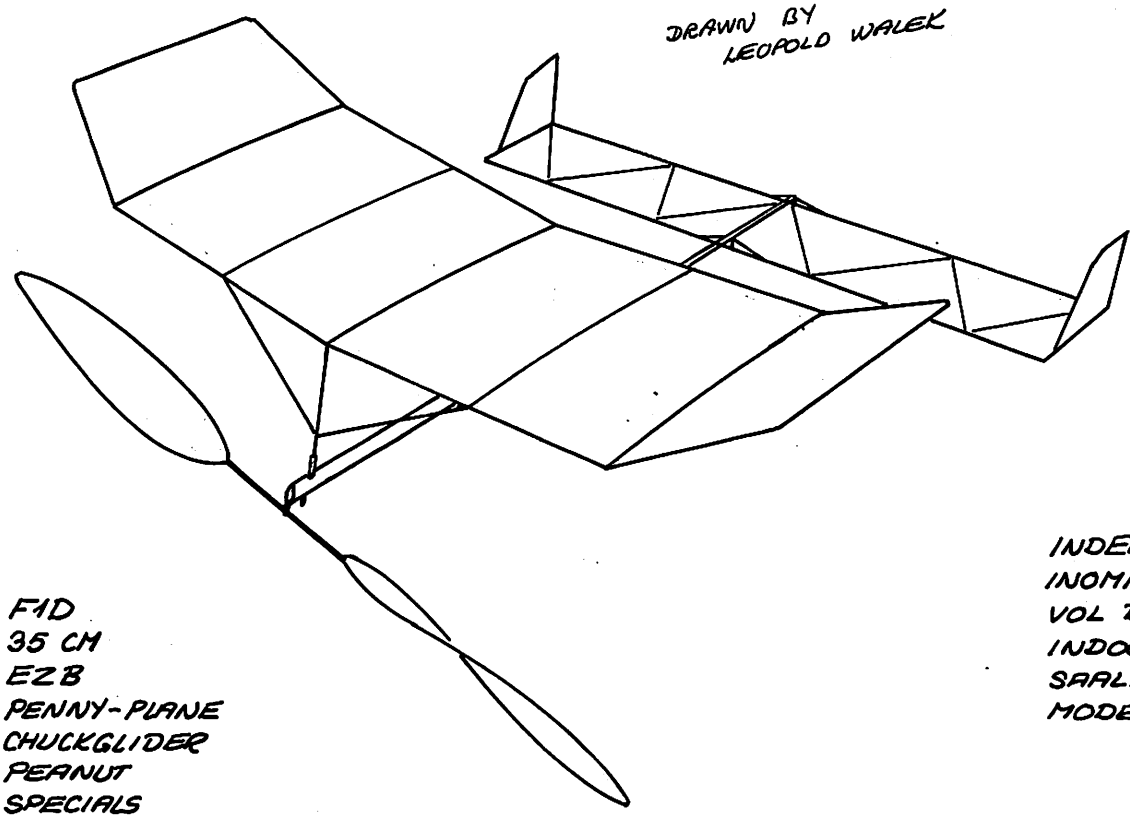


F1D
35 CM
EZB
PENNY-PLANE
CHUCKGLIDER
PEANUT
SPECIALS

INDENDØRS - DK
INOMHUS - S
VOL D'INTERIEUR - F
INDOOR - GB/USA/AUS
SAALFLUG - D
MODELE HALOWE - PL

INDOOR NEWS 3/85

Dear friend.

This issue is the 6th I have produced over the past two years. It has been lots of fun and a very interesting business to make it. Intended as it was in the beginning as a help to my indoor friends in Denmark, it now covers most of the indoor activities in Europe and to some extend in USA and Australia. The support from my readers has been very intensive and comprehensive, and I sincerely hope that this will continue in the third year of "INDOOR NEWS" - (has anyone a better name for it??)

The subscription rates cover the printing - on a copy-machine -, paper, envelopes and postage. By now the newsletter can carry itself economically and the salary for me is the HONOUR. No one who has made contributions, has been paid. Some free issues has been sent to other newsletters/magazines on an exchange basis, and some others has been sent to "names" in order to make them contribute or subscribe. Otherwise free issues have not been the order of the day.

In the past issues you have seen some advertising from different firms or persons selling/offering vital items for our very special sport. I have given them free space and will continue to do so, and everyone is wellcome to ask for ad. space - free! I think it is very important to know where to get the vital things.

When you make contributions you must know that these will help promoting our beautiful sport, every hint and tip will be useful somewhere no matter how "basic" you might consider it! It IS difficult to start building F 1 D microfilmmodels though some of the "experts" might have forgotten their problems!

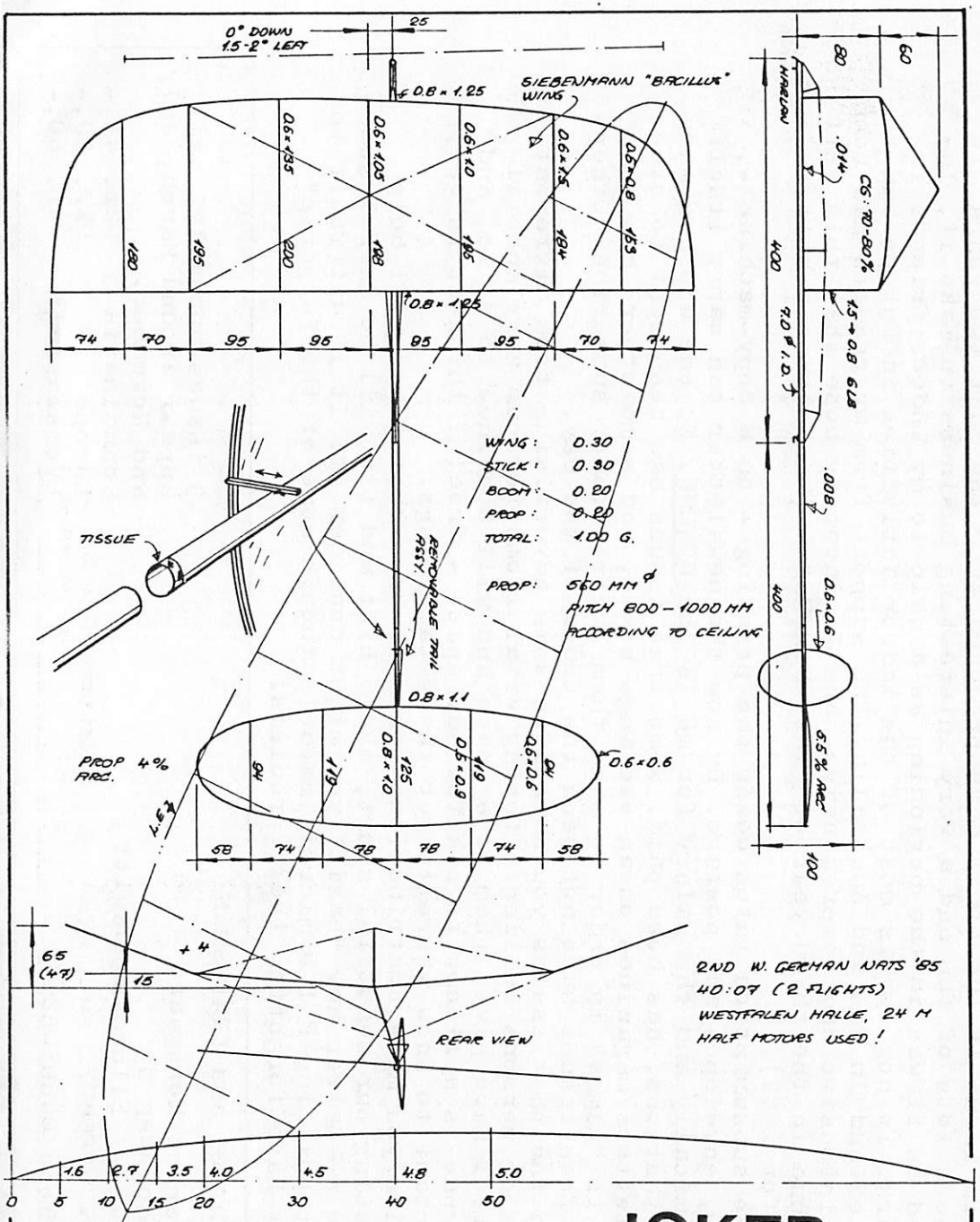
EDITOR and DRAFTSMAN:

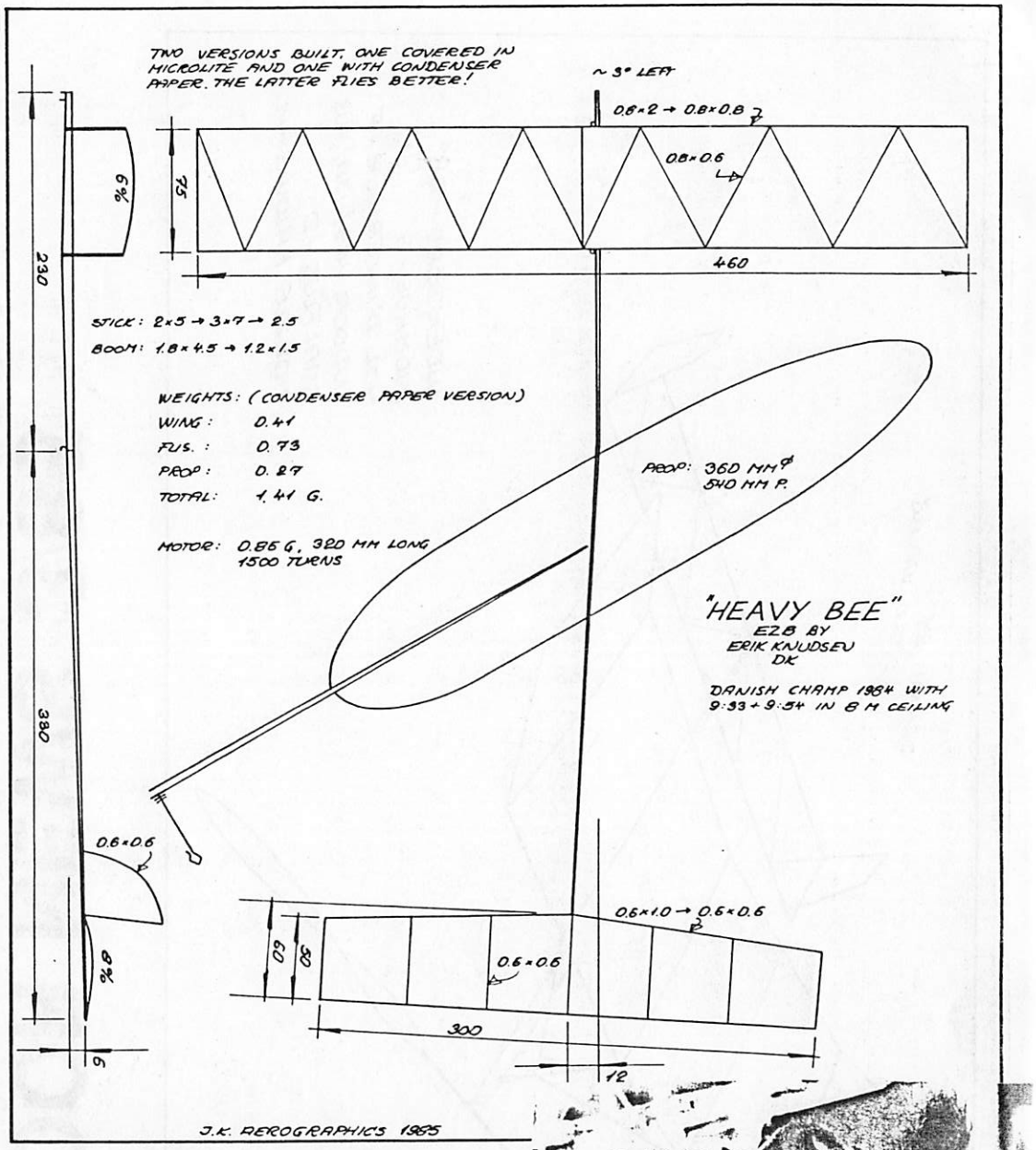
Jørgen Korsgaard
Ahornweg 5
D-2397 Ellund-Handewitt
W. Germany

Phone 04608-6899

3 issues annually, will appear around March, July and November.

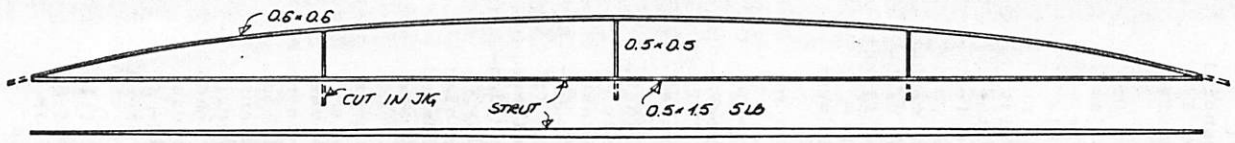
Scandinavia	Dkr. 45,-
Europe	Dkr. 50,-
Overseas,air	Dkr. 60,-

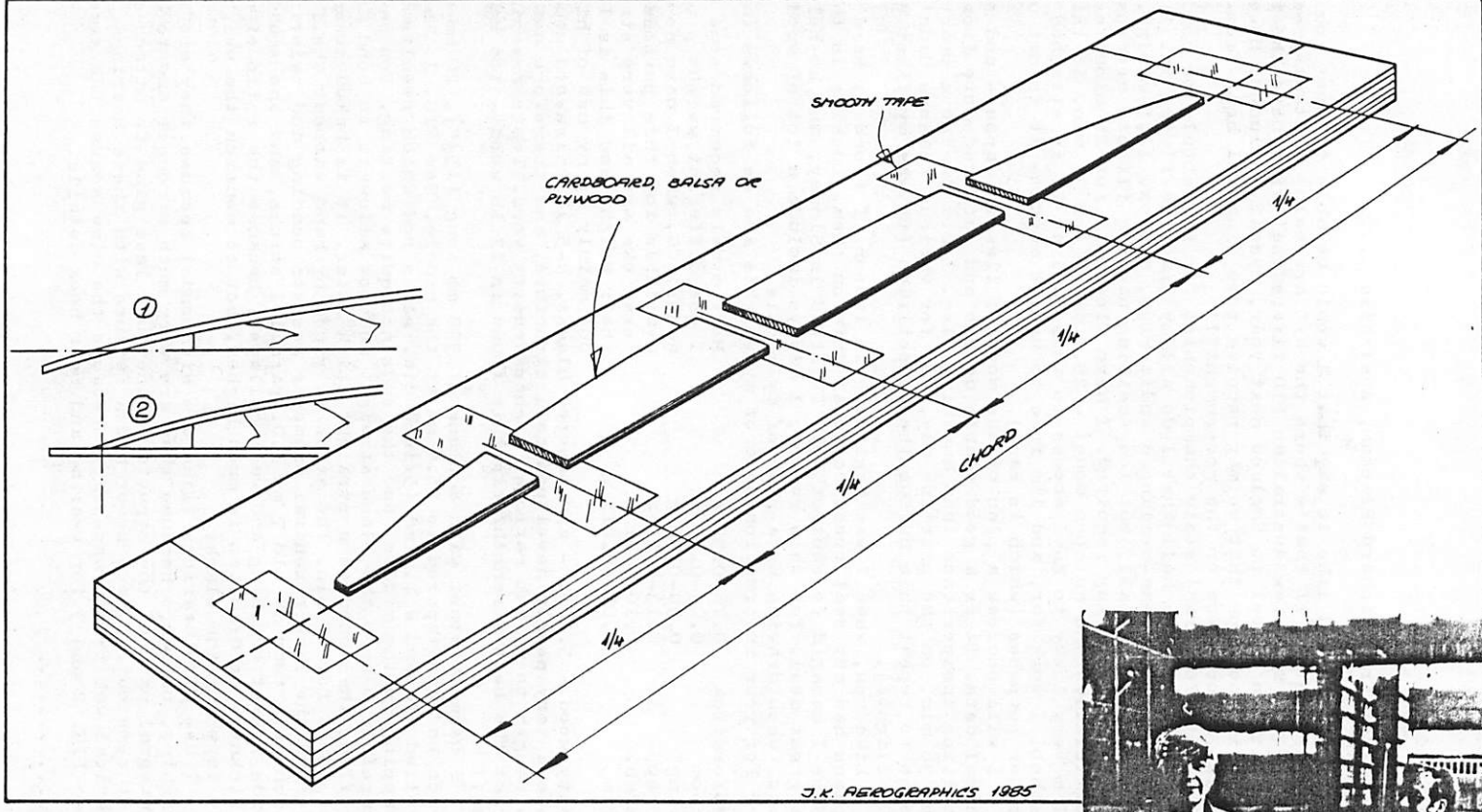





Laurie Barr & Ray Harlan







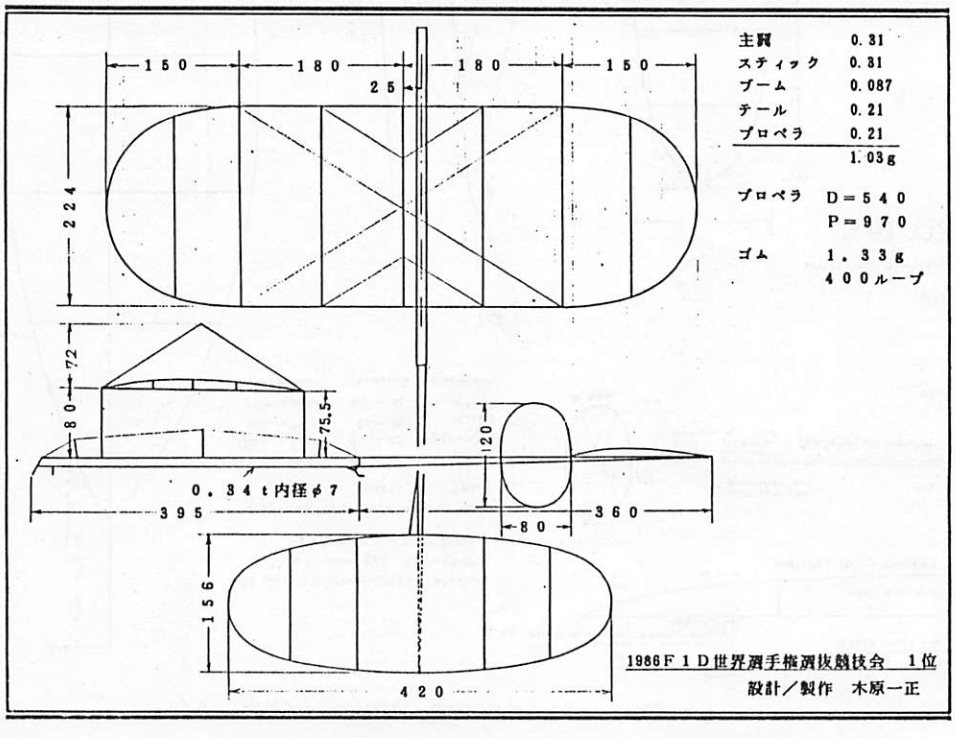


Left Manny Radoff, USA

Japan Indoor Airo Club
Kyoya Bill 302
Sakae 2-30-2
Higashimurayama
Tokyo, Japan

Four yellow pages of JIAC Indoor News just arrived. Unfortunately it is written in Japanese, but I figured out that there were results from many contests, they fly F1D and 1,2 grams EZB, IHGL and perhaps another class. Below is a dwg of model which might go to UK?

JIAC INDOOR NEWS インドアニュース 1985年10月号
1985年10月10日発行 Vol. 1 No. 1
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東京都東村山市栄町2-30-2 京やビル302
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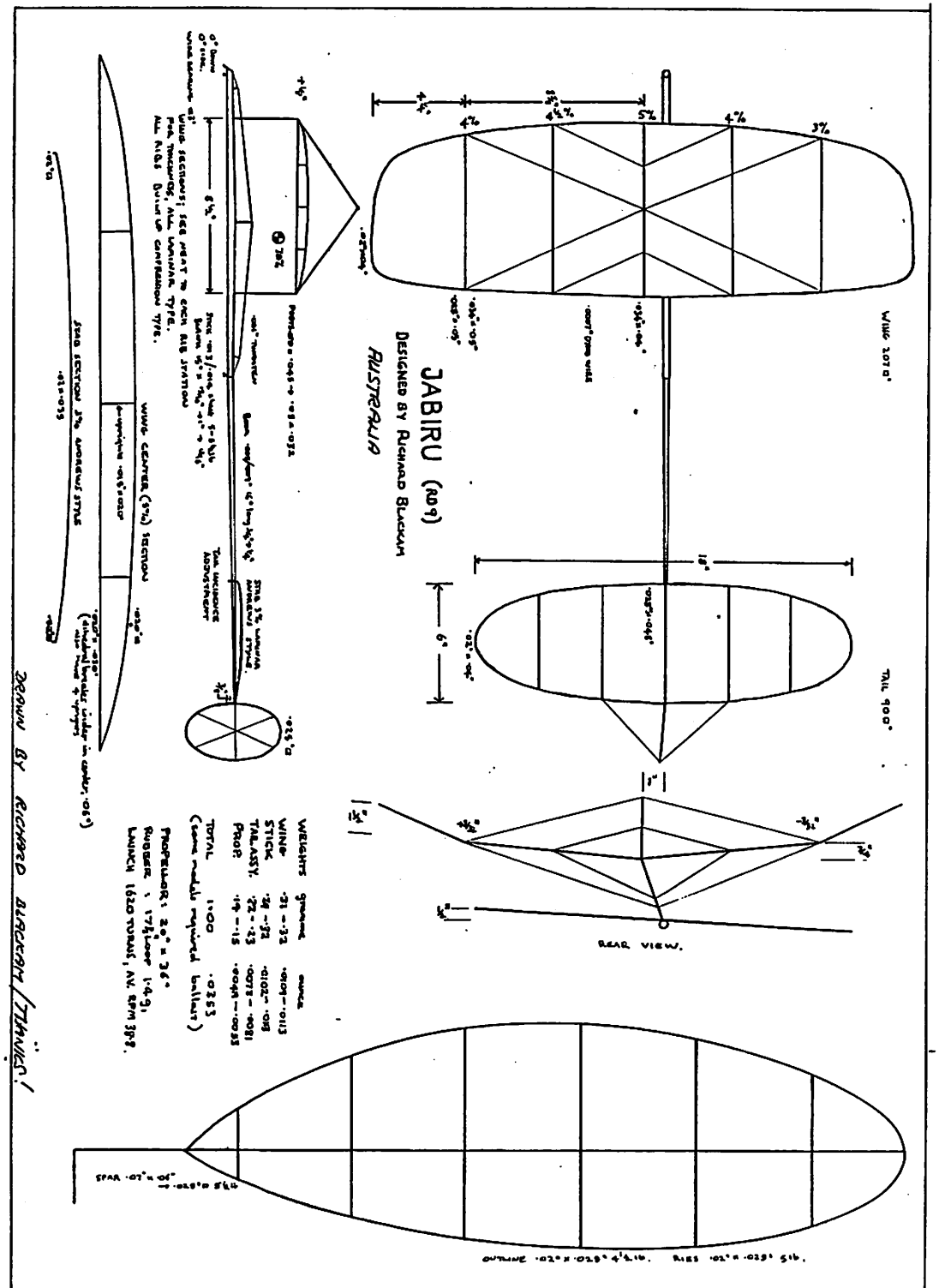


主翼	0.31
スティック	0.31
ブーム	0.087
テール	0.21
プロペラ	0.21
	1.03g
プロペラ	D=540
	P=970
ゴム	1.33g
	400ループ

1986F1D世界選手権選抜競技会 1位
設計／製作 木原一正



Left is Mr Lew Gitlow, INDOOR MODEL SUPPLY



A letter from Richard Blackam, Australia .....

..... and I'd like to say that I would be able to meet you again at Cardington (if that's where the W/C are held), but at present there are very few Australian F1D fliers that will have the financial ability to travel to England next year, myself included. However I live in the hope that we may receive some finacial help from our federal association or the government?!!

Our (Victorian) state championships for F1D should be held on October 5th in the hall that I do all my practise flying in. It is a well-sealed, clean-ceilinged auditorium, approx. 11,5 m high. The floor area is small, but long ceiling bashing flights are possible with some steering required. I have flown F1D for 26 minuttes + (unofficially) and an open model - 26,7 dm^2 - for 31 min. in this site. I'm very lucky to have access to this hall as it is attached to the school I work for, and I'm free to use it anytime it is not used for other purposes (which is rare).

I will enclose a plan of the model I flew in Japan - and some technical data. It is a good stable design and suffered more from my high-ceiling inexperience than anything else. I did manage a practise flight of 36 min. on the practise day, but for various reasons didn't manage to repeat this during the competition (it was my first ever over 30 flight!).

Like you, when I was beginning in indoor, I found it hard that no plans had any real constructional data on them. Luckily in those days I managed to contact Boyd Felstead in Sidney, and he helped me a great deal. For this reason, I always include a lot of woodsizes etc. when drawing up a plan of my models.

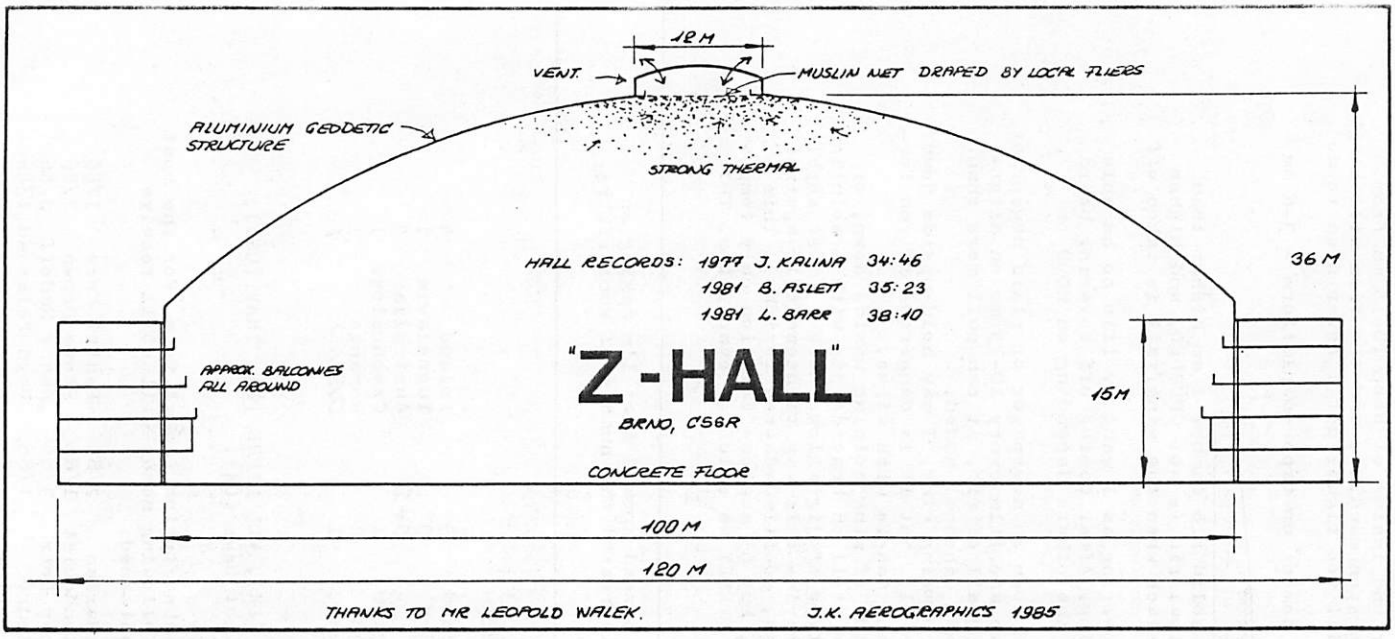
For your information some of my weights are as folloews (average)

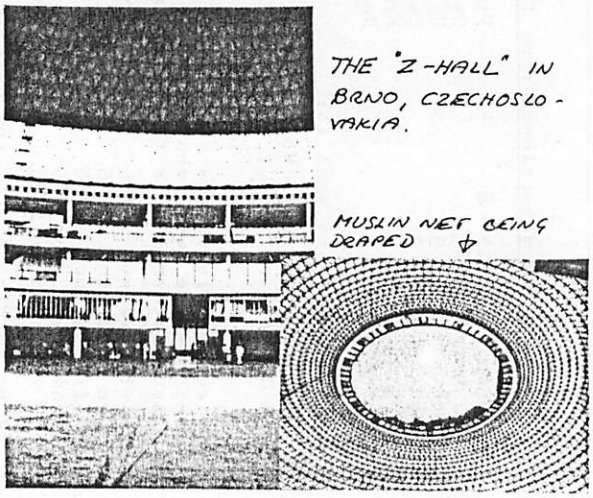
Motorstick	0.28-0.32 g	Most models required some ballast.
boom	0.09-0.10 g	I use different weight props to
wing	0.30-0.31 g	adjust CG, when I have no ballast
Prop	0.13-0.17 g	available for this purpose. My mo-
stab.	0.10-0.11 g	torsticks are all very strong for
fin	0.012-0.015 g	their weight and this is I believe due mainly to my use of higher density wood - 5.5 lb - and tapered blanks. 4-5 lb balsawood ususally has a very poorly developed cell structure, and therefore not as high strength to weight ratio as higher density wood. Tests have indicated that the best strength/weight is found in 17 lb wood - too heavy for us!!

I usually start with a blank of 390 mm long (15½"), 20 mm wide at each end and tapered to 25.4 mm at the middle. See FIG. 1. This is rolled araound a 7.9 mm (5/16") dia. glass rod which results in overlapping in the middle and the ends not quite meeting. You have to be careful to keep the blank straight and not allowvit to bend as it is rolled, this ensures a straight stick later. It is baked in an oven at 150°C for 15 min. The stick is glued by hand without the former. I find the larger central diameter resists bending and twisting loads much more than my old 7 mm I.D. parallel sticks, and the smaller dia. ends resist crushing and wall-collapse, because the ratio of wall-thickness to diameter is much higher, not to mention the weight saved by tapering the blank.

I use wire bearings (like Jim Richmonds) because they are a little lighter, but more because they are very much stronger due to being an integral part of the structure, they use less glue to attach and do not come out. I have never had a failure with these bearings. The verical web is not necessary, because the wire serves the same purpose. See FIG. 2 and 3 for bearing and rear hook details.

.....

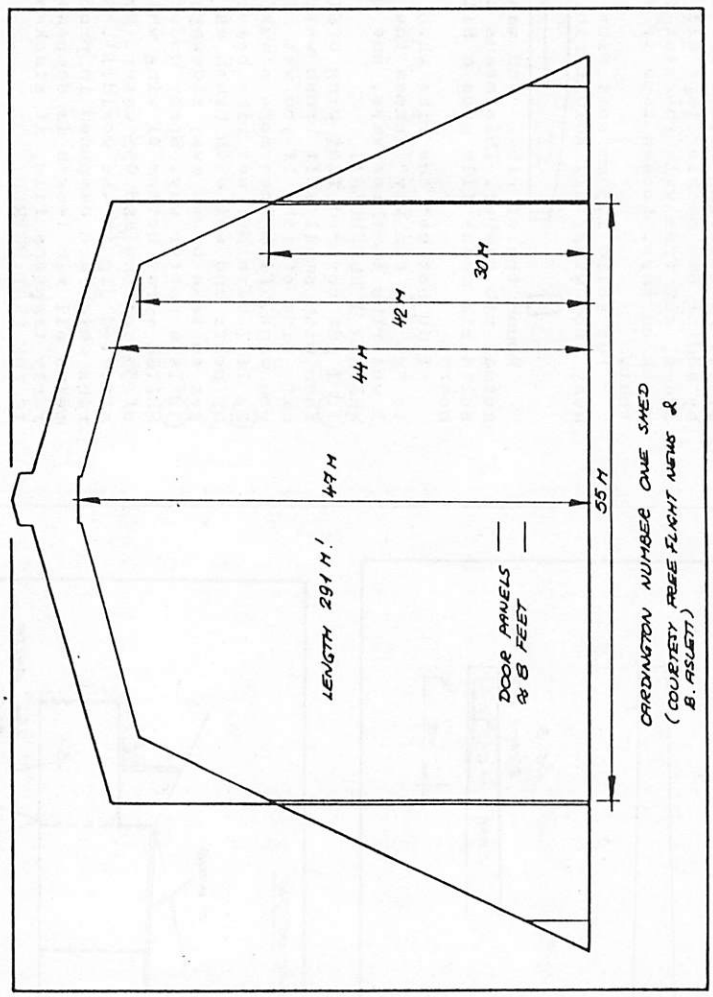


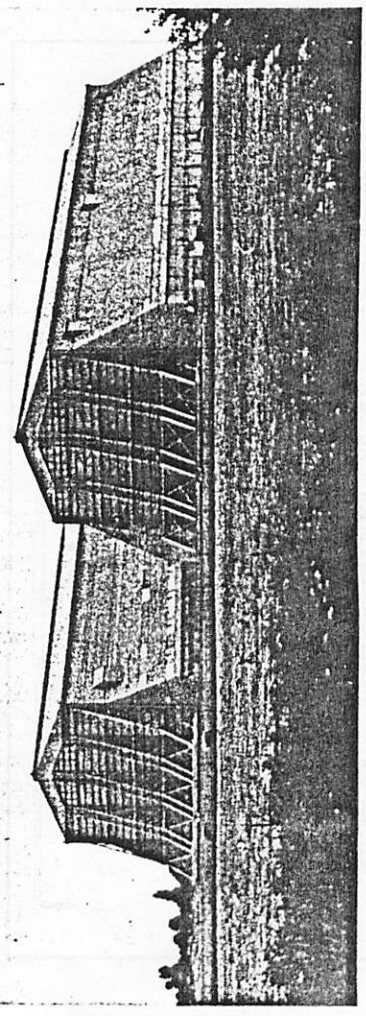


THE "Z-HALL" IN BRNO, CZECHOSLOVAKIA.

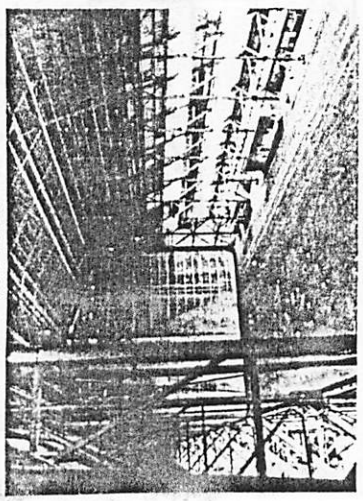
MUSLIN NET BEING DRAPED

FAMOUS SITES OF THE WORLD





CARDINGTON AIR SHEDS # 1 & 2.



INSIDE THE AIR SHED

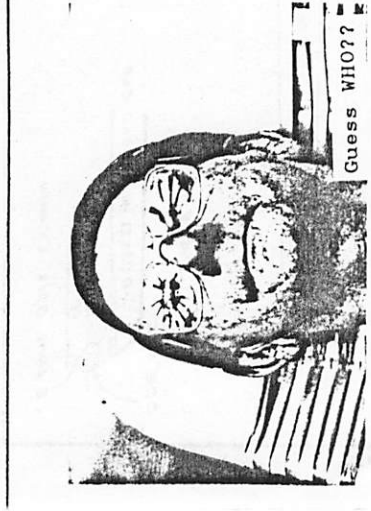


FIG. 1



FIG. 2

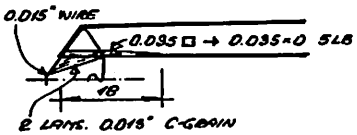
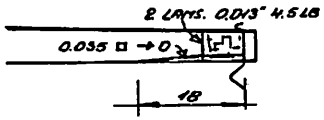
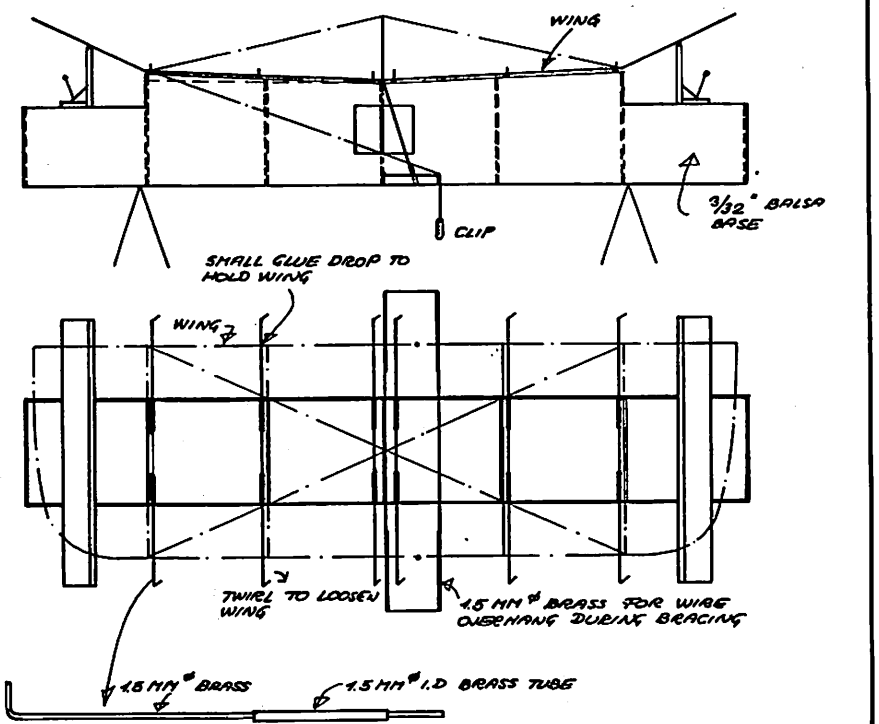


FIG. 3



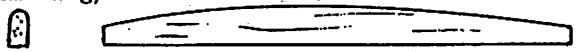
BOYD FELSTEAD'S WING BRACING JIG



Boyd Felstead ... on microfilm covering:

..... My covering method is not UNIQUE but is the BEST!! Slack film by adding 6mm masking tape all around inside of hoop 10-15 mm from frame, cut free with rheostat tungsten machine, and the film will hang slack on tape. Loosen tape if still too tight, but I never need to do that.

Put solid 1,5 mm soft ribs - cement or tape on platform - 3-6 mm away from wing/tail ACTUAL rib.



Round top of rib and make solid rib camber 1 mm higher than actual rib camber. This means actual rib is not CRUSHED, and higher solid rib means film goes a bit slack when the wing/tail is taken off board.

I do not wet the ribs when covering as I want my film to be able to "go its own way" across the wing. After coming off covering board I wet ribs in three ways, one or the others depending on MOOD or WHETHER I REMEMBER!!

(1.) I put covered flat wing UPSIDE down on newspaper or plain newsprint, then with small soft brush wet rib and film every 10-15 mm on alternate side of rib. If you wet along all of rib, it can pull more than you want. Film goes more slack when dihedral added.

(2.) If I have NOT wet ribs before bracing wing, I may hold upside down by posts and wet with brush as in (1). But it is dangerous if you forget to take brush away sideways and tangle with wires.

(3.) Is a better way. Spray underside of wing holding upside down, or BETTER spray bottom of wing while still on bracing jig with a solution of 5% acetone and 95% water. My type of jig allows Access (most sophisticated jig in the world!!). Spraying this way tightens film against ribs which are dampened in process, so film adheres (sticks). This means all rib length is dampened, but 5% acetone solution only temporarly tightens film, it slackens EVENLY as solution evaporates. THIS IS THE BEST METHOD!

Boyd Felstead has very unselfish spread around that I'm making an indoor newsletter, and this has increased the number of subscribers successfully. Thanks a lot, Boyd.

Where do the subscribers come from?

Denmark	12+2	Finland	3	Poland	4
W. Germany	13	Sweden	3	Yugoslavia	1
Schweiz	3	USA	5+2	Australia	3
Holland	2	Belgium	1	Czechoslov.	1
England	3	France	2	Rumania	1
Hungary	1	Norway	1	JAPAN	1

Free issues are sent to:

Aeromodeller (UK), Modelflyvenyt (DK), VOL LIBRE (F), INAV (USA), El Torbellino (CAL.) and Free Flight News (UK).

With this issue you will find a subscription renwal form. For the most this is the last issue, but the following names will still receive issues according to the number mentioned:

Martin Weist	3/86	Ray Harlan	2/86	Pentti Nore	1/86
Uwe Bundesen	3/86	B. Lindquist	1/86	Steve Brown	2/86
Alfred Klinck	2/86	Rainer Lotz	3/86	Manny Radoff	3/86
Pham-Duy-Thanh	3/86	T. André	1/86	Boyd Felstead	1/86
A. Zetterström	1/86	Lew Gitlow	3/87		

I hope this is what you have in your own files!

"WRINKLES" ALL OVER...

CHOOSING AN INDOOR RUBBER MOTOR
by Emanuel Radoff

A well known Indoor Modeler and Physicist computed that an indoor rubber motor should weigh 1.3 the model weight(without the rubber)for optimum flight time. In practice I have seen the weights vary from 1.0 to 1.27 on winning models. If these numbers are strange to you, you must be a beginner. Then you should use the rubber size and length as recommended by the designer of the model you are flying. If you are flying your own design then previous experience will enable you to know where to start. Propellors can be changed to accomodate each motor, but we will assume that you are using your best prop and simplify the choice process by limiting it only to the motor. Also this discussion will be limited to high ceiling flying where it is believed that at the end of a flight the model should land with a half row of knots or less after being wound to capacity for the flight.

There are two problems that occur with rubber motors if you are not lucky enough to guestimate just right. Either the rubber is too strong or too weak. If you are deadsticking and your motor is underweight, increase the length about one half inch at a time. If you are up to weight, then go down in width about .002" at a time while keeping the same motor weight. If you are comin down with too many winds and you are up to motor weight ask yourself if you put in all of the turns possible without hitting the top. If you didn't then it is possible for the extra winds to take you all the way up and you will use up the winds on the long cruise down. If you have tried that and your model is capable of withstanding the extra torque, then add about .002" width to each successive motor, keeping the same weight, till you come down with the half row of knots. If you model is fragile in spots and the extra torque would cause problems, then decrease your motor length about 1/2" at a time. The decrease in weight will let your model reach a greater height and have a better and longer cruise down, to use up all of your winds.

These are the basic rubber techniques with sizes cut from the one skein you bought. If your different rubber sizes are commercially cut, as the sizes may well be from different batches with different torques.

Low ceiling rubber choice is a whole other thing, even winding techniques are different. Low ceiling flying is not in my area of expertise. Will somebody send me a paper on the subject for publication in this column.

UNBRACED WING TIPS
by Emanuel Radoff

Yes, there is a secret that permits some modelers to use unbraced wing tips while others cannot. To discover this secret for yourselves, put some up and down pressure on your wing tips and look at your wing spars while doing this. You will notice that the outer half of your wing spars receive the stresses and strains of the forces acting on the wing tips and as a result the spars also bend up and down. Obviously, the need is better wing spars.

How do you get better wing spars? To make the spars stiffer, increase the depth. Since the forces are near the dihedral break, the spars can be tapered down toward the wing posts. Such construction enables the spars to be made of equal weight (sometimes less) to the original, yet they will stiffen the wing tips.

To help yourself further, decrease the length of your wing tips. Personal experience has shown me that I can fly very well with 5 or even 4 1/2 inch long wing tips instead of indoor ship plans. Consider that you will be using the same dihedral as with the longer tips, along with tail indoor wing posts and you realize that you have all the stability needed.

UNBRACED TAILS

A good rule of thumb is to use the same wood and same size tail spars as you use on your wing. Such spars should taper toward the tips. For example I use balsa spars at approx. .45x .35 tapered to .030 sq. and my 20"x6" parabolic FAI tails are light and strong enough.

UNBRACED ADVANTAGES

The most important advantage of unbraced surfaces is the lack of added wire and balsa struts resulting in a cleaner model with less drag. A by-product and most helpful construction hint in the need for less bracing, results in less time spent thereon, the most tedious part of indoor model construction.

SELECTING AND SALVAGING WOOD FOR MOTOR STICKS
by Manny Radoff

There are five requirements for a piece of balsa to be used for a contest model motor stick:

1. Correct weight
2. Straight grain
3. Even thickness
4. No flaws
5. No saw marks.

If you have two out of 10 pieces like that in your wood pile you are lucky. One simply does not throw out these small pieces of lumber which cost us from 60 to 75 cents per piece. You can save many sheets. Here is how you do it.

If the grain is not straight along the sheet, see if your cut motor stick size will fit on that sheet along the grain. Many will, and you've saved good stock. Sheets that are too thick may be sanded down to size with very fine sandpaper and a light touch. Uneven pieces may be sanded down to the thin dimension if that is thick enough to use. Pieces with wood growth flaws can be used. Spots where the flaw is small, one sixteenth inch or less in diameter or a short pencil-line width flaw along the grain, do not make a piece unusable. If possible lay out your cut stick size where these flaws are on the top of your motor stick. These flaws hold up under the tension of the top and collapse under the compression of the bottom of motor stick. Saw marks are the worst defects. But if you are desperate and nothing else is available, take your hypo glue gun and lay in a line of glue along the furrow.

SECRETS!!!
by Manny Radoff

Recently I asked a question about his model from a flier who did the best time in many of the six rounds in a recent Indoor Team Selection contest. His answer was "Oh Manny!". The very next elimination contest he bombed. But completely! Conclusion: He didn't know what he was doing right, 'cause he even kept the secret from himself!

Even the good guys, who supposedly tell you all, don't stay on top. Have you noticed that when these plan givers are beaten soon afterward, it is not with a superior copy of their own model? Outlines of wing, tail, prop, even the C.G. is different on the new winner.

Did you ever look at a winning model at a contest and notice a distinctive feature, like decided negative incidence on the tail? What was your first thought when looking at the plans in a magazine soon afterward and noticing that the tail is shown at zero degrees? Secrets!!! YEAH!!!

So, if another modeler is interested in your superiority of the day, and wants to pay you the compliments of copying, be a good guy and give him an honest and correct answer. Tomorrow you may be asking that very same question...from him.

When you copy a feature of another modeler's airplane, do you know why he used it? Lately, here on the East Coast at Lakehurst, one of the local modelers mounted his rudder over the tail, similar to those of the East Europeans at the Aerolympics. In explaining why he did it, he had an aerodynamic reason. I had used it earlier in this season. My reason, the same as I was told by the winner at the Aerolympics, was "It fit better in my box!".....

---

50 MISTRZOSTWA POLSKI MODELI HALOWYCH WROCŁAW-POLAND
CHAMPIONSHIPS INDOOR MODELS F1D * SENIORZY
HALA ŁUCZNIKA
23 24 25 o. 08. 1985

ARBO KLUB

1	EDWARD CIAPAŁA	28:34	27:30	34:16	13:59	31:56	33	38:12	67:28
2	6YŁWESTER KUŁAWA	Pozłaka	23:40	32:40	31:05	33:17	30:33	33:20	66:37
3	4 STANISŁAW SIERKO	BYDGOSKI	24:15	32:00	25:31	31:47	31:25	0	63:47
4	JAN DIHM	KRAKOWSKI	30:30	27:23	29:43	29:18	14:43	24:	60:13
5	LEOPOLD WAŁEK	CSSR	25:25	30:59	21:37	23:47	28:37	26:	59:36
6	RYSZARD CZECHOWSKI	KRAKOWSKI	18:05	17:45	20:30	32:53	24:15	23:	57:08
7	WACŁAW WAŁEK	CSSR	16:23	24:06	12:27	27:35	28:37	26:	56:12
8	ZBIGNIEW SZYMAŃSKI	WROCŁAWSKI	27:30	09:27	26:59	12:	01:32	25:	54:29
9	MAREK ANIOŁA	POZNAŃSKI	20:	26:44	21:36	23:37	25:00	25:11	51:55
10	JÓZEF WÓJTOWICZ	CZĘSTOCHOWSKI	23:29	24:37	25:11	25:40	11:33	23:42	50:51

STARTOWAŁO 18 ZAWODNIKÓW. KONTEST 18

TURNIEJ

1. ZBIGNIEW SIERKO	24:24	13:08	11:42	09:27	27:30	24:17	51:54
2. ROBERT MAGNUSZEWSKI	25:35	22:34	22:50	28:05	24:05	17:46	49:40
3. MIROSŁAW KAŹMIEROWSKI	24:55	12:11	22:44	21:31	08:33	22:06	47:39

STARTOWAŁO 15 ZAWODNIKÓW. KONTEST 15

Dear Friend,

only by chance I had the possibility to peruse the Nr. 1/1985 of your excellent journal "Indoor News". It happened last week in Poland, where I and my son took part in Polish Championship F 1 D in Wroclaw, 24-25 th August 1985.

Therefore Czechoslowak choice team wasn't in Nagoya, we had arrived to Poland to look in news, which Poland team had brought from Japan.

Attendance in Nagoya was seen on their models - Czechoswski used long model with the same stab, as Richmond had in Japan. Kujawa tried the most news : he had the long model too, but in addition he had two kinds of propeller : - with variable diameter
- with variable pitch

The flight for title of Polish Champion caused, that he flew with "classical" model, but by last fly of all competition won Edward Ciapala.

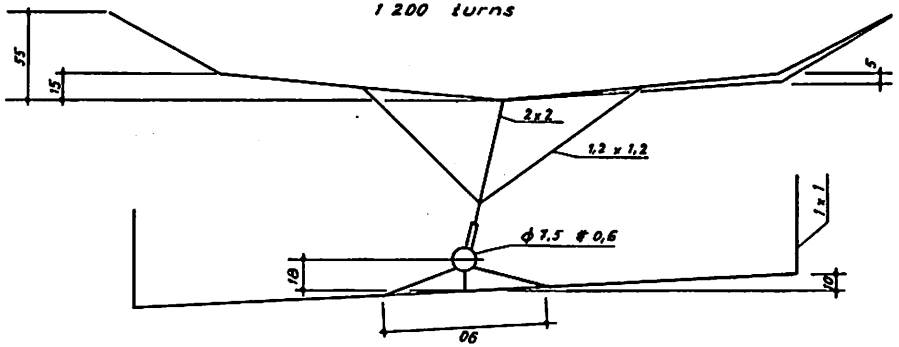
From Leopold Waiek Czechoslowakia

How many of you indoor builders when flitting your mini wings will then drop the wing from the roof to see if it will glide? After the wing flies, you can re-trim for longer flights. Now I use a less steam pressure and a much smaller motor. Instead of cutting the wing tips and tail to get the model to glide, I add weight to the nose. Now I can use a much smaller motor and get longer flights. Now I can use a much smaller motor and get longer flights.

I consider this the best indoor tip I have used, and you will probably read this column.....

Doug Spisak

RUBBER : 420 m/m loop Pirelli # 2,4 m/m
1 200 turns

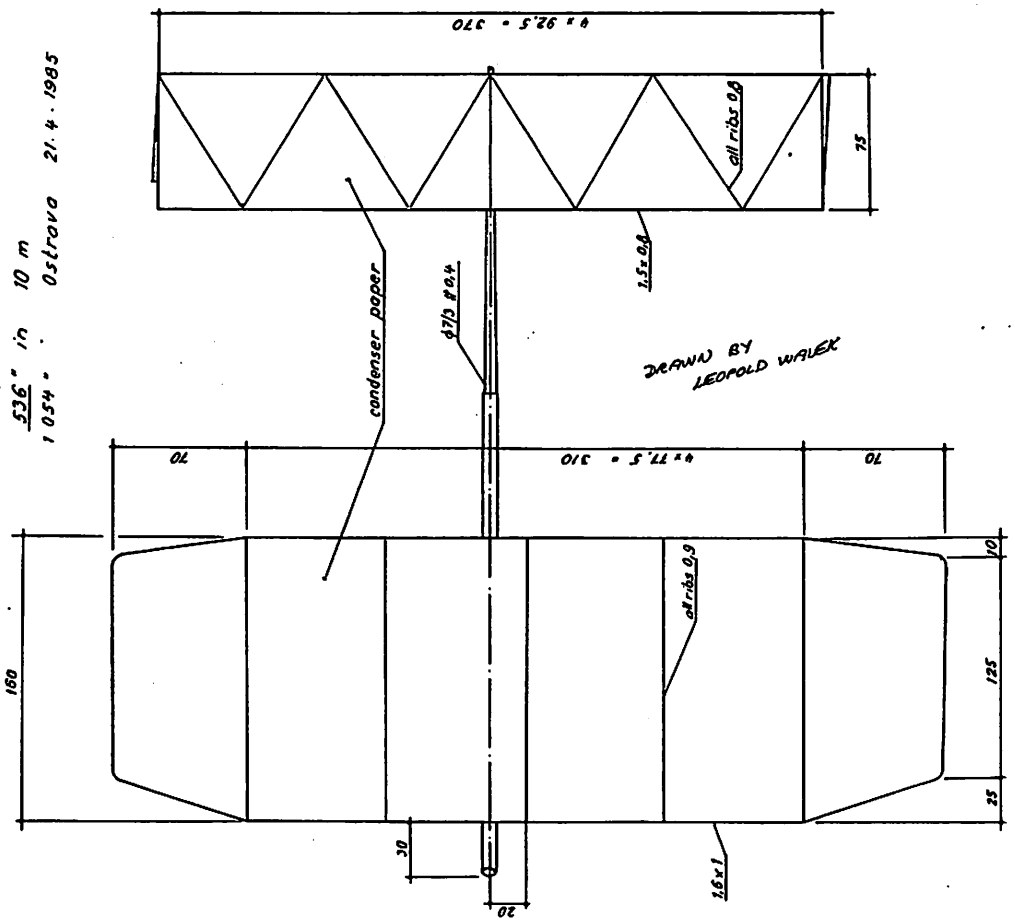


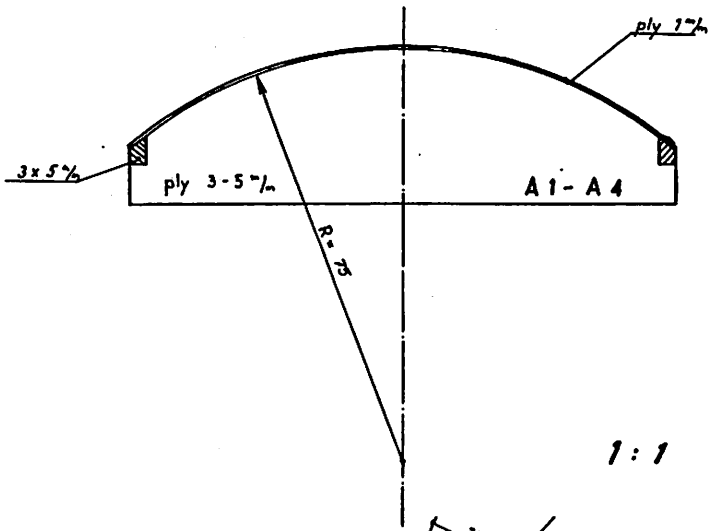
WING : 1,10
FUSEL : 0,46 (boom)
PROP : 0.93
MOT-STICK : 0,53
TOTAL : 3,02 gr.

Penny plane

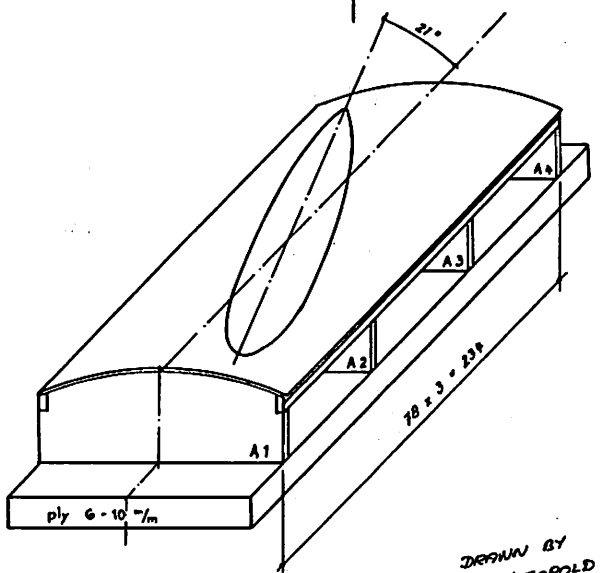
by L. & V. WALEK - AEROCLUB Č.S.S.R.

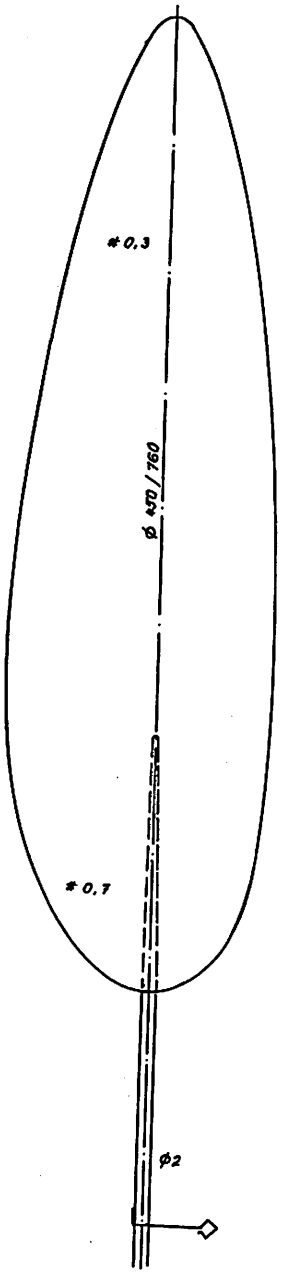
518"
536" in 10 m
1 054 - Ostrava 21. 4. 1985



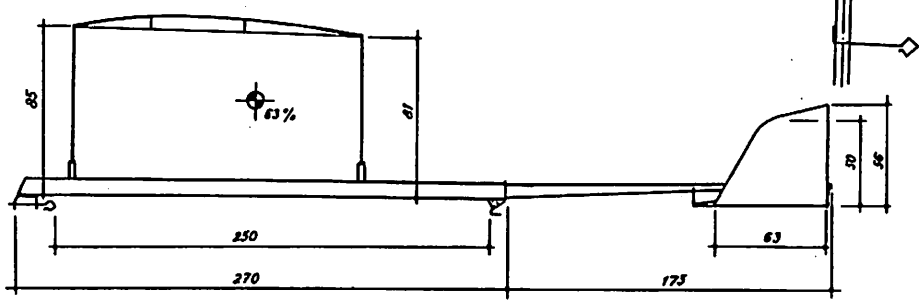


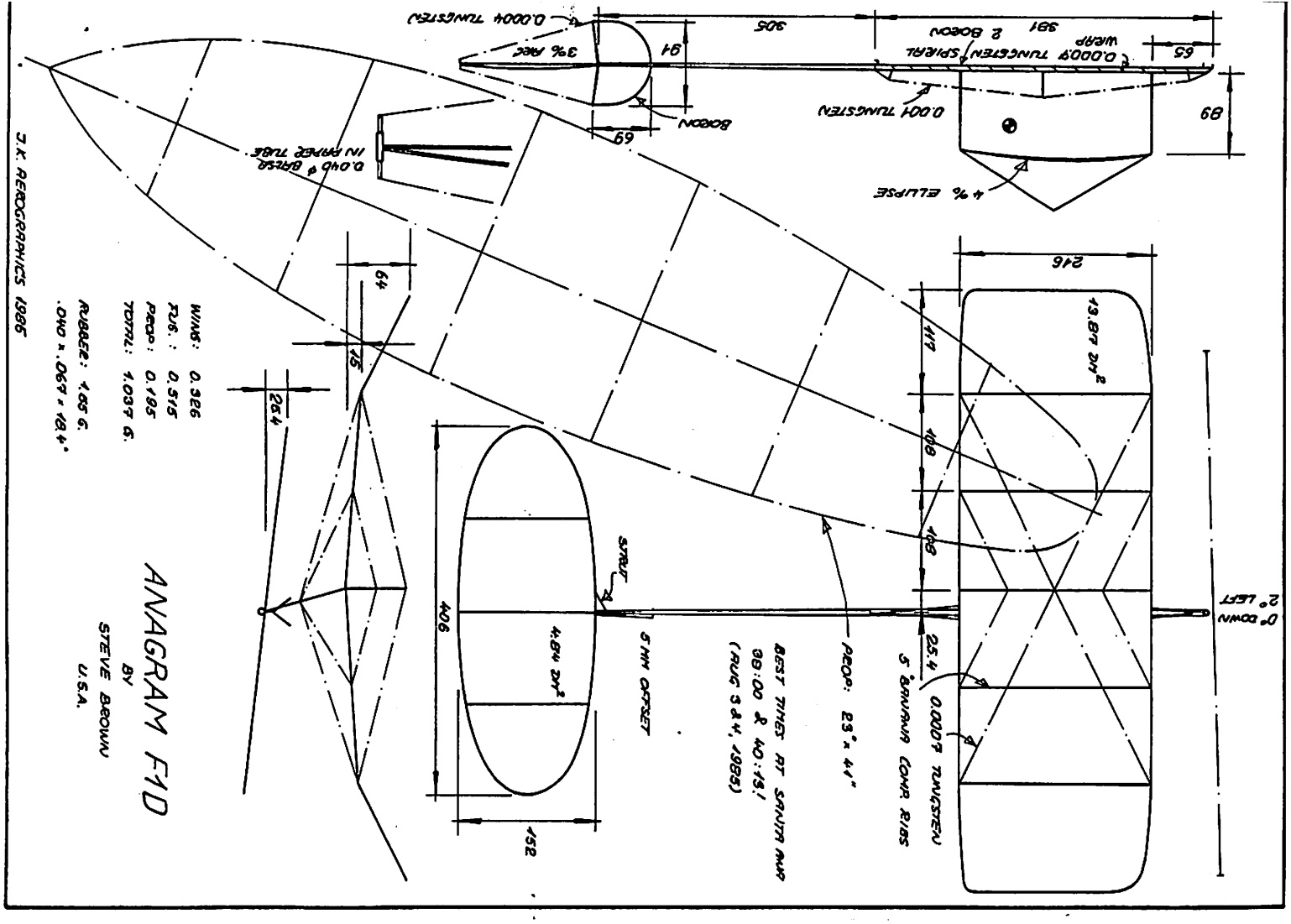
1 : 1

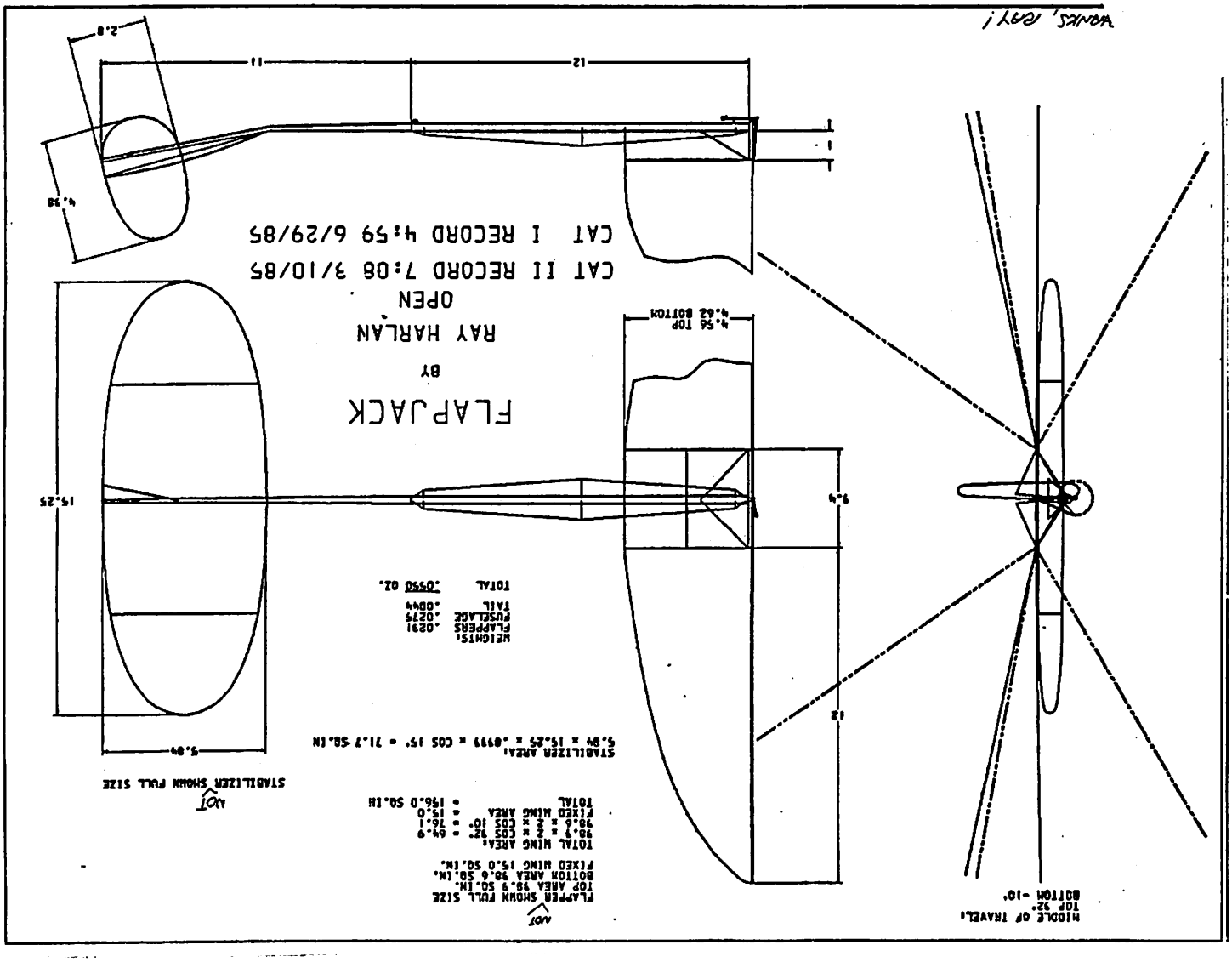


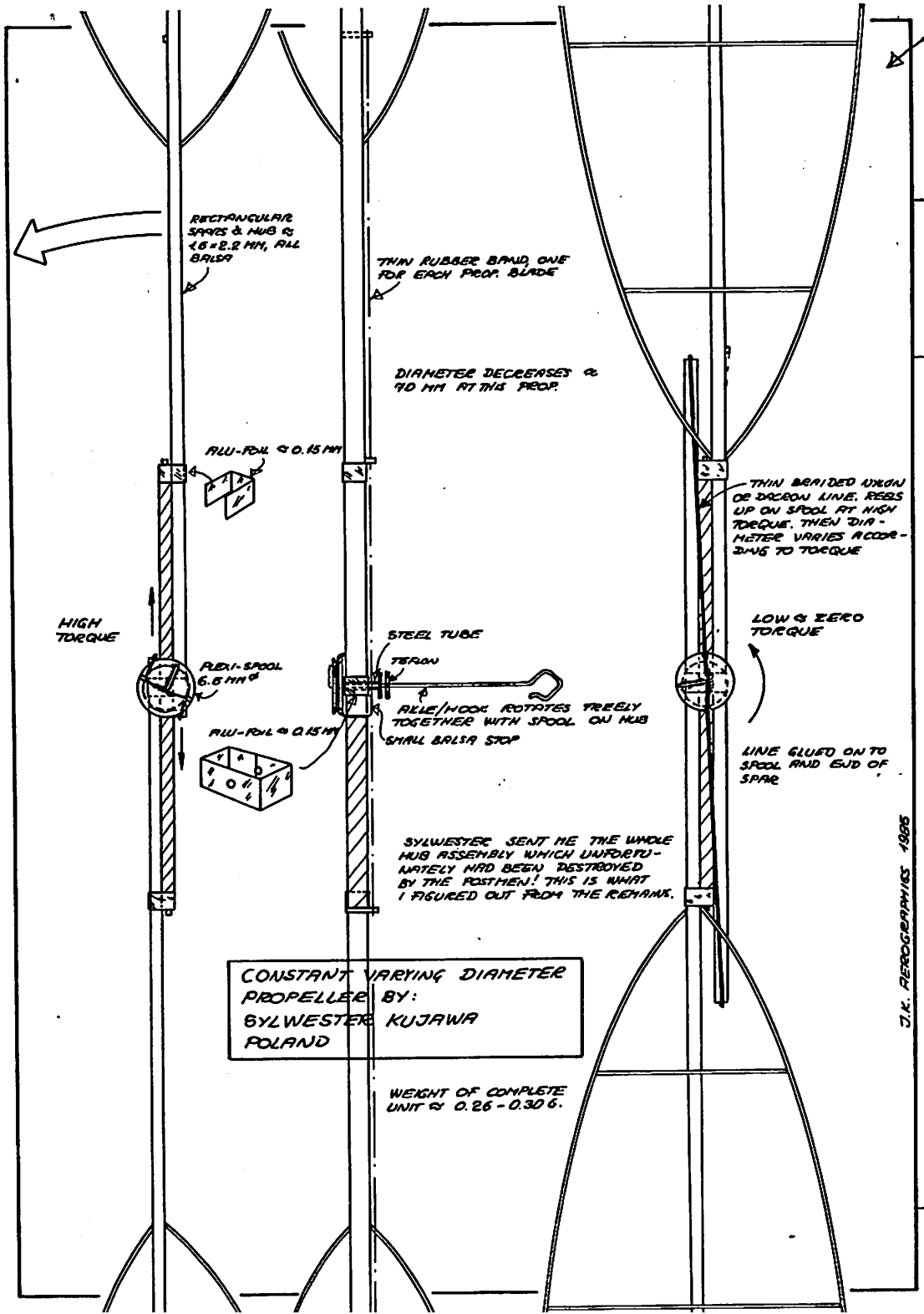


DRAWN BY LEOPOLD WALEK




ANAGRAM F1D
BY
STEVE BROWN
U.S.A.
WING: 0.326
TUB.: 0.515
PROP: 0.195
TOTAL: 1.037 G.
RUBBER: 1.05 G.
.040 x .069 x 18.4"
J.K. REPROGRAPHICS 1986
0.040 ø BRASS IN PAPER TUBE
BOOM
0.0004 TUNGSTEN
3% REF
0.0009 TUNGSTEN SPIRAL WARP
2 BOOM
0.001 TUNGSTEN
4% ELLIPSE
13.87 IN²
4.84 IN²
5° WASHOUT
5° DIHEDRAL
PROP: 23" x 44"
BEST TIMES AT SANTA ANA
38:00 & 40:19.
(AUG 3 & 4, 1985)
0.0007 TUNGSTEN
5° DIHEDRAL COMB RIBS
0° DOWN
2° LEFT


WAKES, RAY!
FLAPJACK
BY
RAY HARLAN
OPEN
CAT II RECORD 7:08 3/10/85
CAT I RECORD 4:59 6/29/85
MIDDLE OF TRAVEL
TOP 92°
BOTTOM -10°
FLAPPER SHOWN FULL SIZE
TOP AREA 98.9 SQ.IN.
BOTTOM AREA 98.6 SQ.IN.
FIXED WING 15.0 SQ.IN.
TOTAL WING AREA:
98.9 x 2 x COS 92° = 64.9
98.6 x 2 x COS 10° = 76.1
FIXED WING AREA = 15.0
TOTAL = 156.0 SQ.IN
STABILIZER AREA:
5.84 x 15.25 x .8939 x COS 15° = 71.7 SQ.IN
STABILIZER SHOWN FULL SIZE
WEIGHTS:
FLAPPERS .0291
FUSELAGE .0275
TAIL .0044
TOTAL .0590 OZ.



A propeller with constantly varying diameter from Sylwester Kujawa.

In September I got a letter from Sylwester containing the hub and some part of the blades of his newly developed C.V.D. prop. Unfortunately the postal services had been rather brutal to the envelope, so quite a lot of bits and pieces fell out, when I opened it!
I tried to put the prop together again, and on the drawing you can see, what I figured out.

Thanks to the following for their contributions:
Manny Radoff, Steve Brown, Leopold Walek, Boyd Felstead, András Reé, Richard Blackam, Werner Nimptsch, Sylwester Kujawa, Ray Harlan, Jerzy Kaczorek, Erv Rodemski, Rainer Lotz, Erik Knudsen, LAURIE BARR AND JIAC.

Laurie Barr just sent me a very colourful letter about their team-trials, he also told me that he has just broken his right leg leaping off the top of a stone-wall while retreiving his vintage Wakefield!! A good recovery, Laurie!

He writes ..... This year our use of Hanger 1 at Card'n has been plaqued by bad weather and main doors not being shut properly.

We have tried this year to run the more popular events (EZB) but this has meant hardly anyone has flown FAI film.

The trials at the end of August were put back to end of September - and into Shed 2/more floor clutter, but airtight - and I arranged a practise meeting two weeks prior to the Trials, but this was not entirely useful, again due to the weather, so by the time the Trials actually came, nobody was in tip-top readyness (apart from Bernie Hunt whose models/motors etc. survived intact from last year).

At last! We hit the (weather) Jackpot, mild warmish weather, almost no wind and thus almost zero drift inside the hanger. Bernie Hunt ripped-off a couple of 41 min flt's in the first two rounds, and virtually left just 2 team places to fight for!!

You would have thought with such good conditions, we would all be knocking up flights close to 40 mins, but most fliers could only manage 35/36 mins (approx). Dave Pymm DID get 1 flight of exactly 40 mins to add to his next best flight of about 36 mins, so with just round 6 to be flown and getting dark (but ultra calm and good air), and only myself and Aslett still to fly, I worked out I needed 39 mins + to get 3rd team place, and Aslett needed 43 mins!

At last I finished breaking every model I touched, and found the right combination to make a flight of (I think) 40:47 and felt pleased to have made the team once more.

But ..

With about 5 mins to the end of this last round - and by now twilight! Aslett broke one of his models as he was about to launch for his last flight - needing 43 mins! . He was so close to the round-end that he threw it to the ground, ran 40 yards to his table, cranked away not knowing how many turns, how much torque, fitted the motor and launched seconds prior to the last whistle blowing!!'

By the time his model reached the roof, you needed binoculars (or image intensifiers) to see it hit the very rusty girders several times and - unbelievably - actually fall off!!! (unheard of!) and after 45 mins it landed.

.....

The British team then is Bernard Hunt, Dave Pymm and Bernard Aslett with Mr Barr coming 4th - team manager?

.....

Laurie works hard to make things work for hosting the 1986 World Champs and I - the Editor - hope he will get lot of help! And rumours from a European country say that the Poles will apply for the 1988 W/C in the Hala Ludowa .....??!

by Manny Radoff

MOUNTING WING SOCKETS, and Uses For an Artists' Brush

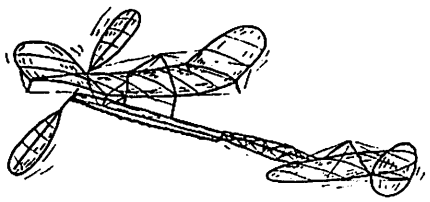
After marking the exact spots for the two sockets, I make holes in which to insert the tissue sockets by pushing the sharpenend end of a piece of 1/16-diam. wire (the one on which I make the tissue tubes) into the motor stick at the marked spots. I enlarge the holes using the rear end of a small artist's brush, which is tapered to less than 1/16-in. I insert the end of the artist brush into the hole until it fits. Then I gently rotate the brush while pushing it in, up to a pre-marked line which makes the right size hole for the socket, with a bit of a tight fit. Push old wing posts about two thirds of the depth into the tissue sockets, and insert the sockets into the holes made in the motor stick. Adjust them for correct alignment with the tail, if mounted, and parallel to each other. Hold the assembly up to a light with the sockets along the line of vision and bottom to the eye. Pin prick holes on two sides of each socket at the bottom, and squeeze in a bit of glue with a hyperdermic glue gun. Then realign the wing posts and wait about five minutes til dry, occasionally checking alignment (strange things do happen). When dry, and if still properly aligned, glue around the tissue socket on the upper surface. When that is dry, remove the wing posts.

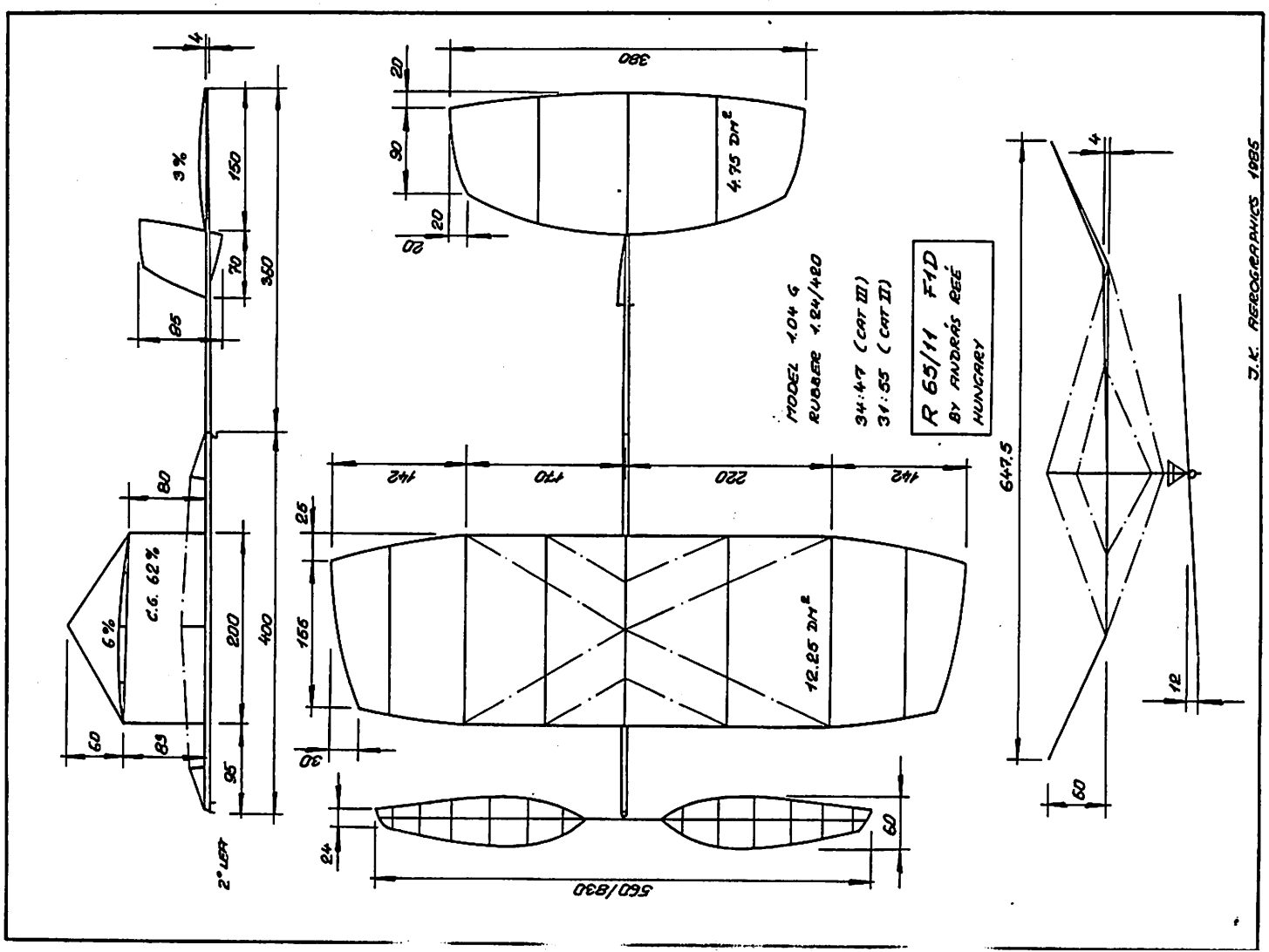
Caution: Don't try to avoid making those little pin-prick holes in the bottom for gluing purposes. First because the glue you insert will seal up those tiny holes, and that surface will be much stronger than the balsa it replaces. Secondly, if you try to insert glue from the top down through the sockets, you invariably get glue on the socket and any old wing post you insert for guide purposes will be stuck therein causing problems.

Some modelers I know use a jig which will align the sockets to each other. You still have to align the jig to correct wing post alignment to the stick and tail. The jig is merely two fairly short wing posts glued into a solid piece of balsa and properly aligned. This will automatically align the sockets to be parallel to each other and vertical to the stick. This is a jig without which I have managed fairly well. Someday, when time permits, I will make a couple for different wing chords.

I have mentioned the use of the end of a small artist's brush for hole enlarging. I do have use for the brush end. I mostly use it instead of a tweezer for small balsa pieces, like the bits of balsa used for wire brace hangers along the wing spars, or the small balsa pieces used to support unbraced tails. Wet the brush with saliva, put it on the balsa piece in correct position and the piece will hold. For the wire brace hanger, put a dot of glue on the spar, and place the piece with the brush. In a couple of seconds the glue will start to dry and as you gently pull the brush away the saliva will give and the balsa will stick. For tail braces, set the tip of the wet brush across the balsa, put a dot of glue at each end, place in position, wait the few seconds, and again the brush will ease away. I find that by using the brush instead of a tweezer I do not accidently crush the small balsa piece I am placing nor do I crush the piece to which I am applying it. This brush also serves as my acetone applicator when stripping bits of film from surfaces I wish to recover, or other needs for applying acetone. The only other brush I use is a number 8 artist brush to apply the film adhesive, like saliva, sugar water, or beer.

John Triolo gave me the idea of the use of a brush instead of a tweezer ....





A letter from András Reé, Hungary.....

..... I have to apologize for the long silence and now I want to remedy for my negligence.

First of all I congratulate you making the "INDOOR NEWS". I agree, we need this newsletter, and the three issues I have got until now prove it! Many thanks for them.

I also will help you with results, photos, drawings and other details, and I also hope, I can arrange my subscription in the future, too.

Something about indoor flying in Hungary. We have about 30 flyers on different levels. Our contests are organized mainly in two sites. One in Budapest with 14,9 m glass ceiling, the other in Debrecen with 29,3 m height, also glass ceiling. (The latter is the site of the 1966 W/C and the very popular Hajdu-Cup contests between 1969 and 1977.)

The smaller place has quite small area, but it is a good one, it was the place of two Cat.II world records - 27:58 by me in 1970 and 32:26 by Orsovai in 1981 - and usually flights between 30-32 min. are needed to win. In Debrecen we organize our championships, where the best flights are between 34-35 min., the hall record is by me with 34:47.

Both sites are quite goog in good weather conditions, but the contests need very long time because of the small areas. For example one week ago was our championship, and two complete days were enough only for 4 flights for 16 flyers.

Besides the F 1 D class we have a small catagory - first of all for beginners, but the experts fly it, too. The rules are:

Max.: 250 mm span
Min. weight: 0,3 grams without rubber

This catagory exists since 1972, the drawing of my prototype is enclosed, the model flies very well nowadays, too! The models are based mainly on my prototype. We organize this small model contests in our smaller site, the best flights by the experts being about 14 min. The beginners can fly with the first model between 2-6 min.

Between 1974 and 1983 we used also my 50 cm rule, we organized 2 international contests, too - the Hajdu-Cup in 1975 & 1977. We suggested this an F 1 D rule in 1974, the CIAM conference voted 13:12 against it!! The rules were:

Max. span: 500 mm
Min. weight without rubber: 1,00 grams.
Max. chord of surfaces: 150 mm
Max. distance between rubber hooks: 250 mm

Now, on the base of Rodemsky's call upon to work out the future indoor rules, I am thinking again on this, maybe with some modifikations.

I also inform you about our three F 1 D events in this year:

Champs of Budapest (14,9 m, 1-2/6):

Seniors:	1. Andras Reé	29:36 + 30:08	= 59:44
	2. Antal Egri	28:12 + 30:00	= 58:12
	3. Dezsö Orsovai	25:49 + 27:16	= 53:05
	.....		
Juniors:	1. Istvan Reé	28:14 + 30:25	= 58:39
	2. László Reé	28:42 + 29:19	= 58:01
	3. Andras Kovacs	6:54 + 10:49	= 17:43

Várszegi Géza Memorial (14,9 m, 15-16/6):

Seniors:	1. Andras Reé	29:39 + 30:28	= 60:07
	2. Antal Egri	27:59 + 27:18	= 55:17
	3. Dezsö Orsovai	27:01 + 24:46	= 51:47
Juniors:	1. Istvan Reé	26:42 + 28:15	= 54:57
	2. László Reé	28:19 + 26:37	= 54:56

Hungarian Championships (29,3 m, 24-25/8):

No different classification!

1. László Reé	33:23 + 34:34	= 67:57
2. Dezsö Orsovai	33:10 + 34:44	= 67:54
3. András Reé	33:59 + 33:07	= 67:06
4. Istvan Reé	29:54 + 32:03	= 61:57
5. Antal Egri	31:24 + 30:14	= 61:38
6. Miklós Kemény	31:52 + 29:33	= 61:25

.....
16 competitors

You se a lot of REÉ on the results. László is my younger son (17), István is the elder one (18). My sons and Kemeny also use my design, a drawing is anclosed.

.....
I hope you can use my materials, and I am sure your newsletter has a nice future if we shall help you!!

András

⇒ Authors/contributions WANTED on: ⇐

1. Adjusting your model to the hall and weather.
2. How to put the most into your motors - winding techniques.
3. Pre-contest testing and preparing of motors.
4. Peanut drawings/articles.
5. Proposals for changing the F 1 D class.
6. Reports in general wanted from:
   - England
   - Finland
   - Sweden
   - W. Germany
   - Belgium - results of the Flemalle contest 1985
   - Holland
   - France
7. Cartoons from our beautiful hobby and sport.

..... and of course drawings, articles, photos etc., or just a letter telling you're alive!!

PUBLIC RELATION

In order to promote our fascinating sport TV and paper coverage is very valuable. I would like very much (like many others) to know something about how you tackle this problem in your country.

By the way, in Denmark I have only seen free flight people fly indoor, though the sport should appeal to all kinds of modellers. Is this the case in your country, too??

North of England

Low-Ceiling Indoor Flying

Rules

Easy B rubber powered duration models.

1) Current model specification i.e. Rule 3.22.2 in the SMAE Rulebook:
   a) Wing maximum projected span 18". max chord 3" monoplane only.
   b) Tail area 30 sq. ins. maximum. Wing and tail to have straight line outlines.
   c) Prop max diameter 14". No variable pitch or flaring mechanisms; spar to be at 50% ± 10% all the way along the blades. Solid wood construction only.
   d) Motor stick and tail boom to be solid construction only.
   e) Minimum weight without rubber 1.2g
   f) Wood bracing may be used.
   g) Any covering material allowed.
2) EITHER: Any rubber weight. Flight times have a 7 minute maximum.
   OR: Rubber max weight 0.6 g
   Ballast in the form of a spacer between rubber and rear hook 0.6 g minimum
   No maximum flight time.
3) Total of best 2 from 6 flights.

Indoor Hand Launched Glider

1) Wing span 13" max., wing area 35 sq. in.s max.
   Overall length 13" max.
   Tail span 6½" max.
   All-up weight 3 g minimum.

Peanut Duration

1) a) Rubber powered monoplanes only.
   b) Wing span 13" max projected. Wing chord 2½ max.
   c) Tail span 7" max. Tail area 14 sq. ins. max.
   d) Overall length, including propeller 13" max.
   e) Propeller 6" diameter max.
   f) Cross-section of fuselage 2 sq. ins. minimum.
   g) Airframe weight (without rubber) 4 g minimum.
   h) Two wheel undercarriage required. Flights must r.o.g.
2) Total of best 2 from 6 flights.

Scale

1) a) Rubber power only.
   b) No limitations on size or weight.
2) Scoring will be on a points basis as follows:-
   Static realism as decided by judges and using any documentation provided by the entrant. 1st place = 1 point, 2nd place = 2 points, etc.
   Flight Duration being the total of the best two flights, one of which must be r.o.g. 1st place = 1 point, 2nd place = 2 points etc.
   The total of a model's points will determine the results.
3) In the case of a tied places in any section, points will be averaged i.e. a two-way tie for 3rd place will be considered as a sharing of 3rd and 4th place and the models awarded 3½ points each.
4) Ties in overall scores will be decided by the higher r.o.g. duration flight.
5) Scale models that *win* a contest during the 1984-85

NORTH OF ENGLAND LOW-CEILING INDOOR FLYING WINTER 1984-85

13 JAN 1985					
60.7	D. Morley		57.2	B. Hunt	
58.3	R. Green		56.5	W. Murray	
56.6	G. Davitt		55.5	D. Morley	
5:52	J. O'Donnell		6:37	J. O'Donnell	6:06
5:32	B. Hunt		6:31	B. Hunt	5:38
4:55	D. Morley		6:51	W. Murray	5:27
6+ 48	R. Boor P51	6	D. Horsefield B. Scout	7	
6+ 25	J. O'Donnell Fike	8	J. O'Donnell Fike	8+1:13	
9+ 25	B. Horsefield Fike	9+29	M. Colling Blériot	8+48	
14:02	D. Morley	15:53	B. Hunt	16:18	
14:00	B. Hunt	14:57	D. Morley	16:17	
13:39	H. Tubbs	14:00	J. O'Donnell	14:20	

10 FEB 1985					
57.5	B. Hunt		57.2	R. Boor He 113	
56.1	R. Boor		56.5	J. O'Donnell Fike	
54.8	W. Murray		55.5	D. Kerswell Piper Pacer	
6:06	J. O'Donnell		6:16	R. Boor He 113	8
5:38	B. Hunt		5:57	J. O'Donnell Fike	9+1:15
5:27	H. Tubbs		4:25	D. Kerswell Piper Pacer	9+5
			14:59	D. Davitt	
			14:00	H. Tubbs	
			13:34	J. O'Donnell	

3 MARCH 1985					
52	B. Hunt		51.8	R. Boor He 113	
51.8	R. Boor		50.8	J. O'Donnell Fike	
50.8	W. Murray		49.5	D. Kerswell Piper Pacer	
6:16	J. O'Donnell		6:27	R. Boor He 113	8
5:57	B. Hunt		5:54	J. O'Donnell Fike	9+1:15
4:25	H. Tubbs		4:21	D. Kerswell Piper Pacer	9+5
			14:59	D. Davitt	
			14:00	H. Tubbs	
			13:34	J. O'Donnell	

THANKS TO "AEROMODELLER" FOR THE PRINTING.

MORE VERY PRECIOUS "MANNY'S WRINKLES"

INDOOR

by Manny Radoff

INDOOR RIBS - A DISCUSSION OF TYPES

There are two types of ribs used in the making of an indoor endurance model: regular ribs and compression ribs. Compression ribs are usually put at the places where the wire bracing joins the wing spars. Regular ribs are used everywhere else.

Most indoor modelers cut the ribs from "c" grain balsa. I wonder why? I cut my ribs as deep as possible so they will better retain the shape I give them. So why not use "A" grain wood where the "C" grain will be on the vertical and give the rib resistance to bending forces? I get resistance to lateral forces on the ribs by wetting them so the microfilm sticks to the ribs and keeps them from bending. Another advantage of sticking the film to the ribs is that it prevents the microfilm from rubbing. This rubbing can wear holes on a very long car trip and was particularly bad in the old piston-engine airplanes when models were carried on them cross-country or overseas.

There are two types of compression ribs that I see on models. They are the built up, Fig. 1, and the deep one piece, Fig. 2. The built-up ribs have been used for as long as I can remember. I have seen one or two, and even three upright pieces used. Their number should depend on the thickness and quality of wood.

The solid, one piece style (Fig. II) can also vary. The deep part can be at the high part of the camber or the middle of the rib. To make them I use a rib cutting template for the underside, which is of a lower camber and I position it to give me the depth and configuration that looks good. I first learned of this style after the 1970 W/C at the Saltmine, in Slanic, Romania, where Jim Richmond used it. I like it because it saves time.

For many years now, two of my indoor modeling friends and I, have not used compression ribs at any wire bracing points on the spars except at the dihedral break of our flat center section wings. We did make one concession and that was to put a piece of bracing wire across the wing at the wing posts.

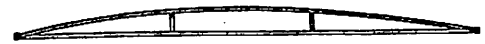


FIG. 1

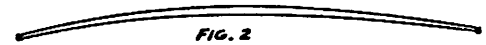


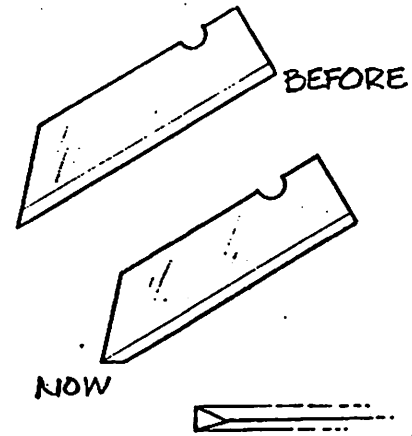
FIG. 2

RAZOR BLADE HINT

by Emanuel Radoff

During a mouth stuffing and elbow bending session after a day of indoor flying at Lakehurst, Ray Harlan told me of a little trick to keep the razor blade point from following the grain of the cutting board. He grinds off the tip of the razor blade with a handstone, at the correct angle to permit the new tip to be flush with the base. The resultant flat tip rides on the surface of the base instead of digging into it and thereby following the grain.

Ray developed the idea for the cutter on his micrometer measuring type balsa stripper he sells along with an indoor scale and pigtail double thrust bearings. Ray can be contacted at 15 Happy Hollow Road, Wayland, Mass. 01778.



WEST GERMAN NATS 1985

DMM-Saalflug 1985

Deutsche Saalflug-Meisterschaft + B-Kader F1D, Dortmund 27./28.7.85

F1D (7 T.)			M1 (5 T.)			P2 (6 T.)		
1. Nimptsch, Werner	NI	41:47	1. Nimptsch, Werner	NI	29:06	1. Lotz, Rainer	BW	22:57
2. Lotz, Rainer	BW	40:07	2. Trzaska, Manfred	NI	28:13	2. Mehr, Friedh.	NW	21:35
3. Jakob, Helmut	NI	36:39	3. Jakob, Helmut	NI	23:59	3. Samiec, Johann	HE	13:08
4. Kuttler, Peter	BY	36:21	4. Kuttler, Peter	BY	17:05	4. Jesinghausen,M.	HE	12:21

1986 TEAM

P1 (13 T.)			TH (11 T.)			F1D-Beginner (11 T.)		
1. Werfl, Helmut	BW	22:51	1. Trzaska, Matthias	NI	20:17	1. WErfl, Helmut	BW	25:35
2. Werfl, Richard	BW	20:05	2. Weil, Jürgen	HE	16:43	2. Bundesen, Uwe	BW	24:43
3. Nimptsch, Werner	NI	18:49	3. Jesinghausen, Mich.	He	14:33	3. Frattini, Marc	BW	22:13
4. Klinck, Alfred	SA	16:38	4. Lerner, Rolf	SA	13:57	4. Heide, WolfgangBW		21:14

THANKS TO "THERMIKSEUSE"

USA Team Selection for the 1986 World Championships:

Times are from Akron Airdock, 31/8-2/9, points formed from this event and regional contests.

1.	C. Banks	84:20	1110 points	NB. Jim Richmond did not fly at this event, perhaps because he can fly anyway at the W/C as a defending champion. Further 9 fliers were on the list, but did not fly at this contest.
2.	B. Randolph	84:00	1105,59	
3.	L. Cailliau	80:14	1061,38	
4.	B. Romak	80:52	1058,89	
5.	R. Doig	79:41	1054,86	
6.	R. Harlan	79:16	1044,97	
7.	L. Gitlow	78:10	1036,42	
8.	S. Cannizzo	78:56	1010,97	
9.	B. Hulbert	74:37	986,97	
10.	D. Obarski	72:07	965,14	
11.	W. Van Gorder	72:01	963,45	
12.	M. Radoff	71:42	958,04	
13.	B. Gibbs	71:23	954,78	
14.	S. Chilton	69:55	939,05	
15.	P. Tryon	68:29	909,70	
16.	L. Loucka	66;24	889,90	
17.	R. Ganser	63:15	853,95	
18.	J. Harlan (J)	64:14	840,74	
19.	D. Belief	61:22	834,75	

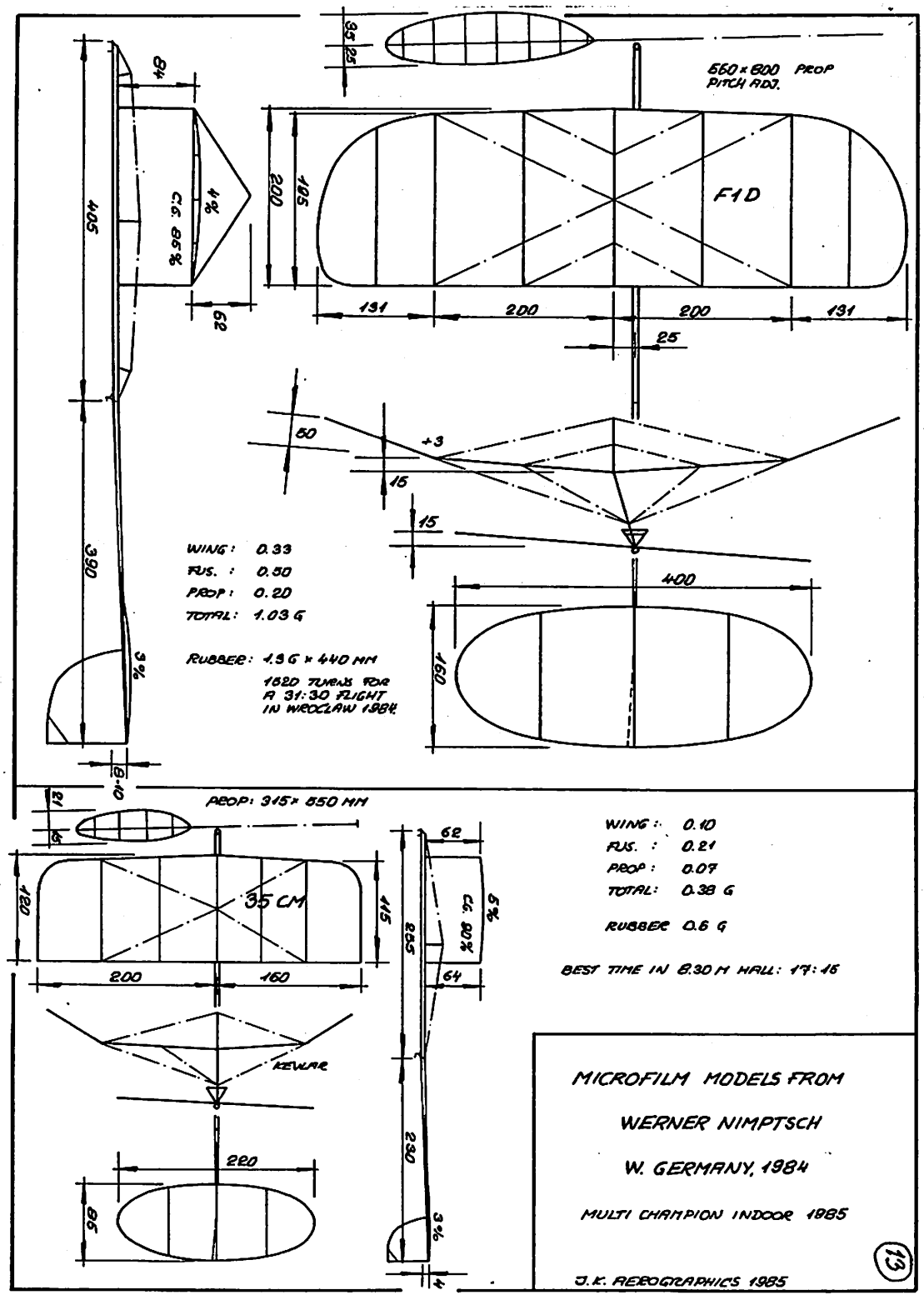
A tip from Erv Rodemski ...

Covering stabs... One trick I have used for stabs, is to glue the stab to the boom BEFORE covering! It is much easier to handle - no holes in the film. Then cut a slot in the stab covering board so the boom can drop below the surface. When you have done the covering, trimmed excess film off, let dry, then you have a straight stab with no holes! Easy...?

Hints and tips from Boyd Felstead ....

Instead of holding wrapping tissue (for rolling sticks and booms) fixed and smooth with a ruler, use a SHEET of GLASS and WET strength Modelspan tissue. Firstly wet, attach and smooth tissue to glass with large, soft brush before rolling. It will roll up TIGHT and SMOOTH and no need for pins to hold former, while attaching tissue edge.

To bend wing tip shapes just hold balsa strips under the (very) hot water tap for ten seconds, there is absolutely no need to soak for 2 hours! After bending put template in an oven at 120-150 degrees C. for 3 minutes.



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