus in Moscow, Idaho, USA, from August 5 through 8.

The Kibbie Dome is one of the best indoor sites available in the world. The ceiling spans 400 feet (122 meters) with the arched center rising to 147 feet (45 meters). The clear floor space inside the seating area (for 18,000 people) is 240 feet (73 meters) wide and 420 feet (128 meters) long. The ceiling high point runs the length of the building. There is almost never any drift in this building.



Schedule:
August 5: Arrival, Practice, Opening Ceremonies
August 6: Rounds 1&2
August 7: Rounds 3&4
August 8: Rounds 5&6, Banquet/Awards
August 9: Departure

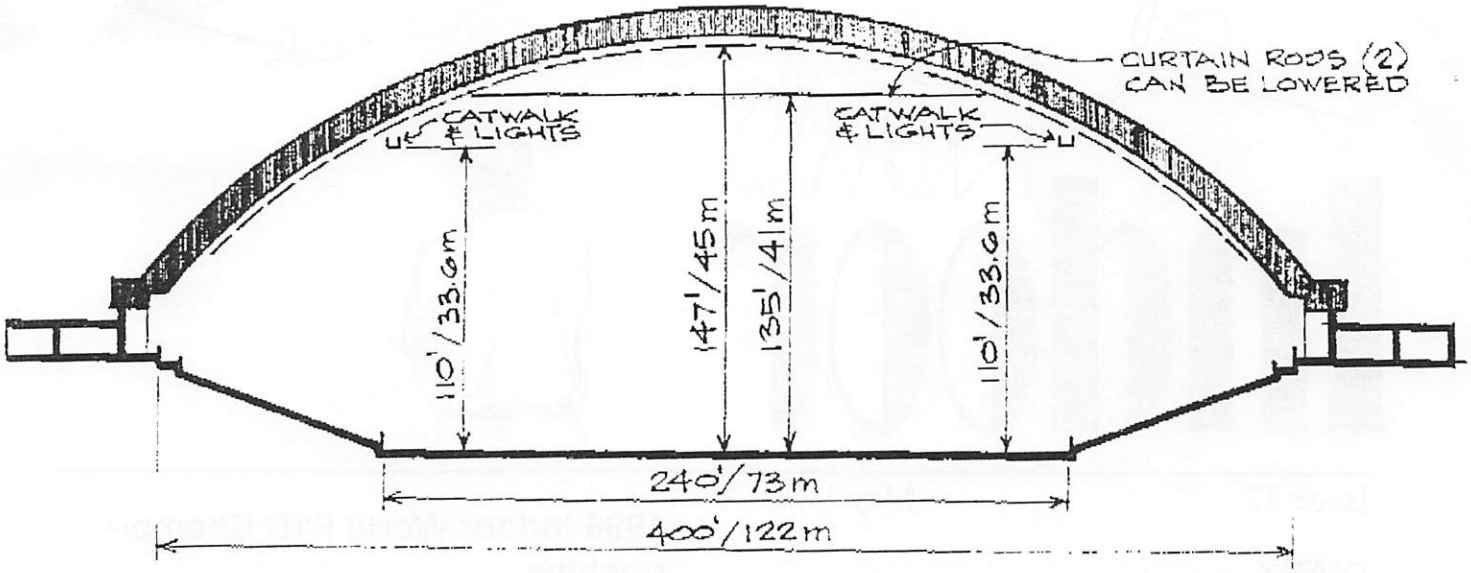
COLOPHON

Indoor News is published at least four times a year and covers all types of indoor models, from peanuts to microfilm. Texts can be sent in Dutch, English, German and French. Please type your texts on 12,5 cm width. Texts can be sent on floppy disk (3½ or 5¼) in any text format. I can make drawings, if you are no draftsman.

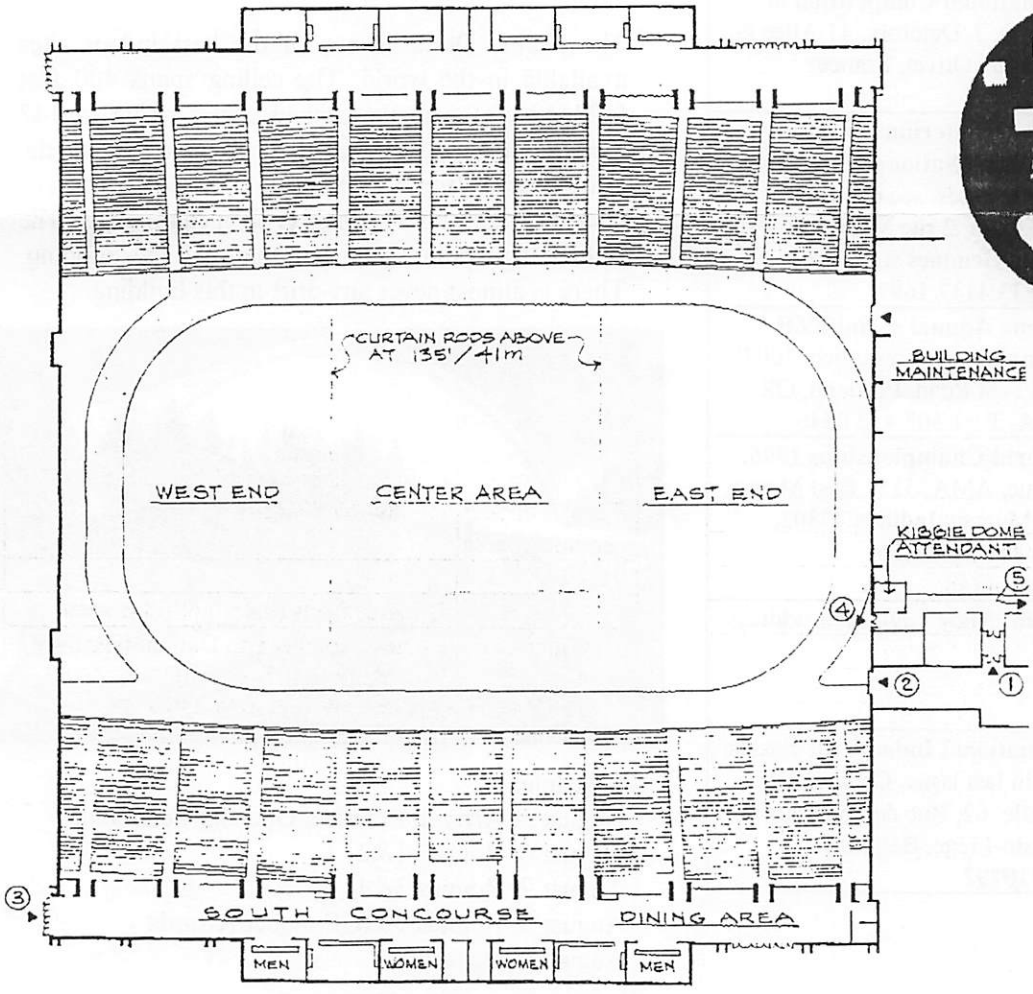
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NORTH • SOUTH CROSS SECTION THRU KIBBIE DOME



KIBBIE DOME FLOOR PLAN

① FLOOR LEVEL SIDE ENTRANCE
② OVER HEAD DOOR AT LOADING DOCK
③ SOUTH CONCOURSE ENTRANCE UPPER PARKING
④ DOORS TO FLOOR LEVEL RESTROOMS AND PARKING
⑤ CORRIDOR TO FLOOR LEVEL RESTROOMS AND PARKING



Preliminary entries have been received from: USA, Canada, United Kingdom, Japan, Poland, Ukraine, Switzerland, Finland, Germany, Hungary, Czechia, China and Rumania. USA will send one junior competitor and Poland a full junior team. Entry fees are $450 for competitors and team manager and $100 for supporters.

Correspondence: Academy of Model Aeronautics, Attn: Competitions Department, 5151 E. Memorial Drive, Muncie, IN 47302 USA, Phone (317) 287-1256, Fax (317) 289-4248, Internet: 76117.167 @compuserve.com.

Preceding the World Championships there will the Kibbie Dome Annual indoor competition (all indoor classes incl. F1D) and the 2nd EZB International. After the champs a 3-day Fly-in will be held in the newly discovered airship hangar in Tillamook, Oregon. See diary for information.

Contests in Cardington (GBR)

From FFn: Bernard Hunt, the contest director and organiser of events at Cardington this year, has sent the information below and comments that there is now a huge plastic mesh tent fixed just under the roof. This protects from falling bolts and also seems to improve flying conditions and stops models hanging in the roof.

The program of indoor meetings to be held at Cardington is as follows:

April 14	Limited Penny Plane and Index
April 28	EZB and Index
May 5	NoCal (profile scale) and Index
May 19	Living Room Stick and Index
June 16	Limited Penny Plane and Index
June 30	EZB and Index
July 14	Living Room Stick and Index
July 28	Limited Penny Plane and Index
Aug 11	EZB and Index
Aug 24	Nats - Practice Day
Aug 25	Nats - EZB and Limited Penny Plane Index (over 2 days)
Aug 26	Nats - F1D and LRS (1st Team Trials)
Sept 8	F1D and Index (2nd Team Trials)
Sept 22	EZB and Index (reserve day for Team Trials)

There will be BMFA plaques/certificates for nominated and Index events and trophies for Nats events. EZB events will be run to 1.2g F1L rules. All EZB and Limited Penny Plane events (except Nats) will be handicapped with a simple time penalty based on the flyer's previous best time (like golf!).

For those that are new to Cardington, it is situated on the A600 about 3 miles south of Bedford (drive in through the gate next to the field, go between the hangars and turn left to reach the vehicle entrance to No.1 Hangar). We close the big door at 11am so if you want to park in the Hangar get there before then.

No.1 Hangar is huge (1000 feet long, 300 feet wide and 150 feet high (300 x 90 x 50 m)) so there is plenty of room for everyone to fly and fun flyers are most welcome. Do remember to ring Laurie Barr (tel 01628 487544) on the Fri or Sat before a meeting to confirm the meeting is on (on rare occasions we have to cancel because of operations in the Hanger).

Contests in Belgium

Everybody is cordially invited to the competitions listed below. All indoor categories are accepted.

28 April Flémalle	Salle Omnisports "André Cools", Rue du Beau-Site, 25, Flémalle-Haute. Contact: Bernard Delhalle, tel. 041-31 07 92
30 June Chapell-lez-Herlaimont	Salle Omnisports, 69, Rue de la Hestre. Contact: Guy Faucon, 11, rue de Wartonlieu, 6180 Courcelles, tel. 071-45 08 70
8 September Mons-Grand Large	Contact: Gérard Proot. tel. 064-67 83 61
29 September Chimay-Baileux	Salle du "Sudhaina". Contact: Emile d'Hondt, tel. 060-21 17 78
13 October Strepy-Bracquegnie	Contact: Jean-Marie Melice, tel. 064-67 57 42
	Other contests (dates not yet known)
May/June or October, Lanaken	Contact: Johnny van Duysen (speaks Dutch and French), tel. 089-73 26 47, or: Jos Melis, tel. 089-41 83 53
Oct/Nov, Chapell-lez-Herlaimont	Contact: Guy Faucon, tel. 071-45 08 70

Armand Petit (BEL) ✞.

Armand Petit passed away in february. He was 69 years old! During 50 years we saw him fly his models just everywhere. Free flight, control line, radio control, no category had any secrets for him. Being of an inquiring disposition, he also just had to try indoor free flight. Though he was with us for only a short period, he amply demonstrated his skills, his "savoir-faire", to all of us. The quality of his mo-

dels, the research for authentic details on his scale models, also the originality in choice of subject (he never chose an easy one) brought him numerous medals in championships and contests. In spite of the tiredness caused by his illness, he carried off the Gold Medal in the F4F Belgium Championships 1995 and the Silver Medal in the Wallonia Championships 1995.

Farewell, Armand! Your kindness, your good mood, your sound advice, we already miss them. Our condolences go to his wife Simone in these difficult moments.

F. van Hauwaert

CIAM Plenary Meeting

At this years CIAM Plenary Meeting there was one item of interest to indoor flyers (quoted from Ian Kaynes report in Free Flight News):

" ***Records***. The Bureau established a working group headed by the Technical Secretary to investigate the overall organisation and rules for records. One item referred to this was a proposal from Germany to require the use of F1D models for indoor records (rather than the present record rules with no minimum weight nor span limit). Other ideas which I will feed in include indoor records for other classes (eg F1L, ie EZB) and, in all major indoor and outdoor classes, establishing records for high performance during the course of competitions."

39'19 F1D Microfilm Cat. I World Record

Bob Randolph (USA), January 21, 1996

January 21, 1996 was cold, windy and rainy due to a cold front and not a very good day for flying indoor models. The flying site was the Academy Elementary School Gym located in my home town of Loma Linda, California. This site used to be one of the best Cat. I sites in the world due to its 25'1" (7.65m) ceiling, good air, recessed lights, and solid wooden beams that made hang ups almost impossible. Its 85x105 ft. (25.9x32m) floor area is surrounded by six basketball back-boards. Almost four years ago, the school installed row after row of 2x6ft. sound proof hang down panels which not only lowered the effective ceiling to 23 ft. (7.01m) but worst of all, the bottom of the panels were very catchy on wing upper bracing wires.

My model was a development of my very successful Super Cat II which held all four indoor world records for several years. The main changes were a reduced taper wing of greater area, a 22"/28" variable pitch prop and a stab with boron tips.

Cold air turbulence made test flying very difficult and never was completely eliminated. A week before at this site I had logged 24'05 on a no touch half motor flight. The conditions today limited my best half motor flight to 20'09. At 3PM I increased the power by using a 13.5" (343mm) loop of .066" (1.68mm) motor weighing .048 oz. (1.36g), increased the pre-load tension on the prop by ½ rev. and decided to make an official attempt with the temperature at 68°F (21°C) and relative humidity of 35%.

I slowly put in 1800 turns, backing off 60 turns for a launch torque of 40. I launched Super Cat III 5 ft. above the floor and it slowly climbed to about 10 ft.. Prop RPM dropped to a low of 29.8 and the ship descended to 4 or 5 ft. before starting another slow climb. The first ceiling touch occurred at 20'14. At about 26 minutes the wings top bracing caught on the panels but freed itself by tailsliding down 5 ft.. It slowly climbed back up but could only reach 21 feet. Many pole steers were required to keep away from the walls. Some balloon steers were made with a total of 10 seconds of prop stop time. Finally Super Cat III settled to the floor with 39'29 on the watches. The remaining turns were 160, so the average RPM was 40.2. The VP prop had changed the RPM so well that I could not have done better if I had had a radio control for ground adjustment.

Kit of Beginners Model

Alfred Klinck (GER) offers a kit of a small indoor beginners model. Wing span is 20 cm. With a flight circle of 1,50 m the model can be flown in a living room. Flying time at 2,50 m ceiling height exceeds one minute. The kit contains: propeller made from balsa, wood, small metal parts, rubber 1x1 mm, ultra light plastic foil for covering, plan and building instructions, all for DM 20 or 70 F. Available from Alfred Klinck, Kurt Schumacher Allee 235, D-66740 Saarlouis, Germany.

Super Cat III

DESIGN & FLIGHTS BY
ROBERT RANDOLPH (USA)

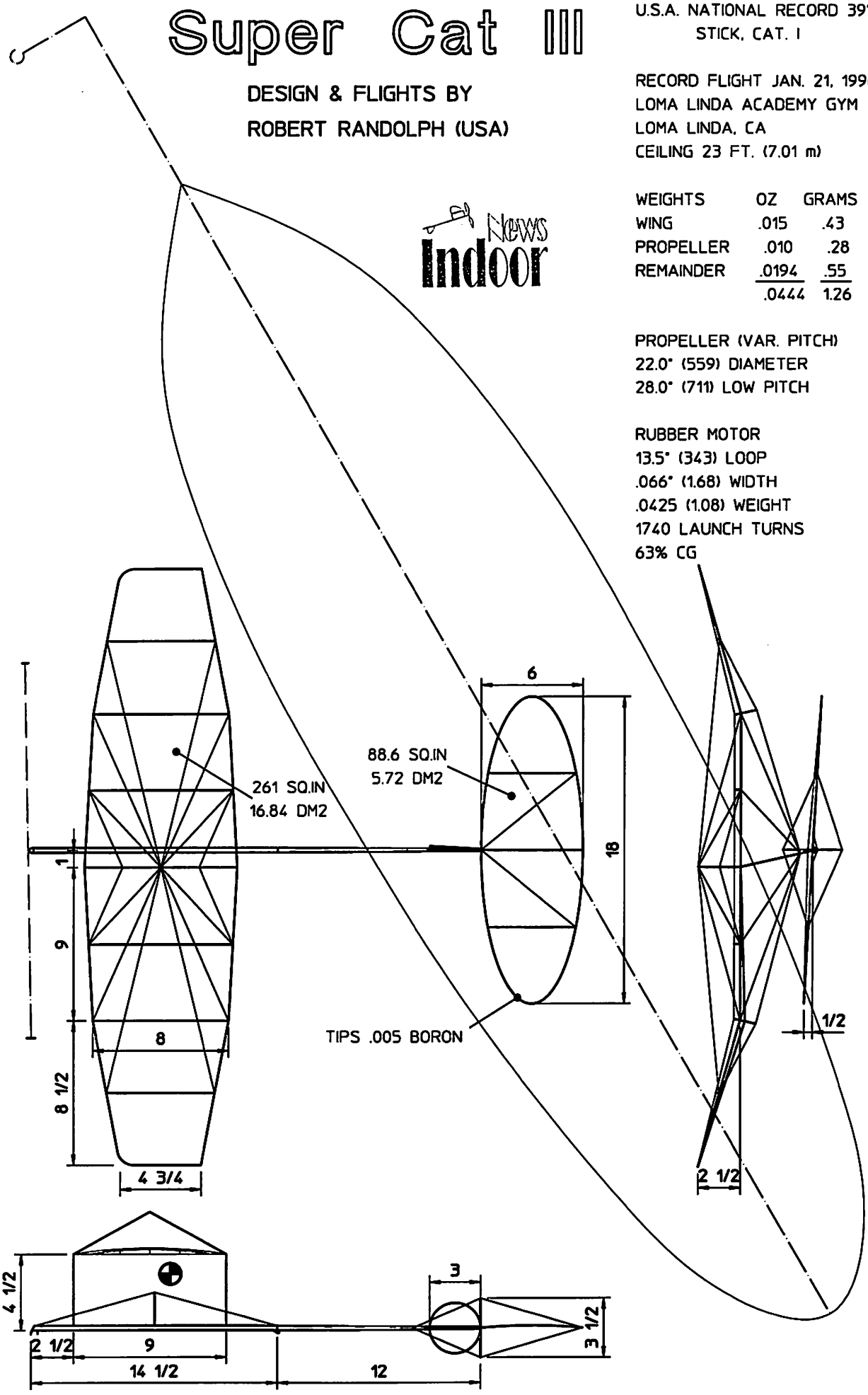
F1D 32a WORLD RECORD 39'19
INDOOR AEROMODELS CAT. I
U.S.A. NATIONAL RECORD 39'19
STICK, CAT. I

RECORD FLIGHT JAN. 21, 1996
LOMA LINDA ACADEMY GYM
LOMA LINDA, CA
CEILING 23 FT. (7.01 m)

WEIGHTS	OZ	GRAMS
WING	.015	.43
PROPELLER	.010	.28
REMAINDER	.0194	.55
	.0444	1.26

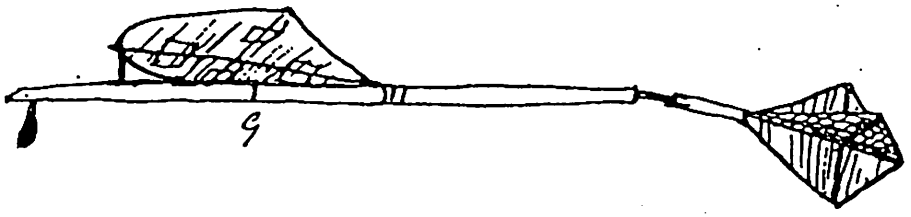
PROPELLER (VAR. PITCH)
22.0" (559) DIAMETER
28.0" (711) LOW PITCH

RUBBER MOTOR
13.5" (343) LOOP
.066" (1.68) WIDTH
.0425 (1.08) WEIGHT
1740 LAUNCH TURNS
63% CG

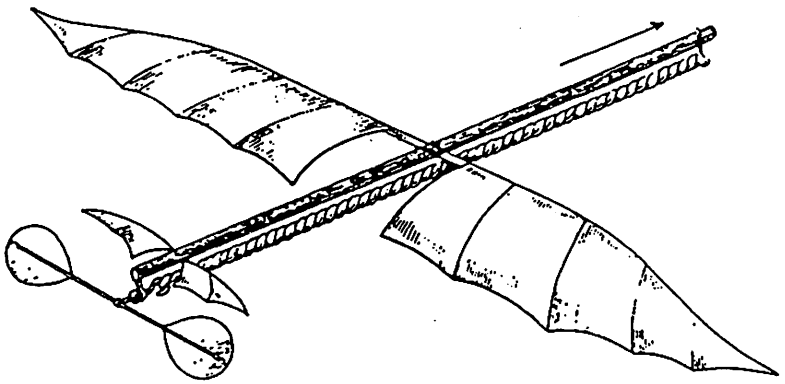


Drawn: R.Randolph/T.André

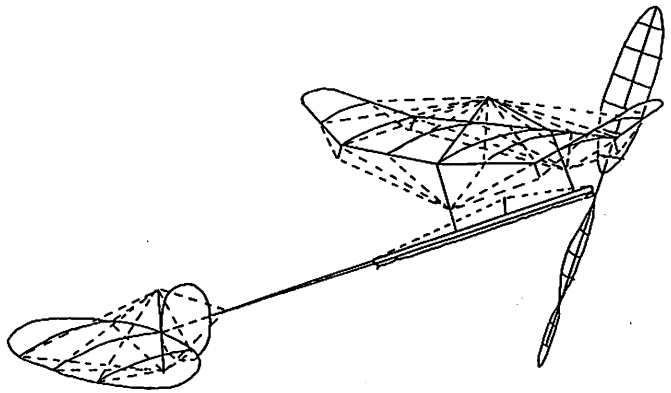
EVOLUTION



Sir George Cayley 1804



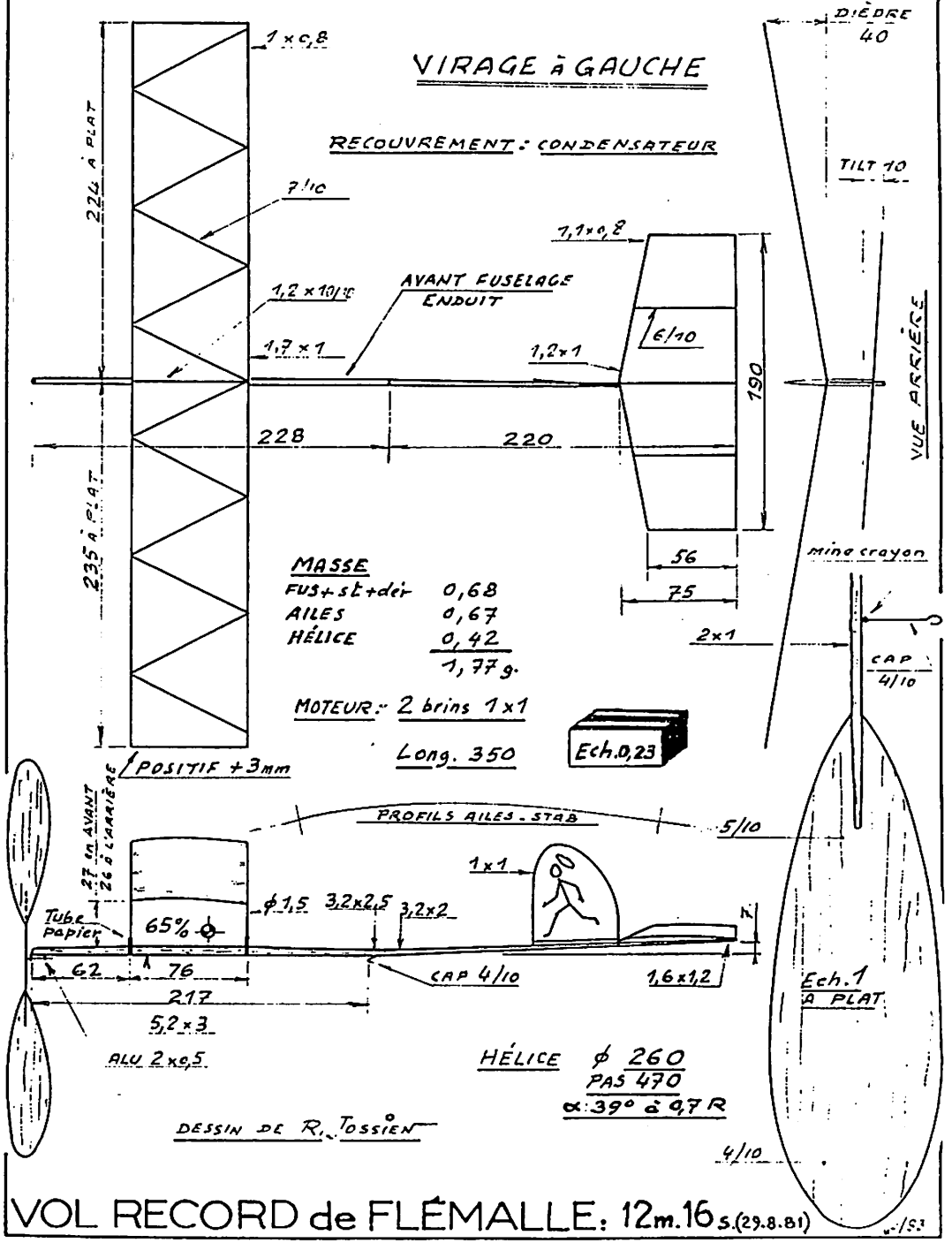
Alphonse Pénaud 18 august 1871



Bob Randolph 5 december 1993 55'06 min.

Arjan.

"ZIZIBY" EZB de René JOSSIEN



VOL RECORD de FLÉMALLE : 12m.16s.(29.8.81)

DRAGONFLY III

Dragonfly III is a development of Dragonfly as shown in the autumn 85 issue of Flapper Facts. Following Frank Kieser's lead I began to experiment with canard ornithopters using my 'teeter-totter' mechanism. Dragonfly III is a dramatic improvement over my previous tractor ornithopters.

Unlike other designs, Dragonfly has a very simple flapping mechanism. This minimum of parts minimumizes the final weight. I'm sure that some indoor builders could build this design to .9 grams. A simple energy analysis shows that flight time is inversely proportional to weight to the power of 1.5. This means , for example, that a 20% decrease in weight should result in a 31% increase in flight time. Weight is ever so critical!

I have limited access to flying sites and these models have only been tested in one 4 hour flying session under a 49 ft. ceiling. Four out of six flights were over 5 min. 30 sec. with the longest being 5 min. 58 seconds. Flight patterns were very smooth and consistant and the models appear to have much more potential once I figure out the right rubber combination.

Construction Comments

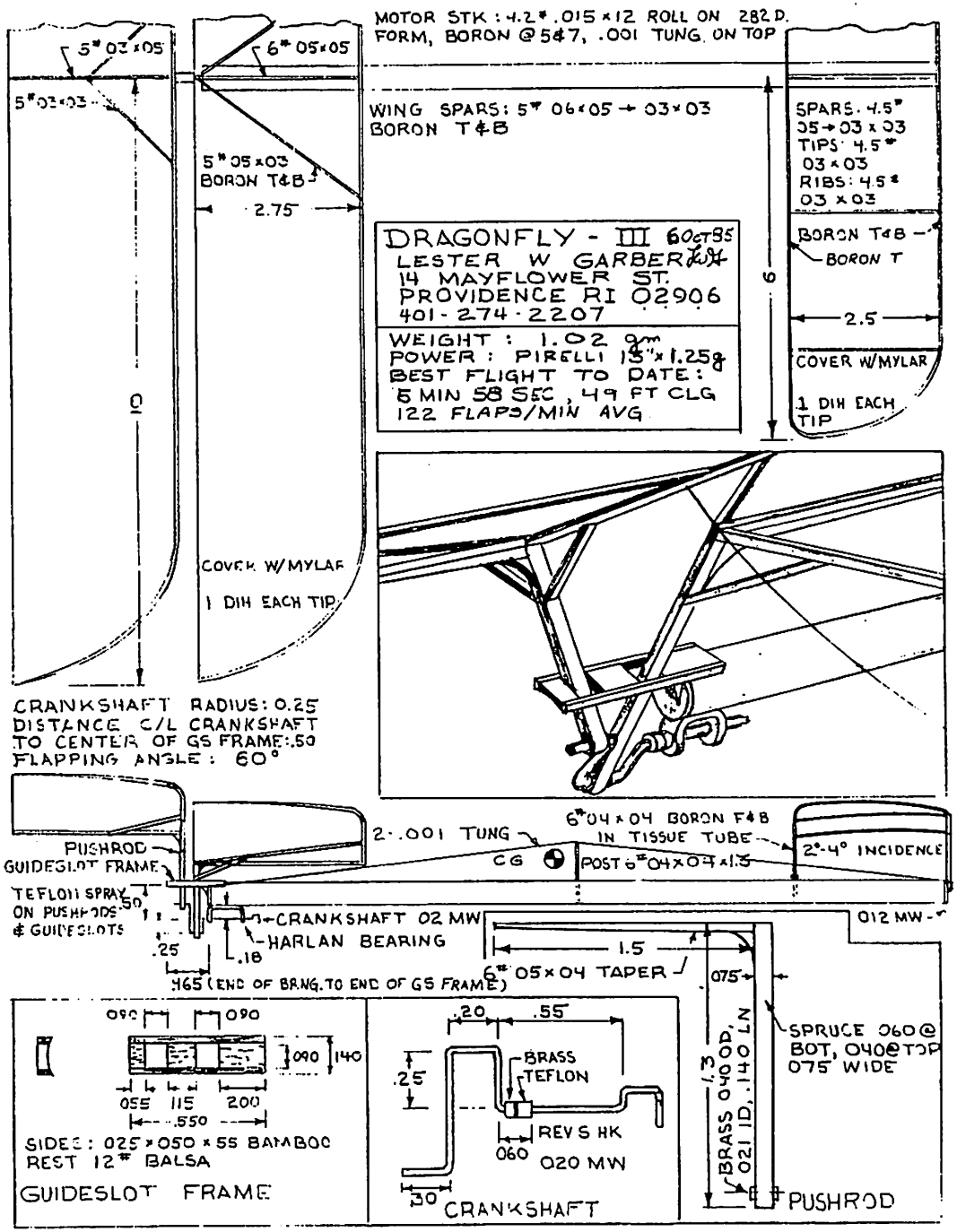
The guideslot frame, crankshaft, and pushrods must be built and assembled with great accuracy. They must be built and assembled in the following order: 1) Make guideslot frame. 2) Make spruce members of pushrods, drill .040 holes for brass bearings, and insert bearings. 3) Bend crankshaft, sliding spruce members into position as you bend. 4) Slide guideslot frame onto spruce members of pushrods. 5) Finish pushrods by gluing horizontals and fillets into position. 6) Slide this assembly into bearing on finished motor stick and glue guideslot frame into position. The flapping mechanism must be perfectly square and rotate freely or the model will, at best, fly poorly.

Note that I use large amounts of boron for increased stiffness and strength. For competition class models this is a necessary evil. We are truly in an era of composite construction, if performance is important it is mandatory to use boron. I don't like to use the stuff, it is dangerous and greatly increases the building time but there is no other way!

The motor stick uses two boron fibers at 5 and 7 o'clock and two .001 tungsten wires on a 1" post. This provides more than adequate stiffness and strength at minimum weight.

The model, if built accurately, does not require a rudder and should turn nicely to the left without any warps in the canard. If it turns in very tight circles this indicates that the wings and flapping mechanism have not been built and aligned with sufficient accuracy.

Lester W. Garber



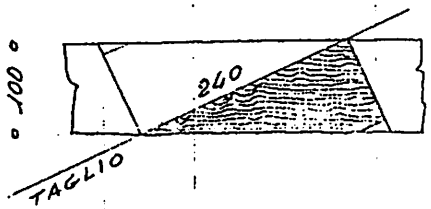
INTERNO 4 H 1:2

INDOOR A FIONDA

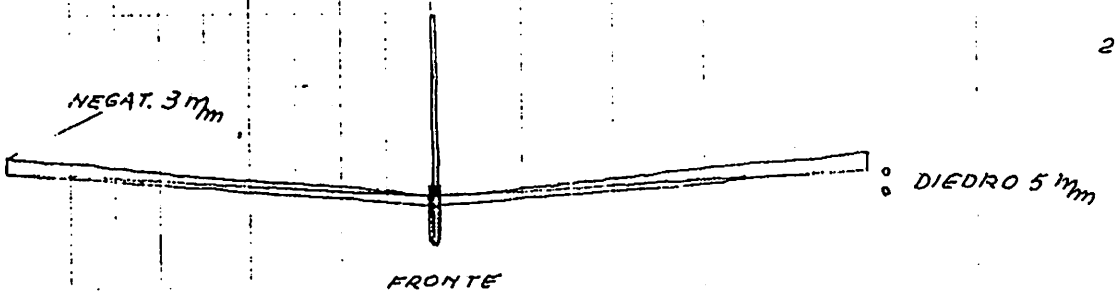
A 190
L 318
S_A 2,6
Q 7,5
$\frac{Q}{S}$ 2,8 g/dm².

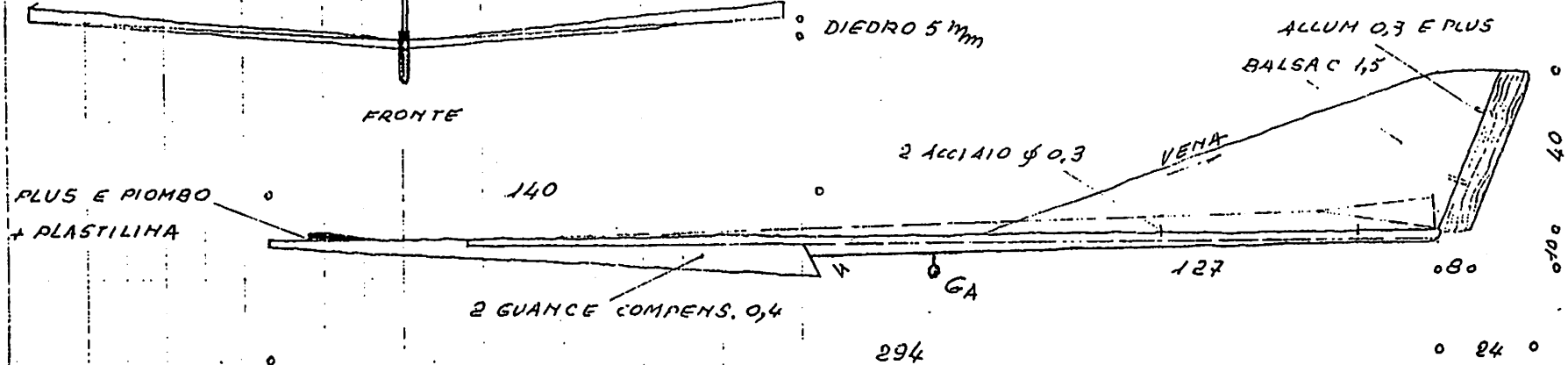
MICHELE IANNACCI
ROMA 20-XI-94.











Test rig for Motorsticks

by Alberto Cromberg (ARG)

I have developed a testing apparatus which can be used for the following tests and measurements.:

- Pulling force of the rubber motor
- Destructive testing of a small section of motorstick tubing
- Measurement of strength of a complete braced motorstick
- Measurement of bracing system
- Measurement of deformation of a complete motorstick

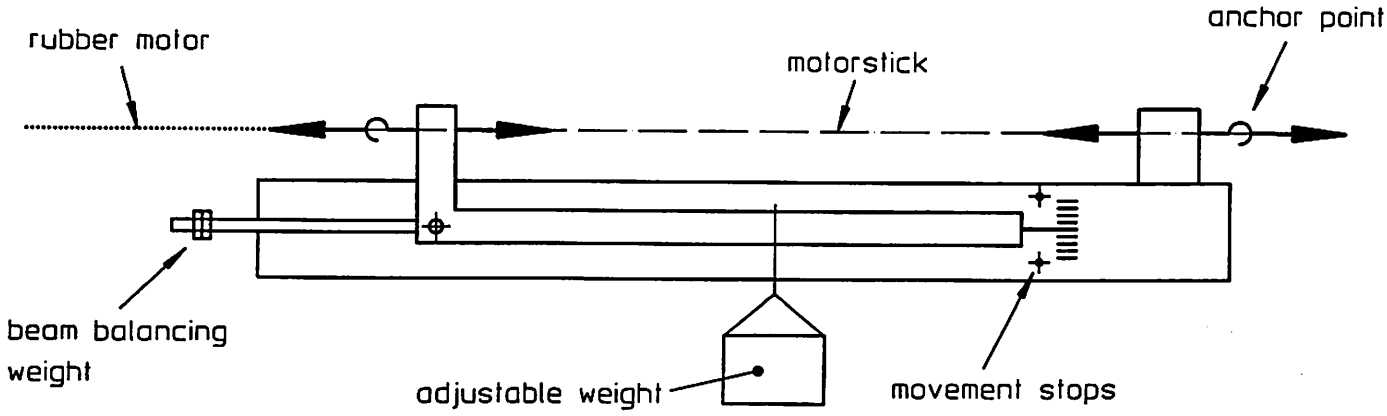
The test rig is constructed to give accurate measurements in a careful and controllable way. It guarantees the strength of a motorstick under full motor load. If the motorstick fails the test it can be improved before making the first flight. You can add dope or add boron, carbon or kevlar fibers. The rig allowed me to investigate different bracing systems.

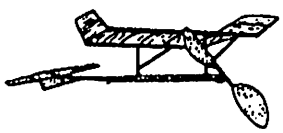
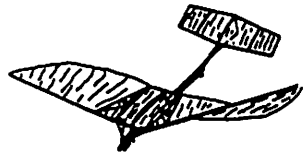
The test rig is made from wood. The pivot of the beam is a screw and brass tube. The weight is a piece of brass, weighted on a scale in a drugstore. The procedure for testing is as follows:

First I make up a test motor of the same length as the distance between the hooks of the motorstick. The motor is hooked to the first hook of the beam and wound to maximum turns. By shifting the weight the pulling force of the motor can be measured.

Secondly, as the maximum pull force is now known, we can do the following: with a small piece of the motorstick tubing (about 1 inch) and a wooden spacer attached between the beam and the fixed block we can test the compressive strength of the motorstick wood. Thirdly a complete motorstick is tested by carefully increasing the load on the beam till the maximum motor load and monitor what happens to the deformations. The deflection can be measured on the scale. Finally a full wound motor has to be hooked on to check whether the torsional deflection of the stick stays within limits. One can then try to make the motorstick as thin and light as possible, before even making a flight! My best stick is 400mm long, weighs 0.300 gram and resists a compression force of 180 grams.

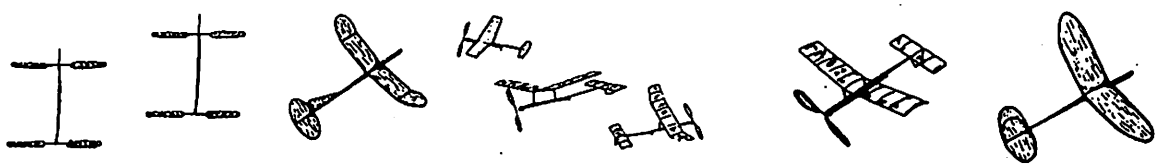
I hope you will appreciate the advantages of this device as it allows you to make better and lighter models, even though you have to do a little more work on building the rig before you can start building your next indoor model.



INDOOR MODEL SUPPLY
Box 5311
Salem, OR 97304

1-503-370-6360



PRECISION PRODUCTS FOR MODELERS SINCE 1959

L'ATROU

Avion d'intérieur type Sainte Formule
en feuilles minces de Styrofoam
Etudié par E. Fillon Aéromodéliste

Nota: à défaut de Styrofoam vous pouvez utiliser du polystyrène blanc choisi à grains fins Serrés. ou même du balsa; en réduisant les épaisseurs de 1/2

Régler l'ATROU en virage à droite en calant l'axe de l'hélice dirigé vers la droite

Utiliser colles spéciales polystyrène expansé UHU Por-Seccotine 2000 - Limpidol Messager

Dièdre 35

A

Renfort bristol à l'extérieur de chaque côtés

baguette triangulaire en styrofoam

Broche bois dûr cure dents

Coller ici du film transparent

Centrage

B

Collage à la UHU Hart

bequille bristol

Pales balsa 1mm ou Plastique de Pot à Yaourt

Calage moyen des pales

45°

Renforts bristol

Tube de plastique dur ϕ int 3 long 14

baguette de bois dûr entrant à force dans le tube

Diamètre de l'hélice assemblée 150 maxi

Styrofoam ep 3

Rondelles

Perle de Verre

Axe cap 5 à 8/10

Enlarge 141%

2 Nervures Styrofoam 3mm

après séchage enlever partie hachurée

A

Dérive et Stabilo Styrofoam 1mm

Régler par déformation

Styrofoam et Roofmate sont en vente chez les marchands d'isolants Thermiques

Balustre équipé pour le découpage des trous d'allègement

Ruban autocollant

Fragment de lame de rasoir

Carton

Moteur caoutchouc suivant poids de cellule 1,5 à 2,5 gr en long 350

Baguette ronde balsa ou paille ϕ 3

60

Renfort

Aile. Fuselage. train d'atterrissage Styrofoam 1,5mm

Renfort

Roue

Roue

Renfort de Roue

Gabarits des pièces à découper après collage sur carton

Bord d'attaque

Installation découpage Styrofoam en feuilles minces

table ou panneau recouvert lamifié

Cales épaisseur en métal

Chargeur de batterie ou transfo de train électrique. Régler la longueur utilisée du fil résistant qui doit chauffer suffisamment mais ne pas rougir

Fil résistant ou cap 5/10 tension par poids 2 à 3 Kgs

Styrofoam ou Roofmate en 30 ou 40 prédécoupé en largeur 150 à 200 mm Avancer régulièrement sans arrêter

Pliages donnant la courbure du profil

Styrofoam 3mm

B

ET. 86

10

Build your own micrometer balsa stripper for indoor models

by Roy Bourke (CAN)

(from SAM 86 Speaks)

Of all the designs I have seen of strippers for indoor sizes of balsa wood the most accurate is the micrometer type, where sheet balsa is held flat, and a cutter block is passed along a guide bar which is positioned by a micrometer. Ray Harlan[1] markets a micrometer stripper which uses actual 0-1" micrometer barrels to position the guide bar. Most commercial micrometers have a 40 TPI thread on the barrel, which means that one revolution of the barrel represents 0.025" movement of the guide bar. This is a highly accurate positioning system, but the resolution of 0.001" in the graduation of a micrometer barrel is usually not needed, and of course the range of motion of the guide bar is limited to the 1" range of the barrel. The sketches detail a similar stripper which uses readily available 1/4-20 threaded rod as the micrometer. The 20 TPI rod advances or retracts the guide bar by 0.050" per revolution. Simple dials with only 10 graduations each yield an easy-to-read scale resolution of 0.005". The dials are fairly large in diameter (compared to a micrometer barrel) so the 0.005" graduations are spaced widely enough that it is very easy to interpolate a reading to 0.001". And the 4" screw length gives the guide bar a range of motion of more than 3", so a 3" wide sheet of balsa can be stripped without repositioning the sheet.

Dimensions of this type of stripper are not at all critical, and can be adjusted to suit your own preference and the sizes of sheet you are most likely to strip. The dimensions shown are those of my own stripper, but feel free to change them. The length and width of the base board should be chosen to accommodate the largest balsa sheet you want to work with.

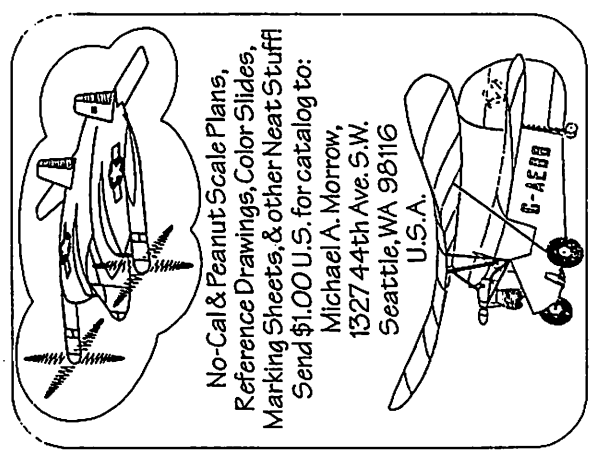
Similarly, the materials used in the construction are somewhat arbitrary. I used aluminum for the stanchions and the dials, but plastic or wood can also be used. If you use wood for the stanchions I would suggest embedding a 1/4-20 nut in each stanchion rather than trying to tap a thread in a wooden hole. The guide bar should be straight and of a stable material like aluminum, so I wouldn't recommend wood for it. Mine was cut from a piece of aluminum angle, but rectangular stock would work just as well (1/4 x 1 1/2; 3/8 x 1 1/2, etc.). The stop strip is simply a thin metal or plastic strip (approx. 0.025" thick) cemented to the base board, against which the balsa sheet is held while stripping.

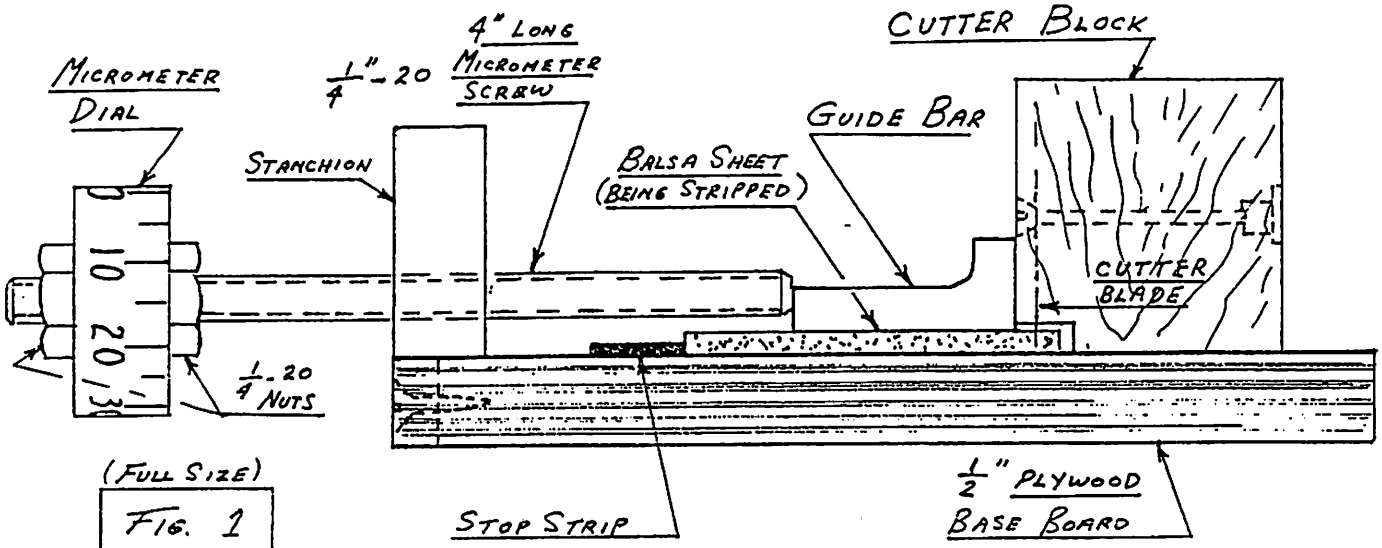
The only hard part in the construction is making a dial with 10 evenly spaced graduations. I used an engraved cylindrical dial of aluminum only because I had access to the equipment necessary to make them. But a simple disk-type dial in plastic or plywood would also work. Graduations could be inked on paper and cemented to the face of each disk.

For the cutter block a variety of blades could be used, but I have found the double-edged blue blade (carbon steel) to give the thinnest cuts and the most accurate results. The maximum width of the strip and maximum thickness of sheet balsa are determined by the size of the rabbet cut into the bottom corner of the cutter block. Some design compromise is necessary here because if too wide a rabbet is cut the block may accidentally rock, and if the rabbet is too high the unsupported part of the cutting blade may bend, producing a wavering cut. If a large range of strip cutting is desired it may be necessary to make more than one cutter block, using heavier blades for the larger strips.

In use, the balsa sheet to be stripped is held against the stop strip, the bar positioned approximately, and a scrap stripped to straighten the edge and register the bar position. Then the micrometers are backed off the required amount for each strip cut. The micrometers can be backed off in differing amounts, producing a tapered strip, very handy for tapered wing spars. If you use tapered sheet balsa you can produce double-tapered wing spars. Also, if you replace the cutter block with a template held against the guide bar you can slide accurate multiple wing ribs using a sharp knife or razor blade against the template.

1. Ray Harlan, 15 Happy Hollow Rd., Wayland, MA 01778, USA.





(FULL SIZE)

FIG. 1

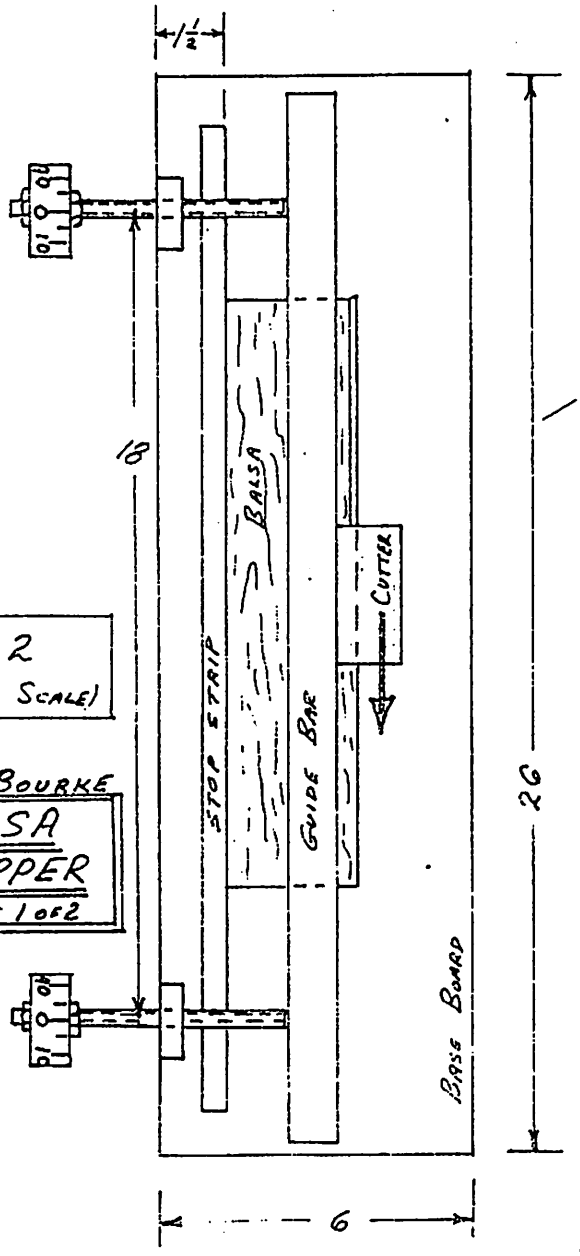
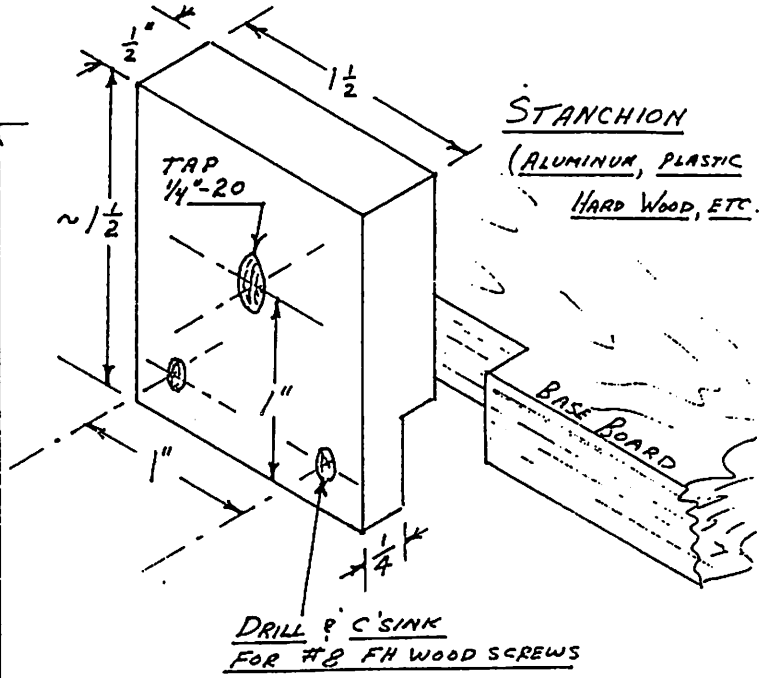
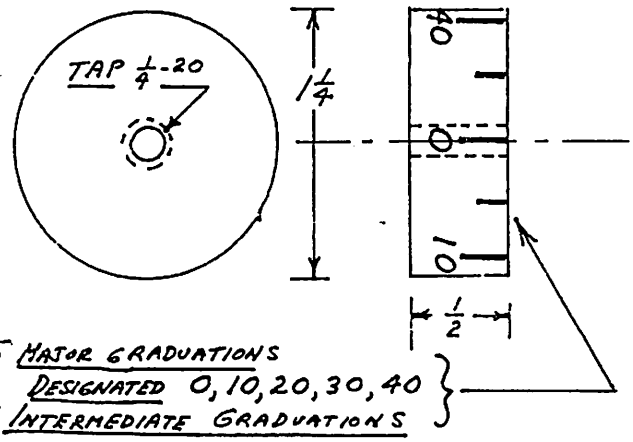


FIG. 2
(NOT TO SCALE)

R. S. BOURKE
BALSA STRIPPER
PAGE 1 OF 2

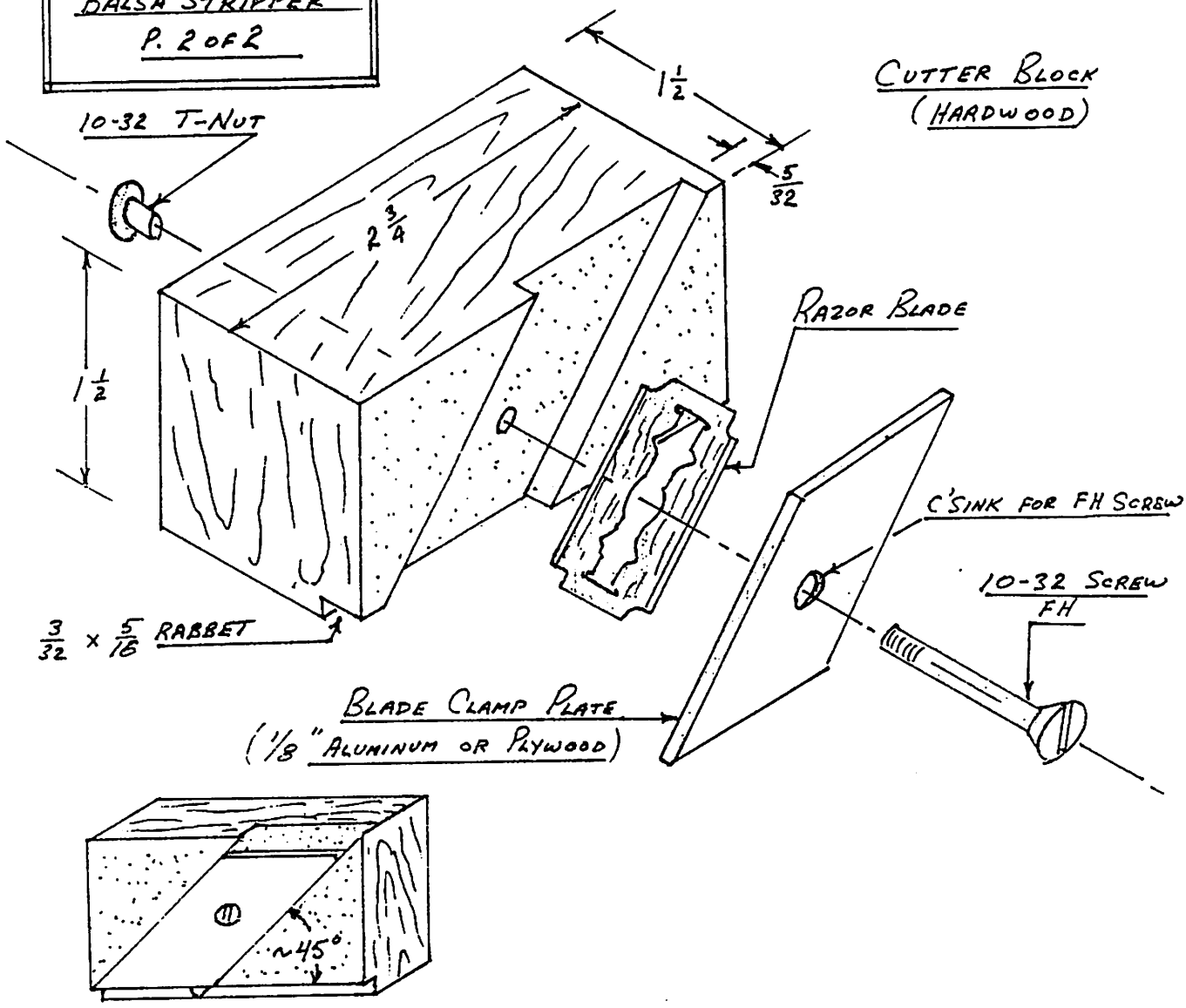


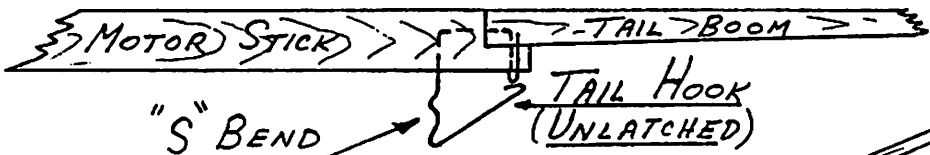
MICROMETER DIAL
(ALUMINUM, PLASTIC, WOOD, ETC.)

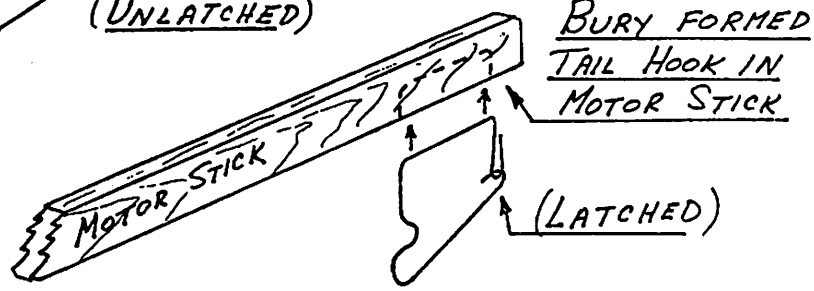


5 MAJOR GRADUATIONS DESIGNATED 0, 10, 20, 30, 40
+ 5 INTERMEDIATE GRADUATIONS

Balsa Stripper
P. 2 of 2







A
Captive Tail Hook
for
Indoor Stick Models
(Roy Bourke)

The Future of F1D

Laurie Barr (GBR):

I am responding to your invitation for comment about the future of our sport due to the lack of new/young modellers, and the drawbacks to the current F1D specifications.

For the benefit of new readers, I have been doing indoor and F1D since 1969, after a long and successful time in outdoor Free Flight. Since 1972, I have been on 9 World Champs Teams, gaining 3rd/4th/5th in individual, and Gold/Silver/Bronze medals in Team events.

On the administrative side, I sponsored and organized 4 world champs in Cardington, and have been responsible for making the number 1 hanger at Cardington available for all modellers (why do the Europeans not come to enjoy this facility?, we have 14 meetings each year, and all it takes is a phone call!).

Class F1D is an "ultimate" class, and the degree of difficulty of the airframe construction, and the requirement of large indoor spaces to fly in, are an essential part of its attraction. If you make it too easy, you may gain some new blood, but loose the interest of all the old experts!

I would like to talk about the problems under different headings:

Places to fly

The best places are long, wide, and high (45 metres plus) that are not air conditioned (or if it is, then it must be switched off!). They must be cheap, and you must be able to say to the FAI, 2 years in advance, that you have an affordable site, good cheap accommodation and meals, and a large number of timekeepers and helpers, who will work for nothing (easy eh!?). When you have done all this, the FAI will ignore you, unless you mess up!

The USA has the greatest number of places that fulfil the above criteria, having Airship Hangars still usable at Lakehurst New Jersey (approx 5 hangers), Akron Ohio (the largest ever), Santa Ana California, Tillamook Oregon (a new possibility). They also have a number of large indoor sports halls such as the State University at Johnson City (Tennessee) and the University Hall (Kibbie Dome) at Moscow (Idaho).

We also have the number 1 hanger at Cardington (which is O.K. unless it rains!), but we cannot get it promised 2 years in advance, as it now belongs to a property development company. In Europe I only know about the Salt Mines at Slanic (Rumania), the "Z"-hall and the new hall where the European Champs were flown in 1993 in Brno (Czechia). All over Europe, there must be other sports facilities that have large and suitable halls, but what is needed, is someone who is prepared to make it all happen. The FAI itself does not do this, and it has no procedure to encourage anyone to do it!

I have an excellent working relationship with the new owners of Cardington, and I would be prepared to run a European or World Champs there subject to the following provisions:

1. If it rains hard, flying on that day would have to be postponed (the roof has holes in it!).
2. If the owners get the chance to let all or part of the hanger to some commercial operation that interferes with our use, and we could not keep all the doors shut, we would have to cancel. We might be able to obtain say 2 months notice of any such interference.
3. Apart from these proviso's, the flying conditions in Cardington during warm summer months is excellent!
4. We may not be able to offer food and accommodation, other than local bed/breakfast, however there could be free camping on site.

To sum up the flying site situation, there are lots of opportunities in the USA; some possibility in England at Cardington, possibilities at Slanic & Brno, but it is up to all indoor flyers to look out for halls that have potential for our sport, and **to go out and make it happen!** (Note from T.A.: we haven't heard anything from Poland since the last Champs being held there in the Hala Ludowa in Wroclaw in 1992. Is this place still available?).

Model Specification

From a beginners point of view, our best models are too big, too light, and with variable diameter props are too difficult. They are also a real "pain" to transport around on the worlds airlines (apart from designs like Bernie Hunts "No Hassle style model").

It is a fallacy created by people who have **never built** an indoor Microfilm covered model to say that Microfilm is difficult. It is **less convenient** than Mylar film which you can buy in ready made sheets,

but Mylar is much more difficult to cover with, and if you have tight weight restrictions, in order to get down to weight, you have to reduce the strength of the structure, and Mylar covered models can become less rigid and less flyable than the Microfilm covered equivalent.

Boron

Why this anti Boron lobby? I do not know of any indoor flyer that uses boron, who wants it banned? It makes life so much easier!! You can build stronger and lighter motor sticks and tail booms using this material, and it makes premium grade wood less essential!

Size

Yes, I do believe the models are too big and complex, and there is case for limiting the chord or wing area. The snag with this is that we will all end up building Bernard Hunt designs, and he would become unbearable!!

Props

There is a case for banning "mechanical" propellers, as they are very difficult (but not impossible) to make and set up, and if you are a learner, you will have enough trouble with the basic airframe, without being handicapped by technique beyond easy reach.

Summary

So long as there are still large flying sites available (and people willing to run things) it is not essential to change the specification of the models to suit the flying sites, **as they do not outfly them.**

I would recommend a new beginners class, which would be the same as the existing F1D rules, except the wing chord should be limited to "say" 18 cm, the minimum weight would be 2 grams, the tail area limited to 60% of the wing area, any covering can be used, Boron may be used, but no mechanical props being allowed. Such models would be a closer "stepping stone" to full F1D, than we have at present. It would be possible to fly the beginner class (we need a better name) alongside the normal World Champs, in such sites as Airship Hangars, which are big enough.

We in England are lucky to be still able to fly in Cardington, and it is big enough for every kind of indoor model to be flown at **any** of our meetings. This way we do get modellers who fly other kinds of indoor model, to cross the threshold and actually build and compete in difficult duration classes including F1D. We have at least 4 modellers who have made a pretty good job of No Hassle style models.

The other thing we do, is to run Handicapped events which favours the beginner who "tries" just a little bit harder.

The FAI could do more to reward and encourage those who have the desire and ability to create Championships opportunities, and they should have at least one practising and experienced F1D flyer on their committee's, so that proper judgements can be made about indoor.

I hope this letter will stimulate some discussion, and I look forward to the next issues of Indoor News.

Yours sincerely (in love with Microfilm!).

Laurie Barr

Kai Halsas (FIN):

I fully agree that there should be a F1D **Standard Class.** Not only boron but also nichrom and other bracing materials should be prohibited. No carbon reinforcements. The propeller could be built-up as for F1D. The rubber weight should be free. Should there be any limit for prop diameter?

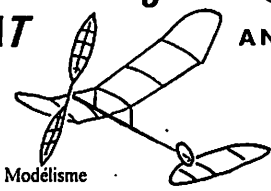
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