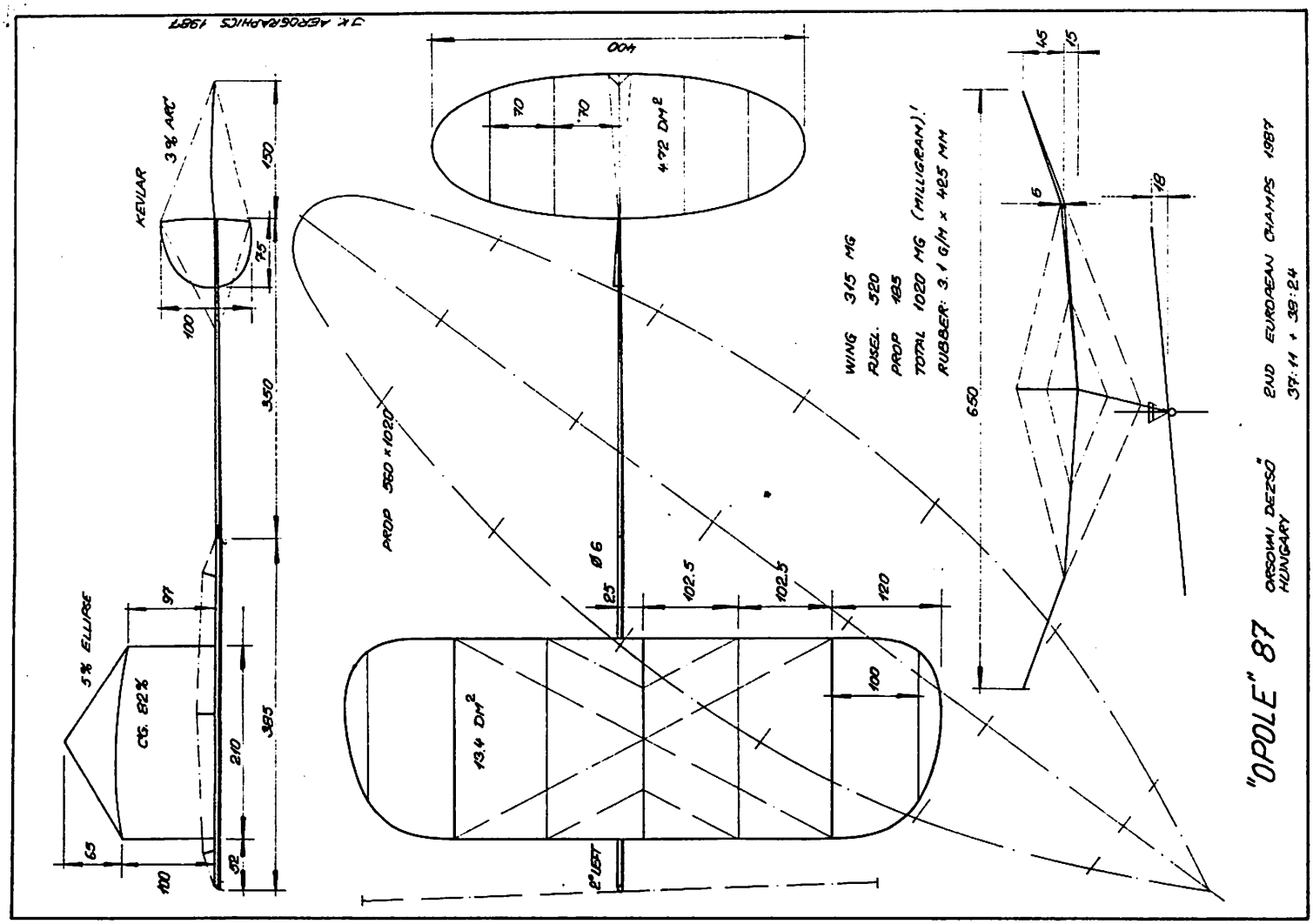


INDOOR NEWS 3/87

MERRI X-MAS & A HAPPY NEW YEAR!



I'M SORRY THIS ISSUE is a couple of weeks late, but there are only six months to the coming World Champs and I was waiting for some facts about this event.
Since the last issue the first ever European indoor champs have been held in Poland. A full report.... inside.

WORLD CHAMPIONSHIPS 1988 - F1D

Doug Barber told the editor the following details on a phone call 7th December:

Date: 28-31 May 1988

Site: The MINI-DOME, Johnson City, Tennessee

Schedule:

Saturday 28th:	Arrival
Sunday 29th:	Practise
Monday 30th:	Rounds 1, 2 & 3
Tuesday 31st:	Rounds 4, 5 & 6 and Banquet

The rest of the week will see the United States Indoor Championships and probably an international EZB contest flown to the rules of your own country.

The MINI-DOME is very big and proved very suited for inddor flying. It measures 80 x 130 meters on the floor with an FAI ceiling height of 36 meters. There are grand stands on each side of the longest dimension. The ends are vertical and the ceiling is a shallow curve.
JOHNSON CITY is a fairly large town with a population of about 40.000 and is a 2 hours drive east of Knoxville.
See you there next year!

Laurie Barr honoured .....

Laurie Barr was this year presented with the RAeC (Royal Aeroclub) Bronze Medal by His Royal Highness the Prince Andrew. Congratulations!

INDOOR IS BEAUTIFUL BUT NOT FOR EVERYONE

EDITOR ETC .....

Jorgen Korsgaard
Ahornweg 5
D-2397 Ellund-Handewitt
W. Germany

Phone: 04608-6899

3 issues a year, will appear around March, July and November.

Scandinavia	45,- Dkr
Europe	50,- Dkr/14,- DM
Airmailed elsewhere	10,- US $

Subscription renewal .....

With this issue is enclosed a renewal formula which can be used by those NOT listed here ... if they would like to continue subscribing....
The numbers after the names is the LAST issue to be received by the running subscription.

In untidy order .... sorry!

Dieter H. Beck 88/3
Boyd Felstead 88/1
Pentti Nore 89/2
Edmund Liem 89/2
U. Bundesen 88/1
Bob Randolph 88/2
Martin Weist 88/3
Pham-Duy-Thanh 88/3
Ray Harlan 88/2
Laurie Barr 89/3
B. Lindquist 88/1
Rainer Lotz 88/1
Thedo André 89/1
Lew Gitlow 89/2
Mark Forster 88/3
Alfred Klinck 89/3
Ian Kaynes 88/3
G. Lefever 88/2
Mastnak Milan 88/1
Peter Keller 88/3
B.W.C. Aslett 88/1
Andras Reé 88/3
Kai Halsas 88/1
S.O. Lindén 88/1
Orjan Gahm 88/1
Finn Nielsen 88/1
Ole Torgersen 88/3
Alain Besse 88/3
Weekenstroo 88/3
Dave Yates 88/3
Jack Carter 88/2
Dick Ganslen 88/3
Van Gorder 88/3
R. Champion 88/3
G. Underwood 88/2
Doug Barber 88/2
Mike Colling 88/3
Kari Heikkala 88/3
Bud Romak 89/3
Vilim Kmoch 88/3
Pete Andrews 88/2
Wim Beekmeyer 88/2
Jim Richmond 88/1
G. Ondraczek 90/3
Kurt Vogler 88/3
Stan Chilton 88/3
Rene Butty 89/2
Kenichi Ohta 88/3
E. Grippo 88/1
F. Romeijn 88/2
Joseph Proost 88/2
Les Garber 90/2
D. Godfrey 88/2
P. Chaussebourg 90/3
B.R. Wills 88/3

The editor is hoping that these figures will be according to your files .... else, do complain!

FREE FLIGHT VIDEOS:

"Le Nez en l'air" is a French free flight video from an outdoor contest and an indoor contest in the CNIT hall in Paris. About 10 minutes. Available from: (PAL or SECAM)

Robert Champion
2 Place Leo Lagrange
Appr 97
F-37300 Joue-les-Tours
France

Price: 220,- Frc or 40 US dollars or 70 DM

VIDEO OF THE 1987 U. S. INDOOR CHAMPS. 90-MINUTE MOVIE OF FLYING ACTION IN THE FABULOUS MINI-DOME. Fun to watch if you were there; informative if you plan to attend next year. See many famous fliers in action. $19.95, free postage and packing to NFFS members. Mike Arak, 10900 S. W. 61 court, Miami, FL 33156.

This one is only for US use, but Mike Arak is trying to make a version in the European PAL system.

Boyd Felstead - Indoor Boxes:

Now that removable booms are becoming common it seems practical to reduce length of boxes to a bit longer than an F1D wing - say reduce box length to 27" (680 mm). What then is the best way to pack (mount) tail assemblies and motor sticks? Perhaps sticks could be mounted with props in foam runners under the wing? Well, I would like IN readers to make answers to the following questions:

1. What type of box/boxes
2. The sizes
3. Materials used
4. How are models/model parts mounted in box

Please, send your answers/comments/sketches to the editor.

Extracts from a letter from Andras Ree, HUN:

European Champs 1987 ....

.....The model of Orsovai has the same wing and motor stick as in Cardington. The boom plus stab chord (suspended) together is 500 mm, but the stab is smaller (400 x 150 mm). The prop was 560/1020, the rubber 3.1 g/m x 425 mm - Pirelli from about 1979 and 1982.

My model was the INDOOREE '87 (IN 2/87) with 566/1050 prop and 3.1 g/m x 420 mm rubber. My son flew the R65/11 model - see the Cardington Planbook - but with longer boom - 400 mm.

The site was better than before I was here but it changed frequently. There were perfect flights (fx. the best flights of Siebenmann, Orsovai and Butty) without any trouble and steering, and a few minutes later some other models drifted to the top of the big curtain - or maybe to the opposite side. Sometimes this happened in the same time! The inside temperature decreased from 23°C on practise day to 21°C on the 2nd and 3rd day. The humidity was near to constant - 62-68%.

The Swiss and Finnish teams were excellent, Poland and Holland had bad luck (Kujawa and Liem, and also André who had troubles with the long boom. It was nice to see some "old" like Jiri Kalina and Vilim Kmoch flying again together with some youngs, too. My son lost his "youngest" position to Roger Ruppert who was only 16. It would be nice - as Pierre Chaussebourg said in his closing words - to organise junior E/Ch and W/Ch in indoor, too! .....
...We have spoken about two items during the competition:

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

2. Steering from the side (from the boom or the rounding of stabilizer).

Some countries tried to use it (Holland, Yugoslavia, Hungary etc.) in local contests and the opinion is that it is a very useful and safe way to TURN the model in the horizontal plane.

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

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

Microfilm tip from Andras:

He and other Hungarians use the following simple "glue" for sticking microfilm to the frame:

Destilled water plus 6-8% butylalcohol

Construction news - Boyd Felstead:

Sometimes stabs' film goes tighter than you'd like. One way to slacken it (apart from putting on 6 mm masking tape inside the frame and cutting film outside the tape) once covered is to put it in a closed case or box and light ½" of Gitlows SLACK-IT-FUSE - on a piece of alu-foil, of course! leaving for an hour or two for the smoke to slack the film. It will probably be too limp to suit, so spray a couple of times with a 5% acetone and 95% water mixture and the covering will be perfect.
With currently lightly built stabs a nice limp covering ensures a warp free surface.

Teflon tubing, shrinkable, sheets and rods, Stainless steel wire and other items .... at:

SMALL PARTS INC.

P.O. Box 381736
Miami
Florida 33238
USA

JIM JONES

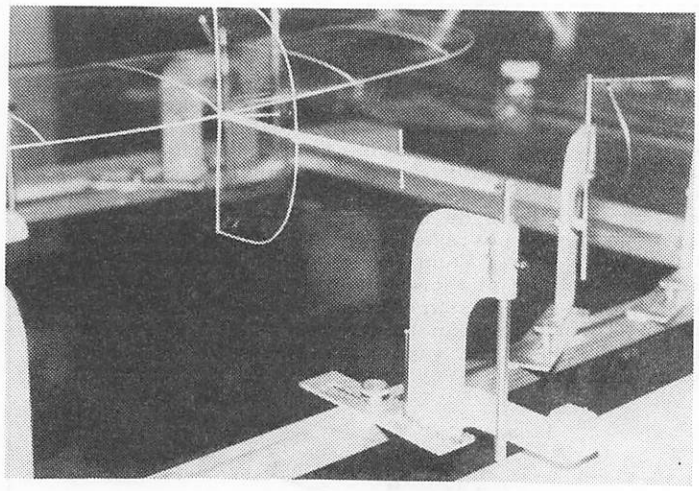
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Mt. Clemens
MI 48043
USA

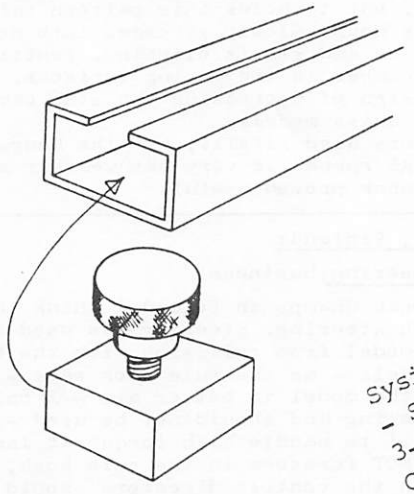
2-3/87

Gunther Ondraczek:

Experiences and tips from a F1D newcomer .....

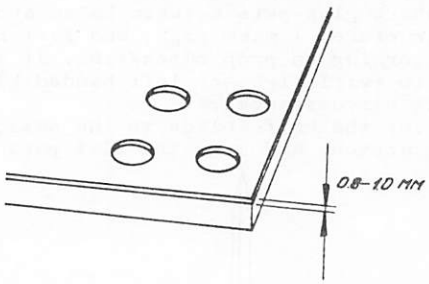
The pictures and sketches show my universal bracing jig which I made from the idea by Dieter Siebenmann.
The frames are made from aluminium profiles which are used normally for curtains - in Europe anyway - The frame is adjustable in each corner. The 10 supporters (a better name???) are adjustable in all directions which means that all wing and stab configurations can be braced. Please note the leading wires made from copper which are used to help running the bracing wire from point to point. TE and LE are placed on 2 mm wire with small drops of glue. A convenient thing is that when the bracing is finished each supporter can be turned away so the flying surface can be removed from the jig without the risk of being entangled.
Well, it takes some time to make this jig, but then it will last forever.....!



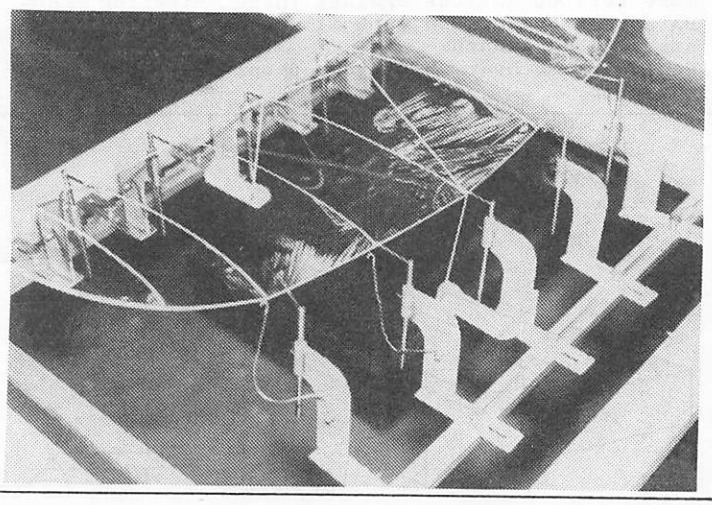


When making your O-rings from the hard plastic tubings used in car's "niveau-lifts" this little sanding jig will make your rings equal in thickness. These homemade O-rings are very strong and very light, about 3 mg = 0.0001058 oz.

Sysichi Uchida
- Shonai Peanut Powers
3-24 Asanaka Ogaki-Shi
City 503, Japan



John Martin
- The Hangar Pilot
2180 Tigertail Rd
Miami, FL 33133



1987 JAPAN INDOOR F1D CHAMPIONSHIPS

Tokyo 1987 July 12.13

Result

		1R	2R	3R	4R	5R	6R	T
1	Shigeyoshi Nonaka	26'00"	17'34"	21'03"	22'28"	24'33"	25'34"	51'34"
2	Hideyo Enomoto	22'49"	22'01"	23'33"	1'26"	24'14"	1'30"	47'47"
3	Mikio Aoshima	21'49"	2'47"	10'48"	17'17"	6'25"	20'25"	42'14"
4	Kazuyoshi Komori	12'00"	1'06"	21'30"	6'22"	18'38"	3'27"	40'08"
5	Ryuzi Matsuzawa	4'16"	8'08"	8'06"	19'00"	19'00"	19'45"	38'45"
6	Kazumasa Kihara	10'22"	10'04"	8'09"	7'44"	9'23"	24'27"	34'49"
7	Isao Hamada	6'57"	4'55"	4'38"	17'40"	3'57"	16'50"	34'30"
8	Yoichi Ichiyama	6'54"	13'45"	7'55"	17'16"	14'48"	3'01"	32'04"
9	Hiroyasu Usui	6'07"	15'41"	13'53"	8'42"	9'53"	14'46"	30'27"
10	Toshiko Munakata	3'42"	4'13"	-- --	11'50"	4'29"	12'10"	24'00"
11	Yoshiro Takeuchi	1'33"	1'35"	4'15"	3'27"	3'08"	5'23"	9'38"

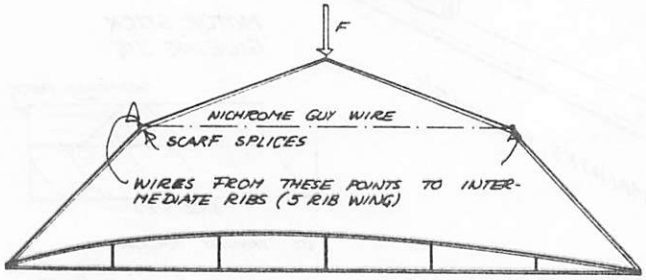
CAT II (15 m)

Supplied by Kenichi Ohta, JPN

Jim Grant via Boyd Felstead:

CABANES and BUILT-UP RIBS

Structurally this trapezoidal cabane is stronger than the conventional triangle. The bracing load F tends to collapse the "long" columns of the conventional cabane. By shortening the columns and redirecting some of the load by means of the "guy" wire, "short" columns of smaller cross section result. The "bent" columns receive lateral (spanwise) support from the intermediate bracing wires.



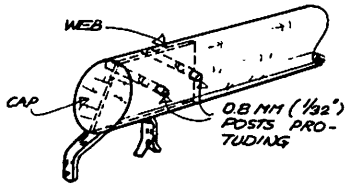
I'm a bit excited by the suggestion that all of the ribs be built-up ribs. This is something that I had intended to do after seeing the intermediate ribs in my 10" chord wing flapping in the breeze. These built-up ribs need not to be much heavier if at all than the conventional rib. Since all of the ribs are adhered to the microfilm covering they have very good lateral support, so all they need is the vertical support. I like 5 upright rib trusses. This divides the upper and lower "stringers" into very short columns. These little trusses can be as small as .015" to .020" sq. and will weigh very little. The upper stringer (rib) can be quite small, probably .025" sq.

Have You Helped a Junior Modeler Today?

3-3/87

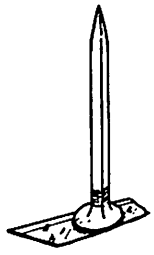
Dick Ganslen's tricks ....

I always build motor sticks with two horizontal posts to facilitate grasp (without collapse) of a stick with a heavy and tightly wound motor. Two hard sharpened posts about 1/32" round are pushed through pin holes through side of stick and web. Posts must protude outside stick on both sides, slightly. Cap is not glued on until a drop of cement can be applied to posts entering web. Posts are glued on outside of stick. One now grasps stick on these posts and any unusual pressure is absorbed by posts and not motor stick. In excitement of winding and transfering rubber to rear hook, too much pressure is often applied at prop end of stick. You can handle up to .0.125" - 3mm - rubber easilly this way. I often repeat these posts at rear hook for similar effect.



Glue release knives

The little knives I make are for cutting loose prop ribs, spars or any glued down part of model from form where glue gets between balsa and underlying structure. I make right and left handed knives for working on prop block/ribs. It is often easier to twirl right of left handed blades in different circumstances.
Before glucing the knife blade to the nail, clean the nail in acetone and sand the flat part of the head.



Flemalle Indoor 1987:

Results only as nobody sent me a report? Perhaps someone will do it for the next issue??

F1D: 2 entries

1. Pham Duy-Thanh, CH 1640 secs

F1D-Beginner: 8 entries

1. J. Valery, F 1351 secs

EZB: 8 entries

1. Juergen Weil, D 1402 secs

Micro 35: 6 entries

1. J. Valery, F 1345 secs

Sainte Formula, 2 g: 13 entries

1. Henri Fraikin, B 804 secs

Peanuts: 23 entries

1. Juergen Weil, D Cloudbuster 98 secs 1050,5 p

Pistachio: 16 entries

1. Mike ARAK, USA Alco Sport 90 secs 878 p

Further some Junior Events were flown. There were competitors from USA, B, F, CH, D, JPN, CS, S, NL.

A lightweight Peanut:

Jonas Romblad of Sweden built a 33 cm span Peanut of the Gossamer Condor, it only weighs 0.46 grams! The best flight so far is 75 seconds.

Comments on the European Champs by Werner Kimptsch, West Germany:

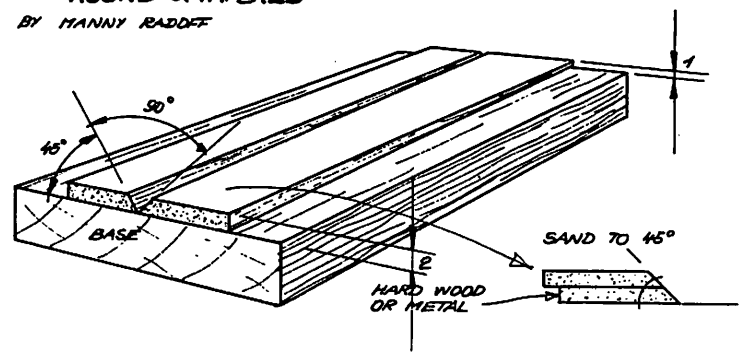
Surely, there are more than one method of getting success in indoor. The Swiss with their long motor sticks and high aspect ratio stabilizers. The Finns the Hungarians and the very strong flying Yugoslavian Velunsek all used well-trimmed "normal" models without any "extras". Sylwester Kujawa relied just as we did on Vario-Pitch props and had times of 40 minutes. Dieter Siebenmann was so impressed he thought he had no chance against Sylwester. But in competition things were different. The VP props of Rainer Lotz and me impressed the Russian team, but I am sure they will be much more well-trimmed next time we see them. They learned a lot in Wroclaw.
Pentti Nore of Finland has placed high in the recent years. Why? Well, he has an ordinary model which is extremely well-trimmed. After launching it literally stands on its tail crabbing around at ground level. But it holds this pattern safely and does not come down. Slowly it comes into normal flying attitude and starts climbing. Pentti uses very little camber in the flying surfaces.
There was a sign of decreasing the stab camber except for the Swiss models.
All competitors used Pirelli, but the Hungarians have tried FAI rubber in very hot weather at home where the rubber proved useful.

Leif Englund, Finland:

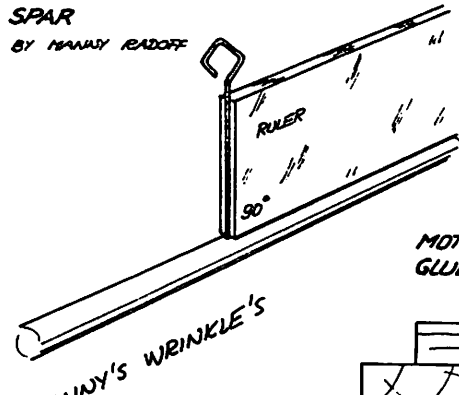
About the steering business:

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

JIG FOR SANDING PROP SPARS ROUND & TAPERED
BY MANNY RADOFF

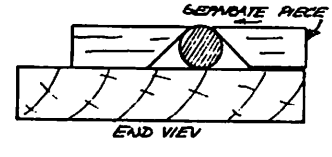


USE END OF 6" RULER TO MAKE SURE PROP SHAFT IS 90° TO SPAR
BY MANNY RADOFF



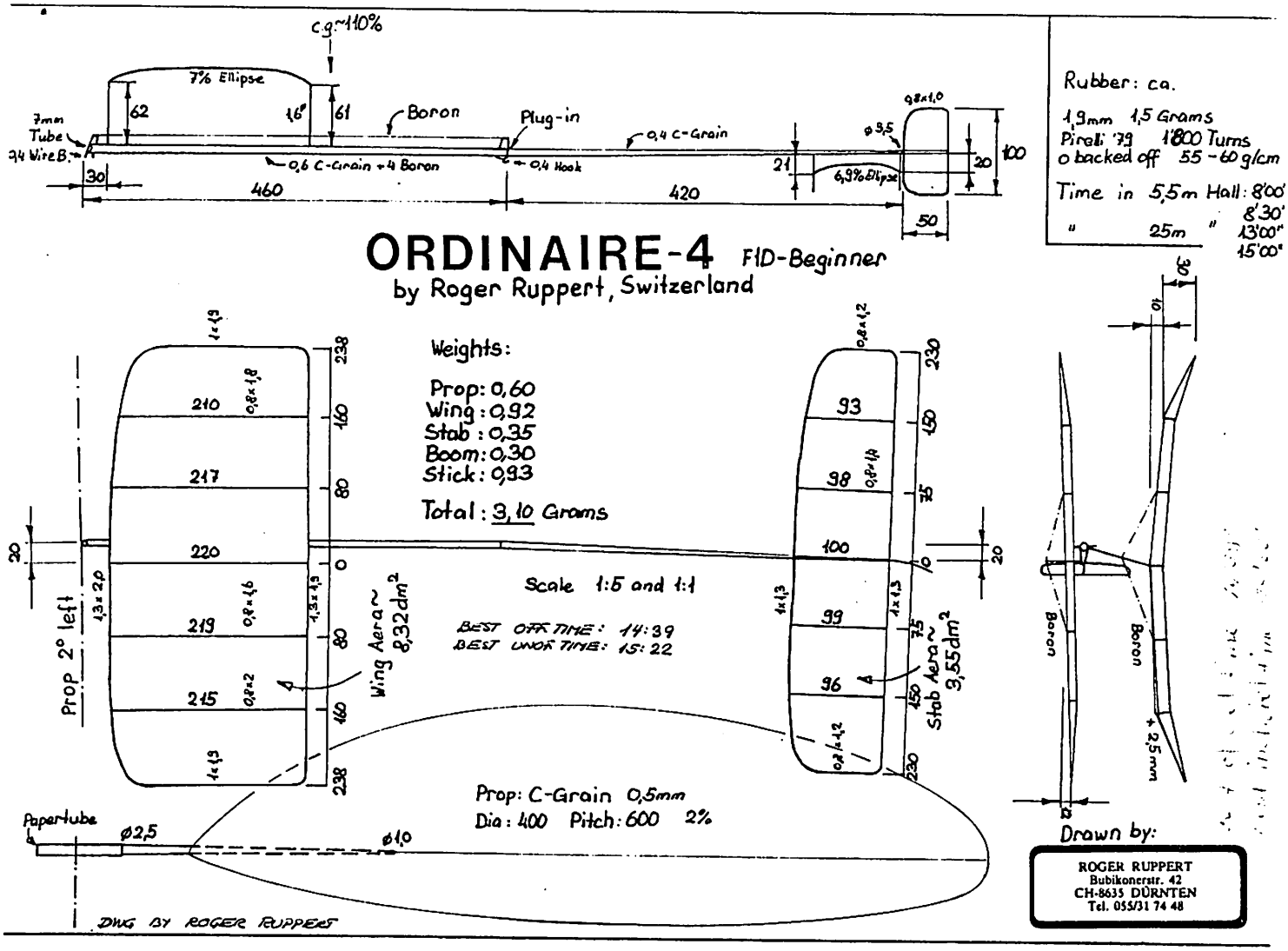
MANNY'S WRINKLE'S

MOTOR STICK GLUEING JIG



BY MANNY RADOFF

4-3/87



Saalflug-Freundschaftswettbewerb Zürich, CH
Kategorie FlD - Beginner

Lichthof der Universität Zürich (23 m), 25. Oktober 1987

RAY HARLAN	INDOOR MODEL SUPPLY
15 Happy Hollow RD Wayland Mass. 01778 USA	1887 West Haven, N.W. Salem Oregon 97304 USA

RANGLISTE

		Durchgänge						Total	Rang
		1.	2.	3.	4.	5.	6.	2 beste	
Roger Ruppert	MFG Hinwil	4:05	14.39	9:00	6:01	12:20	13:02	27:41	1.
Uwe Bundesen	Offenburg	7:27	8:05	13:45	13:34	9:17	7:28	27:19	2.
Peter Keller	MFG Furttal	4:27	13:47	13:28	11:24	8:15	-	27:15	3.
Benno Schlosser	Knittlingen	9:33	11:01	7:38	10:42	13:16	13:22	26:38	4.
Thomas Merkt	Spaichingen	4:58	7:53	6:22	9:00	10:00	10:32	20:32	5.
Rainer Lotz	Pforzheim	9:55	10:05	5:29	3:34	-	-	20:00	6.
Alex Tschallener	Hinwil	9:14	8:49	3:55	8:58	8:18	-	18:12	7.
Thanh Pham	MFG Furttal	9:27	6:29	6:05	5:36	3:37	8:24	17:51	8.

HUNGARIAN CHAMPIONSHIPS 21-22 Aug, 1987
Debrecen (29.3 m site)

1	REE, Andras	37:29	36:31	=	74:00
2	ORSOVAI, Dezso	35:34	36:00	=	71:34
3	REE, Laszlo	34:30	34:10	=	68:40
4	EGRI, Antal	31:16	31:06	=	62:22
5	REKE, Geza	30:57	31:23	=	62:20
6	REE, Istvan	30:52	31:26	=	62:18

Ergebnis B-Kader 87 GERMAN TEAM TRIALS 1987

1) Vogler Kurt	NW	1h18'11"
2) Nimptsch Werner	NI	1h16'06"
3) Lotz Rainer	BW	1h13'22"
4) Mühe Bernd	NI	1h12'24"
5) Nottelmann Klaus	NW	1h1o'21"
6) Ondraczek Günther	BW	1ho8'23"
7) Klinck Alfred	SA	1ho2'59"
8) Gambke Johannes	NI	1hoo'5o"
9) Kuttler Thomas	BY	59'39"
1o) Kuttler Peter	BY	59'34"
11) Traska Manfred	NI	54'06"
12) Werfl Helmut	BW	52'31"

5-3/87

Alfred Klinck
Kurt-Schumacher-Allee 235
663 Saarlouis
14. 11. 1987

Dear Joergen,

For long years I have made a mistake: I thought you can make a model lighter by putting in less wood. So I used ø12 wood for fuselages which broke too often. Now I made some experiments with other methods and came to the following solution:

1. Make a 400 mm fuselage with ø13 wood, 8 diameter and you will get a stiff raw fuselage of 250 milligrams glued together.
2. Put one single post in the middle, it weighs 10 milligrams, 60 high.
3. Put one thread of strong tungsten over it; glue it on at the end and hang it over a tiny piece of balsa at the front so that you can take it away.
4. Make your own bearing from ø,3 wire, pigtail. It has 15 milligrams instead of 30 for an alu bearing.
5. Glue the bearing with epoxy between two pieces of ø09 balsa. Make the end-hook in the same way. Cut slots in the fuselage and glue the pieces in instead of gluing them on as you do with other bearings and hooks. It will be stronger and lighter.

On the old fuselages I had about 90 milligrams weight for bearing, hook and bracing. This has gone down to 50 milligrams and the whole unit will be much stronger!

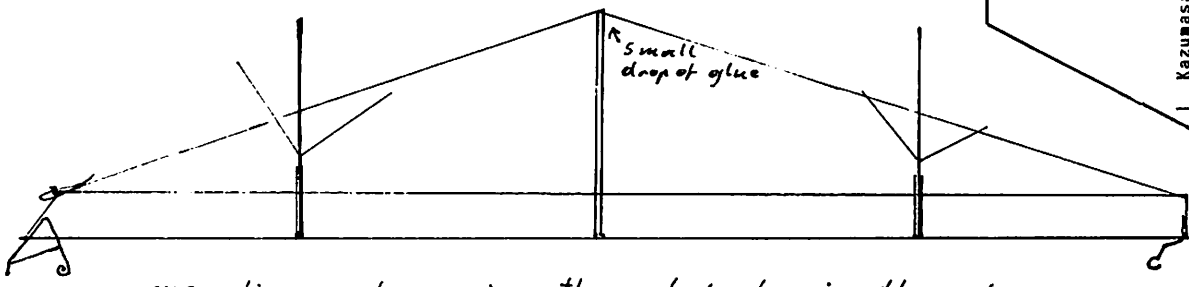
1988 F.A.I. JAPAN INDOOR TEAM SELECTION

Tokyo 1987 Sept 27

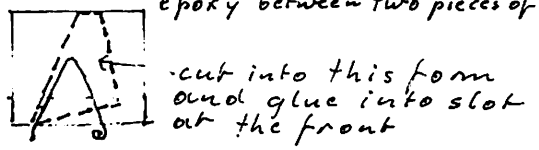
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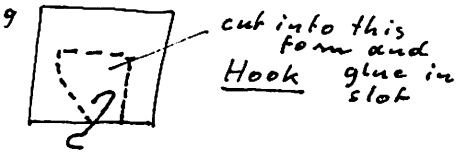
		1R	2R	3R	4R	5R	6R	T
1	Kazumasa Kihara	9'17"	----	8'21"	26'29"	24'40"	6'18"	51'09"
2	Hideyo Enomoto	6'30"	19'38"	7'12"	20'04"	8'56"	23'10"	43'14"
3	Shigeyoshi Nonaka	1'11"	2'43"	16'53"	17'01"	22'29"	13'03"	39'30"
	Mikio Aoshima	1'04"	5'45"	8'14"	19'15"	20'07"	6'45"	39'22"
	Kazuyoshi Komori	8'24"	7'10"	10'31"	16'12"	12'22"	21'33"	37'45"

CAT II (15 m)



mounting: put on wing, throw body-bracing through the wing bracing and fix it on front block
For flying you may put a drop of glue on the post and remove it after flying with thinner





VOL LIBRE
André Schandel
16, Chemnin de Beulenwoerth
F-67000 Strasbourg-Robertsau
France

English Team Trials 1987

Reports and results by Laurie Barr.

The weather on all 3 dates was not entirely predictable, and we all suffered from doors being pulled open and vans being driven into the hanger! As No.1 shed is a "working" shed, there is not much we can do about it, and one of my longer flights being on its final descent was "shot down" this way!
Bernard Aslett could have placed third with a long last flight but he over-cooked it and hung very hard.

1.	Bernard Hunt	44:26	41:41	32:14	118:21
2.	Derl Morley	39:54	37:38	38:28	116:00
3.	Laurie Barr	36:58	39:14	38:29	114:41
4.	Bernard Aslett	38:32	38:23	36:32	113:27
5.	R. Bailey	36:18	40:25	34:44	111:27
6.	D. Pymm	33:25	34:10	37:57	106:11
7.	B. Kenny	34:44	33:43	36:01	104:28
8.	A. Robertson	23:06	31:45	34:33	89:24
9.	N. Aikman	29:13	29:38	29:28	88:19
10.	D. Wolstenholme	35:08	24:50	26:42	86:40

The UK Indoor Team 1988 is then: Bernard Hunt, Derl Morley and Laurie Barr.
Three best flights counted.

US Team Finals.

Santa Ana, September 5-6-7 1987.

Results: Two best of nine flights.

1.	C. Banks	44:25	44:55	89:20
2.	Romak	44:15	44:23	88:38
3.	Brown	41:18	45:25	86:43
4.	Randolph	43:04	43:09	86:13
5.	Foster	41:42	42:44	84:26
6.	Caillieu	40:18	40:01	80:19
7.	Gitlow	40:15	39:18	79:33
8.	Loucka	38:21	39:10	77:31
9.	Hoffman	37:23	38:19	75:42
10.	D. Stevens	34:48	40:35	75:23
11.	Tagliafico	34:54	37:04	71:58
12.	Harlan	33:12	35:01	68:13
13.	Doig	32:45	33:32	66:17
14.	Slusarczyk	31:45	34:43	66:19
15.	Mather	25:07	38:47	63:54
16.	Mzik	30:29	32:18	62:47
17.	Belieff	31:30	31:43	63:13
18.	Godfrey	31:36	26:23	57:59
19.	Radoff	26:42	28:51	55:33
20.	Ganslen	27:43	27:35	55:18

6-3/87

First European Indoor Model Championships 1987.

Report by Thedo André.

When the FAI favoured the Polish offer to host the first European Indoor Model Championships over the Rumanian offer, they did that because their proposal was the most detailed. Well, the Polish organizers kept to this standard as the championships went by smoothly and in good order. The contest took place in the Hala Ludowa (People's Hall) of Wroclaw. This impressive building looks like a tiered wedding cake from the outside but internally it is domed with massive girders meeting each other radially on a central ring of about 15 meter diameter at a height of 42 meter. There were entries from eleven countries each with a full three man team. Notable absentees were Great Britain, Rumania and Denmark. For the first time there was a team from Russia and also the Czech team was back on the international scene again.

Practice day.

On the morning of practice day the team managers meeting took place. The competitor's proposal to shift the time schedule of the contest, which should start at 8 o'clock in the morning, to the better part of the day was only partially accepted as the start was set at 9.00 and the end of contest at 19.00. At the very same time those who were practising experienced quite difficult conditions with the drift going in all opposite directions at the same time. During the day drift to the sunny side of the hall seemed to prevail but generally the conditions did improve only marginally. Bright sunshine and clear skies are not favourable for indoor flying! Those who had never flown in such a domed hall were riding their nerves when trying to steer the model. With no vertical references in the hall structure it is very difficult to position the line accurately and many people missed the model several times or damaged it in the process. Several did not get even one normally ending test flight on the whole day! So it was with a certain amount of disbelief that we watched Sylvester Kujawa's steering performance. Time after time he catched his model flawlessly and in the end he was rewarded with a magnificent, though unofficial, 42 minute flight! Even with steering time subtracted he would have improved his existing hall record of 37'22 by a large margin.

There were always many models in the air at the same time but luckily there were hardly any collisions. Every minute was used to fly and get accustomed to the hall and to the conditions. Enthousiasm played a role too for Roger Ruppert, the sixteen year old new Swiss team member. By the end of the afternoon he tried to postpone the opening ceremonies which were scheduled in the hall at that time as he was still test flying. The ceremonies were short but nice and contained a demonstration of indoor flying. The demonstration microfilm flight inevitably ended in a steering accident. We further saw a couple of fine Peanut flights and a well performed ornithopter demonstration by Rainer Lotz.

The test flying continued after the ceremonies throughout the evening and until midnight. In the evening the air was smooth and the flying became more relaxed. But Edward Ciapala quickly pointed out that these conditions would bear little relation to daylight conditions as less power is needed to get to the ceiling. Thus the day ended with mixed expectancies.

Z - 3/87

Ed Whitten
- The New York Indoor Times
Box 176, Wall Street Station
New York, N.Y. 10005

Day One.

The contest did start at 9.00 but the first flying began after 10 o'clock. It soon became apparent that the air was as tricky as on practice day. The average flight time in this first round was barely 20 minutes and there were only six 30 minute flights! The recovery crew had many models to rescue which they did in a very skilled way. René Butty and Oton Velunsek excelled considerably with flights of 35'26 and 34'44 respectively.

Not surprisingly in the second round the flying began late again. This time either there was more fortune to share or the flyers got more skilled as the number of 30 minute flights was sixteen. Again a beautifully slow climbing Swiss model made the best flight, this time Dieter Siebenmann improving the hall record by 10 seconds. At times these majestically flying models were so critically trimmed that they stalled during the descent because of too much of a row of turns staying near the end of the motorstick aft of the centre of gravity! Kujawa made 35'50, his new model exhibiting a beautiful wide steady climb. Sylvester used a length of thick (ø5 mm) cord below his steering balloon instead of plastic tubing. Others used a flat ribbon.

In the evening the practising continued while outside the sky became overcast and some rain was falling.

Day Two.

On the second day the now clouded sky proved to be beneficial to the conditions and the occasional showers had no bad effects. There still was a fair amount of drift and several times people had to steer between the chairs on the grandstand. The irregularly spaced steps of the stairs are quitefamous now. Imagine running up and down from row to row or climbing over chairs trying to catch your flimsy creation to save at least something of an important contest flight! On the opposite of the grandstand was a podium which further restricted the floor area. The first flyer who took to the air was Alfred Klinck at 11.00 and he got a nice 31'39. Soon the air was filled with models and the number of good flights came in a steady stream. Dieter Siebenmann managed a beautifull 38'55 taking a solid lead. Together with Butty's 37'11 the Swiss took too team position also. They were challenged by the Finns as Nore did 37'18 and Englund 35'49. They flew on only about 1,1 gram of rubber! A particularly fine performance considering they had not even flown since the last world championships.

In the fourth round the best flight was 36'37 by René Butty. Generally the times were slightly lower but many competitors got their second 30 minute flight which made the team standings interesting. Having experienced little or no luck until then the Dutch were badly hit when Edmund Liem hung his model on the central ring and André did the same soon thereafter. They were not allowed to remove their models during the contest and inevitably Murphy's Law hit when a Yugoslavian model collided with Edmund's, both coming down with damage. André's model hang on the boron prop outline and could only be removed in many small useless parts. The hall structure is partly covered with straw-board, a nice material to get sticked on. Someone else who had not had any bit of luck was Laszlo Ree but this time some justice was done with 32'58. Oeszö Orsovai moved into fourth place with 35'55 and Velunsek showed good performance with a skillfull 35'15. A few more 30 minute flights could hussle the team standings considerably and this set the stage for the final day. It was still anybody's game.

The evening was filled with frenzied trimming activity. At one time there were fourteen models in the air and suddenly all the lights went out! There I stood right at the moment to launch a full wound model. I shuffled to the chairs and waited for someone to free me with a lamp. Search lights pierced the darkness to catch the models and cigarette lighters had to be used to find one's way through the model park. It raised some nervous laughter and when many realized the funny side of the situation they dealt with it in patience an carefullness and as far as I know all of the models were retrieved without damage.

Day Three.

The final day dawned with the same clouds and the conditions inside were unchanged. For many it was go for broke now and 'broke' it was! Ask the Poles, Dutch and Italians. For the French it was disaster. Their National Championships had cost them a lot of models because of extremely high humidity. Now they lost the last bits having had little time to repair the damage because of their Free Flight World Championships duties. Flight times were moderate as the drift again took its toll. An exception was Orsovai with an impressive 38'24. His new design has a Richmond style tail construction, a trend followed by many others. He used a hygrometer to monitor humidity changes throughout the day. With Andras and Laszlo Ree further improving their scores the Hungarians jumped to third place. Nore secured a top placing with 36'05.

When returning for the final round the air seemed to feel a bit warmer. So everyone sat aside silently, awaiting a grand finale. The first models went aloft at 15.00 and good flights followed. Valery Dvinskikh got his second 30 minute as did Mastnak thanks to a brave steering show between the chairs. Brandejs concluded his struggle with a fine 32'33 and new Italian team member Tabellini missed the 30 minute barrier by only 3 seconds. Werner Nimptsch solidified his consistency at 33'40. Nearing the end of the round a series of 35 minute flights was opened by Otto Rodenburg. As usual his flight showed again this low lazy prop RPM and put him temporarily in fifth place. Then Andras Ree did 35'56 and when the hooter blew there were still three models in the air. Orsovai stressed Siebenmann who stood sort of nailbiting on the sideline but it was in vain as 37'11 was not enough! Kalina came back all smiles with 35'38. The last model which came to rest was Velunsek's scoring the highest time of the round at 37'39. This concluded an impressive jump in performance for this man! The Hungarians won first team place. Well deserved for their close team operation having fought for every single flight. Switzerland was second with the most impressive models. Third place was for Finland, again by good team coöperation and well judged flying. Thus ended a tough competition in a fine but difficult hall, well organised and under good comradship.

The closing day was spend with a tour around Wroclaw and a visit to the unbelievably impressive panorama of Raclawice. At the prizegiving ceremony the winners were presented with crystal vazes and medals. All of the winning team members received a medal in accordance with the new FAI policy. There were short speeches by the Mayor of Wroclaw and by jury member Pierre Chaussebourg. He was so optimistic to drop the suggestion of a Junior Indoor World Championships in reference to the Junior Free Flight Championships to be held next year also in Poland. After a delicious banquet with fine Polish folk music a memorable event was over. We may meet each other again in this place as the Polish National Aeroclub is considering to bid for the 1990 World Championships to take place in Wroclaw.

Closing comments.

I have a few closing comments and I feel obliged to make special mention of the fine artwork which mr. Jerzy Kaczorek brought into almost anything associated with the championships. This ranged from the scoreboard and scoresheets to T-shirts, buttons, stickers and a most beautifull poster. The art of indoor flying was joined by a very creative drawing talent.

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

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

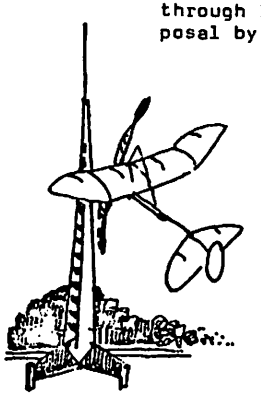
With regard to steering it should be pointed out that steering is only allowed to avert collision with the hall structure or with other models. Several people were seen to steer during the climb to prevent powerstalling.

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

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

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

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

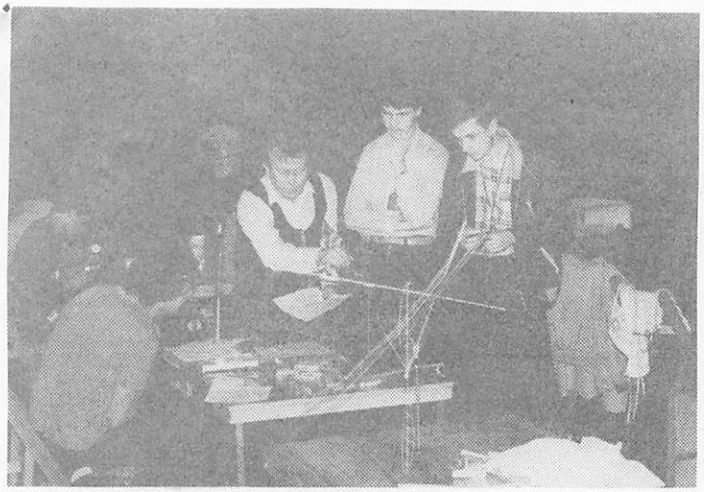


1 MISTRZOSTWA EUROPY MODELI HALOWYCH F3D

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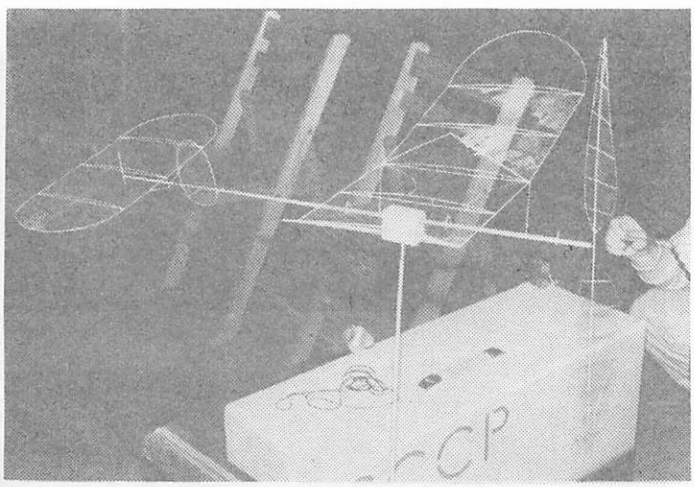
Jerzy Kaczorek gets data from Siebenmann



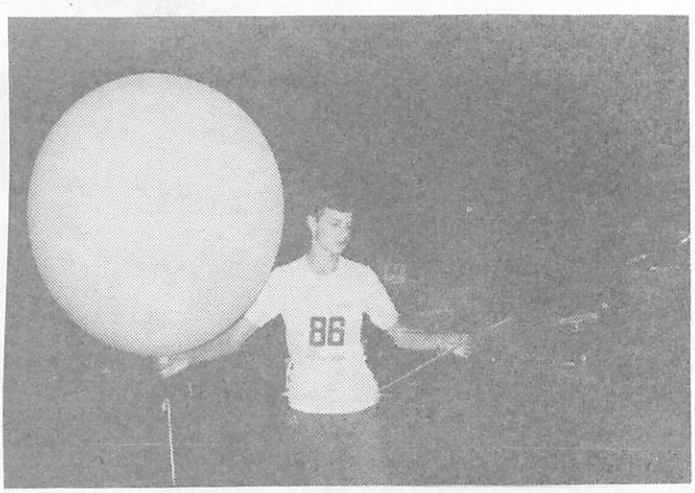
Back on the scene again was Jiri Kalina, CS, 7th



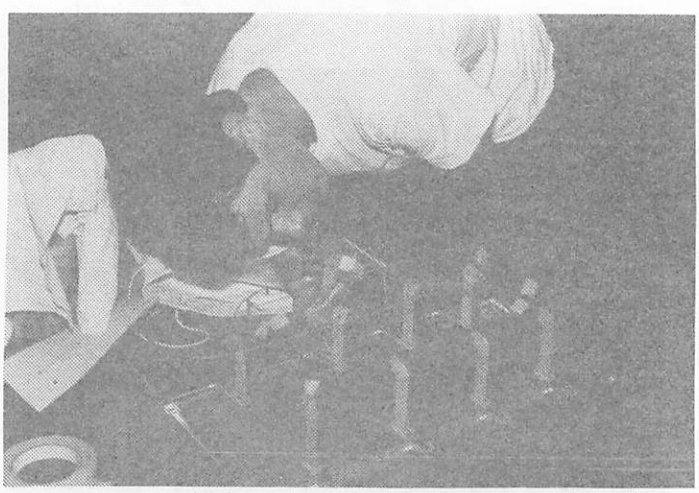
Smiling gold medal winner with his model



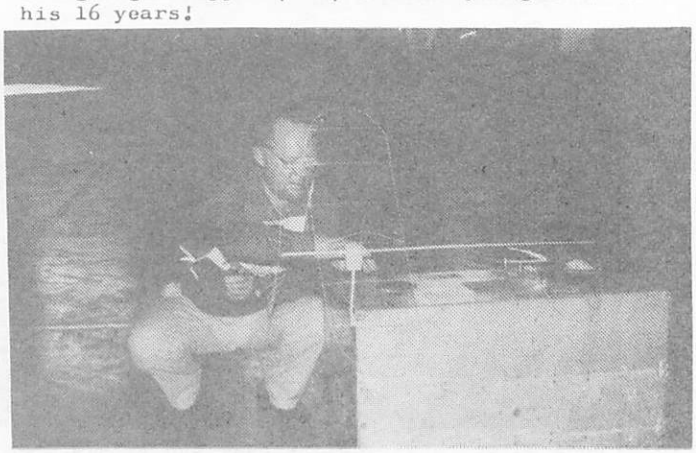
RUSSIAN model with tissue covered motor stick and frame work coloured with dye.



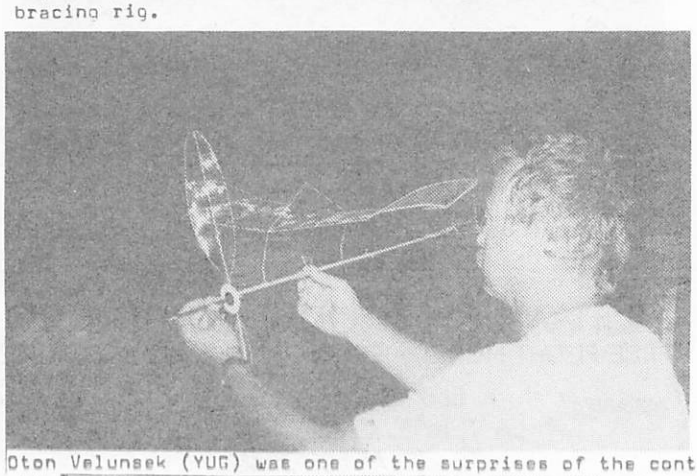
Young Roger Ruppert, CH, was the youngest with his 16 years!



Roger Ruppert (CH) working on his ingenious stabilizer bracing rig.

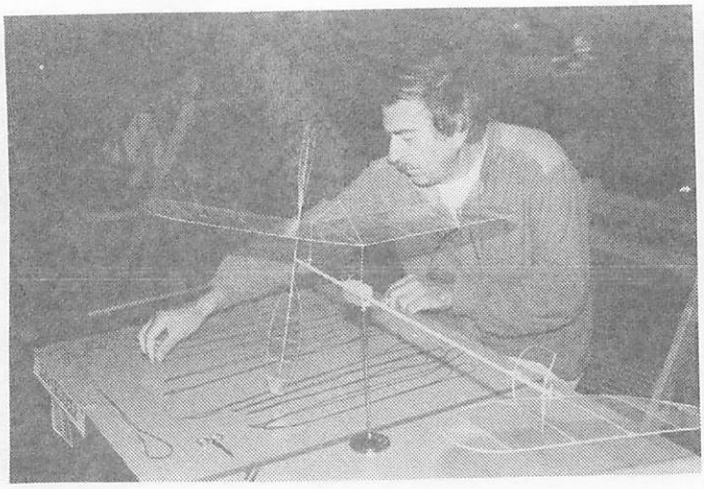


Leif Englund, FIN, putting in turns

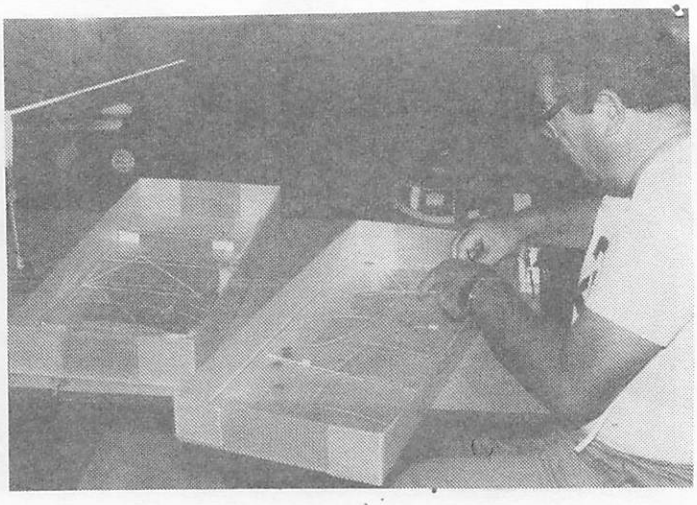


Oton Velunsek (YUG) was one of the surprises of the contest with consistently high scores. Here he checks launch torque.

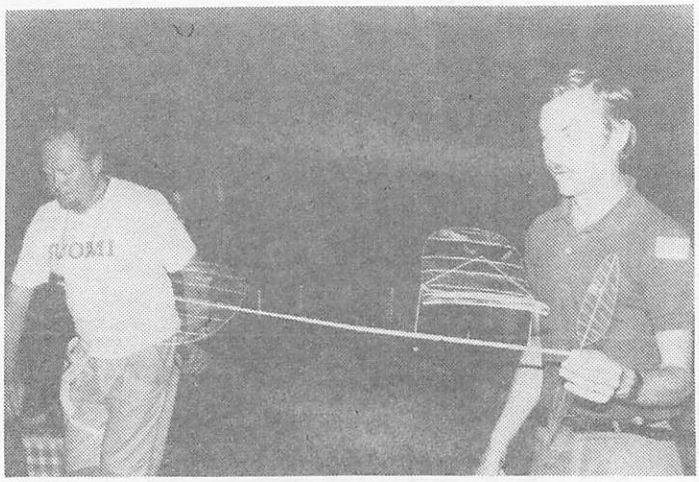
9-3/87



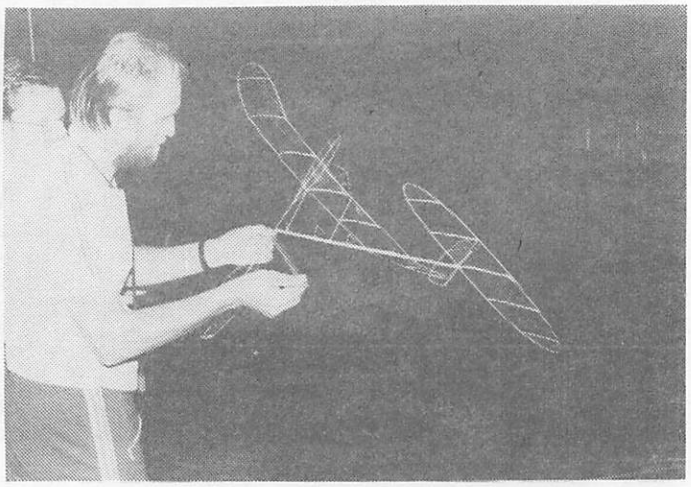
J.F. Frugoli, FRA, with his highly original model



Carlo Cotugna, ITA, packed his models in small boxes made of corrugated plastic board.



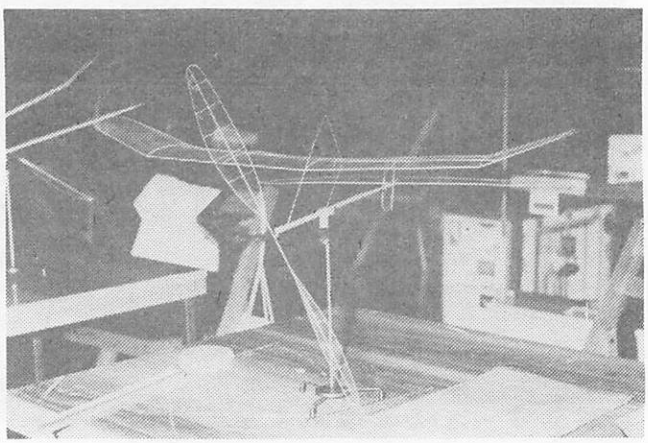
Always placing high, Pentti Nore of Finland



Orsovai, HUN, used a handy motor loading stick to transfer motor to model.



Victorious Hungarian team, nearly a family affair..! as Andras and Laszlo is father and son. In the middle is Derzö Orsovai who placed 2nd.



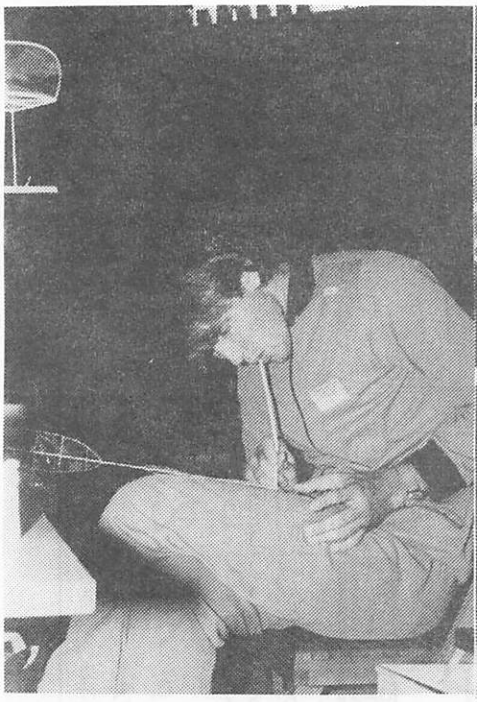
Siebenmanns model from the front.



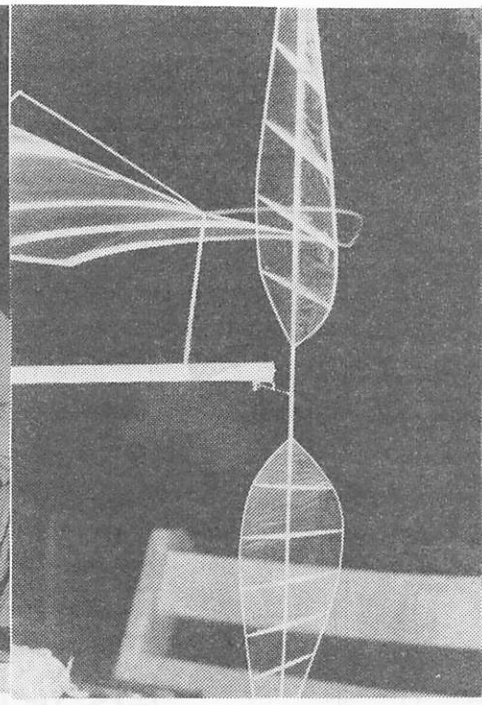
René Butty repairing the rear end of his model

10-3/87

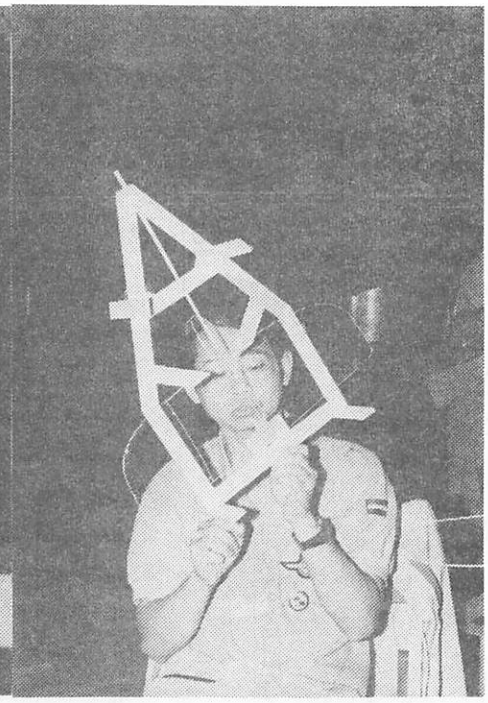
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Mastnak Milan, YUG, repairs his prop



Russian prop with full depth prop ribs



Edmund Liem, HOL, with his stab bracing jig

1st EUROPEAN INDOOR MODELS CHAMPIONSHIPS * WROCLAW * 25-31 Aug. 1987

	Name & Country		1	2	3	4	5	6	Total
1	SIEBENMANN, Dieter	SUI	10:35	37:32	38:55	30:38	28:16	33:46	76:27
2	ORSOVAI, Dezso	HUN	30:47	33:20	34:45	35:55	38:24	37:11	75:35
3	RUTTY, RENE	SUI	35:26	33:44	37:11	36:37	1:19	32:12	73:48
4	NORE, Pentti	FIN	15:42	30:27	37:18	34:49	36:05	35:04	73:23
5	VELUNSEK, Oton	YUG	34:44	33:50	31:21	35:15	32:37	37:39	72:54
6	REE, Andras	HUN	31:38	32:33	30:21	31:59	34:47	35:56	70:43
7	KALINA, Jiri	TCH	16:51	31:46	34:49	28:52	32:57	35:38	70:27
8	RODENBURG, Otto	HOL	19:08	17:27	33:25	34:52	23:58	35:15	70:08
9	ENGLUND, Leif	FIN	25:16	30:35	35:49	33:29	27:09	32:41	69:18
10	KUJAWA, Sylwester	POL	10:22	35:50	10:06	32:41	21:17	23:56	68:31
11	NIMPTSCH, Werner	FRG	30:27	34:06	31:32	32:27	32:52	33:40	67:46
12	REF, Laszlo	HUN	12:15	25:45	17:30	32:58	27:43	33:46	66:44
13	CIAPALA, Edward	POL	31:58	31:26	31:25	34:14	10:53	14:20	66:12
14	LOTZ, Rainer	FRG	22:39	32:50	27:15	23:33	32:46	24:20	65:36
15	ANDRE, Thedo	HOL	20:24	30:05	34:59	6:21	12:39	7:44	65:04
16	EROFEJEFF, Harro	FIN	21:56	11:36	32:22	30:41	30:53	31:19	63:41
17	CZECHOWSKI, Ryszard	POL	10:47	30:53	30:05	32:22	27:26	29:43	63:15
18	MASTNAK, Milan	YUG	28:07	21:32	27:17	27:06	31:23	31:09	62:32
19	KLINCK, Alfred	FRG	24:22	9:58	31:39	30:50	20:20	0:10	62:29
20	DVINSKIKH, Valeri	USR	20:54	17:52	31:12	27:43	25:03	30:51	62:03
21	WALEK, Leopold	TCH	26:17	12:56	17:02	30:42	16:31	31:20	62:02
22	LIEM, Edmund	HOL	25:17	30:05	30:28	10:28	10:00	30:04	60:33
23	RUPPERT, Roger	SUI	26:23	30:34	28:26	26:36	19:59	29:55	60:29
24	BRANDEJS, Karel	TCH	10:22	25:54	17:02	27:00	22:32	32:33	59:33
25	KMOCH, Vilim	YUG	26:33	14:24	25:41	14:10	30:17	28:40	58:57
26	GRASSI, Roberto	ITA	16:26	27:12	16:37	28:40	24:09	22:53	55:52
27	CHAMPION, Robert	FRA	25:22	23:47	19:45	29:47	5:39	0:41	55:09
28	COGNET, Guy	FRA	18:34	27:34	24:36	24:50	11:55	27:08	54:42
29	TABELLINI, Renzo	ITA	13:48	9:13	9:52	24:14	13:25	29:57	54:11
30	IVLEV, Mikhail	USR	18:30	6:41	14:18	5:30	24:31	28:29	53:00
31	COTUGNO, Carlo	ITA	0:21	0:23	22:45	16:06	1:41	29:47	52:32
32	ROMASHOV, Alexandr	USR	15:45	12:19	10:54	24:45	27:30	24:25	52:15
33	FRUGOLI, Jean-Francis	FRA	22:39	18:07	24:28	4:44	3:53	0:11	47:07

	Country		1	2	3	Total
1	HUNGARY	(HUN)	75:35	70:43	66:44	213:02
2	SWITZERLAND	(SUI)	73:48	60:29	76:27	210:44
3	FINLAND	(FIN)	69:18	63:41	73:23	206:22
4	POLAND	(POL)	66:12	63:15	68:31	197:58
5	GERMANY	(FRG)	62:29	65:36	67:46	195:51
6	HOLLAND	(HOL)	70:08	60:33	65:04	195:45
7	YUGOSLAVIA	(YUG)	62:32	72:54	58:57	194:23
8	C. S. S. R.	(TCH)	59:33	70:27	62:02	192:02
9	U. S. S. R.	(USR)	62:03	53:00	52:15	167:18
10	ITALY	(ITA)	52:32	54:11	55:52	162:35
11	FRANCE	(FRA)	55:09	54:42	47:07	156:58

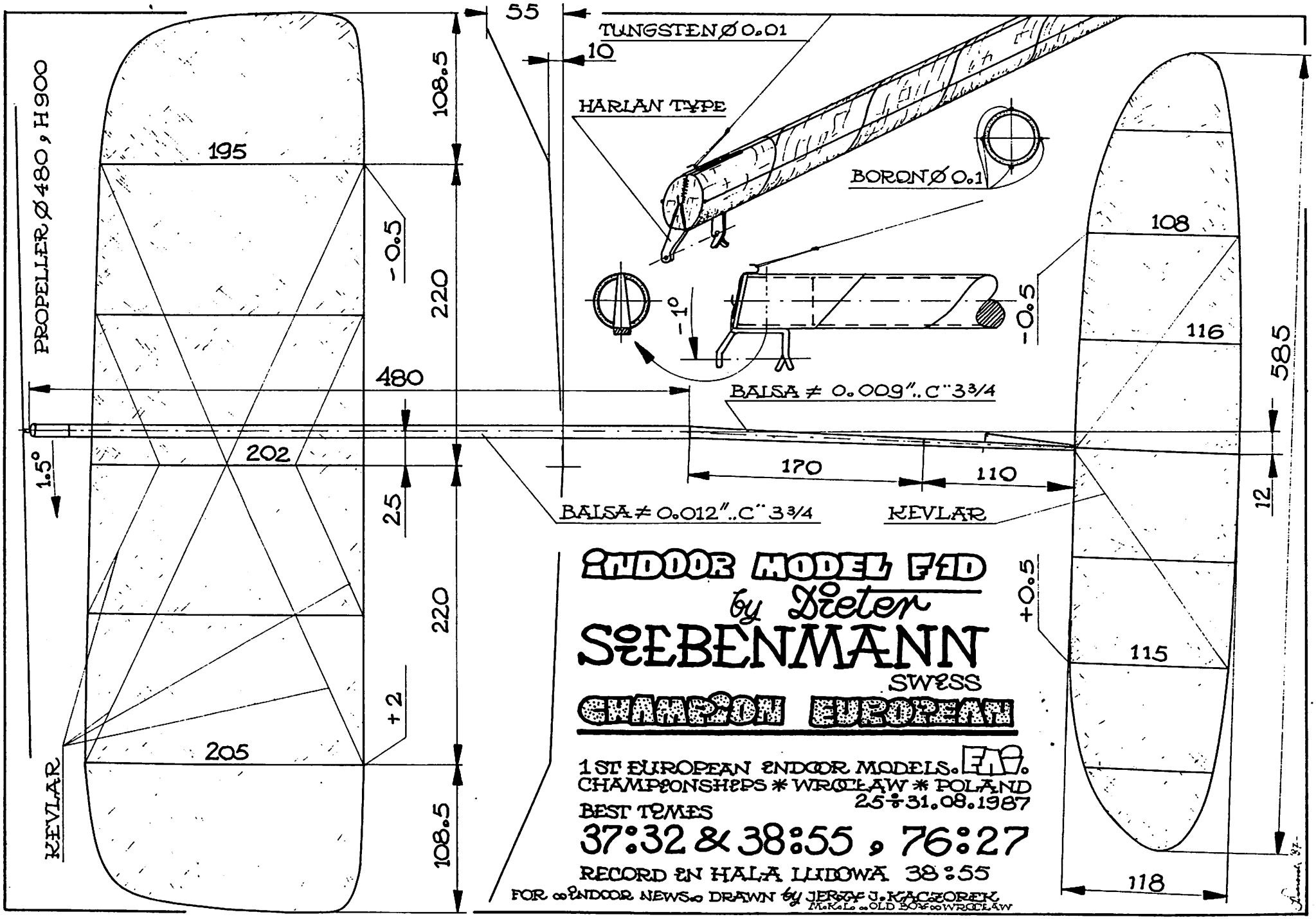


Valery Dvinskikh, USSR

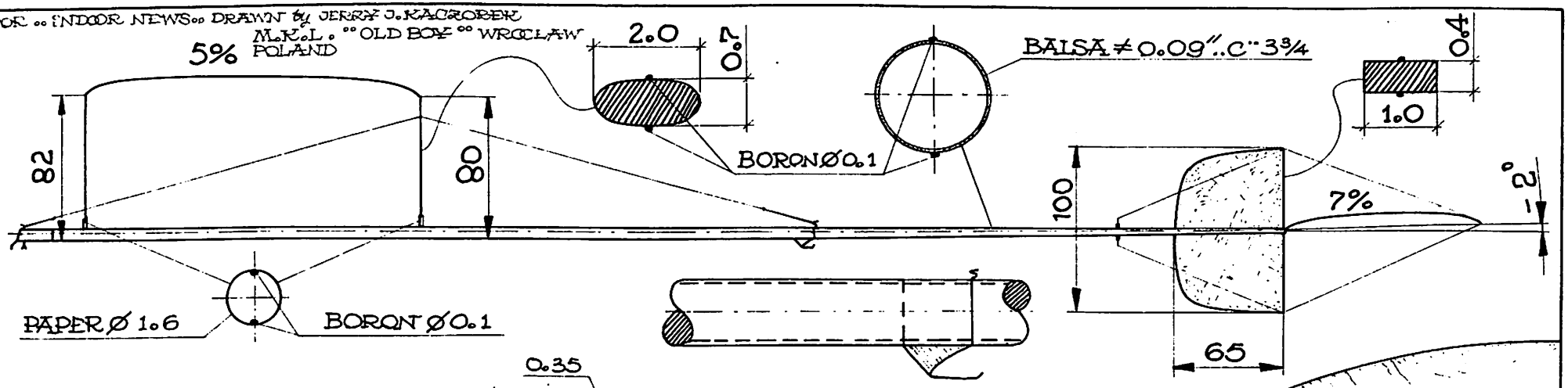


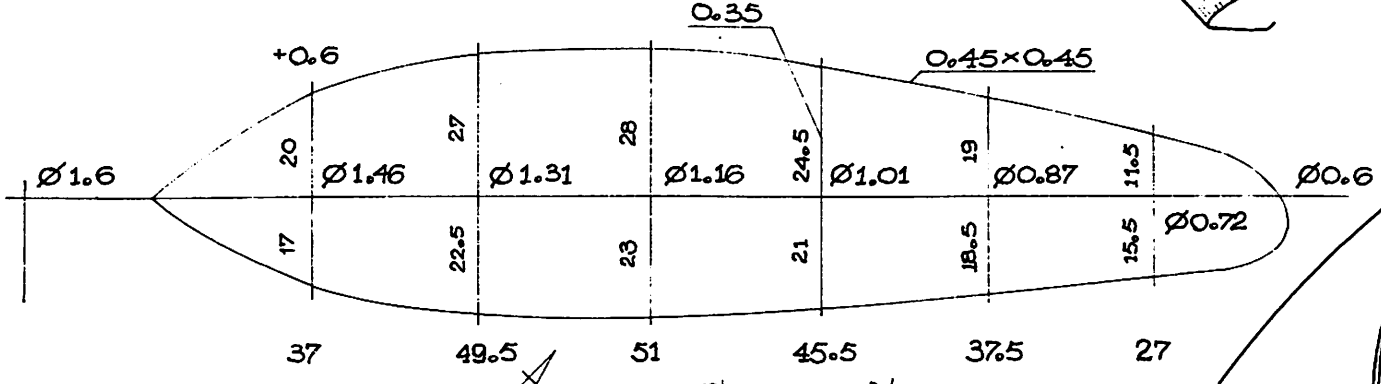
D. Orsovai, HUN, with long model.

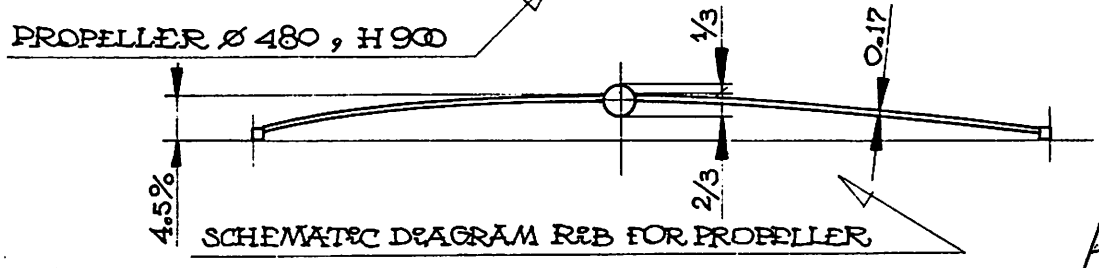
11-3/87

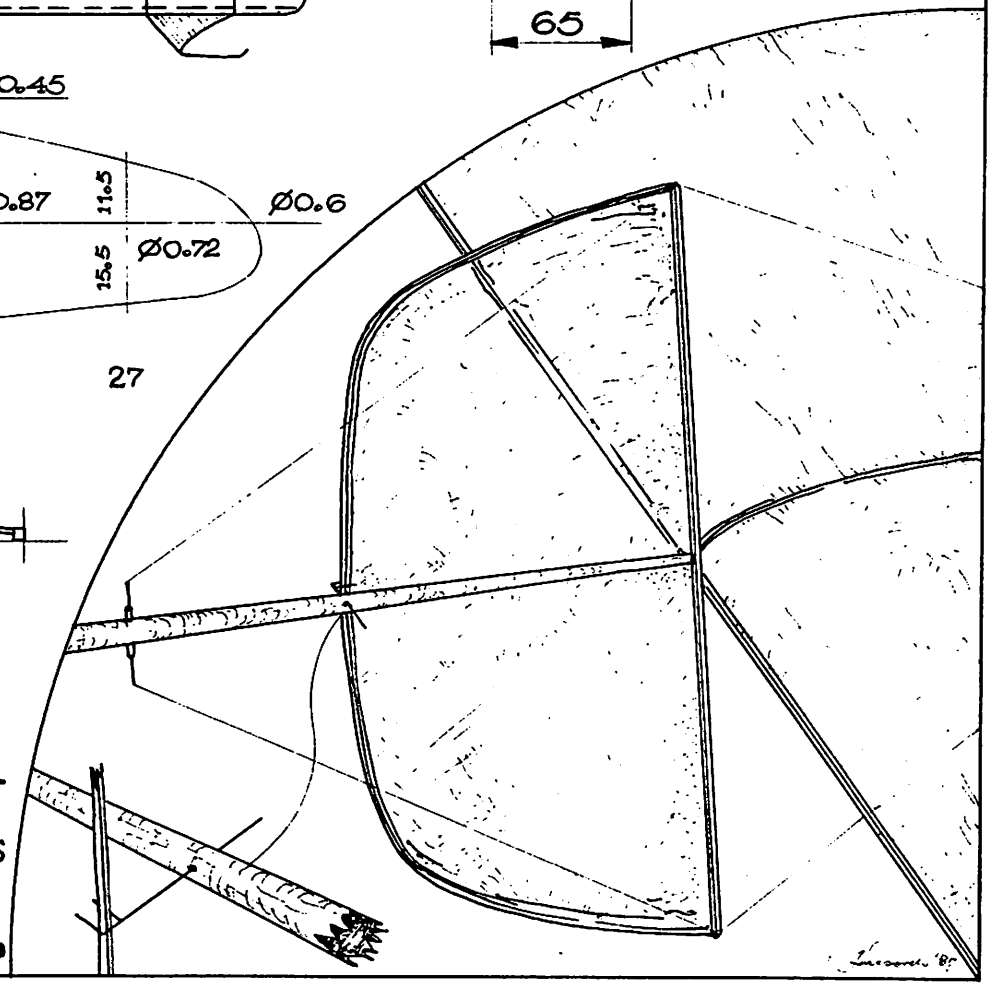

55
TUNGSTEN Ø 0.01
10
HARLAN TYPE
BORON Ø 0.1
PROPELLER Ø 480 , H 900
195
108.5
-0.5
220
480
202
1.5°
25
220
+2
205
108.5
KEVLAR
-1°
-0.5
108
116
585
BALSA ≠ 0.009"..C"3 3/4
170
110
BALSA ≠ 0.012"..C" 3 3/4
KEVLAR
12
+0.5
115
118
INDOOR MODEL F1D
by Dieter
SCHEBENMANN
SWISS
CHAMPION EUROPEAN
1 ST EUROPEAN INDOOR MODELS. F1D.
CHAMPIONSHIPS * WROCŁAW * POLAND
25÷31.08.1987
BEST TIMES
37:32 & 38:55 , 76:27
RECORD IN HALA LUDOWA 38:55
FOR "INDOOR NEWS" DRAWN by JERZY J. KACZOREK
M.K.L. "OLD BOY" WROCŁAW
12-3/87

FOR "INDOOR NEWS" DRAWN by JERRY J. KACROBER
M.K.L. "OLD BOY" WROCŁAW
POLAND









DETAILS of MODEL by Dieter SEEBENMANN SUISS

1ST EUROPEAN INDOOR MODELS CHAMPIONSHIPS * WROCŁAW * POLAND 1987

13-3/87

STEERING GUIDELINES (per Rick Doig) - Mar 1, 1987

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

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

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

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

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

6. Altitude change. During climb, if the prop keeps turning, don't worry about altitude change. If you straighten out the turn during climb, the model may look like it is going straight up, when in fact it isn't climbing any faster, it's just not circling. During cruise and decent, again don't worry about altitude change if the prop keeps turning. If a guy knocks his model down three or four feet, that's his mistake.

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

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

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

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

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

Indoor News

Last month I ran the plans of the P-15, a Danish Indoor SRPSM by Erik Knudsen. One thing I didn't mention was the source. It's simple. The plans were in the world's best Indoor newsletter, *Indoor News*.

This fantastic newsletter of 16 or more pages is edited and published by Jorgen Korsgaard, Ahorn 5, D-2397 Ellund-Handewitt, West Germany. Jorgen is Danish, but he lives and teaches school just across the border in Western Germany. The newsletter, published three times a year, costs us here in the U.S.A. 60 Dkr per year sent airmail.

How much is in it for beginners and Juniors? Most of it is not, but it will tell you all about the excitement involved in world championship Indoor flying. And it also includes Peanut and Pistachio plans and news, Hand-Launched Gliders, experimental types, sport models, and news of the F1D Beginner category popular in Europe. Can you imagine an international European contest restricted to beginners? One is in the works, and also, possibly, an international postal contest for beginners.

Simply, a great newsletter!

Ed Whitten, Model Aviation

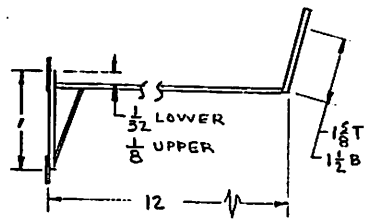
CH - CHAMPS 87:

		Total 2 beste 1/2 Strang + bester Ganzstrang	MOTOR
Rainer Lotz	Baden-Württemberg	68:58	(D)
Dieter Siebenmann	DU	66:24	
Peter Keller	FL	61:43	
René Butty	DU	51:33	
Thanh Pham	FL	50:28	
Roger Ruppert	HW	40:49	
Werner Heise	FL	15:05	
Alex Tschallener	HW	14:02	
Rudolf Trumpf	BE	12:54	

CANARD ORNITHOPTER CONSTRUCTION by FRANK KIESER - 9/15/87

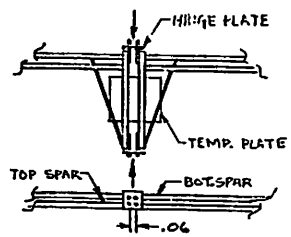
The canard biplane ornithopter has proven to be the best competitive configuration holding three of the four categories of AMA records. Many have asked about construction details of the wing and linkage for this type of model. Presented here are details of Fancy Girl III which features a wing, linkage and crank in a single assembly, demountable from the motor tube. This design is particularly attractive since it reduces considerably the box size, provides adjustment of the flapper incidence and gives interchangability of parts with practically no weight penalty. Wood sizes shown are for the competitive model weighing 1.2 grams. For those building this type model for the first time, sizes may be increased. However, too much weight in the wing assembly will have an adverse affect on the center of gravity. Details of parts not shown are conventional indoor model construction to suit the builder. For instance, my model uses an unbraced mylar covered stabilizer while Roy White uses a braced microfilm covered stabilizer.

FIG. 1 - UPPR & LWR WING SPAR ASS'Y (4)



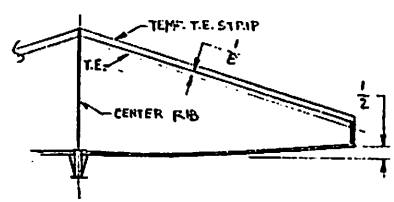
All wood parts are .045 square 5 lb. balsa. Boron is used top and bottom for the inboard 9 inches and the front inboard 4 inches. The hinge pins are .006 aw glued to the inboard side of the inboard rib. Be sure to leave extra length on the tips for glueing temporary T.E. strips in fig. 3. Lower spar diagonal member must be sufficiently inboard to clear upper wing linkage support.

FIG. 2 - HINGE PLATE ASS'Y



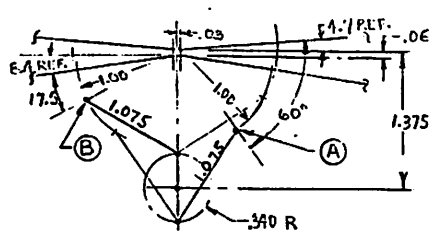
The hinge plates are .025 balsa .12 wide x .19 high. The faces are coated with glue to incease the bearing strength for the hinge pins. Tack glue the 4 spar assemblies to the .020 thick temporary plate between the upper and lower hinge ribs. Be sure the spars are in their exact relative positions. With the upper spars on a smoothe surface, push the hinge plates over hinge pins.

FIG. 3 - WING COVERING



Preparetory to covering, the center rib is made from .025 sheet balsa leaving extra length. It is cemented to the aft hinge plate. The temporary trailing edge strip is made from .05x3/8 balsa and cemented so that the trailing edge of the wing is 1/8 forward of the forward edge of the strip. The tips are bowed back 1/2 inch from the straight position. Care must be taken to keep the upper spar a uniform 3/32 ahead of the lower spar. The covering is 1.7 mylar. The covering is stretched and cemented to a frame, the lower structure surfaces, except for the inner 1 1/2 inches of the spar where the conrod hinge support will be glued, are coated with contact cement, including the temporary T.E. strip and then placed on the mylar. The mylar is cut with a hot wire. The upper surface is covered in like manner. After both surfaces are covered, the T.E. of the mylar is cut with a hot wire using the temporary strip as a guide. After all 4 T.E. cuts are made, the excess center rib and tips are cut away taking with it the temporary T.E. strip.

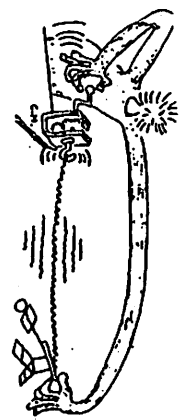
FIG. 4 - LINKAGE DIMENSIONS

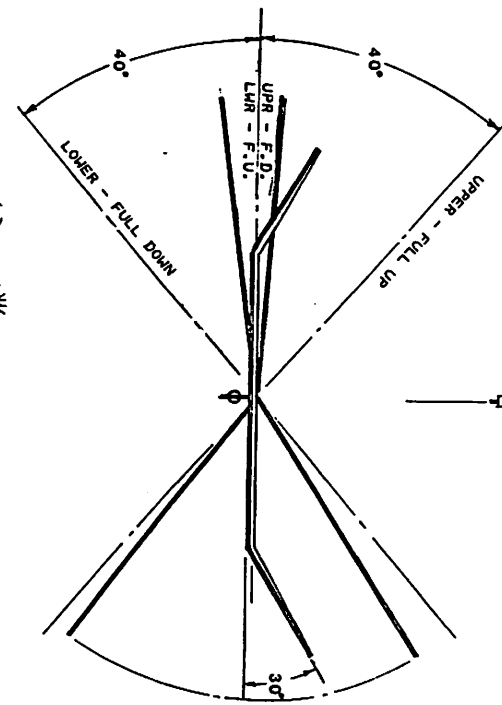


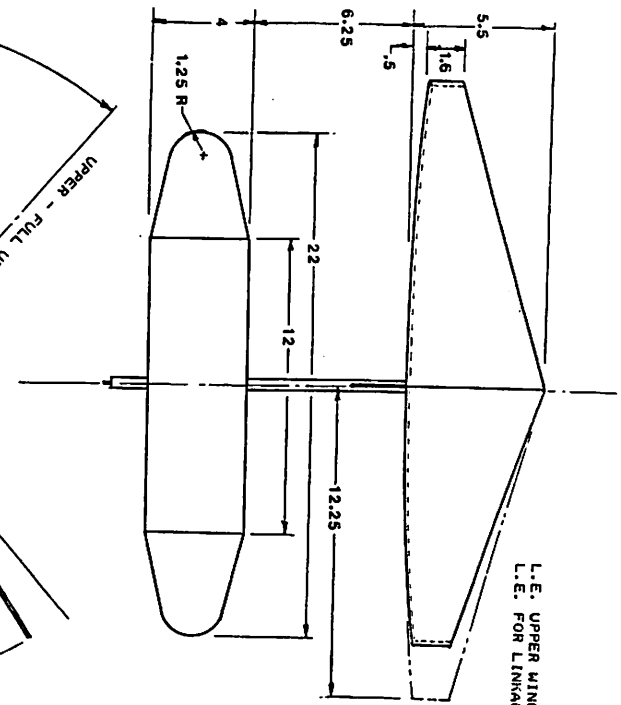
The linkage dimensions for this design are shown for reference. Points A and B are the upper conrod hinge points and are fixed to the upper and lower wing spars respectively (see figs. 9 & 10)

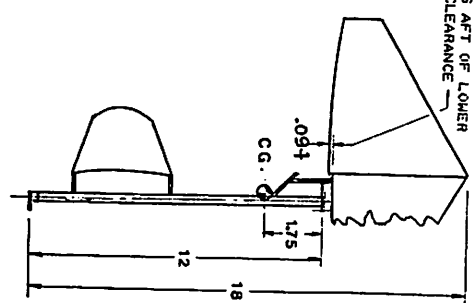
F. KIESER
2219 Gordon Ave.
Jacksonville Bch., FL 32250
TEL 904/249-7298

15 - 3/87









FANCY GIRL III

CANARD PUSHER ORNITHOPTER
DESIGNED BY FRANK KIESER

WING AREAS (SQ. IN.)!

UPPER WING (FLAPPING)	87.2
LOWER WING (FLAPPING)	82.6
TOTAL WING (FLAPPING)	169.8
TOTAL WING (FIXED)	0
PROJECTED (FLAPPING)	159.6
(169.8 X COS 20°)	
STABILIZER AREA (SQ. IN.)	77.3
STAB./PROJ. (FLAPPING) (%)	48.5

WEIGHT - 1.2 GRAMS
COVERING - HARLAN "ULTRAFILM"
NOTE - ALL WING AND STAB. DIMENSIONS ARE FLAT PATTERN

BEST TIMES -

DATE	TIME	CAT	PLACE
4/19/87	8:28*	III	COL. UNIV., N.Y.
6/5/87	10:33	IV	JOHNSON CITY, TN
7/13/87	10:00*	II	LINCOLN, NE
8/30/87	11:32*	III	WEST BADEN, IN

* AMA RECORD - APPROVED OR PENDING

F. KIESER
2219 Gordon Ave.
Jacksonville Bch., FL 32250

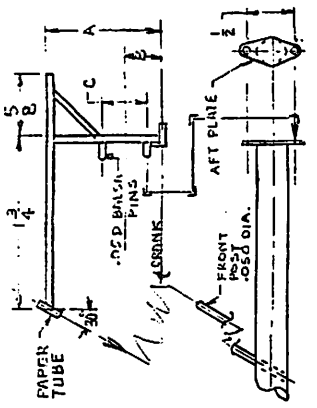


FIG. 5 - HAMPER SUPPORT ASS'Y

The vertical and horizontal numbers are .050 square 7 lb. balsa. Boron is glued to the sides of these members. The diagonal is .045 square 5 lb. balsa. The paper tube is .05 I.D. Jap tissue. The crank bearing is a piece of hypo needle tubing with a tab bent up from the forward end. Dim. A is sized to suit the linkage dimensions (see figs. 467). Dim. B is sized to suit the motor clearance. Dim. C must match the hole spacing in fig. 6.

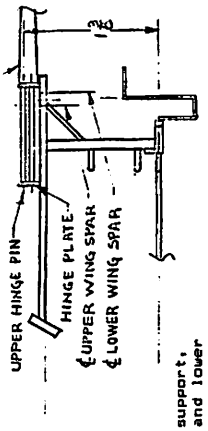


FIG. 6 - MOTOR TUBE ASS'Y

Only the aft end of the motor tube is shown. The rest is conventional indoor construction. The tube is .812 dia. x 9/32 I.D.. Three boron stiffeners, one each at 5, 7 & 12 o'clock are used. The aft plate is .025 thick. It is coated with glue around the two holes. The front post is stiffened with boron on both sides. The post must be sized and located so that it slides tightly in the paper tube.

FIG. 7 - WING & SUPPORT ASS'Y

First make the crankshaft from .015 mw. Insert in the bearing with a short length of hypo needle to act as a washer and then bend the hook. The covered wing is now assembled to the flapper support by glueing the hinge plates to the support. The location must be such that the wing spars are aligned with the crankshaft. Also check that the height of the upper hinge pin above the crank is correct. When wing assembly is firmly attached to the support, remove the temporary plate between the upper and lower hinge ribs by disolving the tack glue spots (see fig. 2). Check wings for freedom of rotation.

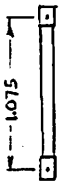


FIG. 8 - CONNECTING RODS

The linkage is designed such that all four conrods are the same length. They are made of .025x.040 balsa with the ends wrapped with 3 layers of jap tissue. The crank end is pierced with a .015 wire and the wing end .026. I use a simple jig so that all hole spacings are accurate and identical.

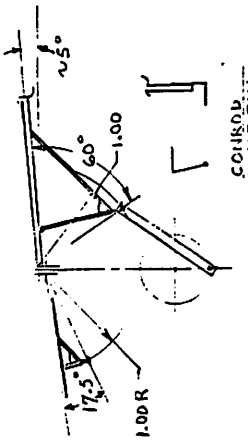


FIG. 9 - CONROD HINGE SUPPORTS

The struts for the conrod hinge supports are made of .025x.035 balsa. The hinge pin is bent from .026 mw and glued to the struts. The hinge support for the upper wing is glued to the spar with the pin at the correct radius (1.00) from the hinge. A diagonal brace is run from the lower end of the support to the forward end of the hinge rib to steady the conrod hinge pin. The conrods are slipped on the crank and then on the wing. With the crank in the bottom center position, both upper wings should be 5 degrees above horizontal. A small balsa washer is glued on the hinge pin to retain the rod.

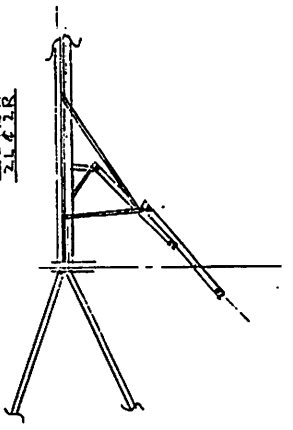


FIG. 10 - LOWER WING HINGE SUPPORT

The final step is to attach the lower wing conrod and hinge support: Each wing is done separately. Slip one conrod on the crank and the hinge support on the conrod. Rotate the crank so that the upper wing is in the full down position and slide the hinge support along the lower wing spar until the upper and lower wing just come together. Glue the hinge support in this position. Repeat for the other wing. This method assures that the upper and lower wings will come together even though there are small errors in the linkage.

UNITED STATES INDOOR CHAMPIONSHIPS

FROM NFFS DIGEST WITH THANKS.

Results

AMA STICK Open, 19 ent.

1	Jim Richmond	41:36
2	Bud Romak	39:18
3	Dan Belieff	35:13
4	Richard Doig	34:25
5	Larry Loucka	32:35

AMA STICK Jr/Sr, 4 ent.

1	D. Slusarczyk	27:04
2	M. Richmond	10:46
3	J. Buxton	6:02
4	P. Loucka	5:36

F1D (FAI), 17 ent.

1	Richard Doig	73:03
2	Jim Richmond	70:57
3	Bud Romak	64:16
4	L. Mzik	56:25
5	D. Godfrey	55:40

INTERMED. STICK, Op, 34 ent.

1	R. Ganser	25:11
2	J. McGillivray	24:57
3	Dan Belieff	24:27
4	L. Loucka	24:20
5	Richard Obarski	23:17

INTERMED. STICK, Jr/Sr, 4 ent.

1	D. Slusarczyk	16:29
2	M. Richmond	11:19
3	P. Loucka	10:29
4	R. Smith	8:05

EASY B, Open, 54 ent.

1	J. Nolin	18:40
2	Walt VanGorder	18:32
3	Richard Obarski	18:21
4	Chuck Markos	18:11
5	Lester Garber	17:50

EASY B, Junior/Senior, 8 ent.

1	D. Slusarczyk	15:40
2	C. Gagliano	14:15
3	P. Loucka	14:10
4	M. Richmond	11:09
5	R. Smith	8:59

ROG CABIN, 9 ent.

1	Larry Loucka	20:25
2	Ron Ganser	17:20
3	A. D'Alessandro	8:38

PEANUT SPEED, 4 ent.

		mph
1	W. Henderson	9.82
2	J. Blair	6.27
3	Jeff Plassman	5.32

NOVICE PENNYPLANE, Op, 54 ent.

1	Jim Clem	12:44
2	Joe Macay	12:30
3	C. Slater	12:30
4	C. McGillivray	12:19
5	Chuck Markos	12:19

NOVICE PENNYPLANE, Sr, 2 ent.

1	P. Loucka	9:22
2	D. Slusarczyk	8:28

NOVICE PENNYPLANE, Jr, 4 ent.

1	R. Smith	9:49
2	M. Richmond	7:34
3	Joel Plassman	4:49
4	Jeff Plassman	4:26

PENNYPLANE, Open, 33 ent.

1	Gordon Wisniewski	15:11
2	Larry Loucka	14:32
3	J. Voorhees	13:45
4	J. Nuszer	13:36
5	Walter VanGorder	13:21

PENNYPLANE, Senior, 2 ent.

1	P. Loucka	8:59
2	D. Slusarczyk	2:54

PENNYPLANE, Junior, 3 ent.

1	R. Smith	9:24
2	M. Richmond	7:55
3	J. Buxton	4:30

HLG Open, 17 ent.

1	Bernie Boehm	138.6
2	Paul Shailor	133.0
3	B. Pardue	119.8
4	C. Slusarczyk	106.8
5	M Whittemore	103.0

HLG Senior, 3 ent.

1	C. Gagliano	133.8
2	P. Loucka	114.0
3	D. Slusarczyk	69.8

HLG Junior, 4 ent.

1	J. Buxton	89.2
2	Jeff Plassman	61.6
3	Joel Plassman	56.6
4	M. Richmond	46.0

UNLIMITED SPEED, 13 ent.

		mph
1	Jim Thornbery	14.47
2	Chuck Markos	13:01
3	J. Voorhees	11.27
4	John Martin	10:19
5	R. Ennis	9:83

AMA SCALE, 23 ent.

1	K. Groves	186.5
2	Jack McGillivray	176.0
3	John Martin	168.5
4	Lester Garber	162.0
5	J. Schlagetter	159.5

PEANUT SCALE, Open, 24 ent.

		pts
1	J. Miller	218.5
2	W. Henderson	213.9
3	K. Groves	210.9
4	J. McGillivray	192.2
5	C. Markos	182.9

PEANUT SCALE, Junior, 4 ent.

1	J. Buxton	134.7
2	Jeff Plassman	72.8

NO-CAL SCALE, 11 ent..

1	J. Marett	By heat
2	Del Ogren	elimination
3	C. Slusarczyk	process

MANHATTAN CABIN, 25 ent.

1	Walt VanGorder	10:50
2	C. Slusarczyk	10:12
3	D. Slusarczyk	9:51
4	Chuck Markos	9:26
5	Hewitt Phillips	9:17

BOSTONIAN, 35 ent.

		pts
1	Jack McGillivray	441
2	J. Marett	430
3	Lester Garber	393
4	Hewitt Phillips	358
5	Ron Ganser	332

ORNITHOPTER, 9 ent.

1	Frank Kieser	10:33
2	Lester Garber	7:02
3	J. Kortenbach	6:44
4	R. Powell	5:55
5	J. Krush	5:11

AUTOGIRO, 4 ent.

1	L. Loucka	8:28
2	O. Klein	0:19

AJI OLDTIMER, 8 ent.

1	Ron Ganser	19:49
2	J. Nolin	18:31
3	J. Nuszer	15:30
4	Gil Graunke	13:21
5	Larry Loucka	3:59

INTERNATIONAL INDOOR CHAMPIONSHIPS OF ROMANIA * SLANIC * SEPT. 24-27, 1987

	Name & Country	1	2	3	4	5	6	Total
1	REE Andras HUN	34:44	32:59	1:34	38:10	38:18	1:31	76:28
2	REE Laszlo HUN	32:39	33:40	33:25	14:25	34:48	0:13	68:28
3	REZMAN Nicu ROM A	27:47	27:55	34:31	30:38	21:14	33:26	67:57
4	POPA Aurel ROM A	32:45	33:14	30:10	23:45	26:56	17:08	65:59
5	SUKOSD Zoltan ROM B	26:42	30:02	30:31	31:37	30:13	26:07	62:08
6	MANGALEA Cornel ROM B	23:06	28:04	31:16	30:30	25:02	13:03	61:46
7	MORAR Aurel ROM A	23:19	23:13	27:34	27:48	29:25	31:06	60:31
8	BEKE Geza HUN	8:47	22:57	17:31	15:16	29:55	30:03	59:58
9	NICOARA Vasile ROM (ind)	30:02	29:06	24:02	24:48	26:33	28:55	59:08
10	VINCZE Alexandru ROM B	24:56	-	12:34	23:00	25:13	27:05	52:18
11	FLOREA Petre ROM (ind)	25:33	24:28	23:17	16:27	17:05	-	50:01
12	AMORARITEI Dan ROM (ind)	20:49	22:08	19:10	22:57	21:24	23:14	46:11

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SCALE

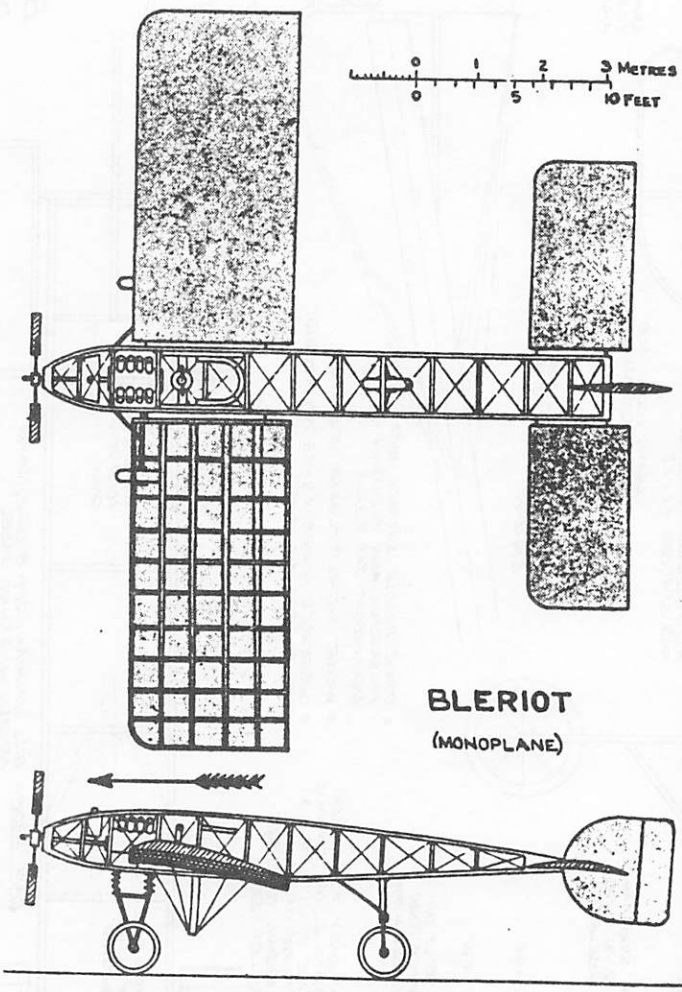
36 OF W.M.'S FAVORITE PEANUTS REDUCED TO 8" SPAN: BAG 6 $ 5,- POSTPAID.

WALT MOONEY P.O. BOX 231192 SAN DIEGO CALIF. 92123 *** FIRST FIVE PEANUT SCA BAGS STILL AVAILABLE AT $ 5.00 EACH.

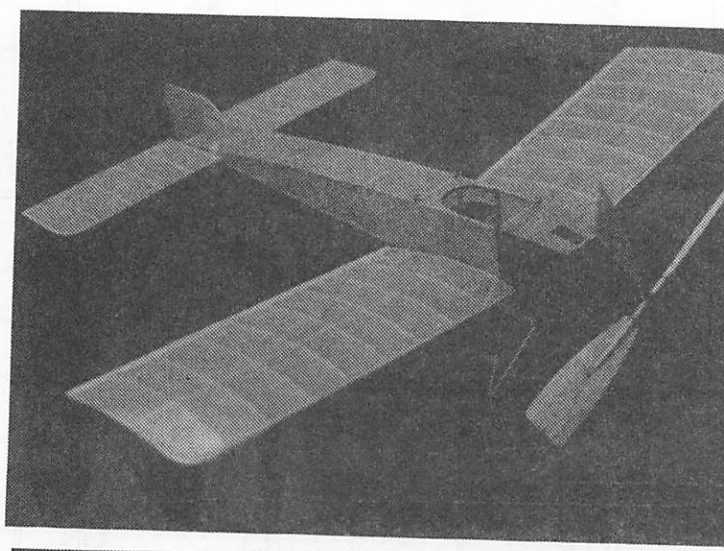
The Peanut design of this issue is made by Bill Henderson, Canada, who placed 2nd at the USIC with this model, the BLERIOT VII.
Bill writes that Jane's All the World's Aircraft lists the aircraft as NO IV, probably because it was available as a commercial venture, whereas historians list it as NO VII in his series of development aircraft, many of which were experimental and not intended for sale

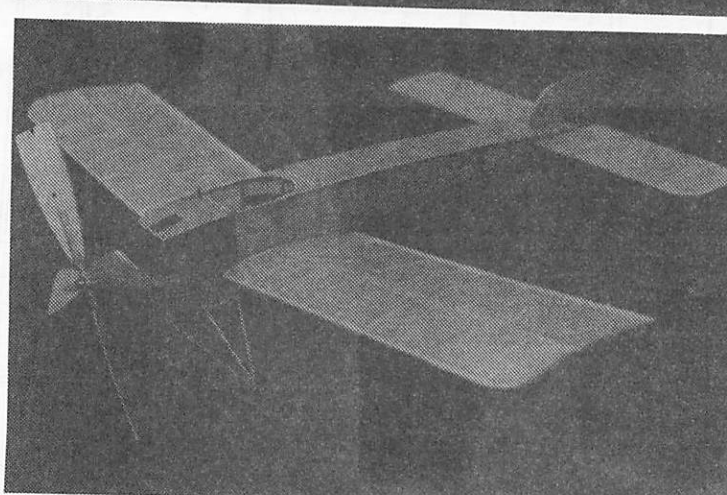
Several points need to be drawn to your attension. undercarriage does not agree with photos that I h since reviewed and there is a little controversy the wing tip shape. I have used the shape shown i enclosed 2-view from Jane's 1910.
The 4.9 gram model I fly will do over one minute gularly in a 7 metre hall.

Thank you, Bill, for supplying the material.



BLERIOT IV.





BILL



Special features of Bleriots are fixed wings with rounded edges, and ailerons in rear of wings.

The Bleriots were first developed on Langley lines. The first successful one was a *V*, but subsequently Tatin features were embodied and a *Bleriot VIII* produced. This flew well till it was smashed up. All subsequent Bleriot monoplanes are developments of this machine.

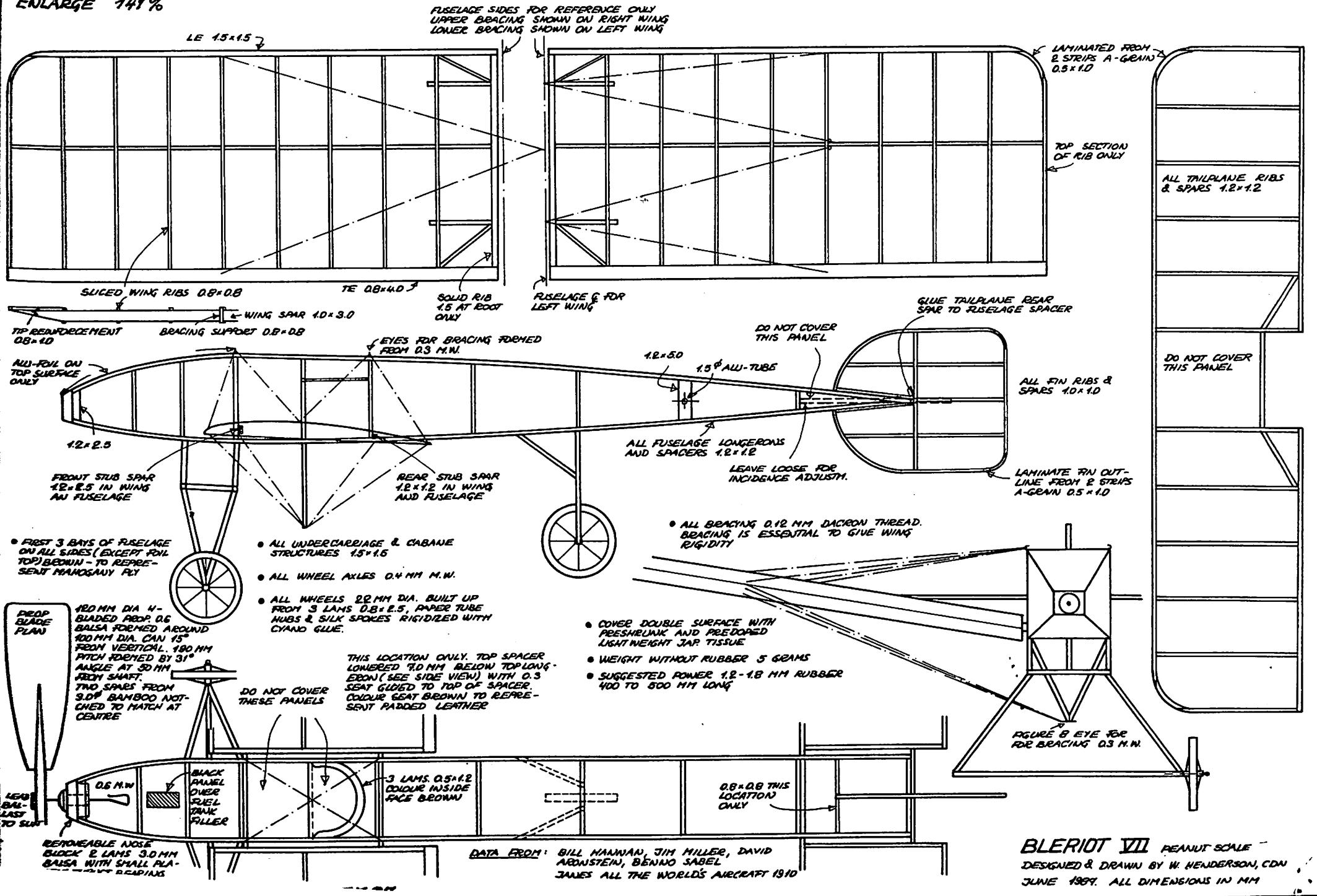
Model 1908-9.	
1	Bleriot IX
2	Bleriot XI (cross channel)
3	Bleriot XII
4	Leblanc, XI type
5	Delagrange, XI type
6	Cie Aerienne type (on sale)
7	" " "
8	" " "
9	" " "

Model 1908-9	
10	Cie Aerienne, XI type (on sale)
11	Experimental (40 h.p. Anzani) (XII)
12	" (60 h.p. E.N.V.) (XII)
13	Parkinson
14	Balin Hinde
15	G. H. Cox (XII)
16	Grahame White (*for sale*)
17	Captain Windham (*for sale*)

In addition: 34 Bleriots are building in France for delivery this year; 50 building at the Humber Works, Coventry, England; 21 sold to owners who cannot be traced.

17-3/87

ENLARGE 141%



DATA FROM: BILL HANNAN, JIM MILLER, DAVID ARONSTEIN, BENNO SABEL
JANES ALL THE WORLD'S AIRCRAFT 1910

BLERIOT XII PEANUT SCALE

DESIGNED & DRAWN BY W. HENDERSON, CDN
JUNE 1989. ALL DIMENSIONS IN MM

12-1981