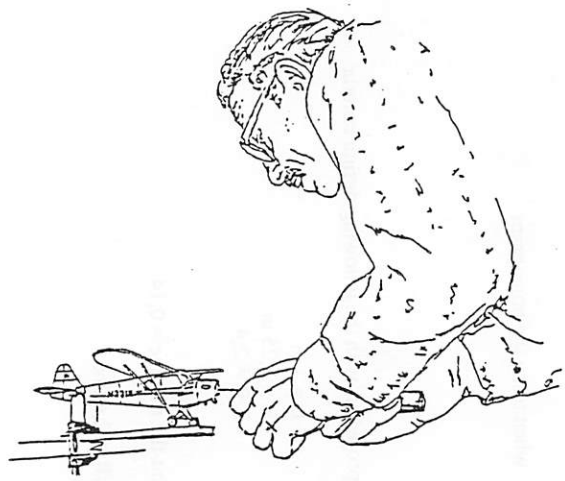
Indoor News



Issue 28 August 1994

DIARY

25-28 Aug Liège Belgium	**18th International Indoor**, All classes, Bernard Delhalle, rue de Souvret 62, B-4100 Sclessin-Liège, Belgium.
28-29 Aug Cardington England	**British Indoor Nationals**, Index over 2 days; 28th: EZB, Lim.PP, Catapult, 29th: F1D, LRS. L. Barr, Herries Cottage, Winter Hill Road, Pinkneys Green, Berks. SL6 6PJ, England. Ring Laurie the Friday before (tel. 0628 487544)!
20-25 Sept Slanic Romania	**1994 Indoor World Championships**, Federatia Romana de Modelism, see details in IN27.
26/27 Sept Slanic Romania	**F1D Open International**, Federatia Romana de Modelism, see details in IN27.

RECORDS

28'05 EASY BEE **AMA Cat. IV Record**
Walt van Gorder (USA) **June 19, 1994**

30'06 EASY BEE **Cat. IV World Record**
Larry Coslick (USA) **July 3, 1994**

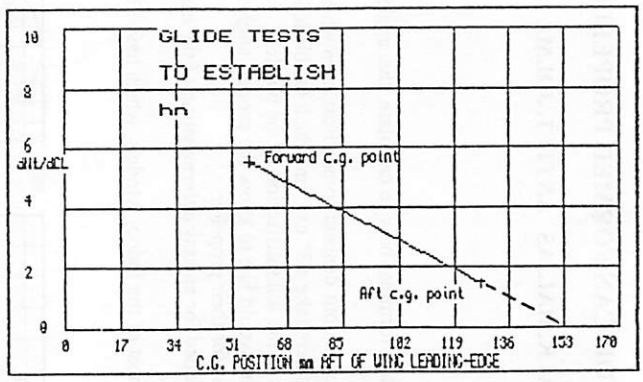
This record flight was made in the Akron Blimp Hangar. The time exceeds Bernard Hunt's current unofficial world record time of 28'33. It is not known whether Larry's model meets the FAI F1L rules, but it is probably a USA rules model.

INAV is back!

The U.S. newsletter for indoor flyers, INDOOR NEWS and VIEWS, is back again. The newsletter is now edited by a team consisting of:
L. Coslick - editor, R. White - publishing manager, H. Henderson - treasurer, M. J. Reilly - managing editor, B. Martin - scale editor.
They have quickly produced two issues. The last one contained the full USIC results with pictures, TAN II tests and lots more. I have no information about subscription rates. Write to Roy White for information: 1025 Cedar Street, Catawissa, MO 63015, U.S.A..

CORRECTION

I accidentally omitted a graph from Reg Boor's article "Glide Testing for the Neutral Point" in the last issue. My apologies for the omission. Here it is:



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 (I can read the latter two, but not write them). Please type your texts on 12,5 cm width. Texts can be sent on floppy disk (3½ or 5¼) in Wordperfect or ASCII format.

I can make the drawings, if you are no draftsman. I prefer payment of subscriptions per six issues. Paying by Eurocheque, Postal Money Order or sending bank notes is free of handling charges to the recipient. Please bear the handling charges yourselves when paying by Eurogiro or with foreign checks. The Eurogiro account number is 4406860.

Editor:
Thedo André
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NL-6537JD Nijmegen
The Netherlands

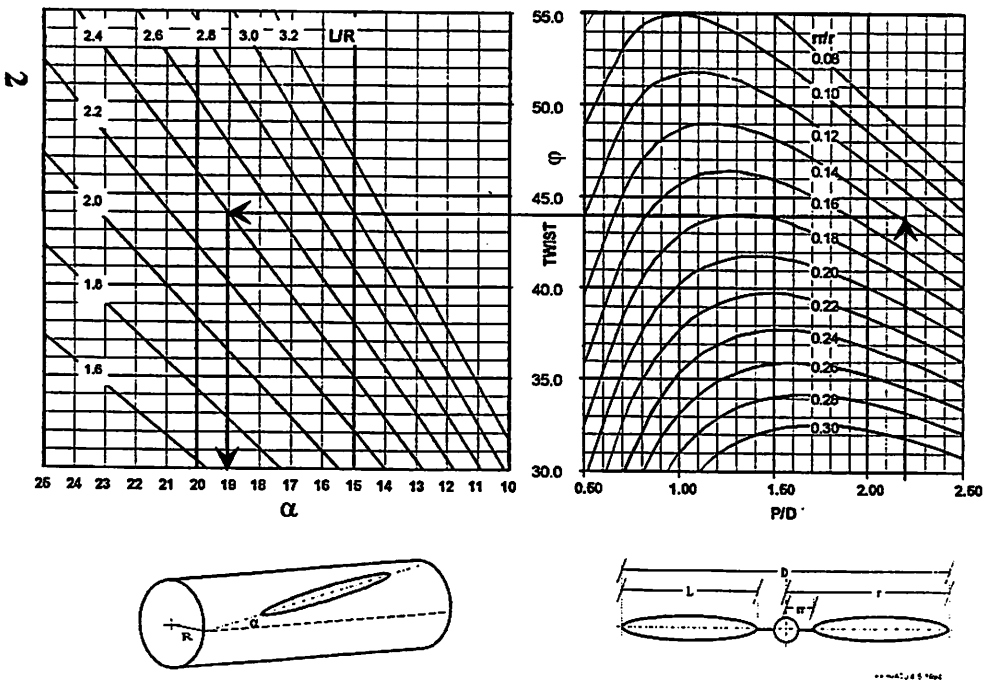
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NOMOGRAM FOR CAN FORMED PROPELLER BLADES

KAI K. HALSAS ANTTI T. JOLMA

GENERAL

There are a number of mathematical formulas how to calculate the angle for laying the propeller blade blank on a cylinder.
The formulas are not too complicated, but demand some effort even when a computer is used.
We assume that most of the modelers take a 3" can, on which the blade is laid at an angle of 15 degr., and the propeller performs to the full satisfaction of the builder.
There are, however, modelers who would like to know the proper angle for a given can size or what can diameter they should use for their propeller.
The enclosed nomogram is developed for an easy determination of the can angle, without extensive mathematical calculations.
The P/D range 0,5 - 2,5 covers most of the Indoor Models, which have all wood propeller blades.



USING THE NOMOGRAM

There are only three simple calculations to make when using the nomogram.

1. Calculate Pitch/Diam = P/D
2. " root radius/prop radius = r/r
3. " blade length/ can radius = L/R

We are using as an example a LRS (Mini-Stick) propeller, with the following design criteria:

D = 7 in	r = 3,5 in	L = 3 in
P = 15,4 in	r = 0,5 in	R = 1,25 in
P/D = 2,2	r/r = 0,14	L/R = 2,4

Step 1, Go straight up from P/D = 2,2 until you hit the r/r line = 0,14

Step 2, Draw a horizontal line until you hit the L/R = 2,4 line.

Step 3, Go straight down to the α - line.

Step 4, Determine the can angle α , in this case 19 degr.

A 2" diam. (R=1") can would give a L/R of =3 and the corresponding can angle would be 16 degrees.
The nomogram can be used, without modifications, either in inches or metric dimensions.

CAN SIZE

It seems that optimum camber and lengthwise curvature of the blade is achieved, when the can angle is between 15 - 20 degr.
Recommended can sizes (can diameters):

Peanut	1,5 - 2,0 in	35 - 50	mm
LRS	2,0 - 2,5 "	50 - 65	"
Lim P-P	4,0 - 4,5 "	100 - 115	"
EZB	4,0 - 5,0 "	100 - 125	"
FID-B	5,0 - 6,0 "	125 - 150	"
P-P	5,0 - 7,0 "	125 - 175	"

BLADE TWIST

Between the two parts of the nomogram is a vertical line of numbers. These numbers show the blade twist (blade root angle - blade tip angle). The LRS blade in our example has a twist of app. 44 degrees. This gives a twist of 15 degr. per inch of blade length.

MATHEMATICS AND FORMULA

One of the authors (1) has published a resumè of the mathematical procedures for determining the proper angle for a "jug prop".
B.Meuser (2) has published a comprehensive article about can angle selection. using a set of nomograms.
The authors will supply, by request, the complete mathematics for their nomogram
The nomogram ties together the key parameters in propeller planning, using the can technology.
The parameters are P/D , rr/r and L/R.

The nomogram is based on the equation $\tan\varphi = \tan\{(L/R)*\alpha\}*\cos\alpha$
α = can angle, φ = blade twist (blade root angle - blade tip angle), L = blade length. R = Can radius

We have also available a simplified formula : $\alpha = \varphi / \{0.97 * (L/R)\}$

For computer calculation we write this formula as follows:

(((ATAN(P/D/PI()/rr)) - (ATAN(P/D/PI())))/(L/R*0,97))*(180/PI())

This simplified formula gives accurate results for L/R ratios over 2 For lower ratios the deviation will be about 1 degree. The angle will be on the low side.

We calculate our earlier example:

Blade twist φ = (atanP / D / π / rr - atanP / D / π)

$\varphi = 78,7° - 35° = 43,7°$

$$\alpha = \frac{43,7}{0,97 * 2,4} = 18,77° \approx 19°$$

NOMENCLATURE

P = Propeller pitch
D = Propeller diameter
r = Propeller radius = D/2
rr = Blade root radius
α = Blade angle on can
φ = Blade twist (blade angle – blade tip angle)
L = Blade length
R = Can radius = Can Dia./2

REFERENCES

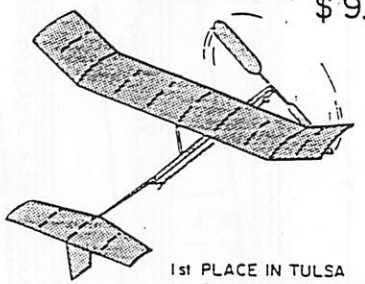
1. Kai Halsas, "Can formed propeller blades"
INDOOR NEWS. Issue 26,April 1994
2. Bob Meuser,"Can - formed propeller blades"
SIXTH ANNUAL NFFS SYMPOSIUM REPORT 1973.

MACE KITS

BALSA AND TISSUE

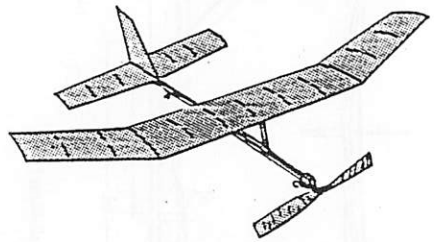
4

EASY-B
18" WINGSPAN
INDOOR FLYER
$9.95



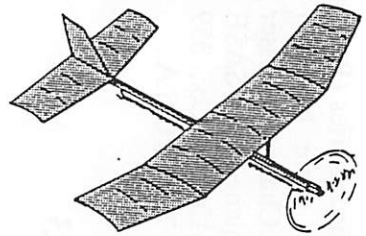
1st PLACE IN TULSA
1st PLACE IN OKLAHOMA CITY
KIT HAS 24"x36" DETAILED AND TWO DETAIL SHEETS. ALL MATERIAL FOR BUILDING IS INCLUDED IN THE KIT.

P-24 CONDOR
$9.95
24"WINGSPAN
INDOOR FLYER-
OUTDOOR WHEN CALM



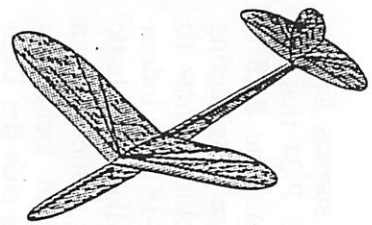
MANY INDOOR FLIGHTS OF OVER 4 MIN.. BEST OUTDOOR TIME WAS OVER 9 MIN. (FLEW OUT OF SIGHT).
FOR BEGINNERS AND EXPERIENCED..
KIT HAS 24"x36"DETAILED PLAN, ALL MATERIALS AND A FINISHED PROPELLER ASSEMBLY.

P-18 HAWK $8.95
18" WINGSPAN
INDOOR FLYER-
OUTDOOR WHEN CALM



FLIGHTS OF OVER 3 MIN. REPORTED.
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KIT HAS 18"x 24" DETAILED PLAN, ALL MATERIALS AND A FINISHED PROPELLER ASSEMBLY.

SKY KING $6.95
18"WINGSPAN
HAND LAUNCH GLIDER



BALSA AND SPRUCE CONSTRUCTION
DETAILED PLAN AND INSTRUCTIONS FOR FLYING.

PLANS

MACE PLANS

1911 CAUDRON TYPE N	24"WINGSPAN	$6.00
1911 CAUDRON TYPE N	8"WINGSPAN	1.25
BLERIOT CHAN. CROSS.	13"WINGSPAN	5.00
BEBE JODEL	8"WINGSPAN	1.25
P-24 CONDOR	24"WINGSPAN	3.00
P-18 HAWK	18"WINGSPAN	3.00
EASY-B	18"WINGSPAN	3.00
SKY KING GLIDER	18"WINGSPAN	1.50
FOKKER D VIII	8"WINGSPAN	1.25
BLERIOT CHAN. CROSS.	8"WINGSPAN	1.25

SIG PLANS

CABINAIRE	22"WINGSPAN	$ 1.00
MR. MULLIGAN	20"WINGSPAN	1.00
'29 er PARASOL	20 1/2" WINGSPAN	1.00
SIG TIGER	21 1/2" WINGSPAN	1.00
MINI-MAXER	23"WINGSPAN	1.00
MONOCOUPE	24"WINGSPAN	1.00
CUSTOMAIRE	20"WINGSPAN	1.00

MACE MODEL AIRCRAFT

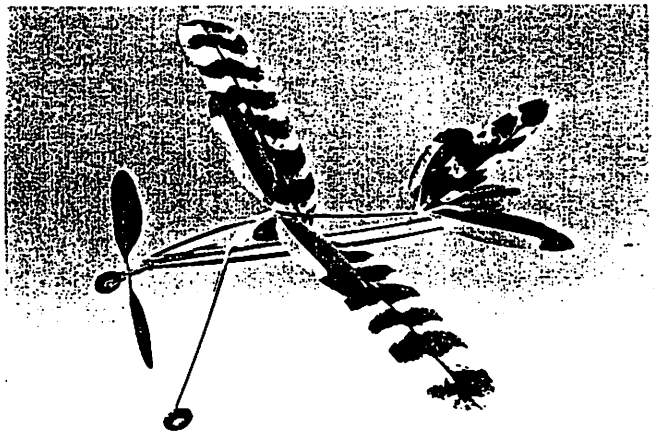
Les Shaw (USA) wrote about the success he has with the beginner models P-18 and P-24 that are kitted by Mace Model Aircraft Co.. The P-18 is used to teach incoming Aerospace Engineering Freshmen at the University of Colorado how to build and fly indoor models. The P-18 is an indoor model airplane that uses a 7 inch diameter plastic propeller, is covered with Japanese tissue and can have no dimension greater than 18 inches. In exchange for this effort Les and his club the Denver Area Indoor Modelers Association have been given up to 10 free evenings at the University Fieldhouse (a Cat. II site).

Mace sells several other kits and accessories (Peck, Micro-X, SIG). They also have some beautiful plans, like the Pistachio Bleriot Channel Crosser and 1911 Caudron Type N Monoplane. Send SASE for catalogue to: Mace Model Aircraft Co., 359 South 119th East Ave., Tulsa, OK 74128, U.S.A..

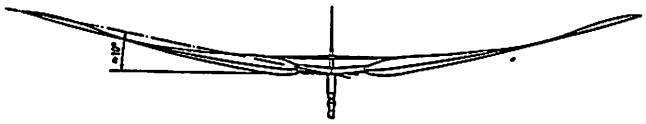
FEDERFLIEGER Nr. 3

by Bruno Wächter (GER)

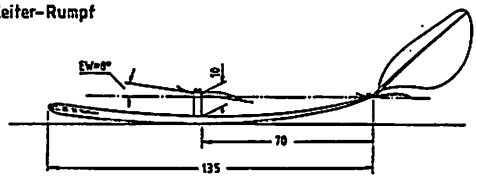
Federflieger Nr. 3 is an indoor model with wings made from bird's feathers. Bruno demonstrated the model at the F1D Eurochamps in Brno. The model flies in tight circles just like a Mini Stick. Times are not long of course, but it is a wonderful sight. The idea is not from Bruno but from Hermann Holzhauser. Holzhauser has built over 200 different designs and described many of them in his book "Federleicht, Modelle aus Vogelferdern". He does a one hour show with his models and has demonstrated them on TV several times. Some pages from the book are reprinted here. The book costs 32 DEM and is available from him at: Hermann Holzhauser, Hardstr. 81, D-90766 Fürth, Germany.



Vorderansicht vom Gleiter und Motor-Flugmodell (V-Form)

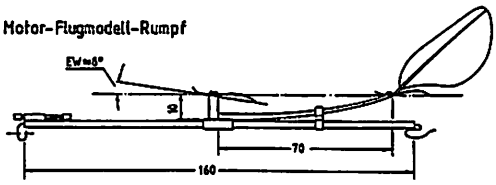


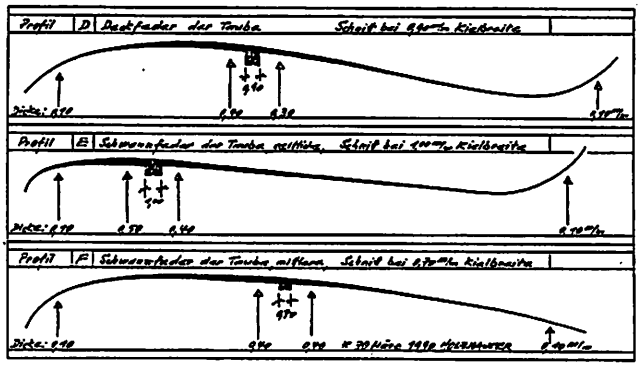
Gleiter-Rumpf



Trimm-Nadel in der Rumpfspitze

Motor-Flugmodell-Rumpf



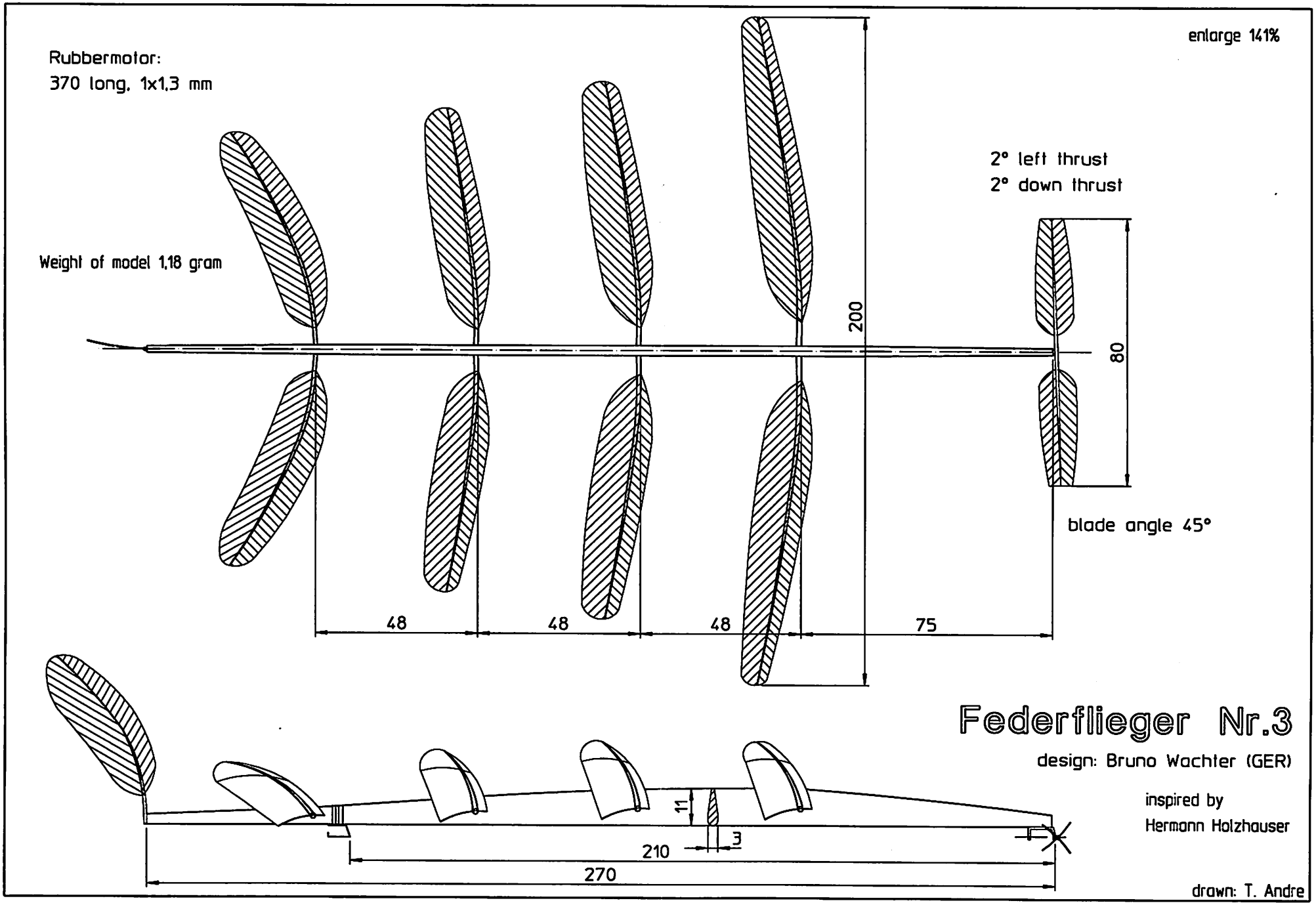


Federprofile, Naturformen (vergrößert dargestellt)

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Vol 4&5 soon


Rubbermotor:
370 long, 1x1,3 mm
enlarge 141%
2° left thrust
2° down thrust
Weight of model 1,18 gram
200
80
blade angle 45°
48
48
48
75
11
3
210
270
Federflieger Nr.3
design: Bruno Wachter (GER)
inspired by
Hermann Holzhauser
drawn: T. Andre

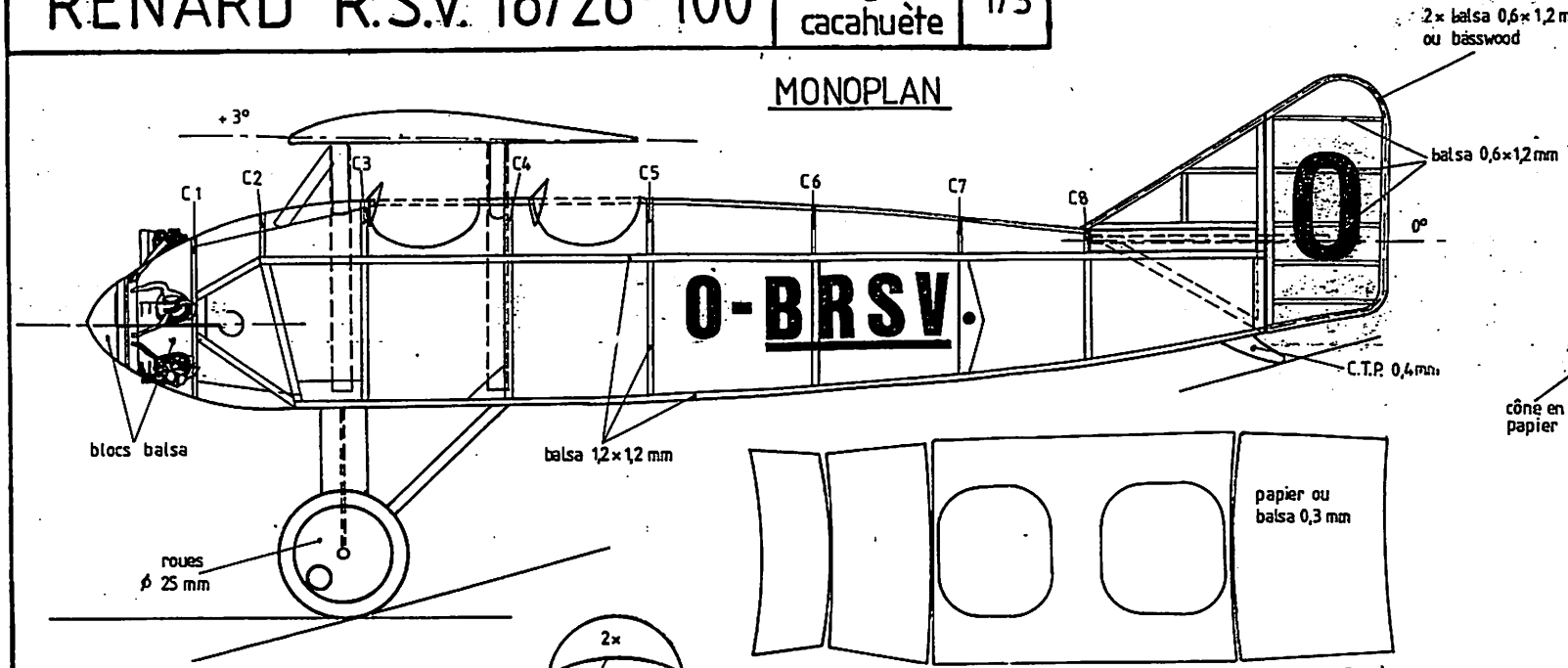
RENARD R.S.V. 18/26-100

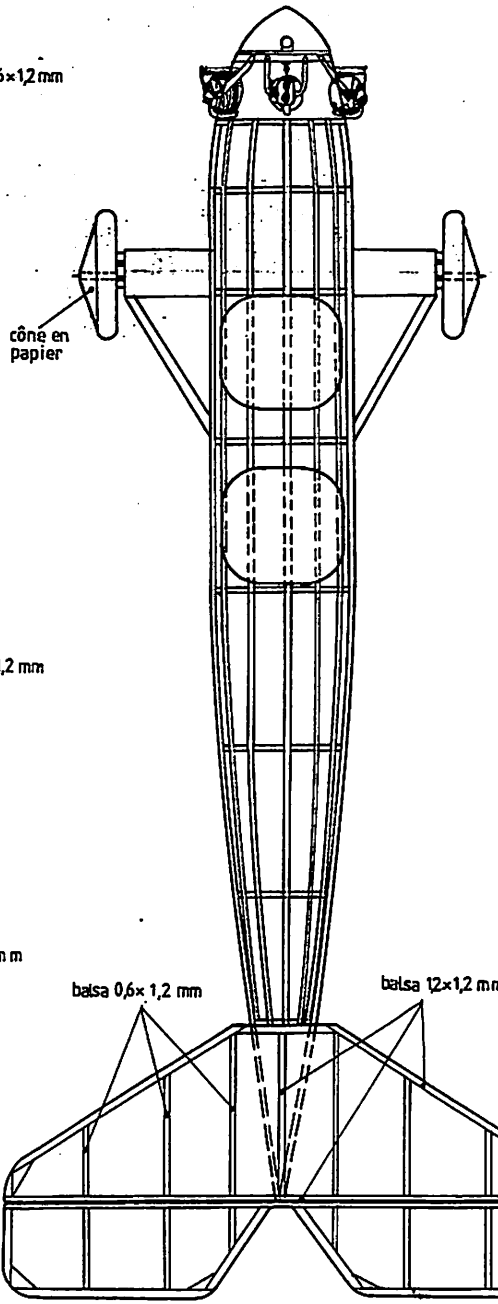
Catégorie cacahuète

1/3

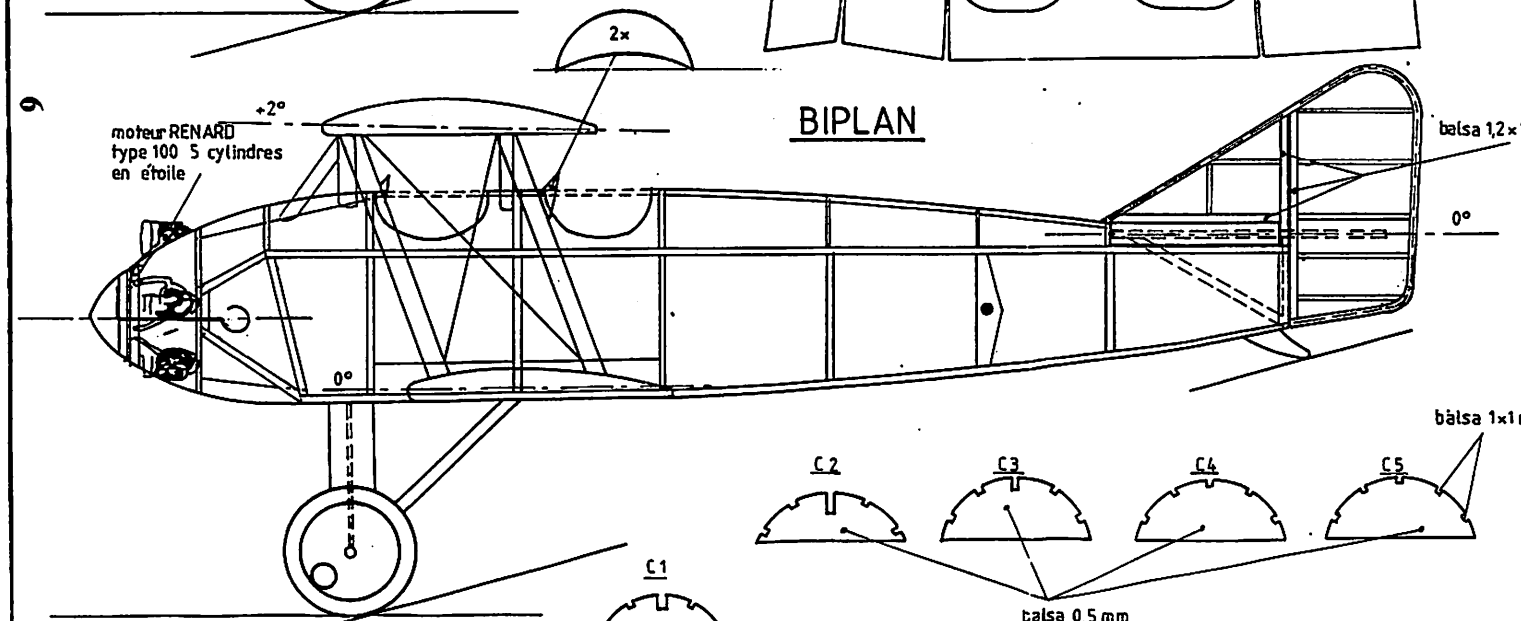
News Indoor

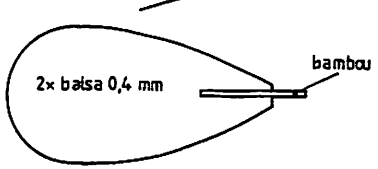
MONOPLAN

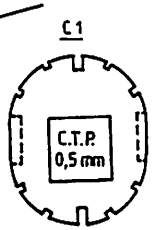




BIPLAN







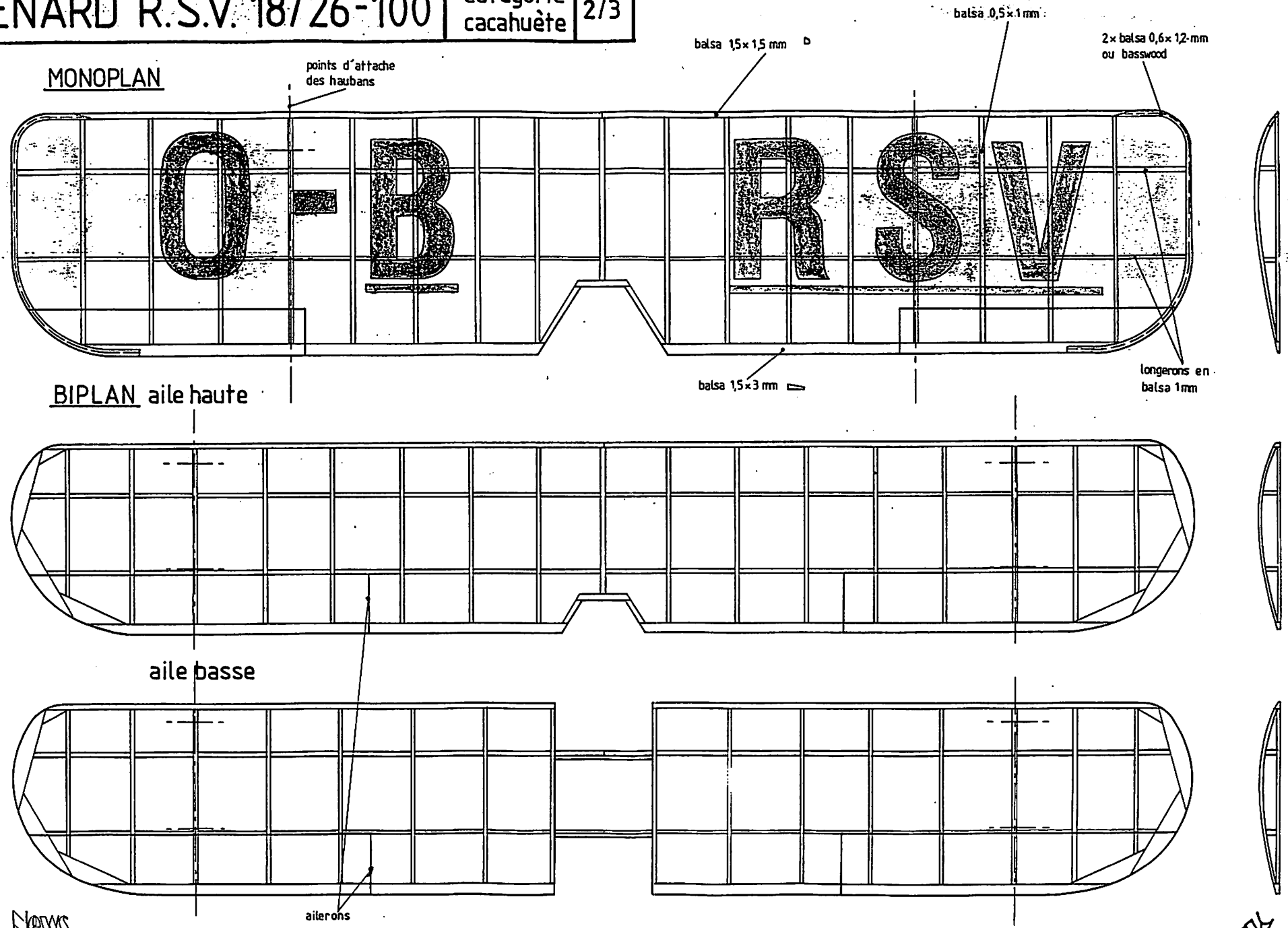
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RENARD R.S.V. 18/26-100

Catégorie cacahuète

2/3



7

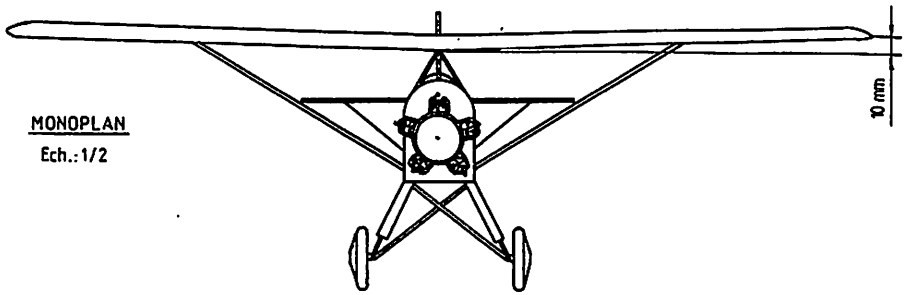
Indoor News

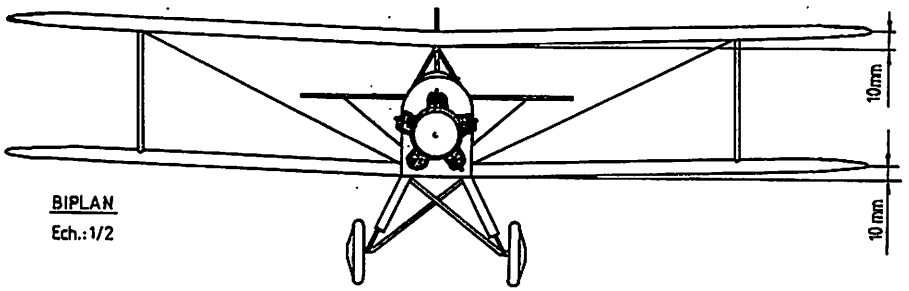
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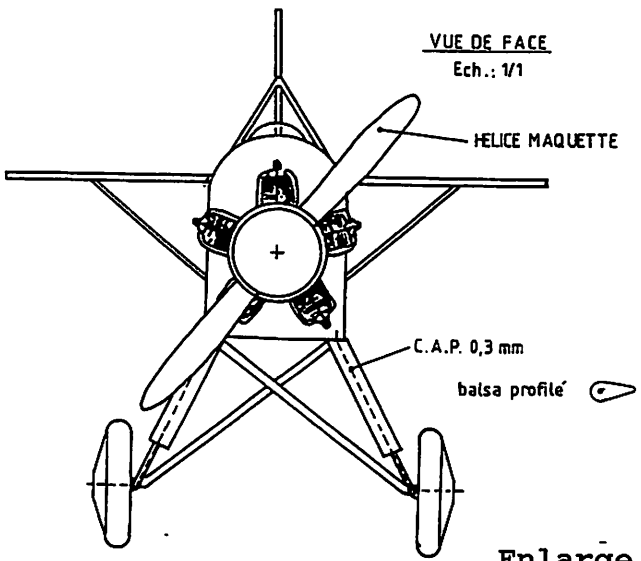
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RENARD R.S.V. 18/26-100

Catégorie cacahuète | 3/3







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8

News Indoor

DECORATION

Renard 18-100 monoplan

Fuselage:

Capot moteur aluminium. Depuis le capot moteur jusque l'arrière du poste de pilotage, imitation de revêtement en contreplaqué. Tout le reste du fuselage est entoilé au papier japon blanc teinté à la chicorée (imitation de la toile écrue). Les mâts de la cabane étaient en duralumin. Le train d'atterrissage était en tubes d'acier avec amortisseurs carènés et contrefiche en tubes de duralumin. Immatriculations noires soulignées par un fin trait noir. Roues à rayons entoilées.

Voilure:

Entoilée au papier japon blanc teinté à la chicorée. Immatriculations noires soulignées d'un fin trait noir. Les mâts étaient en tubes de duralumin profilés aérodynamiquement avec du bois. Immatriculations sur l'intrados et l'extrados identiques.

Moteur:

Renard type 100 5 cylindres en étoile. Hélice en bois.

Immatriculations:

O-BRSV - prototype. OO-AKA. OO-AKG. OO-APC.

Renard 26-100 Biplan

Fuselage:

Identique au 18-100.

Voilure:

Identique au 18-100. Un aileron par demi-aile.

Moteur:

Identique au 18-100.

Immatriculations:

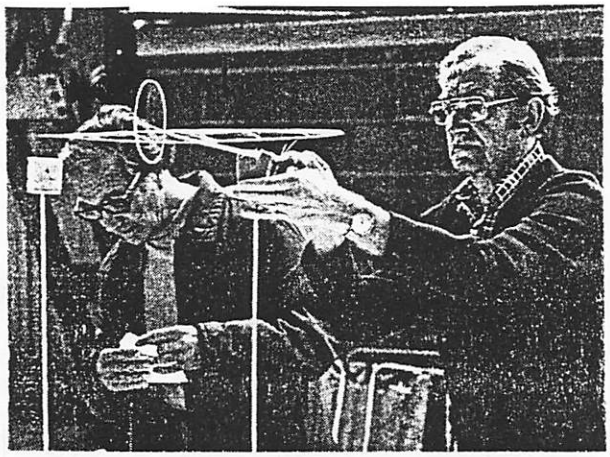
C-BAJS. C-BAJU. OO-AJT. OO-AJV. O-BAJK.

Sources d'informations:

LES AVIONS RENARD par André Hauet aux éditions A.E.L.R./Bruxelles

PS: Si vous possèdez des photos couleurs de l'une de ces versions, je serai heureux que vous me contactiez.
José Vigneront 392 rue de Tilff 4031 Angleur Belgique
Tél.: 041/65.88.71.

IN MEMORIAM
Boyd Felstead (AUS)



For many years Boyd Felstead was Australia's sole F1D Microfilm flyer. He learned the art of microfilm flying from magazine articles and extensive correspondence with many of the leading microfilm flyers. He regularly contributed to Indoor News, always willing to share his ideas with anyone. As a tribute to his enthusiasm we herewith reprint his description of his trip in 1976 along Santa Ana, Akron, Lakehurst and Cardington from Aeromodeller April 1977.

ANTIPODEAN AMBASSADOR

IN ORDER TO represent Australia at the 1976 Indoor World Championships, one had to place at the Australian National's indoor contest. In my usual procrastinating form, I readied five models just before the event, and despite stiff competition from indoor newcomers Helen and Dave Tongway I managed to place first – but in the process wrote off four of the five models in hang-ups on the many suspended lights. The only way we could get them down was to direct a blast from a hand held electric fan: it got them down alright, but the effect was lethal!

Having thus qualified, I decided to attend the Championships in person this time. My wife Betty and daughter Lisa decided to come too and make it a world trip, so the stage was set. New models were needed – only the Nationals winner was left – so the decision was made to change design to an angled wing-post set up following a recent



trend. Now the hassle! What chord? In my usual form, much time was spent taping and writing letters to overseas friends debating the merits of lower versus higher chords. While this was going on, Betty was planning the trip itinerary which was to take in the USA, England and Europe, but during the year my resident in-laws died in rather quick succession and the domestic upheaval thereby contributed to a further delay in our getting to grips with the preparations. Time was spent making a new, rather elaborate, wing bracing jig to allow for the symmetrical wing to go with the angled wing posts, and film was poured. My usual *Aerolite* was unavailable owing to shipping problems, so I reverted to *Micro-X*. Lo and behold, out of the blue some of *Aerolite's* new film arrived with only three weeks to go, and not being able to resist using it, more time was taken pouring this new film. I had finally decided to have two designs – one a 170 square inch wing for more penetration, the other a 185 square inch wing for better days, but with a 7½in. centre chord for interchangeability.

The building programme was also delayed while I remained undecided about wood density and grain to be used, and awaited new stocks of wood from overseas. Therefore July was upon us before the actual wood cutting commenced and the midnight oil was burned consequently, copiously to complete the eight models planned – four to go direct to England and four to accompany us through the USA.

By midnight on the night prior to our departure (1st August) I still had to establish the C of G of the models, install tissue tubes and pack the models into two boxes using a new stick assembly packing method. This important aspect of preparation needed care, so I decided to have a couple of hours sleep, arise at 2 am and press on until the hour of departure. Only trouble was, I woke at 1.30 am, switched off the alarm, and promptly went back to sleep! I *did* wake again at 4.00 am and got on with the job, but the two hours lost was time I could ill afford, so come 10.30 am I was still in pyjamas finishing off packing with Betty and Lisa ready and waiting to depart at 11.00 am. We *did* make our plane including two packed model boxes, but things were rather hectic, to put it mildly.

Our first destination was Los Angeles. My two model boxes travelled well, and immediately I sent the "England" box to Laurie Barr to be passed on to Reg Parham who had agreed to be my team manager/helper. In California we enjoyed the hospitality of the Randolphs, Rodemskys and the Romarks and I test flew in the NASA wind-tunnel (132 foot ceiling) on Sunday 8th August, surprising myself and the local flyers when one of my new models made a first flight exceeding 32 minutes! We flew then to the century-heat of Las-Vegas. Despite the "special handling" tag our first view of the model box was on the luggage turntable; an indication it had "shot" out of the chute (fortunately, on examination later, no model damage).

Next stop was Detroit where we met Plotzke & Co. of the *Balsa Bugs*. Kowalski took me to the flying session at Akron on August 14/15th where I test flew, and he set a new world record of 50 minutes 41 seconds with his beautiful "D" class model.

On then to New Jersey, where we stayed with the Radoffs, apart from several days in New York. In company of Manny and John Triolo I flew to the Lakehurst session on August 21/22nd and was pleased to meet other well-known indoor fliers with whom I correspond.

August 24th saw us depart for London by TWA. Laurie Barr was kind enough to pick up my "USA" box, so unencumbered I enjoyed a few days in London before driving to Cardington with Reg Parham. With two model boxes at Cardington I had a good selection of models for the World Championships. On day 1 our selection exceeded 31 minutes in two flights and with a change in stick assembly, a new propeller and slightly heavier rubber on Day 2 we did 32:18 on the fourth official flight, hung in the roof at 20 plus on the fifth (looked set for 35 – 38) and did 35:45 on the sixth with the same model, which fell free from roof, with wing folded, but which "flipped" back up without damages. If the fifth had not hung I *might* have been second – if I'd steered flight six clear of pile of bales on which it landed I could have upped time to give me a 69 minute total and a fifth position IF....., like other contestants, who had the models but not the luck!

It was a happier Betty the day after, when the model boxes were air freighted back home (together with a case of surplus luggage) at a cost of £145! Her expressed view was that I had been nursing at least one model box all the way thus far, leaving it to her and Lisa to manage the rest of our bags. Cad, sir.!

With the flying over, we were then able to drive to the North of England, back to Bath and Bristol and then fly to Amsterdam for the start of our three week European tour culminating in three days in Athens after which we flew home via Singapore.

A trip of a lifetime, during which I must have set some sort of a record – four consecutive weekends flying in four different high ceilings (NASA wind-tunnel, Akron, Lakehurst and Cardington), A tribute here to Reg Parham – he capably carried out some minor repairs to damage to structure and film in the "England" box, and his expertise and experience in winding and testing largely contributed to "our" quite reasonable performance at Cardington.

Incidentally, my model boxes got separated from the case of luggage on the way home and finished up in Victoria. The hassle in tracking them down and getting them home .... but that is another story.

Japan Vs USA



International Postal Contest
USA Rules Easy B Models
Three Man Teams
Dates - 1 August thru 31 October

For complete rules and entry form
send stamped envelope to Tom Vallee
444 Henryton So,
Laurel, MD 20724
(301) 498-0790

UNITED STATES INDOOR CHAMPIONSHIPS

Johnson City, 2-3-4 June, 1994

O no. of participants

1994 USIC GRAND CHAMPION (15)

CONTESTANT	201 HL STICK	202 INT STICK	203 F1D	204 ROG CABIN	205 MANH CABIN	206 EZB	207 PP	208 LPP	210 ORNI	212 HLG	215 BOSTON	505 PAUT SCALE	507 AMA SCALE	TOTAL CHAMP POINTS
Larry Coslick		82.50			92.28	100.00	99.41	92.15	100.00		99.92			666.36
Anthony D'Alessandro		0.00		83.30	89.21	72.33	94.39	86.84			0.00			425.07
Walter Eggert		74.62	0.00			82.09	87.99	96.57				68.91		410.18
Ron Ganser		65.34		98.37	84.55			88.72			66.83	92.22	99.62	595.65
Dick Hardcastle	79.85	88.94	0.00			73.04	100.00	91.81				43.33		476.97
Bernard Hunt	87.10	100.00	0.00		0.00	93.92	0.00	100.00						381.02

1994 USIC (17) — HAND LAUNCH STICK - #201

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE	GRAND CHAMP POINTS
Richard Doig	5392	00:39:34	00:11:25	00:36:33	00:33:57	00:41:36	00:41:36	1	100.00
Jim Richmond	4936	00:41:12	-	-	-	-	00:41:12	2	99.04
Don Slusarczyk	5490	00:36:52	00:36:09	-	-	-	00:36:52	3	88.62

1994 USIC (25) — INTERMEDIATE STICK - #202

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE	GRAND CHAMP POINTS
Bernard Hunt	SMAE# 56209	00:32:59	00:34:10	00:37:22	-	-	00:37:22	1	100.00
Jack McGillivray	MAAC# 1025L	00:17:34	00:32:32	00:35:07	-	-	00:35:07	2	93.98
Dick Hardcastle	847	00:29:23	00:33:06	00:33:14	-	-	00:33:14	3	88.94

1994 USIC (17) — FAI INDOOR (F1D) - #203

CONTESTANT	AMA #	1	2	3	4	5	6	BEST FLIGHT	2ND FLIGHT	TOTAL BEST 2	PLACE	USA TEAM REGIONAL POINTS	GRAND CHAMP POINTS
Richard Doig	5392	00:40:54	00:40:59	00:42:01	00:39:57	00:39:55	-	00:42:01	00:40:59	01:23:00	1	100.00	100.00
Jim Richmond	4936	00:08:35	00:09:44	00:31:06	00:41:36	00:39:37	-	00:41:36	00:39:37	01:21:13	2	97.85	97.85
Don Slusarczyk	5490	00:34:40	00:28:03	00:27:10	00:35:21	00:35:19	-	00:35:21	00:35:19	01:10:40	3	85.14	85.14

1994 USIC (5) — R.O.G. CABIN - #204

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE	GRAND CHAMP POINTS
Dan Belieff	12816	07:38	22:27	-	-	-	22:27	1	100.00
Ron Ganser	7532	14:21	22:05	12:44	21:39	-	22:05	2	98.37
Anthony D'Alessandro	1316	09:49	13:38	18:42	-	-	18:42	3	83.30

1994 USIC (13) — MANHATTAN CABIN - #205

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE	GRAND CHAMP POINTS
Mike Thomas	MAAC# 1964	10:54	11:48	12:31	-	-	12:31	1	100.00
John Marett	MAAC# 651L	09:03	11:16	08:00	12:23	-	12:23	2	98.93
Walter Van Gorder	19912	10:26	11:47	12:18	-	-	12:18	3	98.27

1994 USIC (12) — HI-WING MONOPLANE

CONTESTANT	AMA #	SUBJECT	1	2	3	BEST FLIGHT	FLIGHT POINTS	STATIC POINTS	TOTAL POINTS	PLACE
Jim Miller	89382	Hi-max	93	102	120	120	82.50	52.25	135	1
Michael Thompson	1484	Lacey	142	152	146	152	82.50	49.25	132	2
Dr. John Martin	712	Dornier Komet	89	-	-	89	74.50	51.00	126	3

(14) 1994 USIC

CONTESTANT	SCALE POINTS	TOTAL POINTS	PLACE	GRAND CHAMP POINTS
Don Slusarczyk	112.50	225.00	1	100.00
Jack McGillivray	112.50	225.00	2	100.00
Ron Ganser	112.50	207.50	3	92.22

1994 USIC (13)

CONTESTANT
Jim Buxton
Bernie Boehm
Michael Thompson

1994 USIC (53) — EASY B - #206

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE	GRAND CHAMP POINTS
Larry Coslick	404651	00:25:47	00:09:09	-	-	-	00:25:47	1	100.00
Don Slusarczyk	5490	00:20:47	00:19:38	00:24:44	-	-	00:24:44	2	95.93
Mike Thomas	MAAC #1964	00:22:43	00:06:30	00:24:43	-	-	00:24:43	3	95.86
Bernard Hunt	SMAE# 56209	00:19:59	00:22:44	00:23:18	00:24:13	00:23:55	00:24:13	4	93.92
Bob Eberle	411591	00:18:57	00:22:55	00:18:01	00:23:48	00:23:23	00:23:48	5	92.31
Walter Van Gorder	19912	00:15:46	00:21:08	00:23:10	00:19:09	00:18:42	00:23:10	6	89.85
Howard Henderson	302944	00:21:26	00:22:33	00:19:40	00:22:27	-	00:22:33	7	87.46
Jack McGillivray	MAAC# 1025L	00:08:30	00:10:21	00:19:39	00:22:13	-	00:22:13	8	86.17
Jim Richmond	4936	00:21:56	00:19:45	-	-	-	00:21:56	9	85.07
Larry Cailliau	79985	00:20:25	00:21:20	00:21:44	00:07:25	-	00:21:44	10	84.29

1994 USIC (41) — PENNYPLANE - #207

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE	GRAND CHAMP POINTS
Dick Hardcastle	847	15:23	16:56	15:38	16:45	-	16:56	1	100.00
Larry Coslick	404651	16:00	11:00	16:50	-	-	16:50	2	99.41
Dan O'Grady	MAAC# 6192	16:40	15:56	-	-	-	16:40	3	98.43
Phillip Hartman	8667	14:48	15:53	15:59	16:20	15:45	16:20	4	96.46
Anthony D'Alessandro	1316	14:56	15:59	-	-	-	15:59	5	94.39
Mark Vancil	124866	14:44	14:30	14:55	15:46	-	15:46	6	93.11
John Marett	MAAC# 651L	11:48	14:08	14:41	15:37	-	15:37	7	92.22
Jim Clem	L-55	12:04	14:24	15:24	13:12	-	15:24	8	90.94
John Kagan	469254	13:43	11:51	14:33	15:19	-	15:19	9	90.45
Walter Eggert	292	12:36	13:21	13:43	14:54	14:21	14:54	10	87.99

1994 USIC (62) — LIMITED PENNYPLANE - #208

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE	GRAND CHAMP POINTS
Bernard Hunt	SMAE# 56209	13:50	14:20	15:04	-		15:04	1	100.00
Chuck Slusarczyk	2643	12:34	13:03	13:20	14:41	-	14:41	2	97.46
Walter Eggert	292	14:33	10:58	12:53	-		14:33	3	96.57
Tom Green	2689	02:08	14:23	14:11	14:25	-	14:25	4	95.69
Michael Thompson	1484	13:26	14:22	-			14:22	5	95.35
Larry Coslick	404651	12:21	06:35	13:09	12:41	13:53	13:53	6	92.15
Dick Hardcastle	847	13:31	13:12	13:33	10:43	13:50	13:50	7	91.81
Fred Rash	63458	11:57	12:46	13:38	-		13:38	8	90.49
Ted Seaver	397891	11:42	11:47	13:33	04:11	12:23	13:33	9	89.93
Jim Grant	159477	13:22	13:13	11:20	11:57	12:24	13:22	10	88.72

1994 USIC (3) — ORNITHOPTER - #210

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE	GRAND CHAMP POINTS
Larry Coslick	404651	06:01	11:03	-	-	-	11:03	1	100.00
Tom Nied	76537	02:22	01:59	02:27	01:32	01:13	02:27	2	22.17
Edward Ripley	484619	00:56	-	-	-	-	00:56	3	8.45

1994 USIC (13) — HAND LAUNCHED GLIDER - #212

CONTESTANT	AMA #	1	2	3	4	5	6	7	8	9	BEST FLIGHT	2ND FLIGHT	TOTAL (BEST 2)	PLACE	GRAND CHAMP POINTS
Jim Buxton	75154	76.5	73.6	76.0	-	-	-	-	-	-	76.5	76.0	152.5	1	100.00
Bernie Boehm	92567	66.2	67.4	69.9	74.1	74.3	73.5	74.8	72.5	72.6	74.8	74.3	149.1	2	97.77
Michael Thompson	1484	66.0	65.0	65.0	68.3	-	-	-	-	-	68.3	66.0	134.3	3	88.07

1994 USIC (9) KIT PLAN SCALE - #213

CONTESTANT	AMA #	SUBJECT	1	2	3	4	5	BEST FLIGHT	BEST (MAX)	2ND FLIGHT	2ND (MAX)	FIDELITY POINTS	CRAFT POINTS	TOTAL BEST 2 FLIGHTS	TOTAL POINTS	PLACE
Richard Miller	179518	Howard DGA-9	104.0	109.0	-	-	-	109.0	95.0	104.0	95.0	59.0	36.0	190.0	285.0	1
John Blair	29698	Fairchild Ranger	101.0	90.0	-	-	-	101.0	91.0	90.0	90.0	55.0	35.0	181.0	272.0	2
Dr. John Martin	712	Dornier Komet	74.0	97.0	86.0	-	-	97.0	86.0	86.0	86.0	55.0	30.0	172.0	258.0	3

1994 USIC (32) BOSTONIAN - #215

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	2ND FLIGHT	TOTAL BEST 2	CHARISMA	TOTAL	PLACE
Jim Grant	159477	01:24	03:15	05:03	05:31	04:58	05:31	05:03	10:34	1.14	722.76	1
Larry Coslick	404651	04:27	04:56	04:48	01:52	05:32	05:32	04:56	10:28	1.15	722.20	2
Mike Thomas	MAAC #1964	05:11	05:16	05:09	04:15	05:17	05:17	05:16	10:33	1.11	702.63	3
Tom Sanders	244075	04:35	04:50	05:02	-	-	05:02	04:50	09:52	1.09	645.28	4
Richard Miller	179518	04:27	00:42	05:06	03:34	-	05:06	04:27	09:33	1.09	624.57	5

1994 USIC (32) STANDARD CLASS CATAPULT GLIDER - #218

CONTESTANT	AMA #	1	2	3	4	5	6	7	8	9	BEST FLIGHT	2ND FLIGHT	TOTAL (BEST 2)	PLACE
Bill Schlarb	14425	80.1	76.0	73.2	59.0	77.4	80.2	-	-	-	80.2	80.1	160.3	1
Dan Belieff	12816	74.6	78.0	80.2	71.0	21.0	10.0	52.5	72.2	68.0	80.2	78.0	158.2	2
Keith Fulmer	31552	68.7	70.0	70.3	70.7	74.3	72.5	75.2	79.0	78.2	79.0	78.2	157.2	3
Ralph Schlarb	322352	73.5	76.6	77.9	75.1	71.0	77.5	-	-	-	77.9	77.5	155.4	4
Bernie Boehm	92567	62.4	68.2	72.0	75.6	71.0	74.0	75.0	73.2	3.0	75.6	75.0	150.6	5

1994 USIC (12) PEANUT SCALE - #505

CONTESTANT	AMA #	SUBJECT	1	2	3	4	5	6	7	8	9	BEST FLIGHT	BEST MAX	2ND FLIGHT	2ND MAX	AVERAGE BEST 2
Don Slusarczyk	5490	1911 Voisin	129.2	117.8	-	-	-	-	-	-	-	129.2	112.5	117.8	112.5	112.5
Jack McGillivray	MAAC# 1025L	Isaac's Fury	112.5	90.0	134.0	-	-	-	-	-	-	134.0	112.5	112.5	112.5	112.5
Ron Ganser	7532	1911 Voisin	60.0	59.0	10.0	42.0	88.0	94.0	96.0	86.0	-	96.0	96.0	94.0	94.0	95.0

1994 USIC (13) AMA SCALE - #507

CONTESTANT	AMA #	SUBJECT	1	2	3	4	BEST FLIGHT	2ND FLIGHT	AVERAGE BEST 2	SCALE POINTS		TOTAL POINTS	PLACE
Ed Stoll	1243	Corbin S Ace	68	85	91	97	90	91	90.0	93.0	183.0	183.0	1
Ron Ganser	7532	Cessna	82	88	90	96	90	90	90.0	92.3	182.3	182.3	2
Jack McGillivray	MAAC# 1025L	SE5	87	110	180	-	90	100	90.0	92.2	182.2	182.2	3

1994 USIC (9) FEDERATION R.O.G

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE
Jim Clem	L-55	08:55	01:31	-			08:55	1
Daniel Baird	334655	07:50	05:48	05:45	06:56	03:42	07:50	2
Larry Coslick	404651	06:21	06:20	06:13	07:07	06:59	07:07	3

1994 USIC (23) NO-CAL SCALE

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE
Mike Thomas	MAAC #1964	06:38	07:17	07:47	-	-	07:47	1
Robert Hareann	18748	05:49	05:32	07:25	-	-	07:25	2
Howard Henderson	302944	06:10	06:52	-	-	-	06:52	3
Larry Coslick	404651	05:37	05:43	06:34	04:59	06:14	06:34	4
Chuck Slusarczyk	2643	06:22	06:15	05:54	06:15	-	06:22	5

1994 USIC (5) PEANUT SPEED

CONTESTANT	AMA #	1	2				BEST MPH	PLACE
Chris Sydor (SR)	280169	12.84	18.38	12.84	23.38		6.67	1
Dave Robelen	12555	-	-	0.00	5.00			2
Chuck Wojtkiewicz	178300	-	-	0.00	5.00			3

1994 USIC (5) UNLIMITED SPEED

CONTESTANT	AMA #	1	2	3	4	5	6	7	BEST MPH	PLACE
Larry Coslick	404651	6.42	6.04						14.19	1
Chris Hales (JR)	One Day	12.68	9.02	9.64	12.74	9.07	7.81	7.16	11.97	2
George Chabot	466544	10.76	10.95	7.30					11.74	3

1994 USIC (39) MINISTICK

CONTESTANT	AMA #	1	2	3	4	5	BEST FLIGHT	PLACE
Bernard Hunt	SMAE# 56209	11:00	11:30	-	-	-	11:30	1
Larry Cailliau	79985	10:14	10:53	11:04	10:54	11:24	11:24	2
Dick Hardcastle	847	09:55	11:23	08:55	-	-	11:23	3
Walter Van Gorder	19912	10:27	07:40	11:18	08:54	-	11:18	4
Larry Coslick	404651	10:50	08:06	03:08	09:17	-	10:50	5

1994 USIC (10) GOLDEN AGE SCALE

CONTESTANT	AMA #	SUBJECT	1	2	3	FLIGHT TOTAL	FLYOFF	PLACE
Stuart Weckerly	13250	Stout 2AT	120	120	120	360	155	1
Jack McGillivray	MAAC# 1025L	Cessna C-38	120	120	120	360	153	2
Michael Thompson	1484	Farman	120	120	120	360	144	3

1994 USIC (12) COCONUT SCALE

CONTESTANT	AMA #	SUBJECT	1	2	3	BEST FLIGHT	FLIGHT RANKING	STATIC RANKING	TOTAL RANKING	PLACE
Dave Ross	33928	Citabria	125	128	-	128	4	1	5	1
Walter Eggert	292	Air Coach	158	166	-	166	1	5	6	2
Millard Wells	65503	Ford 2-AT	58	-	-	58	8	2	10	3

1994 USIC (16) FAC SCALE

CONTESTANT	AMA #	SUBJECT	1	2	3	BEST FLIGHT	FLIGHT POINTS	STATIC POINTS	TOTAL POINTS	FLYOFF	PLACE
Jack McGillivray	MAAC# 1025L	SE-5 Replica	117	-	-	117	81.75	76.75	158.50		1
Stuart Weckerly	13250	Centennial 100/Floats	77	73	100	100	77.50	65.00	142.50		2
William Passarelli	15623	Nesmith Cougar	122	-	-	122	82.50	55.00	137.50	144	3

1994 USIC (19) PISTACHIO SCALE

CONTESTANT	AMA #	SUBJECT	1	2	3	4	5	6	7	8	9	TOTAL (Best 2)	FLIGHT POINTS	STATIC POINTS	TOTAL	PLACE
Donald Brimmer	1097	Citabria	57.7	47.9	35.6	52.8	57.7	60.6	31.0	-	-		3	1	4	1
Dr. John Martin	712	Goldwing	87.0	111.2	-	-	-	-	-	-	-	198.2	2	6	8	2
Millard Wells	65503	Curtiss Jenny	31.6	32.5	-	-	-	-	-	-	-	64.1	6	4	10	3

Swedish Indoor Championships

Örebro, April 17, 1994

Report by Sven-Olov Lindén (SWE)

The Swedish Indoor Championships took place, as so many times before, in the Athletic Hall of Örebro. The ceiling is about 18 metres high but it is reduced in the center by a large boxing armature. Our group of F1D flyers was this year reduced to only three men! Greater interest is shown in the scale model classes. See the results. SM means "Svensk Mästerskap" = "Swedish Championship". RM is "Riksmästerskap". The difference is that you can only get a "SM" in FAI internationally recognized competition classes. You can become "Riksmästere" in any Swedish class of model airplanes! We thought of making "Peanut" a "SM"-class, but we don't like the F4F-rules. We have tried different rules and think our present ones are better than the F4F!

The participating clubs were "MFK Vingarna" from Helsingborg, "Haninge MFK" from a Stockholm suburb as well as "MFK Red Baron". "RFK Fyris" is a club in Uppsala north of Stockholm and "MFK Nimbus" is my homeclub from Kumla south of Örebro (MFK = model flying club, RFK = radio flying club).

		F1D----	SM	------	1994			
Plac.	Namn	Klubb	1:start	2:a start	3: start	4:e start	2 bästa	
1	Peter Comet	Vingarna	6.19	18.06	10.29	18.15	36.21	
2	Lars Lindén	Nimbus	13.30	12.30			26.00	
3	S.-O.Lindén	Nimbus	8.07	2.29	12.41		20.48	

		F1L----	SM	------	1994			
Plac.	Namn	Klubb	1:start	2:a start	3: start	4:e start	5:e start	2 bästa
1	Jonas Romblad	Haninge	7.30	9.24	8.07	11.40	11.32	23.12
2	Georg Törnkvist	Haninge	8.03	2.24	11.35			19.38
3	Peter Comet	Vingarna	6.23	6.39	0.31	4.41		13.02
4	S.-O.Lindén	Nimbus	2	4.05	4.41	4.16		8.57

			NO CAL					
Plac	Namn	Klubb	Modell	1:a start	2:a start	3:e start	4:e start	2 bästa
1	Peter Comet	Vingarna	Waterman Racer	106	166	180	107	346
2	Sven Pontan	Haninge	Waterman Racer	122	64	135	116	257
3	Olle Blomberg	Nimbus	Zlin	65	76	59	71	147
4	Daniel Hartstein	Red Baron	Bristol Scout	55	6	80	32	135
4	Christer Comet	Vingarna	Waterman Racer	72	58	60	63	135
6	Jonas Romblad	Haninge	Pushy Cat	43	44	58	74	132
7	Daniel Bronn	Nimbus	Zlin	53	68	62	45	130
8	Magnus Pettersson	Nimbus	Heinkel 100 V8	50	62	62		124
9	Lars Tolkstam	Nimbus	Martin Baker MB5	63				63
10	Lars Lindén	Nimbus	Mustang	20	29	29	33	62
11	Sven Olov Lindén	Nimbus	Zero	32	24	28	18	60
12	Kristian Thorén	Nimbus	PZL-24	17	11	5	15	32
13	Daniel Steckl	Nimbus	PZL-24	19				19
14	Dennis Varga	Nimbus	Mustang	18				19
			MINIFLYG/FLUGAN					
1	Christer Comet	Vingarna		45	39	9	52	97
2	Daniel Bronn	Nimbus		35	35	31	36	71
3	Kristian Thorén	Nimbus		22	22	24	24	48
4	Christoffer Gutafsson	Nimbus		11	6	3	26	37

			PEA-NUT	RM--	1994								
Plac.	Namn	Klubb	Modell	1:a start	2:a start	3:start	4:e start	5:e start	6:e start	2 bästa	Skala	2 flyg+skala	Pris
1	Tomas Hultgren	Haninge	Bucker Jungmann	63	65	82				147	177	324	Guld
2	Tomas Hultgren	Haninge	Sopwith Triplane	63	11	57				120	177	297	
3	Peter Comet	Vingarna	Lacey M10	59	66	65	11	67		133	144	277	Silver
4	Georg Törnkvist	Haninge	Deper Dussin	33	45	51				96	180	276	Brons
5	Sven Pontan	Haninge	Piaggio Pegna PC7	55	52	66	69	68		137	135	272	4:e
6	Lars Tolkstam	Nimbus	Fike E	60	66	64				130	132	262	5:e
7	Daniel Hartstein	Red Baron	Lee Rickardo No 3	27	46	38	34			84	150	234	6:e
8	Olle Blomberg	Nimbus	Lacey M10	58	56	7	51	60	38	118	105	223	7:e
9	Rolf Karlsten	RFK Fyris	Lacey M10	40	41	14	42			83	120	203	8:e
10	Birgit Törnkvist	Haninge	Lacey M10	16	20	31	38			69	129	198	9:e
11	Lars Tolkstam	Nimbus	Piper J3 Cub	38	32					70	123	193	
12	Rolf Karlsten	RFK Fyris	Rieseler III	29	26	28	27	31	30	61	126	187	
13	Peter Comet	Vingarna	Corsair	8						8	165	173	
14	Rolf Karlsten	RFK Fyris	Pietenpol Air Camper	22	26	27	24			53	117	170	
15	Daniel Hartstein	Red Baron	H.P. Sayers								87	87	
16	Christoffer Gustafsson	Nimbus	Spitfire								72		10:e

SWEDISH PEANUT SCORE SHEET

Please fill in this sheet and give it together with your documentation and model to the judge!

Class: Peanut Junior Senior

Name:

Club:

Model:

SCALE POINTS

Documentation:

3-view in scale of at least 1:144, colour document and picture	4p ___
3-view in scale of at least 1:144 in colour, type "Profile Publications"	4p ___
3-view in scale of at least 1:144 and colour documentation	3p ___
3-view in scale of at least 1:144 without colour documentation	2p ___
Construction drawing with colour documentation	2p ___
Construction drawing without colour documentation	1p ___

Surfaces:

Double covered wings, stab and fin	3p ___
Double covered wings and stab, single covered fin	2p ___
Double covered wings, single covered stab and fin	1p ___
Sheet surfaces	1p ___
All surfaces single covered	0p ___

Covering:

Painted paper/plastic or vacuform	6p ___
Doped coloured paper or plastic	5p ___
Undoped Jap tissue or plastic	4p ___
Undoped balsa	3p ___
Coloured condensorpaper	2p ___
Uncoloured condensorpaper	1p ___
Microfilm	0p ___

Scale accuracy of stab and fin:

Stab and fin to scale	3p ___
Enlarged stab, fin to scale	2p ___
Enlarged fin, stab to scale	2p ___
Stab and fin enlarged	1p ___
Stab and fin enlarged, outline changed/simplified	0p ___

Landing gear:

Length to scale from underside of fuselage	3p ___
Somewhat enlarged	2p ___
Much enlarged	1p ___
No landing gear or retracted	0p ___

Dihedral:

Dihedral to scale	3p ___
Not more than 6° from scale	2p ___
More than 6° from scale	0p ___

Rigging (regarding wing and tail, not tail only):

To scale - biplane	3p ___
To scale - monoplane	2p ___
Simplified rigging - biplane	2p ___
Simplified rigging - monoplane	1p ___
No rigging	0p ___

Pilot:

Three dimensions - correct size	3p ___
Two dimensions - correct size	1p ___
No pilot	0p ___

Propeller:
Propeller and noseblock will not be judged, but model has to be shown and judged with propeller for flight.

Model type:

Highwinged	0p ___
Midwinged	1p ___
Biplane	2p ___
Lowwinged	3p ___
Canard/Tandem	4p ___
Flyingboat or seaplane	5p ___
Pioneer aircraft before 1914	6p ___
Autogiro	7p ___
Helicopter	9p ___

Additional points:

Wingribs to scale/per wingpair (right-left)	2p ___
Ribs in stab to scale	1p ___
Ribs in fin to scale	1p ___
Movable ailerons/per aileronpair (left-right)	1p ___
Movable rudder	1p ___
Movable elevator	1p ___
Fuselage - rectangular cross section	0p ___
Fuselage - semiround, round upper side	1p ___
Fuselage - semiround, round upper and lower side	2p ___
Fuselage built of ribs - round or oval	3p ___
Wheelpants	1p ___
Detailed exposed engine	2p ___
Exposed engine - simplified	1p ___
Vacuformed cabinhood	1p ___
Detailed cabin interior	1p ___

Craftsmanship:
To the opinion of the judge 1-10p ___

Resemblance to the prototype, colour and markings:
To the opinion of the judge 1-10p ___

Richness of details:
To the opinion of the judge 1-10p ___

Deduction of points due to omission of important details:
To the opinion of the judge 1-10p ___

Total points of the model multiplied by three (3) to obtain **SCALE POINTS:** ___

FLYING
(Attempt T=less than 5 sec., 5 sec. bonus for ROG)

	1st	2nd	3rd	4th	5th	6th
1st att. in sec.	___	___	___	___	___	___
2nd att. in sec.	___	___	___	___	___	___

SUM OF TWO BEST FLIGHTS ___

SUM OF SCALE POINTS AND FLYING ___

Placing ___

Name:

Model:

'94. JAPAN CHAMPSFID 24.25.APR. At. Yumenoshima(Cat-II) 日本模型航空連盟

No.	氏名	JANo.	1 R	2 R	3 R	4 R	5 R	6 R	成績	順位
1	榎本 英世	33F00255	28'28"	20'29"	3'30"	18'31"	8'35"	28'18"	56'46"	6
2	野中 繁吉	33F00111	19'34"	34'15"	0'35"	0'36"	8'15"	3'43"	53'49"	
3	市山 洋一	27F00314	18'10"	28'10"	30'53"	31'21"	31'15"	26'37"	62'36"	5
4	田中 泰幸	33F58055	31'50"	32'01"	7'04"	25'47"	20'47"	3'51"	63'51"	4
5	岡田 利昭	53F29412	25'51"	0'52"	4'18"	1'35"	10'17	3'56"	36'08"	
6	原田 良介	34F01329	19'02"	28'39"	7'53"	11'52"	———	5'12"	47'41"	
7	木下 哲	34F37955	16'00"	13'45"	10'51"	35'26"	22'16"	36'29"	71'55"	1
8	竹内 淑朗	33F01733	28'46"	1'03"	23'43"	1'23"	1'59"	26'48"	55'34"	
9	三沢 正敏	34F58469	10'49"	25'41"	33'05"	5'01"	33'03"	13'24"	66'08"	2
10	木原 一正	34F01226	28'28"	31'44"	13'17"	33'36"	25'04"	4'07"	65'20"	3

H. ENOMOTO　S. NOMAKA　Y. ICHIYAMA　Y. TANAKA　T. OKADA　R. HARADA　S. KINOSHITA　T. TAKEUCHI　M. MISAWA　K. KIHARA

写文責　茂手木

French Indoor Championships

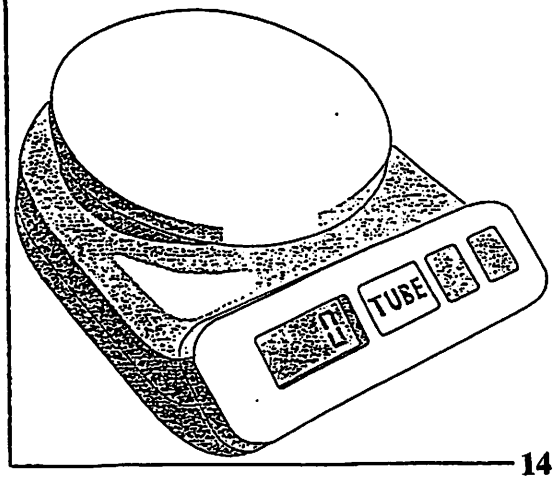
Orleans, June 18-19, 1994

Micro 35 Cadet	6 flew				
1. A. Py	UAOVL	7'37	7'12	**14'49**
2. S. Cheron	UAOVL	7'10	7'21	**14'31**
3. S. Chabot	CAT	6'58	7'26	**14'23**
Micro 35 Junior	2 flew			
1. F. Pourias	UAOVL	8'38	9'42	**18'20**
2. J. Prevault	UAOVL	5'34	5'25	**10'59**
Micro 35 Senior	11 flew			
1. J. Tipper	GBR	17'15	15'44	**32'59**
2. C.Hanriot	A ARD	16'32	13'39	**30'11**
3. G. Cognet	ACP	12'24	12'57	**25'21**
4. T. Hua Ngoc	PESS	11'17	12'05	**23'22**
5. A. Trachez	AZAY	11'26	11'36	**23'02**
F1D Microfilm	8 flew	(1/3 motor)		
1. B. Bailey	GBR	14'22	12'45	
		13'54	13'53	**54'54**
2. J. Tipper	GBR	13'31	12'43	
		13'02	13'52	**53'08**
3. A. Trachez	AZAY	12'13	12'29	
		12'25	12'26	**49'33**
F1D Beginner	15 flew			
1. B. Bailey	GBR	13'24	12'40	**26'04**
2. J. Valery	ACL	12'56	10'59	**23'55**
3. T. Hua Ngoc	PESS	9'10	10'40	**19'50**
4. R. Champion	CAT	9'21	9'55	**19'16**
5. D. Yates	GBR	8'53	10'10	**19'03**
EZB	17 flew			
1. B. Bailey	GBR	15'05	16'58	**32'03**
2. J. Tipper	GBR	14'37	13'49	**28'26**
3. D. Yates	GBR	12'44	11'33	**24'17**
4. P. Masterman	GBR	11'47	11'25	**23'12**
5. J. Valery	ACL	14'25	8'15	**22'40**

Elektronische 2-Bereichs-Waagen

Technische Daten:

Versorgung ..... 9-Volt-Batterie oder externes Netzgerät
Arbeitsweise ..... Doppelbiegebalken mit Dehnmeßstreifen
Tarierung ..... Über den vollen Wägebereich möglich
Anzeige ..... LCD-Display (0...2000)
Überlast- und Unterspannungsanzeige



	Bereich	Modell 1	Modell 2
Wägebereich	1	2 ... 2000 g	0.2 ... 200.0 g
	2	0.2 ... 200.0 g	0,02 ... 20,00 g
Auflösung	1	1 g	0.1 g
	2	0.1 g	0,01 g
Genauigkeit (typ.)		± 2g / 0.2g	± 0.2g / 0.02g
Tellerdurchmesser (abnehmbar)		125 mm	110 mm
Abmessungen (mm)		143 x 180 x 60	143 x 180 x60

!!!

Wägebereichsumschaltung.... "Zwei Waagen in Einer", durch Wägebereichsumschalter auf der Unterseite. Gleiche Auflösung über den vollen jeweiligen Wägebereich.

Tara-Taste ..... Bei Betätigung wird die Anzeige auf "Null" gestellt. Nochmaliges Betätigen führt wieder zur normalen Anzeige. Hierdurch ist es möglich, eine Mischung direkt auf der Waage auszuführen: Sie müssen nur vor der Zugabe eines neuen Bestandteiles der Mischung die Tara-Taste betätigen. Der Tarierbereich umfaßt den ganzen Wägebereich!

Batterieschonender Betrieb... Bei Batteriebetrieb schaltet sich die Waage nach 1,5 Minuten ab, wenn keine Bedienung erfolgt. Alternativ kann ein externes Steckernetzteil verwendet werden (nicht im Lieferumfang enthalten), wodurch ein Dauerbetrieb ohne Abschaltung möglich ist.

Garantie ..... 6 Monate (sachgerechte Behandlung und Belastung vorausgesetzt)

Preise (incl. MwSt.) ..... TUBE, Modell 1 ..... 159,– DM
TUBE, Modell 2 ..... 259,– DM
Versandkosten ..... 9,– DM

Zahlungsziel ..... Bei Lieferung innerhalb von 8 Tagen

Bestellanschrift ..... Heinz Becker
Eisenacher Straße 74
10823 Berlin

1994 Ornithopter Modelers' Society Postal Contest

by Nathan Chronister (USA)

Over the years many inventors and hobbyists have tried to build machines which are supported and propelled through the air by flapping wings. The first successful ornithopters, as these machines are called, were constructed over one hundred years ago and were powered by rubber bands. More recently, internal combustion and electric motors have been used.

However, the wing design and aerodynamics of the ornithopter are still very different of those of a bird. Birds use a highly efficient type of flapping in which the wing is completely folded during the upstroke. This significant reduction of wingspan allows birds to raise its wings more efficiently. Most ornithopters have relied on simple, sail-like wings which cannot fold like a bird's, so we have not yet managed to take advantage of this principle. But maybe you can change that!

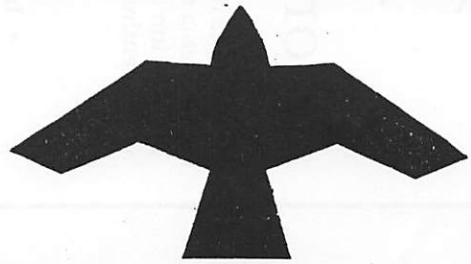
This contest, sponsored by the Ornithopter Modelers' Society and Indoor Model Supply, seeks to encourage the development of new ideas for ornithopters which at least partially fold their wings during the upstroke. Entries will be accepted in two categories: actual models and untested designs. In the former category, flight duration and the amount of wing folding will be used to determine score. Documentation of the flight is to be mailed in. In the untested category, designs will be submitted for publication in the OMS newsletter, "Flapper Facts", and a winner will be chosen by our members through a vote.

The rules of the contest are printed below. If you want more information on ornithopters, please write to Nathan Chronister, 3140 Route 209 #2A, Kingston, NY 12401, USA. Membership in OMS is not required in order to enter the contest.

Bird during downstroke, with wings extended



Bird during upstroke, with wings folded to reduce span



EASY CALCULATION OF OPTIMUM C.G. POSITION

VOL LIBRE 1977-91 René JOSSIEN FRANCE
24 Rue des Vignes,45250 BRIARE

IMPORTANT: For scale models, which frequently have wide fuselages, only the wing area should be taken for the calculation, and the wing span PS should not include the fuselage width. For Wakefields, the Great Moment value GM should never be taken as more than 8,5 da (33,5") in the calculation. Above this value, balance disturbing factors (rain) can make the calculated CG position dangerous. In cases of sharply tapered wing tips, areas in which the actual chord is less than half the mean chord value for the entire wing, should not be included in the wingspan value PS. Note that two CG positions are given for Wakes, the "day" position which is more efficient in thermal or turbulent conditions, and the "evening" position which is better in calm conditions, with little or no thermal activity.
IMPORTANT: All measurements should be in dm and dm² or in inches and sq.in.

$$C\ \% = KW + \frac{KT \times TA \times GM \times PS}{WA \times WA}$$

In which:
C % : Distance LE at C.G. in % from the Wing mean chord line
KW : Numerical coefficient for Wing → KW = 20 + A + B + C
KT : Numerical coefficient for Tail → KT = 25 + D + E
TA : Tailplane Area in dm² (or sq.in)
GM : Great Moment, distance from Wing LE to Tail LE in da (or inch)
PS : Projected wingSpan in da (or inch). Deduct fuselage width from wingspan
WA : Projected Wing Area in dm² (or sq.in)

COEFFICIENT KW (WING) → KW = 20 + A + B + C

A → Varies with the Wing position relative to the fuselage centre-line (in % of the PS wing)
Take → + 2 for low wing
+ 3 for mid-wing
+ 4 for high wing from distance 3 % of the PS (Projected wingSpan)
+ 5 for high wing from distance 6 % of the PS
+ 6 for high wing from distance 9 % of the PS
+ 7 for high wing from distance 12 % (and more) of the PS

B → Varies with the camber of the Wing section
Take → + 1 for semi-symmetrical section
+ 2 for flat bottomed section
+ 3 for undercambered section
+ 4 for highly undercambered (for example Indoor)

C → Depends on the class and the use of the model

WEATHER OR FLIGHT CHARACTERISTICS CRITERIA	CHOICE OF CLASS: Scale SteFormule Peanut	F1B Day RC Glider RC Power	F1A - A1 Electric CdH - CO_2	F1B Calm VintageWak P 30	OpenPower Indoor 1/2 A	FIC Power VII
Rough weather or best climb →	- 6	- 4	- 2	+ 1	+ 3	+ 6
All weather or medium climb →	- 4	- 2	0	+ 3	+ 5	+ 8
Calm weather or best glide →	- 2	0	+ 2	+ 5	+ 7	+ 10

COEFFICIENT KT (TAIL) → KT = 25 + D + E

D → Varies with the type of fins used
Take → + 0 for central fin
+ 1 for small tip fins
+ 2 for large tip fins

E → Varies with the tailplane section used
Take → + 0 for symmetrical
+ 1 for flat bottomed
+ 2 for undercambered
+ 3 for highly undercambered

OPTIMUM C.G. POSITION

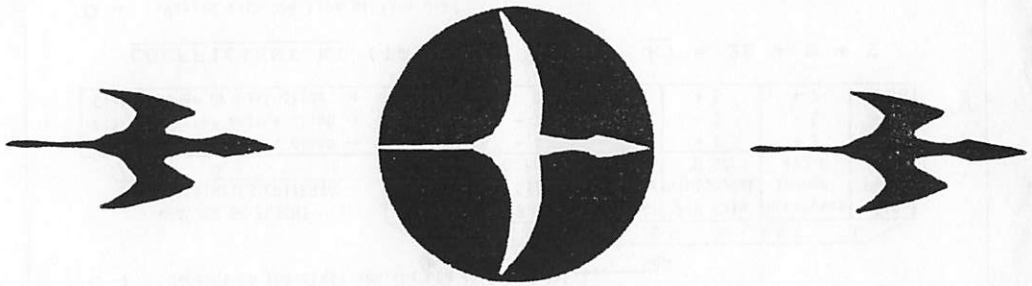
For Indoor Duration

$$C\ \% = 36{,}2 + \frac{29 \times TA \times GM \times PS}{WA \times WA}$$

René JOSSIEN

7-91

1994 Ornithopter Modelers' Society Postal Contest



Rules:

1. The purpose of this contest is to encourage the design and construction of ornithopters which partially fold their wings during the upstroke in an attempt to approach the appearance and efficiency of bird flight.
2. Anyone may enter. There is no entry fee.
3. Actual models or unproven designs may be entered. Entries in these two groups will be subject to different rules and will be eligible for different prizes.
4. Actual models will be given a score equal to flight duration x (mid-downstroke span - mid-upstroke span) / mid-downstroke span. Thus, both duration and span variation contribute to score. Other factors such as size and power source will not be considered.
5. Proof of duration may consist of a VHS videotape of a flight (non-returnable) or a statement signed by a contest director. Proof of span variation may consist of videotape or photographs (also non-returnable) of the model in front view. In either case, the model must be flapping its wings under full power while being held in place, and the wing tips must be clearly visible at the mid-downstroke and mid-upstroke positions. Also include a brief description of the model and its operation.
6. The entrant with the highest score will receive an autographed copy of Lew Gitlow's book, Indoor Flying Models, OMS membership for two years, and a copy of the Flapper Facts backissues since 1983. Second place will receive an autographed copy of Indoor Flying Models and OMS membership for one year.
7. To encourage broader participation, unproven designs may be entered. Designs must be clearly presented in 8.5 x 11" format with at least .25" margins, using one or two pages. All entries will be printed in Flapper Facts and the winner will be determined by member vote. The winner will receive an IMS Flapping Flyer kit, OMS membership for two years, and a copy of the backissues.
8. The contest will be administered by the Flapper Facts editor, who is not permitted to enter. Score determination and choice of winners is final. If fewer than two actual models are entered, prizes may be redistributed.
9. Entries must be received by March 31, 1995. Send all materials to Nathan Chronister, 3140 Rt 209 # 2A, Kingston, NY 12401.

192 pages
of ornithopter information!

Flapper Facts has been in print since 1983. I didn't join until 1988, and when I was given a copy of the backissues, I was delighted by the vast amount of information they contained. It is a dream come true for any ornithopter enthusiast. Now, all of this and much more can be yours:

- Plans for over thirty different ornithopters
- In-depth discussion of optimum design parameters
- Detailed analysis of flapping mechanisms by Frank Kieser
- Indoor canard construction by Frank Kieser
- Ornithopter cartoons!
- Articles on all ornithopter topics
- Creative ideas from indoor to gas power

None of this can be found anywhere else! To get your copy as soon as possible, please send $19 ($24 outside the USA) to Nathan Chronister. Your contribution will allow OMS to sponsor contests and publicity which will help us serve you better. Get ten years of newsletter for the cost of two years' membership dues!

And if that's not enough, get the Ornithopter Design Manual ($3), Vast Ornithopter Information Directory (newly expanded, $1.50), or Freebird easy-to-build ornithopter plans (2 stamps). The 42 page (5.5 x 8.5") Design Manual was written by Frank Kieser and basically tells (and shows) how to design and build ornithopters.