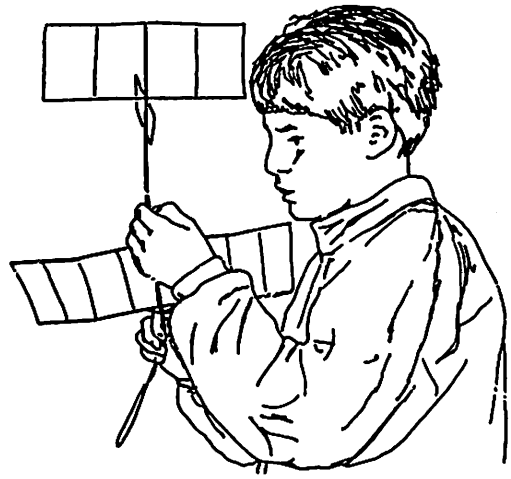
Indoor News

Issue 43 August 1997



DIARY

29-31 Aug Maastricht Netherlands	**Interscale 1997,** F4D, F4E, F4F, Pistachio. Contact: H.F.J. van Leeuwen, Papsouwselaan 180, 2624EE Delft, The Netherlands, tel/fax +31 15 2610972.
30 Sept- 5 Oct Slanic Romania	**European F1D Indoor Championships 1997.** Contact: Federatia Romana de Modelism, Str Vasile Conta no. 2, sector 2, 70139 Bucharest, Romania, tel +40 1211 0160, fax +40 1210 0161.
6-7 Oct Slanic Romania	**Euroindoor F1D.** Contact: see above

POSTAL/PROXY EVENTS

Oct. 1- Feb 1	**MIAMA Pistachio Postal Intergnats,** Pistachio Scale, Model of a model, Ridotto models. Send MIAMA a photo of your model, it's weight without rubber, and it's span, with it's best time. Contact: Doc Martin, 2180 Tigertail Ave., Miami, FL 33133, USA.

Records

60'01 F1D **World Record Cat. IV**
Steve Brown (USA) **Santa Ana, June 1, 1997**

Steve Brown set a new world record for microfilm models on June 1, 1997. The time was 60'01. This is the first "official" one-hour flight and took place at Santa Ana, Hanger 1.

Steve reports: "After my "unofficial" flight of 63'54 last september the cool and windy weather of fall interfered with my efforts to set an "official" one-hour record. After a few attempts and damaged models it became clear that I would have to wait for warmer air. I did have two flights of 58'59 and 59'32 on May 4.

I used the same Time Traveler design, this time with a 538mm diameter, 864mm low pitch prop. This model really needs a larger prop to limit the RPM's, but the 538mm was the best I had available on June 1. I used a 495mm loop of August 93 Tan II to compensate for the higher RPM of the smaller prop. The model was launched at 1:50pm and reached 45 meters altitude in 16 ½ minutes. The ceiling of Santa Ana is very narrow at the top and between 16 ½ and 27 minutes I steered the model 4 times to counteract some strong drift to the side. By 45 minutes the model had descended to catwalk altitude, about 42 meters. Total time was 60'07 with 6 seconds of prop stop. Average RPM was 41.4.

46'16 F1D **Japanese Record Cat. IV**
Kenichi Ota (Jap) **Matsumoto City, May 27, 1996**
Yamabiko Doom, ceiling 34 m.

34'13 EZB(USA) **Unoff. World Record Cat. IV**
Larry Coslick (USA) **Akron**

Dave Yates

Dave Yates passed away on Tuesday 3rd June, 1997. He had been in hospital for a few days and his illness developed into pneumonia. Dave was a most enthousiastic indoor flyer and one of the trio that keeps the British "North West Indoor Association" running. For many years he published the very fine Norwind News indoor newsletter. The loss of his friendship will be felt not just by his fellow british indoor flyers but also by the many friends he made abroad. Our deepest sympathies go to his wife Kath.

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.

Payment of subscriptions is preferred per eight issues. When paying by Eurocheque, International Postal Money Order or with bank notes no additional bank fees are required. Please add NLG 6,50 for bank fees when paying by Eurogiro or NLG 20,00 with foreign checks. The Eurogiro account number is 4406860.

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The U.K. Indoor Scale Nationals

Nottingham, May 4, 1997

by Reg Boor (GBR)

Once again the UK Indoor Scale Nationals were flown in the Sports Complex of the University of Nottingham, although this year only the larger of the two halls was used. Except that this made for a very busy and crowded day competitors were not greatly disadvantaged, but visitors who sometimes like to take the opportunity of flying their models during quiet periods were not allowed to do so this year. Nevertheless, there were plenty of visitors and the spectator's gallery was as busy (sometimes busier!) as the flying area all day, applauding good flights, stocking-up with model goods from SAMS and taking advantage of the refurbished restaurant area, which is now very attractive.

This time last year, when Peter Smart's all foam, four rubber motor Lancaster won the F4D open rubber event we all asked "what now ?". Well, as some of you must have seen from the aeromodelling press, Peter has made a foam Tupolev "Bear" which is painted in various shades of grey to simulate the alloy finish of these aircraft and it is a most impressive model. Not to be outdone in the foam stakes, Richard Crossley, the other "foam-master", brought along a new Heinkel HE177 in the black and green mottled finish that later versions of this aircraft carried. Both of these are large models and are beautifully executed. In the event, Richard's Heinkel took 1st place and Peter's Tupolev was 3rd, with the SE5a of Divs Masters between them in 2nd position. But if, as I did last year, you take-out the multi-engined flight bonus of 15% from the flight scores of both Richard and Peter you see that they become 882 and 991, respectively. In doing this you discover what the judges actually awarded them for their flights and you find that the Halton "Minus" of Adam Beales made the best flight of the day by a good margin, in fact, there were some good flights well down the results list, and more consistancy. So, but for the multi-engine bonus, Master's SE5a would have won, not for its flying, but for its huge static score. The message being, perhaps, for those who do not wish to build in foam, that all is not yet lost!

I should record that two judges were employed in F4D and F4E for both static and flying, so that the maximum possible judge's score in each section was 2 x 650 = 1300 points. The multi-engine bonus is added to the flight score awarded by the judges. It is also worth pointing-out to readers who are not too familiar with the scale scene that indoor scale contests are judged to exactly the same standards as outdoor radio control scale events and often by the same judges. They are tough events in which to achieve high scores, as an examination of the results will show, and although our free-flight colleagues tend to mock the 15 second flight-time requirement, the results, again, show how difficult it is to strike a reasonable, never mind correct, balance between static and flying qualities. Nevertheless, the free-flighters might consider that there is more merit in flight consistancy than we allow.

Take the F4E, CO2/ Electric event under review, it is again obvious that the best flights were not made by the top ranking models, the static scores in 1st and 2nd places being dominant. Mike Allen's Sopwith "Baby", with its huge floats, achieving best F4E flight of the day and flying more consistantly, together with Mike Green's Anec 1A, than the rest. The results are scattered with no-flights and in both contests there were five models judged statically that were not able to satisfy the flight-time requirement. It is interesting also to observe that no one has entered a model of foam construction in the CO2/Electric contest up to the present time.

Derek Knight's large, electric-powered AVRO 560 flew quite well for him this year but the coveted award of the "Acroplane Monthly" trophy, for the best model of an "ultralight" aircraft, slipped away from him and was awarded, for the first time ever, to a Pistachio entry. Chris Chapman's Bristol "Brownie". Chris's Brownie was an absolute jewel in foam at this small scale, from a modeller not previously known for foam construction. Other Pistachio entries in foam were Crossley's Hellcat and Smart's Curtiss racer. But do notice the 1st place in the Pistachio flying of Nick Peppiat's Lippisch "Storch", this is a remarkable achievement with a high aspect ratio tailless aircraft.

In the F4F, Peanut event Mike Hadland thoroughly deserved his 1st place. A very nice model, not flying particularly well in the first round of flying, he persevered to achieve 2nd place in both static and flying and consequently was 1st overall. Another model which looked very nice in the air was Ian Pallister's Peanut "Canberra". A twin-jet aircraft, of course, but modelled with a single, celluloid propeller which was invisible in flight.

For the first time, the UK Indoor Scale Nationals had a continental visitor and competitor. We were more than pleased to welcome Bernard Delhalle, of the Flemalle P.A.T. Club in Belgium and return to him some of the enjoyment that we have had over the years in Liège. Also, this was the first Nationals under the organisation of Dave Hanks, of the South Bristol club, who now has the responsibilities previously held by Doug Sheppard. Dave was ably supported by the usual team of extremely dedicated judges, timekeepers, contest directors, recorders etc. without whom there would not be an Indoor Scale Nationals. Our thanks must go to them all.

The UK Indoor Scale Nationals next year will be at the same venue on May 10th but both halls will be in use and the "fun" flyers will be welcome, all day, in the smaller hall

RESULTS: F4D, OPEN RUBBER

Posn.	Name.	Model	Fly1	Fly2	Fly3	Fly4	Static	Total
1	R.Crossley	Heinkel177	1014.2	932.8	0	0	845	1859.2
2	D.Masters	SE 5A	0	0	632	786	1055.5	1841.5
3	P.Smart	TU Bear	1140		1125.6	991.2	601	1741
4	A.Beales	Halton	496	1031	506	903	539.5	1570.5
5	Barry H.	Travelair	786	741	810	872	686.5	1558.5
6	V.Masters	Lacey M10	769	832	648	904	650	1554
7	R.Boor	H.Fury	691	749	824	478	588.5	1412.5
8	W.Beales	BA Swallow	0	0	506	528	803	1331
9	D.Reece	C.Ace	0	570	634	616	508	1142
10	S.Taylor	DornierD1	0	0	0	300	421	721

RESULTS: F4E, CO2/ELECTRIC

Posn.	Name.	Model	Fly1	Fly2	Fly3	Fly4	Static	Total
1	M.Goldby	BristolF2B	0	0	778	0	1115	1893
2	C.Newman	SE5A	0	759	0	0	1106	1865
3	J.Hovel	Blackburn	862	582	0	716	770.5	1632.5
4	M.Allen	S. Baby	898	892	933	852	686	1619
5	D.Knight	AVRO 560	706	0	706	0	846.5	1552.5
6	M.Green	ANEC 1A	398	680	542	878	412	1290

RESULTS: F4F, PEANUT

Posn.	Name	Model	Flying Posn	Static Posn.	Total.
1	M.Hadland	Fury	2	2	4
2	M.Harris	Voisin	3	3	6
3	R.Crossley	Chesapeake	1	7	8
4	P.Smart	Arado	5	5	10
5	D.Masters	SE5A	10	1	11
6	A.Beales	Martinsyde	4	9	13
7	N.Peppiat	Mustang	8	6	14
8	P.Boys	Waco SRE	15	4	19
9	D.Knight	Swift	9	11	20
10	I.Pallister	Canberra	7	14	21
11	V.Masters	Lacey M10	6	16	22
12	J.Hovel	Blackburn	11	12	23
13	A.Allen	Turbulent	17	8	25
14	R.Boor	AVRO 560	16	10	26
15	D.Prior	MIG 3	14	13	27
16	B.Stichbury	Piper Cub	13	15	28
17	B.Delhalle	Messerschmitt	12	17	29

RESULTS: PISTACHIO

Posn.	Name.	Model	Flying	Static	Total
1	C.Chapman	Brownie	4	1	5
2	R.Crossley	Hellcat	2	4	6
3	N.Peppiat	Storch	1	6	7
4	D.Masters	SE5A	6	2	8
5	M.Harris	Voisin	7	3	10
6	P.Smart	Curtiss	5	5	10
7	B.Stichbury	Lacey M10	3	7	10

FORTY MINUTE CLUB

JANUARY 1997

NAME	COUNTRY	TIME	1*	2*	YEAR	SITE
BROWN, STEVE	USA	63:54	X		1996	SANTA ANA
RICHMOND, JIM	USA	56:35	X		1996	AKRON
RANDOLPH, BOB	USA	55:06	X		1993	SANTA ANA
BROWN, STEVE	USA	52:46		X	1995	SANTA ANA
ASLETT, BERNARD	UK	52:22	X		1983	CARDINGTON
UNDERWOOD, GARY	USA	51:58		X	1996	LAKEHURST
KOWALSKI, DICK	USA	50:41	X		1976	AKRON
DOIG, RICH	USA	50:41		X	1995	AKRON
BANKS, CEZAR	USA	49:50		X	1996	MOSCOW, IDAHO
ROMAK, BUD	USA	49:35		X	1991	LAKEHURST
RANDOLPH, BOB	USA	49:31		X	1995	AKRON
SLUSARCZYK, DON	USA	48:10		X	1995	AKRON
BUTTY, RENE	SWI	48:01		X	1996	MOSCOW, IDAHO
RICHMOND, JIM	USA	47:44		X	1986	CARDINGTON
BARR, LAURIE	UK	47:28		X	1982	CARDINGTON
HARLAN, RAY	USA	47:13		X	1980	AKRON
DOIG, RICH	USA	46:24	X		1983	AKRON
HUNT, BERNARD	UK	46:14		X	1995	JOHNSON CITY
LOUCKA, LARRY	USA	46:14		X	1995	AKRON
CHILTON, STAN	USA	46:10		X	1994	AKRON
McGILLIVRAY, JACK	CAN	45:57		X	1996	MOSCOW, IDAHO
RODEMSKY, ERV	USA	45:50	X		1974	SANTA ANA
RIEKE, K. H.	GER	45:40	X		1962	CARDINGTON
MERKT, THOMAS	GER	45:27		X	1996	MOSCOW, IDAHO
GIBBS, BOB	USA	45:23		X	1995	SANTA ANA
REDLIN, CARL	USA	45:17	X		1962	CARDINGTON
ANDREWS, PETE	USA	44:59		X	1979	AKRON
MATHER, CLARENCE	USA	44:44	X		1974	SANTA ANA
ASLETT, BERNARD	UK	44:37		X	1985	CARDINGTON
DE BATTY, BOB	USA	44:35		X	1996	SANTA ANA
NICOARA, VASILE	ROM	44:30		X	1996	MOSCOW, IDAHO
HULBERT, BILL	USA	44:27		X	1994	AKRON
HACKLINGER, MAX	GER	44:20	X		1961	CARDINGTON
NORE, PENTTI	FIN	44:01		X	1986	CARDINGTON
ANDRE, THEDO	NED	44:01		X	1986	CARDINGTON
KOPECKY, ERNIE	USA	43:42	X		1963	SANTA ANA
ROBBINS, HERB	USA	43:39		X	1995	SANTA ANA
ORSOVAI, DEZSO	HUN	43:37		X	1986	CARDINGTON
KUJAWA, SYLWESTER	POL	43:35		X	1992	WROCLAW
MANGALEA, CORNELIU	ROM	43:30		X	1996	MOSCOW, IDAHO
CUMMINGS, FRANK	USA	43:28	X		1963	SANTA ANA
REE, ANDRAS	HUN	43:27		X	1992	DEBRECEN
ATWOOD, BILL	USA	43:17	X		1963	SANTA ANA
ROHRBAUGH, AL	USA	43:11	X		1996	AKRON
THOMAS, MIKE	CAN	43:01		X	1996	MOSCOW, IDAHO
PLOTZKE, RON	USA	42:53	X		1969	LAKEHURST
FOSTER, JOE	USA	42:44		X	1987	SANTA ANA
SIEBENMANN, DIETER	SWI	42:33		X	1986	CARDINGTON
CAILLIAU, LARRY	USA	42:29		X	1985	AKRON
DOMINA, DAN	USA	42:25		X	1979	AKRON
CANNIZZO, SAL	USA	42:20		X	1983	LAKEHURST
PYMM, DAVE	UK	42:03		X	1986	CARDINGTON
ROMAK, BUD	USA	42:01	X		1965	MOFFETT NAS
COSLICK, LARRY	USA	41:48		X	1995	AKRON
KAGAN, JOHN	USA	41:31		X	1996	LAKEHURST
OBARSKI, DICK	USA	41:30		X	1981	AKRON
FINCH, TOM	USA	41:27	X		1963	SANTA ANA
CHAMPINE, BOB	USA	41:23	X		1963	SANTA ANA
RODEMSKY, ERV	USA	41:23		X	1979	AKRON
STOLL, ED	USA	41:21	X		1963	SANTA ANA
HOFFMAN, EARL	USA	41:13		X	1987	SANTA ANA
MATHER, CLARENCE	USA	40:54		X	1974	SANTA ANA
GANSER, RON	USA	40:53	X		1996	AKRON
TIPPER, JOHN	UK	40:47		X	1996	MOSCOW, IDAHO
DRAPER, RON	UK	40:44	X		1962	CARDINGTON
POPA, AUREL	ROM	40:42		X	1996	MOSCOW, IDAHO
BILGRI, JOE	USA	40:37	X		1965	SANTA ANA
NONAKA, S.	JPN	40:36		X	1978	CARDINGTON
STEVENS, DARRYL	USA	40:35		X	1986	SANTA ANA
SHEPHERD, JESSE	USA	40:33		X	1995	AKRON
BAILEY, BOB	UK	40:25		X	1987	CARDINGTON
LOTZ, RAINER	GER	40:20		X	1996	MOSCOW, IDAHO
GITLOW, LEW	USA	40:15		X	1987	SANTA ANA
MOSKALEV, VASILI	UKR	40:15		X	1996	MOSCOW, IDAHO
KALINA, JIRI	CZE	40:11		X	1975	CARDINGTON
RODENBURG, OTTO	NED	40:11		X	1986	CARDINGTON
TRIOLO, JOHN	USA	40:06	X		1974	LAKEHURST
MZIK, LARRY	USA	40:01		X	1995	AKRON

*CLASS 1 – Over 65 cm CLASS 2 – FAI 65 cm – 1 gram

Official and unofficial flights included (best effort only, by individual, by class is shown).

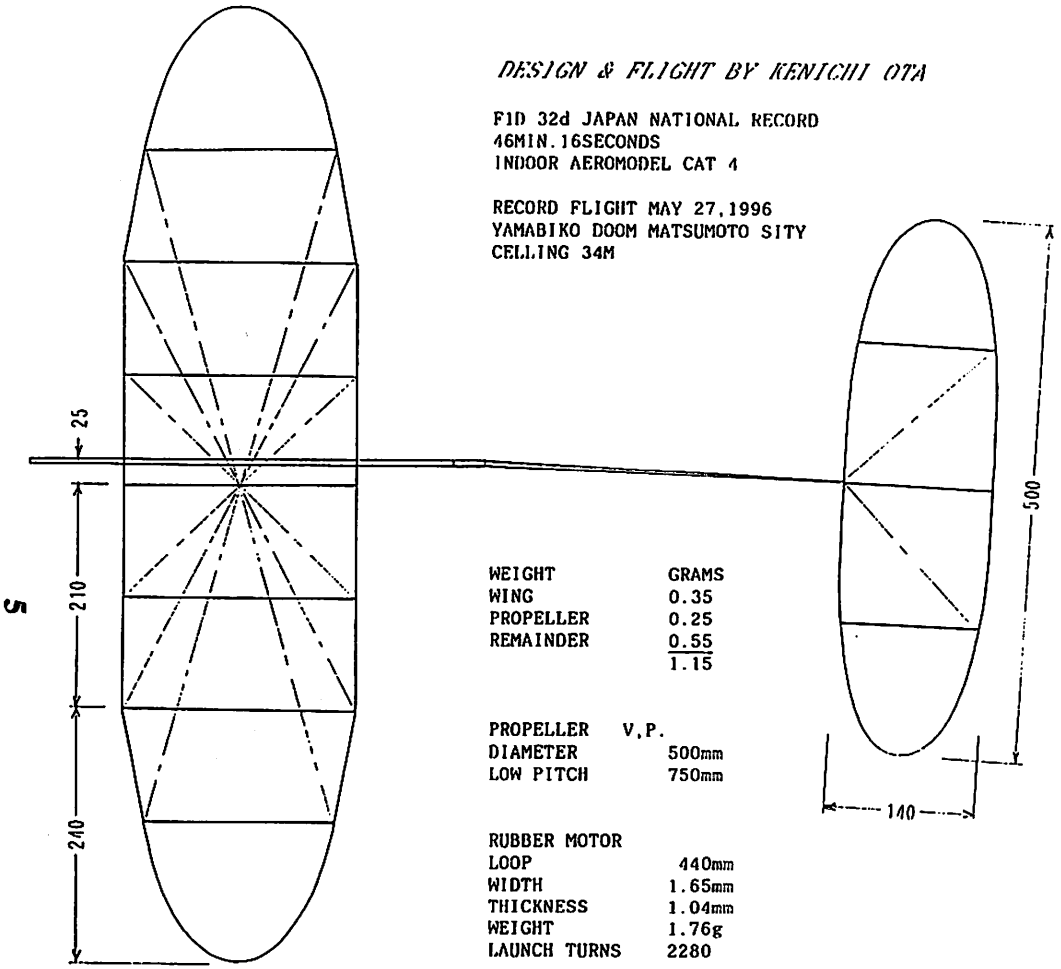
For additions, corrections, etc. send details to:

BOB GIBBS 22870 Springmist Drive, Moreno Valley, CA 92557 USA

DESIGN & FLIGHT BY KENICHI OTA

F1D 32d JAPAN NATIONAL RECORD
46MIN.16SECONDS
INDOOR AEROMODEL CAT 4

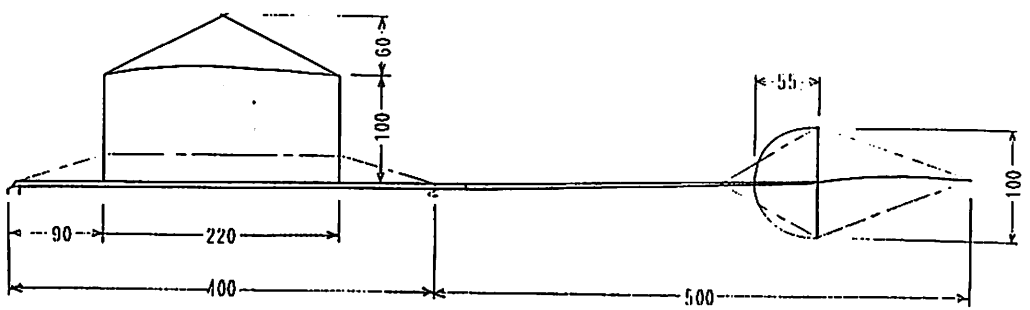
RECORD FLIGHT MAY 27,1996
YAMABIKO DOOM MATSUMOTO SITY
CELLING 34M

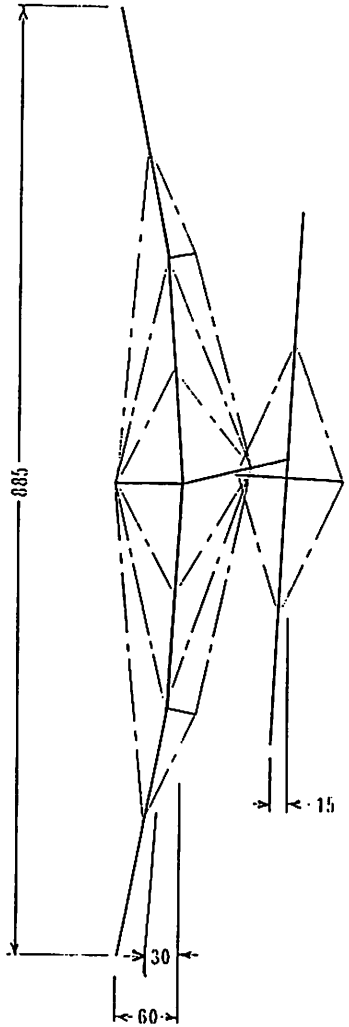


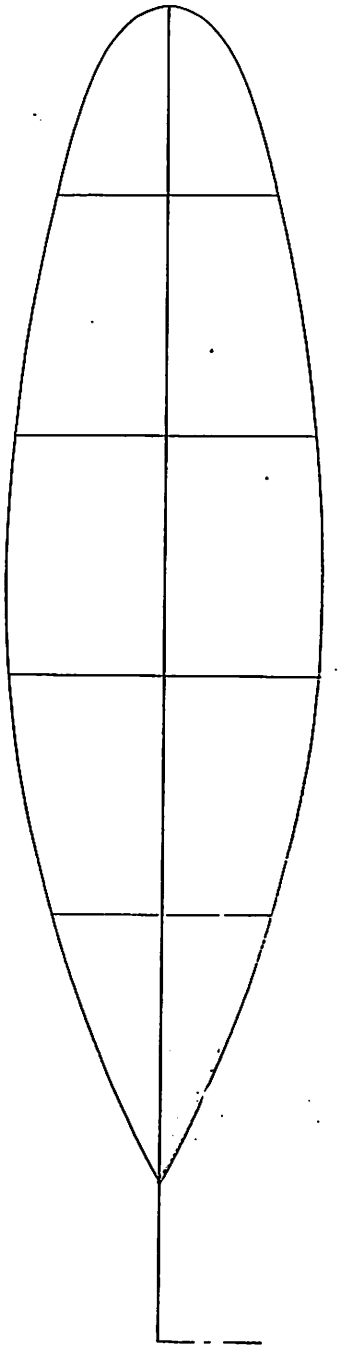
WEIGHT	GRAMS
WING	0.35
PROPELLER	0.25
REMAINDER	0.55
	1.15

PROPELLER	V.P.
DIAMETER	500mm
LOW PITCH	750mm

RUBBER MOTOR	
LOOP	440mm
WIDTH	1.65mm
THICKNESS	1.04mm
WEIGHT	1.76g
LAUNCH TURNS	2280







Indoor News

PROPELLER BLADES FROM A PLASTIC MUG

KAI K. HALSAS ANTTI T. JOLMA

A popular methode to make propeller blades for small indoor models is to cut them from plastic mugs or cans. Balsa sheet blades can also be formed on these conical surfaces.

The following will describe how the blade should be located on the mug. The pitch distribution will be compared to the helical distribution and to the distribution obtained if the blade is formed on a cylindrical surface

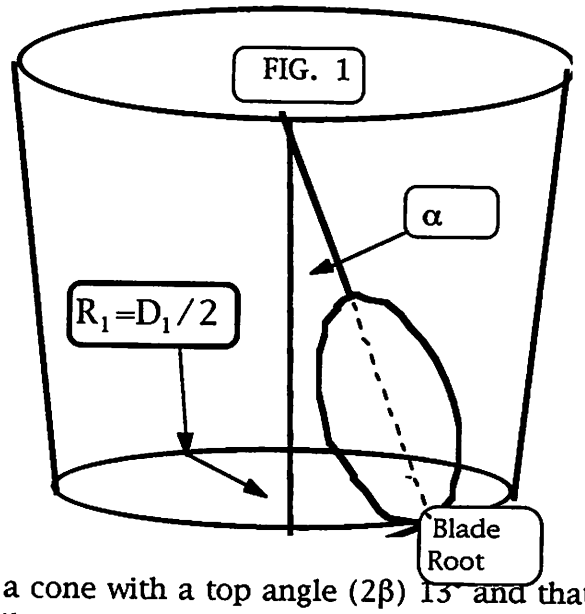
1. DETAILS OF PROPELLER AND CAN.

PROPELLER			MUG		
Diameter	D	178 mm (7")	Bottom diameter	D_1	60 mm (2.38")
Pitch	P	254 mm (10")	Top diameter	D_2	86 mm (3.38")
Pitch/Diameter	P/R	1,43	Mug height	H	108 mm (4.25")
Root radius	rr	20 mm (.79")			
rr/r		0,22			
Blade length	L	70 mm 2.76"			

Mug and prop. data are from (1)

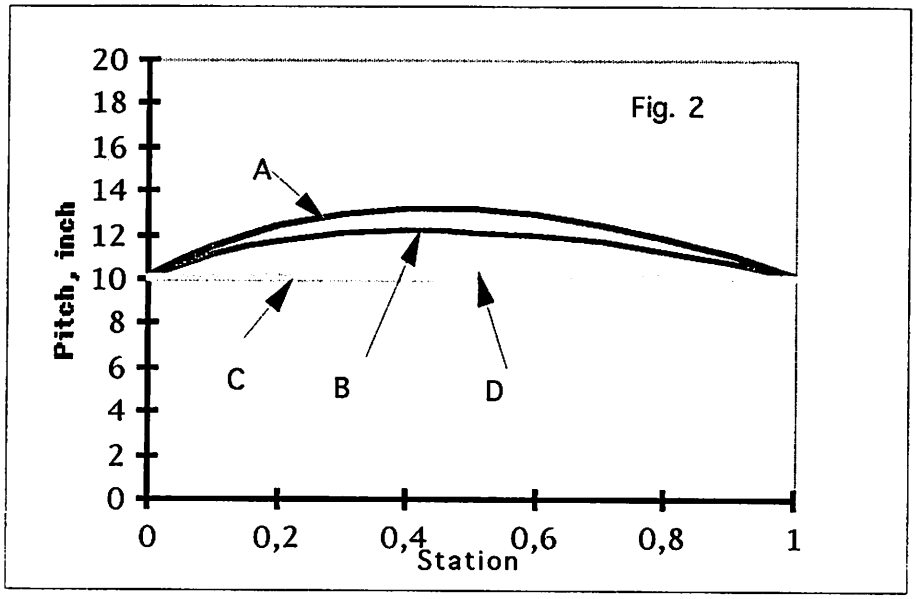
2. LOCATING THE BLADE

On a conical surface it is possible to form into the blade a twist that follows the helical pitch distribution closely.
The authors have shown (2) how a blade should be located on a cone with a top angle (2β) of 30°.The 30° cone was selected because it gives a "practical" combination of α and R_1.It was also shown that the conical surface gives always a twist that follows more closely the helical distribution than on a blade formed on a cylindrical surface.



Calculations show that our beer mug is part of a cone with a top angle (2β) 13° and that the blade root should be, for helical pitch distribution, located at R_1 = 14,5 mm D_1 =29 mm and at an angle α = 8°
,This shows that we are clearly outside the surface of the mug and we can not get a helical distribution for our blade. It is obvious that the blade root must be located on the bottom circle of the mug.
We read the can angle α, from the enclosed nomogram the same way as for a cylinder with the diameter 60 mm= the bottom diameter of the mug. First we have to calculate L/R = 70/30 = 2,33. From the nomogram we read α = 18°
Note! The angle α must "open" towards the bottom of the can.We have now a blade that follows the helical distribution more closely than a blade located on a cylinder with a diameter of 60 mm and the can angle α = 18°.

3. COMPARISON OF PITCH DISTRIBUTIONS.



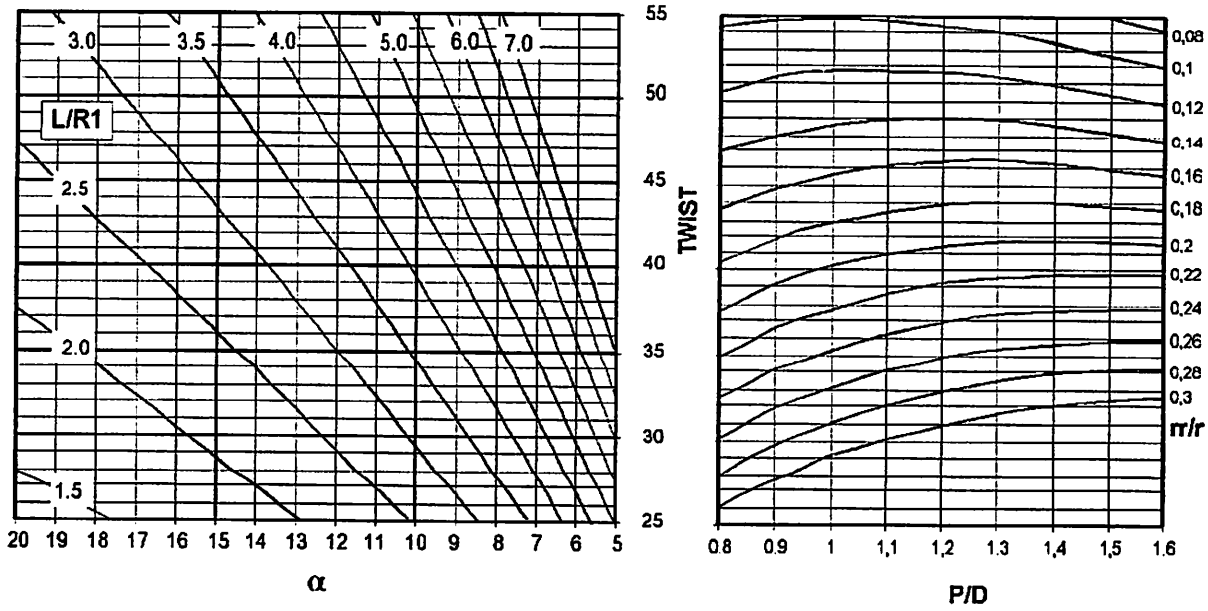
We have calculated and plotted the pitch distributions for four different cases:

A. On a cylindrical can with a Dia. of 60 mm and the angle $\alpha = 18°$.

B On our beer mug with the blade root at th bottom Dia. of the mug.At an angle $\alpha = 18°$.

C. On a cone which has a top angle of 30°. The blade is located with the root at the cone Dia of 29 mm and at an angle $\alpha = 8°$ The angle is opening towards the top of the cone. D. The helical pitch distribution.

We note from FIG. 2 how the beer mug gives a pitch distribution which is closer to helical than on the cylindrical can. The 30° cone gives a distribution which is practically same as the true helical distribution.



ACKNOWLEDGEMENT.

Mr Fred H. Rash has given, during our work, valuable advice and comments

REFERENCES

1.WILLIAM HENDERSON."*Farman F-190 . No-Cal Model*". NFFS Winning Indoor Designs" 1987 - 1989.

2.K.K. HALSAS AND A.T.JOLMA.*A Universal Forming Block For Propeller Blades*" NFFS Symposium Report 1996."

JAPAN Vs UNITED STATES
1996 EASY B POSTAL CONTEST
Individual Standing

Rank	Contestant Name	1	2	3	4	5		Best
1	Donald Slusarczyk	17:13	18:25	20:00	---	---		20:00
2	Jim Clem	14:57	17:30	18:41	16:43	18:00		18:41
3	Larry Coslick	16:21	18:23	02:09	04:48	01:58		18:23
4	Shigeyoshi Nonaka	17:42	16:59	18:06	--	--		18:06
5	Larry Loucka	13:25	16:55	17:20	---	---		17:20
6	Satoshi Kinoshita	--	17:08	16:13	--	--		17:08
7	Kazumasa Kihara	15:38	16:15	12:31	17:05	--		17:05
8	Dick Hardcastle	12:49	15:54	15:20	01:20	06:57		15:54
9	Thomas Vallee	00:05	14:44	15:12	01:22	03:39		15:12
10	Larry Mzik	10:25	14:39	14:54	---	---		14:54
11	Yooichi Ichiyama	10:12	12:07	13:40	14:51	--		14:51
12	Chuck Slusarczyk	11:31	12:40	14:38	--	--		14:38
13	Noburu Omata	09:37	14:04	14:37	13:41	--		14:37
14	Mazaki Takaji	--	14:19	06:31	--	--		14:19
15	Masatomo Oshima	12:08	13:08	14:10	13:24	--		14:10
16	Dan Belieff	04:38	13:52	13:19	07:40	13:10		13:52
17	Vern Hacker	13:48	12:21	--	--	--		13:48
18	Jesse Shepherd Jr.	13:41	13:16	13:26	12:56	07:04		13:41
19	Gene Toshu	13:25	00:34	02:29	03:41	04:32		13:25
20	Hiroshi Kurihara	11:22	12:56	12:18	12:47	--		12:56
21	Hisao Tamura	09:03	10:03	08:44	10:53	--		12:42
22	Ralph (Bud) Tenny	06:57	10:56	12:35	09:13	11:56		12:35
23	Phillip (Randy) Kleinert	12:02	11:59	02:44	12:05	12:33		12:23
24	Hirotaka Inoue	08:44	09:31	11:05	38:59			12:07
25	Goro Ueno	08:56	11:10	12:07	--	--		12:07
26	Minoru Fukuda	12:05	09:18	11:54	--	--		12:05
27	Jintarou Nakao	11:58	--	--	--	--		11:58
28	Hidaharu Thuthui	10:53	11:26	10:07	--	--		11:26
29	Kiyoshi Shiizu	07:11	08:30	11:26	09:48	--		11:26
30	Yuichi Katoh	10:23	10:00	10:51	11:12	11:09		11:12
31	Masaru Kuga	10:28	13:02	08:20	11:00	10:05		10:05
32	Seizu Tamai	03:20	09:41	09:24	07:58	06:45		09:41
33	Satoshi Tomita	03:26	06:56	09:33	--	--		09:33
34	Akio Akahoshi	06:46	08:56	07:59	--	--		08:56
35	Ted Seaver	05:03	06:47	04:50	05:29	08:10		08:10
36	Gordon Wisniewski	05:46	07:45	--	--	--		07:45
37	Tom Sova	06:39	--	--	--	--		06:39
38	John Fellin	03:35	01:41	06:25	--	--		06:25
39	Kazuma Hara	--	--	--	--	--		00:00



Larry Loucka - 17:20 - 5th place



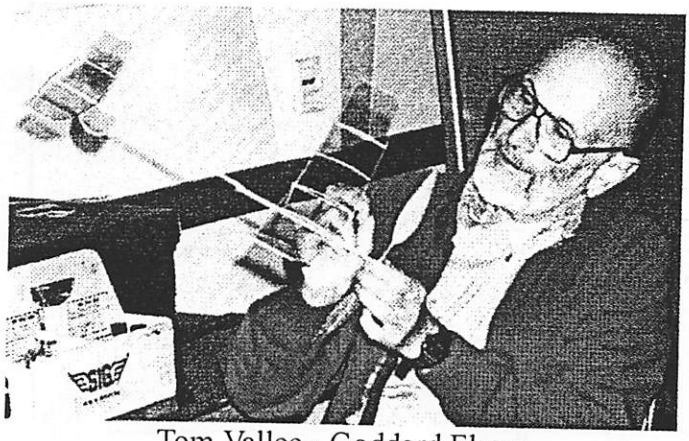
Satoshi Kinoshita - 17:06



Don Sluscarczyk - 20:00 - 1st Place



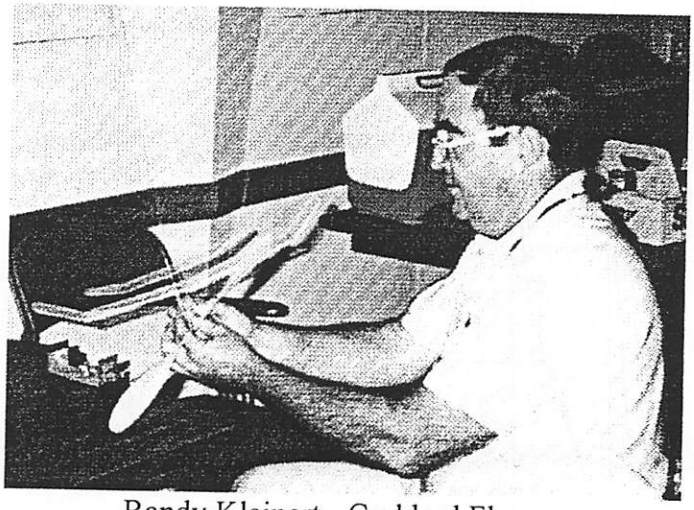
Larry Coslick - 18:23 - 3rd Place



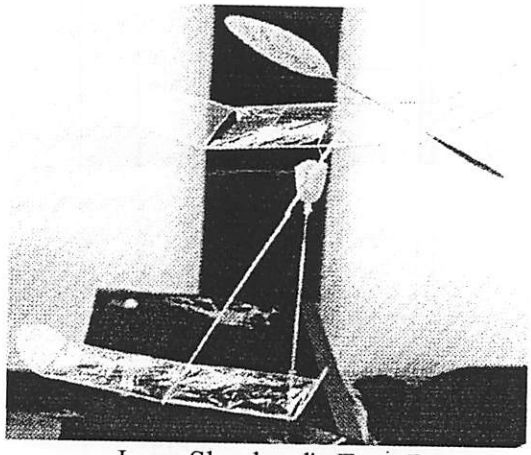
Tom Vallee - Goddard Flyers



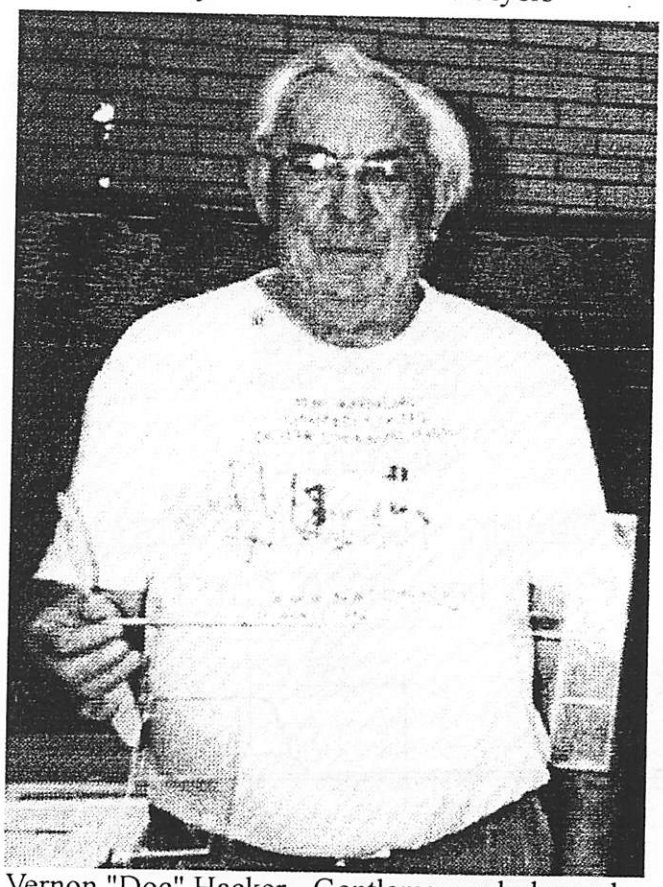
Dick Hardcastle - St. Louis Thermaleers



Randy Kleinert - Goddard Flyers



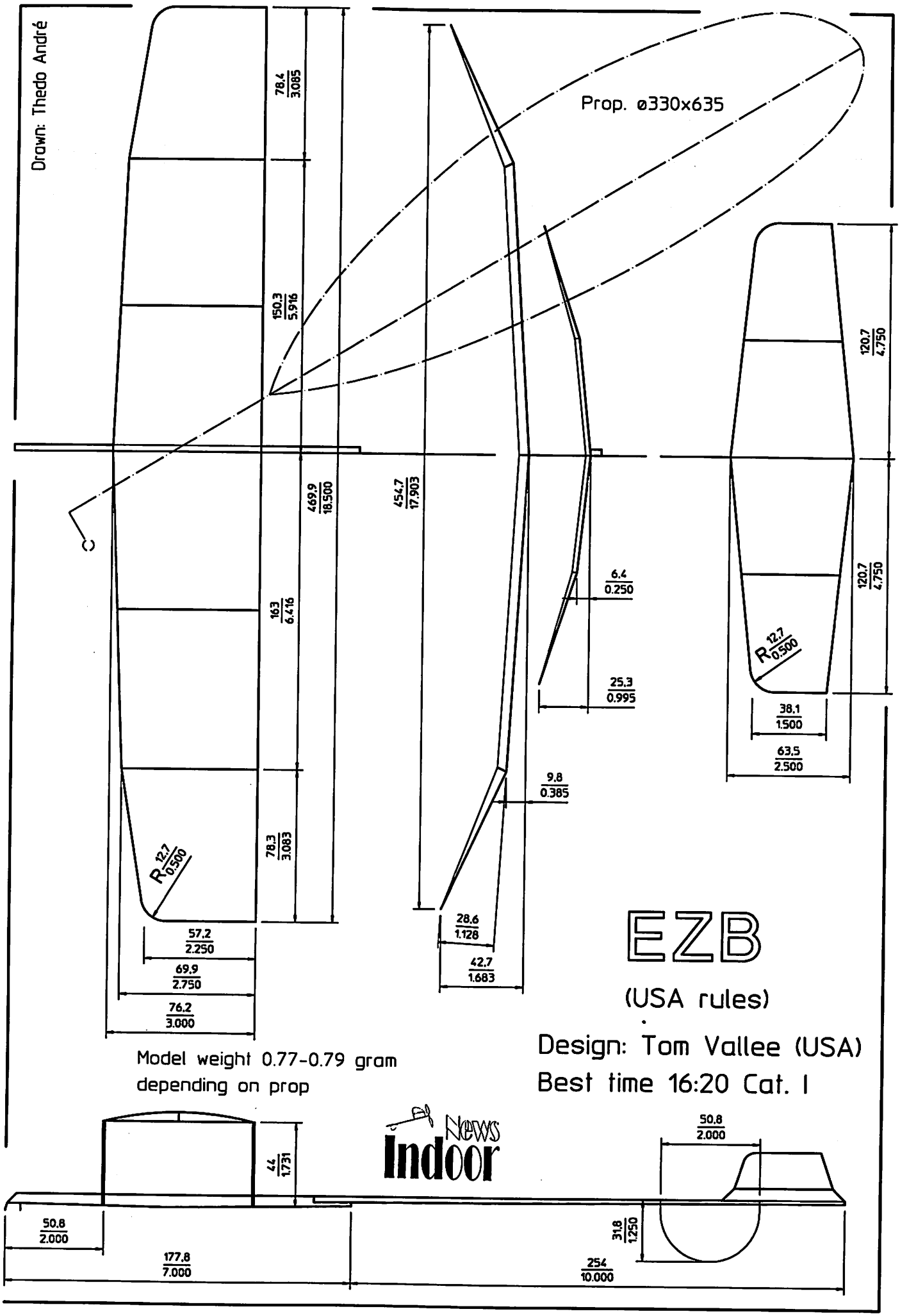
Jesse Shepherd's Easy B



Vernon "Doc" Hacker - Gentleman, scholar and Cleveland Clowns team captain/contest organizer.



Gene Toshu - St. Louis Thermaleers


Drawn: Thedo André
Prop. ø330x635
78.4 3.085
150.3 5.916
469.9 18.500
163 6.416
78.3 3.083
R 12.7 0.500
57.2 2.250
69.9 2.750
76.2 3.000
454.7 17.903
6.4 0.250
25.3 0.995
9.8 0.385
28.6 1.128
42.7 1.683
120.7 4.750
120.7 4.750
R 12.7 0.500
38.1 1.500
63.5 2.500
EZB
(USA rules)
Design: Tom Vallee (USA)
Best time 16:20 Cat. I
Model weight 0.77-0.79 gram
depending on prop
44 1.731
50.8 2.000
177.8 7.000
254 10.000
31.8 1.250
50.8 2.000

Indoor Campionships of Andalusia

Linares, Spain, June 1, 1997

On Junc 1st thc acromodclling club of Linarcs organiscd thc Indoor Championships of Andalusia. This rcgional contest also incorporated the second national compctition of thc scason and thc "Mayor's Trophy 1997". Thc contcst was hcld in thc bcautiful 9 mctcr sports hall of Linarcs. Thc modcls flown wcrc of thc F1D/F1D-B typc with wing spans of almost 50cm and modcl wcights down to ncarly 1 gram. This low wcight is only possiblc with carcful wood sclcction, minimum usc of glue and thc lightcst plastic covcring matcrials availablc.

Thc day startcd with rcgistration formalitics and tcst flying to find thc optimum rubbcr/propcllcr combination. Thc bcst flight of thc day was madc by last ycar's Spanish champion Daniel Mcdina with a ncw pcrsonal bcst of 7'28. Sccond placc was for Juan Morcno of thc Brcguct 19 club of Gctafc: his bcst flight was 5 sccond lcss than Mcdina's flight. This timc thc flight timcs wcrc not as good as last novcmbcr, although thc hall rccord of 7'08 was improvcd by 20 scconds (by Daniel Mcdina). Without doubt this was causcd by thc turbulcncc through thc opcning of doors and strong winds outsidc thc hall. But wc fccl that wc arc on thc way to rcach thc samc lcvcl of flight timcs as arc flown in othcr countrics.

Andalusia Championships

F1D

1.	Daniel Medina	Malaga	12'52
2.	Alejandro Exposito	Linares	9'37
3.	Francisco Jimenez	Linares	9'11
4.	Miguel A. Campos	Linares	8'16
5.	Pedro Delgado	Linares	7'42
6.	Jose Cubero	Linares	7'05
7.	Francisco A. Afonso	Linares	6'01

2nd Indoor Contest

F1D

1.	Daniel Mcdina	Malaga	12'52
2.	Juan Morcno	Brcguct 19	12'33
3.	Alcjandro Exposito	Linarcs	9'11
4.	Francisco Jimcncz	Linarcs	9'11
5.	Miguel A. Campos	Linarcs	8'16
6.	Pcdro Dclgado	Linarcs	7'42
7.	Grcgorio Martincz	Cuatro Vicntos	7'33
8.	Josc Cubcro	Linarcs	7'05
9.	Maria Jimcncz	Esc. Linarcs	6'43
10.	Francisco Garrido	Esc. Linarcs	6'23
11.	Rocio Martincz	Pucrta dc Hicr	6'17
12.	Francisco A. Afonso	Linarcs	6'01
13.	Ignacio Lozano	Esc. Linarcs	5'42

F1D-B

1.	Josc Cubcro	Linarcs	7'51
2.	Antonio Garrido	Esc. Linarcs	7'19
3.	Juan Manucl Hcrgcta	Esc. Linarcs	6'24

JMA-JIAC F1L Contest

Kawasaki, May 18, 1997

Akihiro Danjo kindly scnt thc rcsults of this Japancsc EZB contcst, which was hcld in thc Kawasaki, Kanagawa 20m high Todoroki Arena. This building has a squarc floor arca with thc narrowing from 12m upwards till 10m widc at thc cciling. Lamps, spcakcr-boxcs, cablcs and trussc arc hanging from thc cciling. As onc is not allowcd to hit thcsc, it is important to fly just bclow thc cciling in ordcr to gct a good flight.

RESULTS

21 flcw			Bcst 2 from 6
1. Akihiro Danjo	18'53	19'50	**38'43**
2. Masatoshi Misawa	17'46	19'07	**36'53**
3. Shinsukc Miura	16'35	16'37	**33'12**
4. Scizou Tamai	15'06	15'58	**31'04**
5. Zuikichi Fujiwara	14'44	15'04	**29'48**

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Age 18 & under. (US only)	1 yr. $7.50 ($.50 membership fee plus $7.00 subscription)
	2 yr. $13.50 ($1.00 membership fee plus $12.50 subscription)
All Non-US Residents	1 yr. $24.00 ($.50 membership fee plus $23.50 subscription)
	2 yr. $47.00 ($1.00 membership fee plus $46.00 subscription)
Life Membership US Residents	$450.00
Life Membership Non-US Residents	$500.00

Subscriptions are not available without membership.

Include payment in US dollars and this form–please circle applicable fees.

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Current expiration date: Mo. Yr.

Name AMA # (US only)

Address Telephone # (US only)

City, State Zip

Send *all* renewals, change-of-address, new applications, and membership questions to the Membership Office.

The Future of F1D

by Reg Boor (GBR)

I read Laurie Barr's article in INDOOR NEWS 37 with great interest and respect. Respect, because Laurie has, undoubtedly, by his efforts kept the Cardington site available for UK aeromodellers throughout the years and in addition has found the time and energy to be a formidable competitor in F1D at World class level. Interest, because I too am a follower of ultimate performance in model aircraft and despite my scale leanings have devoted a lot of time to the analysis of F1D and F1L formula model design. So if the editor will allow it, I should like to enter the debate, not by proposing new rule sets or by defending the old but by trying to highlight what effect specific rules, or limitations, have on design and construction. To do this we must be clear what the parameters are that affect duration in indoor extensible motor models such as F1D and F1L.

I shall avoid any mathematics because I should like this contribution to be as accessible as possible and I'm sure that all serious F1D flyers are familiar with the equation for duration anyway. As far as I know indoor duration theory was first brought to the attention of aeromodellers through a masterly paper presented by Max Hacklinger at the Annual WGL meeting in Braunschweig in 1962 which appeared in translation from the German in the UK Journal of the Royal Aeronautical Society in 1964. I'm equally sure that all of us who are interested have satisfied themselves of both the derivation and the result and it is sufficient to say that, used with care, the equation gives excellent predictions of duration.

Neglecting the "constants" involved in the equation, rubber-powered duration is a function of four parameters...

1. **Wing loading.**
Duration varies inversely as the square-root of wing-loading. If you could somehow arrange to achieve 90% of a previous loading, whilst keeping everthing else the same, your duration would increase by 1/sqr(0.9), i.e. 5.41%. Nevertheless, despite the conditional clause, the lighter the loading, the higher the duration.

2. **Rubber-to-airframe mass ratio.**
This is a much more complicated relationship and it contains Hacklingler's classic result that maximum duration is obtained when the rubber mass is twice that of the airframe. Only F1D models approach this ratio. However, it is not generally appreciated that the result is true only when the centre of gravity of the rubber and that of the airframe are co-incident.

3. **Aerodynamic "power factor" or CL^1.5/CD.**
Duration varies directly as the power factor. Any percentage increase in this parameter is reflected as the same percentage increase in duration. This is the real airframe design parameter involvimg such things as aerofoil profile and camber, the wing to tailplane area ratio and tail arm as expressed in the "tail volume ratio", wing to tailplane vertical gap, neutral point position, static stability margin and general drag reduction. Good trimming skills are essential in order to achieve optimum power factor and to know when you have achieved it.

4. **Propulsive efficiency.**
Duration varies directly as the propulsive efficiency, as item 3. The variables in this parameter are propeller diameter and pitch to diameter ratio, blade planform and blade angle distribution, foil shape and camber, balancing, good geometric blade matching and propeller choice to power matching. Included here are torque driven variable pitch and variable diameter propellers.

I have omitted the "energy height" of the rubber motor from this list, treating it as if it were a constant. This, of course, is not entirely true and obtaining rubber with a high energy content is essential to success in F1D. Indeed, in any extensible motor class.

It is worth noting in passing that items 1. and 3. are important in their own right in the outdoor duration classes as they are the key elements in the equation for glide sink rate. For the outdoor class of F1B, "Wakefield", the FAI in their wisdom, and I am not intending to be facetious in saying that, limit the total surface area, fix a minimum airframe mass and a maximum rubber mass. In doing so they eliminate items 1. and 2. from our list of parameters and present the modeller with the challenge of designing to achieve maximum aerodynamic efficiency in terms of both the airframe and the propeller, items 3. and 4. The specification for F1B does not, as it does in F1L, fix the wing and tailplane areas nor, as it does in F1D, within the span and airframe mass limits, allow the modeller complete freedom.

Now, superficially, you may feel that complete freedom sounds OK but in practice it develops skills of building the largest possible surface area inside the mass limit whilst including sufficient motor stick

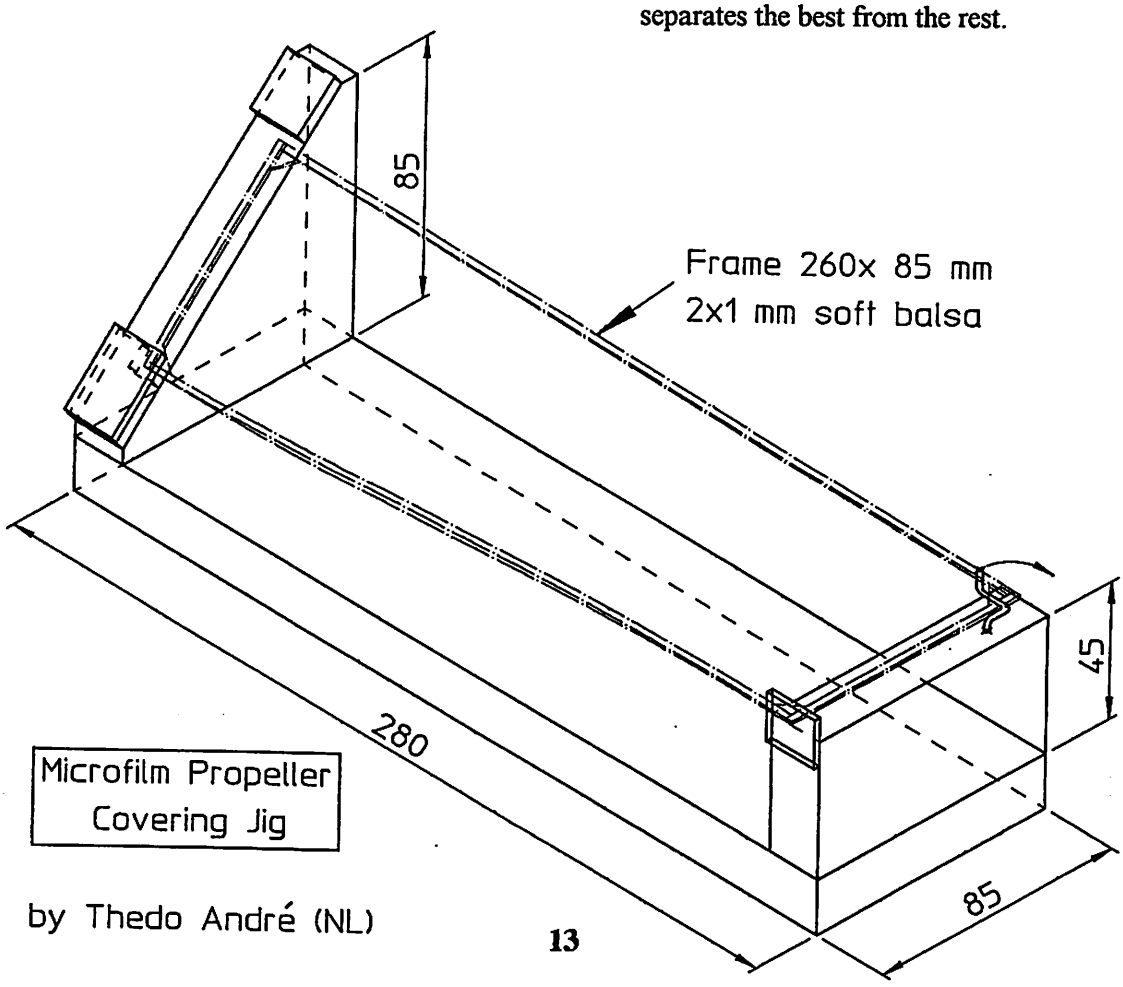
strength to carry a big rubber mass. Now, don't misunderstand me, I am full of admiration for the achievements in both F1L and F1D and wish that I could emulate them. But it is aerodynamic design only in a very limited sense and if we are going to suggest rule changes we should be thinking more clearly about the parameters which contribute to duration and try to decide what it is we are hoping to encourage the modeller and, in fact, the models to do. With respect, Laurie's suggestion for a class with a 65x18cm wing plus a 60% tailplane would, in effect, be a larger EZB. Why not propose 1872sq.cms. total surface area, 2gms minimum airframe mass with a 1 gm maximum motor and let the modeller get on with it? Not, perhaps, a beginner's class, but neither is "EASY" B (EZB), where we fix just about everything.

As an indoor duration "novice", rather than a beginner, I have been attracted to F1D-beginner. Although the specification does not quite match my philosophy propounded above, its 3gm. minimum airframe mass together with a 1.5gm. maximum motor provide a much more level playing field in terms of both constructional ability and perfomance than either F1L or F1D. This is very necessary, because there is no reasonable way of excluding the experts from competing in a class. Many top European flyers compete in F1D-beginner, but because of the stringent requirements their durations are not much greater than my own, whereas in F1L a factor of two is not unusual!

So, by restricting wing-loading and rubber-to-airframe mass ratio you promulgate a DESIGN competition in terms of airframe and propeller aerodynamic efficiency. But, by defining the wing and tailplane areas and their relationship, particularly with a low minimum airframe mass, you tend to encourage a BUILDING competition. F1L is firmly in the second category, with the choice, or discovery, of a motor stick of suitable strength-to-mass ratio being absolutely crucial. Should the minimum airframe mass in F1L be set higher it would at least encourage a TRIMMING competition.

In F1D there is much freedom of design but the low minimum airframe mass tends to dominate the modeller's thoughts. Additionally, although we have not previously mentioned it, the 65cm. span limit is a severe design limitation but if the minimum airframe mass were to be set high enough it would not be necessary, as wings could be constructed that would come apart for transport.

Last but certainly not least, neither have we mentioned trimming and steering. This is where the expert will always come to the fore because skill in trimming a model to exploit its full potential is as important as anything else and more than likely is what separates the best from the rest.



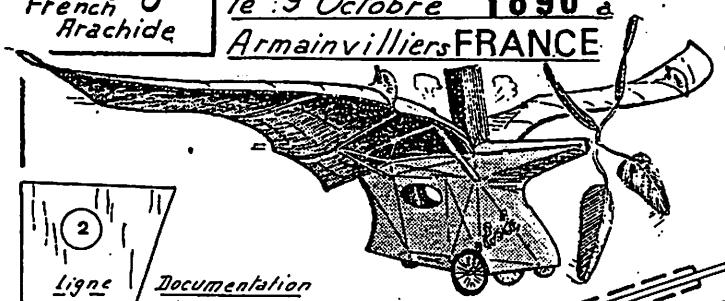
Microfilm Propeller Covering Jig

by Thedo André (NL)

L'EOLE N° 1 de CLEMENT ADER

Premier décollage au monde d'un aéronef plus lourd que l'air mû par un moteur à vapeur le 9 Octobre **1890** *à Armainvilliers* **FRANCE**

The French Arachide



Maquette Volante taille Peanüt longueur 230 mm
Déssinée par E Fillon Aéromodéliste

Documentation Air Museum . Air Sport
Etude du G' Lissarrague dans PEGASE N°52-56

Moteur caoutchouc 4 brins de 1x2 longueur 150 m paids 1,2 g
Poids modèle avec moteur : 15 gr
Surface : 7,56 dm² Charge : 2 gr/dm²

Profil 7 et autres bacs de nervures peuplier 0,5x1 Cintré à chaud

Baguette Provisoire, balsa 5x1

Ligature collé Araldite

Palier 1 Dural 8/10

Bambou ϕ 2 à 1 cambré à chaud

≅ 40°

Hélice 4 pales ϕ 190

Bambou 0,5x1

Roue ϕ 18

≅ 20°

Paille refendue entre 2 feuilles de papier Japon fin

Vue développée

Bambou 0,5x45

Roue ϕ 38 Voie 42

Lest si nécessaire

Roue ϕ 18

Bambou 0,5x1

Balsa utilisé densité 0,15 à 0,2

Pas de vitrage

Eole en blanc

Balsa 1,5x1,5

Balsa 1x1,5

Balsa 0,8x1,5

Axe cap 8/10

Balsa 1,5x1,5

Soupliseau

Tube papier

2 balsa 0,8x1,5

Paille ϕ 1

Capot amovible

Condenseur

Trame auto collante ou dessin à l'encre de chine

Paille ϕ 0,8

Paille ϕ 0,5

Traits de scie

Paille ϕ 1 à 1,5

2 balsa 0,8x 1,5

Bambou 1,5x1,5 à 0,8x0,8

Bambou ϕ 2,5 à 1,5 mis en forme à chaud

Fuselage cotés et parties inférieures recouvertes en papier Japon bleu + Enduit Tendeur dilué

Papier calque 90 gr recouvert Japon bleu

Papier calque

Paille ϕ 1,2 Noir

Coupe

Voilures
Recouvrement papier Japon bleu par panneaux développables
Enduit non tendeur
Coller ensuite les pailles de bord de fuite et couper les parties excédentaires

Nota pour obtenir l'autostabilité sur ce modèle non piloté la courbure d'origine des profils à été modifiée

Papier calque
Tube papier
Dessiné à l'encre

Ligne A-B
Chantier Balsa 4 mm

Ligne A-B
Chantier Balsa 4 mm

Ligne C
Chantier Balsa 4 mm

Ligne A-B
Chantier Balsa 4 mm

22 Dièdre 2 peuplier 0,5x3

Régler la direction de vol par l'orientation de l'axe hélice

Balsa 1,5

Balsa 1,5 x 1,5

2 balsa 0,8 x 1,5

bossage balsa

balsa 2x2

Peuplier 0,5x1

2 balsa 0,8x1,5

Balsa 1,5x1,5

Crochet cap 5/10 Balsa 1,5

Colle Araldite

Centrage

Dessus du fuselage non recouvert

Paille ϕ 1 Echelle 1/1,25

14

1997 ministick Postal Contest

Name	Country	Time	?illing--	Corr. factor	Corr. time	STANDING
VanGorder, Walt	USA	598	23.4	1.609680412	962.5888865	1st overall
Collins, Walt	USA	438	8.166	2.100850304	920.1724334	1st USA
Danjo, Akihiro	JAPAN	527	24.23	1.593674922	839.8666839	1st International
Clem, Jim	USA	519	23	1.617612628	839.5409539	2nd USA
Brooks, Peter	USA	390	8.166	2.100850304	819.3316188	3rd USA
Mzik, Larry	USA	485	20	1.682235827	815.8843759	
Platt,Bob	USA	386	8.166	2.100850304	810.9282176	
Keller, Peter	SWITZ	377	8.04	2.10804124	794.7315476	2nd International
Z Fujiwara	JAPAN	528	29.52	1.503854509	794.0351809	3rd International
O'Grady, Dan	CANADA	484	25	1.579345088	764.4030227	
Tenny, Bud	USA	421	16	1.786324786	752.042735	
Shigezoshi, Nonaka	JAPAN	471	24.23	1.593674922	750.6208883	
Hua-Nboc, Trung	FRANCE	485	27.55	1.535089532	744.6184232	
Slusarczyk, Don	USA	439	20	1.682235827	738.5015279	
Shigeyoshi, Nonari	JAPAN	461	24.23	1.593674922	734.684139	
Toru, Yatabe	JAPAN	488	29.52	1.503854509	733.8810005	
S Miuya	JAPAN	488	29.52	1.503854509	733.8810005	
Sadeyoshi, Tomita	JAPAN	485	29.52	1.503854509	729.369437	
Raymond-Jones,Collin	CANADA	461	25	1.579345088	728.0780856	
Hoffman, Earl	USA	425	18.75	1.712245332	727.704266	
Gardner, Steve	USA	440	22	1.63810595	720.766618	
T Anishi	JAPAN	476	29.52	1.503854509	715.8347464	
Fujiwara, Zuikichi	JAPAN	439	24.23	1.593674922	699.6232908	
M Ida	JAPAN	458	29.52	1.503854509	688.7653653	
Samuelson, Pete	USA	394	18.75	1.712245332	674.6246607	
Hiroshi, Kurihara	JAPAN	417	24.23	1.593674922	664.5624425	
T Abe	JAPAN	441	29.52	1.503854509	663.1998386	
Someya, Sado	JAPAN	415	24.23	1.593674922	661.3750926	
Hirataka, Iroue	JAPAN	415	24.23	1.593674922	661.3750926	
Akio, Akahoshi	JAPAN	412	24.23	1.593674922	656.5940679	
Shinsuke,Miura	JAPAN	435	29.52	1.503854509	654.1767115	
Olshefsky, Peter	CANADA	414	25	1.579345088	653.8488665	
Sova, Tom	USA	388	20	1.682235827	652.7075007	
Jintaro, Nakao	JAPAN	403	24.23	1.593674922	642.2509936	
Hisao, Tamura	JAPAN	402	24.23	1.593674922	640.6573186	
Matsushita, Tokutaro	JAPAN	412	29.52	1.503854509	619.5880578	
Person,Lee	USA	290	8.166	2.100850304	609.2465883	
VanDover,Abram	USA	283	8.166	2.100850304	594.5406362	
Toru,Onishi	JAPAN	389	29.52	1.503854509	584.9994041	
Kelly,Jim	USA	274	8.166	2.100850304	575.6329834	
Hirotake, Inoue	JAPAN	361	24.23	1.593674922	575.3166468	
Yano, Goro	JAPAN	360	24.23	1.593674922	573.7229719	
Minoru, Iida	JAPAN	378	29.52	1.503854509	568.4570045	
Anthony, Dick	USA	338	22	1.63810595	553.6798111	
Kaneko, Shoji	JAPAN	368	29.52	1.503854509	553.4184594	
Kateh, Yuichi	JAPAN	343	24.23	1.593674922	546.6304982	
Masatomo, Osima	JAPAN	342	24.23	1.593674922	545.0368233	
Tmatsu, Shita	JAPAN	352	29.52	1.503854509	529.3567873	

Minoru, Hukuda	JAPAN	331	24.23	1.593674922	527.5063992	
Grange, Yannick	FRANCE	300	19.52	1.693520615	508.0561846	
Akira, Tachimori	JAPAN	315	24.23	1.593674922	502.0076004	
Tadashi, Abe	JAPAN	333	29.52	1.503854509	500.7835516	
Pontan, Sven	SWEDEN	300	23.08	1.616014436	484.8043308	
Miyazawa, Takeshi	JAPAN	296	24.23	1.593674922	471.7277769	
Leijon, Tomas	SWEDEN	323	32.78	1.456894142	470.5768078	
Someya, Akira	JAPAN	290	24.23	1.593674922	462.1657274	
Haihas, Kai	FINLAND	279	23	1.617612628	451.3139232	
Yochiro, Tkevchi	JAPAN	282	24.23	1.593674922	449.416328	
Hartstein, Daniel	SWEDEN	262	23.08	1.616014436	423.3957822	
Tornkvist, George	SWEDEN	281	32.78	1.456894142	409.3872538	
Komura, Kazumasa	JAPAN	271	29.52	1.503854509	407.544572	
Linden, Lars	SWEDEN	253	32.78	1.456894142	368.5942178	
Sullivan,Ed	USA	137	8.166	2.100850304	287.8164917	
Suzuki, Hidoharu	JAPAN	176	29.52	1.503854509	264.6783936	
Martinez, Fernando	SPAIN	91	13.3	1.872993929	170.4424475	
Bellet, Luis	SPAIN	90	13.3	1.872993929	168.5694536	
Schmidt, David	SWEDEN	113	32.78	1.456894142	164.629038	

F1L(EZB) and Scale Rules

A letter from Reg Boor (GBR):

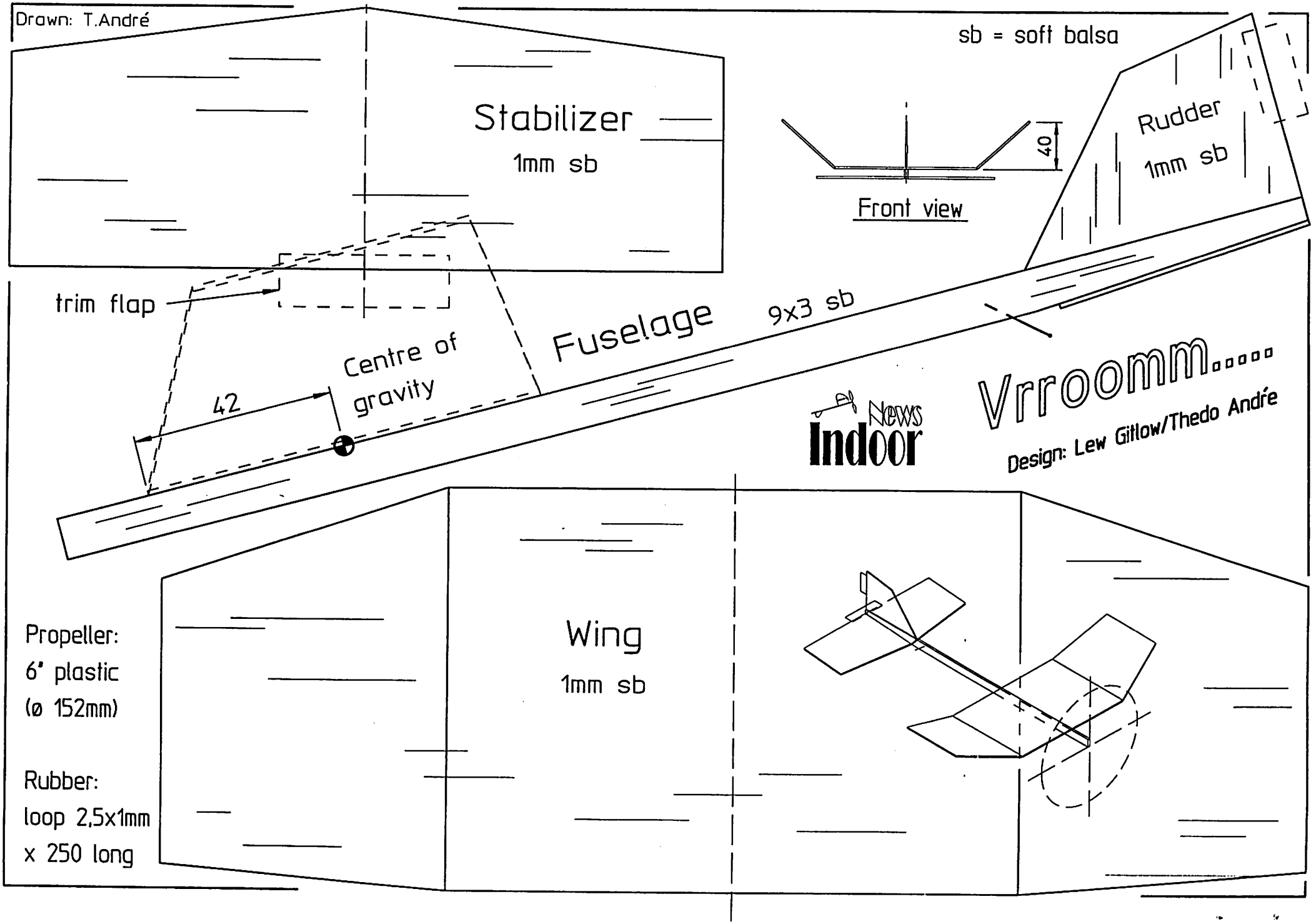
Dear Thedo,
Your correspondents Lentink and Wackers in their excellent report of the 1996 Liège meeting (INDOOR NEWS combined issue number 39/40) raise a number of points regarding rules which are possibly puzzling more modellers than themselves.

Let us look at F1L first, remembering that the FAI designation of F1L is attached to what we all knew previously as "1.2gm EZB". In a contest announced as being for F1L models the rules are very well defined by FAI and were given in full in INDOOR NEWS issue number 19. There is no doubt that in an F1L contest all the models should have a minimum airframe weight of 1.2 grammes and that mechanically operated variable pitch propellers are NOT allowed. But because of U.S.A. influences, and their continuing enthusiasm for a contest with no minimum weight limit, a contest announced as being simply for EZB models can be interpreted by different modellers in different ways and the authority holding the contest must be prepared for American style EZB's with minimum airframe weights of as little as 0.7 of a gramme. However, propellers which vary their pitch by means of aerodynamic forces only are allowed in either contest. The Liège organising authorities announce their contest as being for "F1L(EZB)" models, this should imply 1.2gm models but perhaps the dual title is confusing some contestants who are not entirely familiar with the rules.

Similarly, the position with regard to scoring static appearance and flight realism in F4D and F4E indoor scale is also clear-cut in the FAI rules. The intention is to give the flight and static scores equal potential, but the scoring authority at a contest has to be very careful. If three static appearance judges are employed, as suggested by the rules, their individual scores should be added together to obtain the final static appearance score. But, if only two flight realism judges are then employed, and their individual scores are averaged, the resulting figure should be multiplied by three. This will then give the final flight realism score the same potential as the static appearance score. If the scores from two flight realism judges are added together then the resulting figure should be multiplied by one and a half.

I hope this is clear! Only if an equal number of judges is employed for both static appearance and flight realism, without any averaging, can their scores be added together without previous manipulation. So, a good score in static appearance only is unlikely to result in a good contest result unless a mistake of the type described has been made.

I shall leave David and Jeroen to go back and look at the results in question! No names, no packdrill, as we say in the UK.


Drawn: T.André
sb = soft balsa
Stabilizer
1mm sb
Front view
40
Rudder
1mm sb
trim flap
Centre of
gravity
42
Fuselage
9x3 sb
News
Indoor
Vrroomm.....
Design: Lew Gitlow/Thedo André
Wing
1mm sb
Propeller:
6" plastic
(ø 152mm)
Rubber:
loop 2,5x1mm
x 250 long